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Prepared for

Baldwin Park Operable Unit
Cooperating Respondents

2018 Annual Performance Evaluation Report – Volume 1

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LIST OF ACRONYMS AND ABBREVIATIONS

1,1-DCE	**1,1-Dichloroethene**
1,2-DCA	**1,2-Dichloroethane**
1,2,3-TCP	**1,2,3-Trichloropropane**
AJ	**Aerojet**
ALR	**Azusa Land Reclamation Company, Inc.**
AMEC	**AMEC Environment and Infrastructure, Inc. (formerly AMEC Geomatrix, Inc.)**
ARARs	**Applicable or Relevant and Appropriate Requirements**
BPOU	**Baldwin Park Operable Unit**
BPOUSC	**Baldwin Park Operable Unit Steering Committee**
CC	**Conrock Company**
CDM	**Camp, Dresser, and McKee**
CDWC	**California Domestic Water Company**
CEQA	**California Environmental Quality Act**
CERCLA	**Comprehensive Environmental Response, Compensation, and Liability Act**
cis-1,2-DCE	**Cis-1,2-Dichloroethene**
COC	**Chemical of Concern**
COI	**City of Industry**
CRs	**Cooperating Respondents**
DDW	**California State Water Resources Control Board, Division of Drinking Water (formerly Department of Health Services [DHS]).**
DQO	**Data Quality Objectives**
EDB	**Ethylene Dibromide**
EPA	**U.S. Environmental Protection Agency**
ERM	**ERM-West, Inc.**
ESD	**Explanation of Significant Differences**
FSAP	**Field Sampling and Analysis Plan for Air and Wastewater Discharges**
FSP	**Field Sampling Plan for Groundwater**
f.k.a	**Formerly Known As**
GAC	**Granular Activated Carbon**
gpm	**gallons per minute**

HLA	**Harding Lawson Associates**
ISEP	**Calgon Ionic Separation Process**
IX	**Ion Exchange**
LACO	**Los Angeles County**
LACDPW	**Los Angeles County Department of Public Works**
LACSD	**Los Angeles County Sanitation Districts**
LDC	**Laboratory Data Consultants, Inc.**
LPGAC	**Liquid-Phase Granular Activated Carbon**
LPVCWD	**La Puente Valley County Water District**
MCL	**Maximum Contaminant Level**
MICR	**Maximum Individual Cancer Risk**
msl	**Mean Sea Level**
mg/L	**Milligrams Per Liter**
MY	**Model Year**
NDMA	**N-Nitrosodimethylamine**
NL	**Drinking Water Notification Level**
ng/L	**Nanograms Per Liter**
PCE	**Tetrachloroethene**
PE	**Performance Evaluation**
PHG	**Public Health Goal**
PRP	**Potentially Responsible Party**
PSEP	**Performance Standards Evaluation Plan**
QAPP	**Quality Assurance Project Plan**
QC	**Quality Control**
RI	**Remedial Investigation**
ROD	**Record of Decision**
RMSE	**Root-mean squared error**
SA	**Subarea**
SCAQMD	**South Coast Air Quality Management District**
SGVWC	**San Gabriel Valley Water Company**

SOW	**Statement of Work**
SMR	**Self-Monitoring Reports**
SVOC	**Semi-Volatile Organic Compound**
SWS	**Suburban Water Systems**
TIC	**Tentatively Identified Compound**
TCE	**Trichloroethene**
UAO	**Unilateral Administrative Order**
µg/L	**Micrograms Per Liter**
UV	**Ultraviolet**
VCWD	**Valley County Water District**
VFD	**Variable Frequency Drive**
VOC	**Volatile Organic Compound**
VPGAC	**Vapor-Phase Granulated Activated Carbon**
WE	**Water Entity**

1. INTRODUCTION

This document presents the 2018 Annual Performance Evaluation (PE) Report for the Baldwin Park Operable Unit (BPOU) of the San Gabriel Valley Superfund Sites, located in the San Gabriel Basin, Los Angeles County, California. This report was prepared jointly by Geosyntec Consultants, Inc. (Geosyntec) and ERM-West, Inc. (ERM), on behalf of the BPOU Cooperating Respondents (CRs). The CRs are:

- Aerojet Rocketdyne, Inc. (formerly known as [f.k.a.] Aerojet-General Corporation);
- Azusa Land Reclamation Company, Inc. (ALR);
- Hartwell Corporation;
- Chemical Waste Management, Inc. (as successor to Oil and Solvent Process Company); and
- Winco Enterprises Inc. (f.k.a. Wynn Oil Company).

This report meets the requirements for the Annual PE Report, as required by Unilateral Administrative Order 2000-13 (UAO) and the supporting Statement of Work (SOW), issued by the U.S. Environmental Protection Agency (EPA) Region IX on June 30, 2000, and amended on February 28, 2002.

1.1 Background

Beginning in 1979, volatile organic compounds (VOCs) were detected in groundwater within the San Gabriel Basin (the Basin). In May 1984, four areas of groundwater contamination were listed as San Gabriel Valley Areas 1-4 on EPA's National Priorities List based on available water quality data. Subsequent investigation by EPA and others revealed widespread VOC contamination in the Basin. As a result, EPA subsequently divided the Basin into seven Remedial Investigation (RI) areas to focus characterization on the extent of contamination and plan remedial actions. EPA later designated some of these RI areas as operable units. RI Area 5 was designated as the BPOU.

Although many of the figures provided in this report depict a generalized boundary to the area of impacted groundwater in the BPOU (Figure 1-1), the precise definition of the boundary of the BPOU has not been developed. The approximate BPOU boundary provides a point of reference on the figures.

Since 1986, EPA, various Potentially Responsible Parties (PRPs), and numerous other entities have compiled and evaluated groundwater quality data from the Basin. Initial field investigations conducted by EPA in the BPOU included the installation and sampling of one multiport monitoring well and the sampling of water-supply wells. In 1990, EPA issued a Basin-

wide Technical Plan that described options for remediation of VOC plumes through the Basin. In 1992, EPA published an Interim RI Report for the Basin.

In 1993, EPA issued a Feasibility Study Report for the BPOU. This report evaluated various remedial alternatives for the remediation of groundwater in the BPOU. In 1994, EPA issued a Record of Decision (ROD) for the BPOU interim remedy. The ROD identified 17 chemicals of concern (COCs), all of which were VOCs. EPA's selected remedy consisted of pumping and treating approximately 19,000 gallons per minute (gpm) of contaminated groundwater. In approximately 1995, the Baldwin Park Operable Unit Steering Committee (BPOUSC) began to perform pre-remedial design activities, including additional characterization of the extent of VOC-contaminated groundwater and the development of a groundwater extraction plan. Eight multiport monitoring wells were installed and sampled, and 26 existing water-supply and monitoring wells were sampled to provide additional characterization of the extent of VOC contamination in the BPOU. The results of these pre-remedial design activities were submitted to EPA in the Draft Pre-Remedial Design Report, dated December 1996 (Camp, Dresser, and McKee [CDM], 1996). The groundwater extraction plan was revised on several occasions. Following review and comment by EPA, the Final Draft Pre-Remedial Design Report, dated September 1997 (CDM, 1997), was issued.

In mid-1997, and then again in 1998, certain constituents that were not previously considered as COCs in the ROD, including perchlorate, N-nitrosodimethylamine (NDMA), and 1,4-dioxane were discovered in groundwater within the BPOU. Consequently, EPA requested that the BPOUSC characterize the distribution of these constituents, as well as conduct further characterization of VOCs in groundwater within the BPOU. As a result, the BPOUSC installed and sampled four additional multiport monitoring wells and conducted additional groundwater sampling to evaluate the extent of VOCs, perchlorate, NDMA, and 1,4-dioxane in groundwater in the BPOU.

The results of these investigations and several groundwater extraction plan options were presented to EPA in the Draft Addendum to the Pre-Remedial Design Report, dated January 14, 1999 (Harding Lawson Associates [HLA], 1999). Throughout 1999, these groundwater extraction plan options were refined, and new options were formulated. These changes were made in response to comments from EPA and the Main San Gabriel Basin Watermaster (Watermaster). This resulted in a range of candidate groundwater extraction plans with total groundwater extraction rates ranging from 19,500 to 21,500 gpm.

In May 1999, EPA issued an Explanation of Significant Differences (ESD) to supplement the 1994 ROD. The ESD depicted an expanded area of the groundwater contamination in the southern portion of the BPOU to reflect the results of the additional investigations related to the characterization of perchlorate, NDMA, and 1,4-dioxane in groundwater. The ESD also added perchlorate, NDMA, and 1,4-dioxane to the list of COCs defined in the ROD. In June 2000, EPA

issued the UAO, requiring various PRPs (identified in the UAO as "Respondents"), including but not limited to the CRs, to design, construct, and operate the BPOU interim remedy identified in the ROD, as revised by the ESD. In addition, beginning in the late 1990s, various water agencies, producers, and other water entities (collectively, the "Water Entities" or "WEs") with regulatory oversight and/or financial or other interests in the BPOU groundwater filed lawsuits or asserted claims against the BPOU PRPs for damages allegedly suffered as a result of contamination of the groundwater and water-supply wells in the BPOU area. Thereafter, the CRs entered into negotiations with the WEs, which culminated in March 2002 with the CRs and WEs executing the BPOU Project Agreement to implement the BPOU Project. The BPOU Project Agreement went into effect on May 9, 2002 and had a duration of 15 years terminating in May 2017. A new Project Agreement commenced on May 9, 2017 following the expiration of the 2002 BPOU Project Agreement. This new Project Agreement extends for a 10-year period ending in May 2027.

While the BPOU Project Agreement negotiations were underway, the CRs prepared the Final Remedial Design/Remedial Action Work Plan and the Draft Final Conceptual Design Report for the implementation of the remedy (HLA, 2000a and HLA, 2000b). The Preliminary Design Report was prepared by the WEs and submitted to EPA in April 2001 (Watermaster, 2001).

In January 2006, EPA's Remedial Project Manager notified the CRs that EPA was concerned about the detection of 1,2,3-trichloropropane (1,2,3-TCP) in certain wells within the BPOU. At that time this compound did not have a federal Maximum Contaminant Level (MCL) but did have a California state Drinking Water Notification Level (NL) of 5 nanograms per liter (ng/L).[1] In response, the CRs funded a further modification of the Valley County Water District (VCWD) Lante Treatment Plant to include Liquid-Phase Granular Activated Carbon (LPGAC) treatment to address EPA's concerns about the presence of 1,2,3-TCP.

In August 2006, EPA requested that the CRs include in the BPOU monitoring program additional sampling for non-COC VOCs and non-target volatile and semi-volatile compounds (Tentatively Identified Compounds, or TICs) including 1,2,3-TCP (1,2,3-TCP was subsequently added as a COC). In response to EPA's request, the CRs provided a proposal for non-COC groundwater analysis and reporting in a technical memorandum dated August 24, 2006 (Geomatrix, 2006a). This proposal included the following:

- Information on sampling and analysis of 1,2,3-TCP;

[1] In August 2009, the State of California's Office of Environmental Health Hazard Assessment adopted a final Public Health Goal (PHG) for 1,2,3-trichloropropane of 0.7 nanograms per liter, or 0.0007 parts per billion. While DPH considers a PHG in setting a state MCL, to date no final MCL has been established.

- A proposal for reporting results for non-COC VOCs in a subset of multiport monitoring wells located upgradient of each groundwater extraction and treatment facility (i.e., "early warning" wells);
- A proposal for monitoring of non-target VOCs and semi-volatile organic compounds (SVOCs) in a subset of multiport monitoring wells located upgradient of each groundwater extraction and treatment facility (i.e., "early warning" wells); and
- A proposal for periodic analysis of 1,2,3-TCP in selected wells.

EPA approved the August 24, 2006 proposal in a letter dated September 13, 2006, subject to the addition of several wells. The complete requirements for non-COC groundwater analysis and reporting were summarized in a technical memorandum dated September 29, 2006 (ERM, 2006).

On October 3, 2006, EPA provided a letter approving the BPOU Quality Assurance Project Plan (QAPP) and Field Sampling Plan (FSP) subject to submittal of final versions of these documents with the complete requirements for non-COC groundwater analysis and reporting. Final versions of the QAPP and FSP for groundwater were submitted in November 2006 (Geomatrix, 2006b; Stetson, 2006a) and were approved by EPA in a letter dated February 12, 2007. The QAPP (Rev. 5) and FSP (Rev. 7) for groundwater were most recently updated in 2013 at the request of EPA (AMEC, 2013a and AMEC, 2013b). EPA approved the updated QAPP and FSP in a letter dated May 21, 2013.

In the February 12, 2007 letter, EPA also requested that a data management plan be prepared as an addendum to the QAPP. The report, Data Management Plan for the Baldwin Park Operable Unit Performance Standards Evaluation Plan Monitoring Program, was submitted to EPA on May 17, 2007 (Laboratory Data Consultants, Inc. [LDC] 2007).

A separate Field Sampling and Analysis Plan for Off-Gas Air, Waste Brine, and Treated Water (FSAP) was submitted to EPA on August 14, 2006 (Stetson 2006b) and the corresponding QAPP for Air, Brine, and Treated Water was submitted on March 16, 2007 (Geomatrix, 2007a). The CRs submitted a revised QAPP for air and wastewater discharges to the EPA in September of 2012 (AMEC, 2012a) and an updated FSAP was issued in July 2013 (Stetson, 2013b). The CRs submitted an addendum to the QAPP and FSAP for air and wastewater discharges to the EPA on February 3, 2015 documenting a change in the analytical method for chemical oxygen demand (COD)(Geosyntec, 2015a).

Numerous minor modifications have been proposed and approved for the BPOU PSEP monitoring program since 2007. In 2010, the QAPP for Groundwater (AMEC Geomatrix, 2010a), the FSP for Groundwater (AMEC Geomatrix, 2010b), and the Revised Final Performance Standards Evaluation Plan (PSEP) were updated (AMEC Geomatrix, 2010c) to

incorporate the modifications that were approved after the previous versions of these documents were issued. An updated version of the PSEP (Rev. 3) was submitted to EPA on April 13, 2012 (AMEC, 2012b) to address comments received from EPA on July 1 and October 12, 2011. EPA provided comments and requested additional modifications to the PSEP in e-mail correspondence dated September 21, 2012, November 28, 2012, February 28, 2013, and March 8, 2013. As a result, a revised version of the PSEP (Rev. 4) was prepared to address EPA comments including the addition of 1,2,3-TCP as a COC, clarification of monitoring and reporting requirements for non-COCs such as ethylene dibromide (EDB), and the modification of remedial action objectives outlined in Sections 2.2.1 and 2.2.2 (AMEC, 2013c). EPA approved the revised PSEP in a letter dated May 21, 2013. Modifications to the various monitoring components of the PSEP are described in detail in Section 3.0 of this report.

1.2 Overview of Remedial Action

The UAO and SOW direct the Respondents to design, construct, and implement the remedy described in the ROD and ESD, and to achieve the Performance Standards in accordance with the UAO. In a letter to the CRs dated February 28, 2002, EPA confirmed that CR funding of the implementation of the BPOU Project Agreement described in Section 1.1 above provided the CRs with a means to satisfy the requirements of the UAO. The WEs (either directly or through contractors) designed the groundwater extraction and treatment facilities (Subprojects), and construction related to the initial design work has been completed. The WEs are now operating the Subprojects which provide for groundwater extraction and treatment in two general areas of the BPOU (Figure 1-2). The treated groundwater is supplied for direct potable use.

In 2000, the EPA approved groundwater extraction plan associated with the various Subprojects consisted of the extraction of a total of 21,000 gpm of groundwater on annualized basis: 6,000 gpm from the northern portion of the plumes (Subarea 1), and 15,000 gpm from the southern portion of the plumes (Subarea 3)(EPA, 2000). During remedial design activities, the groundwater extraction plan was refined to include an additional 750 gpm in Subarea 3 resulting in a total 15,750 gpm. In January 2015, EPA requested that the extraction plan for Subarea 3 be expanded to include an additional 8,000 gpm from the California Domestic Water Company (CDWC) Bassett Wellfield, increasing the extraction plan for Subarea 3 to 23,750 gpm (EPA, 2015) and total project extraction to 29,750 gpm.

Extracted groundwater is to be treated using a treatment train that is designed to remove all COCs to levels acceptable for direct potable use. The treatment train varies among the treatment plants but generally consists of a series of contaminant treatment processes including air stripping and/or LPGAC to remove VOCs, ion exchange (IX) to remove perchlorate, and ultraviolet (UV)/oxidation to remove 1,4-dioxane and NDMA.

1.3 Summary of Remedial Action Objectives and Performance Standards

The remedial objectives for groundwater in the BPOU are defined in the UAO as follows:

> *The remedial objectives of the Baldwin Park OU are to prevent future increases in, and begin to reduce concentrations of trichloroethene, tetrachloroethene, carbon tetrachloride, and other VOCs, along with perchlorate, N-nitrosodimethylamine, and 1,4-dioxane in groundwater in the Baldwin Park area (hereafter referred to as contaminants or contaminated groundwater) 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 contaminants from the aquifer.*

The BPOU Project involves the design, installation, operation, and maintenance of groundwater extraction systems in two areas of the BPOU. The two areas are designated in the ROD and ESD as Subarea 1 (the upper area) and Subarea 3 (the lower area). Remedial objectives for the two Subareas are described below.

1.3.1 Subarea 1 Remedial Objectives

In Subarea 1, the movement of COCs in groundwater will be limited by groundwater extraction at rates and locations that will establish the necessary groundwater flow field, such that the resultant capture zone limits migration from known or suspected source areas and depths and removes chemical mass. Source areas and depths include locations believed to contain a significant mass of soil contamination (i.e., vadose zone) or a subsurface source of dissolved-phase groundwater contamination. The capture zone is to include all significant depth intervals where COC concentrations exceed MCLs. As part of the groundwater extraction process, chemical mass will be removed from Subarea 1 groundwater.

1.3.2 Subarea 3 Remedial Objectives

In Subarea 3, the movement of COCs in groundwater will be limited by groundwater extraction at rates and locations that will establish the necessary groundwater flow field to reduce the potential for groundwater containing unacceptable concentrations of tetrachloroethene (PCE), trichloroethene (TCE), carbon tetrachloride, perchlorate, NDMA, 1,4-dioxane or other COCs from moving into areas where these chemicals are not present in unacceptable concentrations. Subarea 3 groundwater extraction is to result in a hydraulic capture zone that includes all significant depth intervals where COC concentrations exceed MCLs. As part of the groundwater extraction process, chemical mass will be removed from Subarea 3 groundwater.

1.3.3 Performance Standards

Two distinct performance standards have been derived from the Remedial Objectives cited above: 1) limit further migration of COCs in groundwater, and 2) remove COCs from groundwater. Achievement of these performance standards will prevent future increases in concentrations, begin to reduce concentrations, and prevent the spread of COCs from more contaminated areas to less contaminated areas. These two performance standards are described in more detail below.

1.3.3.1 Performance Standard 1 - Limit Migration of Chemicals of Concern

The BPOU extraction plan was developed using an EPA-approved three-dimensional finite-element groundwater flow model, DYNFLOW. In 2002, the model was updated using a similar code, FEFLOW. The construction and calibration of this model rely on many years of data collection activities in the BPOU, including water level measurements and water quality sampling. The model was initially calibrated using water level data from a 20-year period (1982 to 2002). Following calibration, the model was run in a forward/predictive manner to select locations and depths of groundwater extraction wells that would allow the remedy to achieve the objectives described above. Review of geophysical logs from exploratory borings at the extraction well locations as well as logs from other wells in the BPOU suggested the presence of relatively thick, fine-grained layers that can be correlated across Subarea 3 but do not extend north to Subarea 1. These layers are present at approximately -200 and -500 feet mean sea level (msl). As a result, the well-screened intervals for new extraction wells in Subarea 3 were designed so that they could capture the entire vertical extent of contaminated groundwater without creating hydraulic connections across these layers. Therefore, shallow extraction wells were screened above the layer at -500 feet msl and deep extraction wells were screened below the layer at -500 feet msl. Aquifer testing in the extraction wells confirmed that the layer at -500 feet msl acts as a confining unit that provides hydraulic separation between the shallow and deep elevation intervals. In 2005, the groundwater flow model was modified to incorporate the confining units in Subarea 3. The groundwater flow model is updated annually with quarterly pumping and recharge data that are compiled from various sources. The CR group will continue to make refinements to the groundwater model to incorporate the results of water-level monitoring and other information to ensure the model adequately simulates observed groundwater conditions in the BPOU. Updates and refinements to the groundwater model are reported in Annual PE Reports as necessary. The calibrated model is the primary tool that is utilized to assess system performance in terms of limiting the migration of COCs.

1.3.3.2 Performance Standard 2 - Removal of Chemical Mass

This performance standard will be met through extraction and treatment of groundwater from the BPOU plumes. Documentation of the removal of chemical mass will use measured flow rates from groundwater extraction wells and results of water quality sampling and analysis for these same extraction wells. Using these data, the mass removal for selected COCs will be estimated on an annual basis. Cumulative chemical mass removed from the aquifer will also be reported.

1.4 Approach to Performance Monitoring and Evaluation

Performance monitoring and evaluation focuses on the operation of the groundwater extraction system to meet and satisfy the perfomance standards of 1) limiting further migration of groundwater contamination into less contaminated areas, and 2) removing chemical mass from groundwater. As described in the PSEP (AMEC, 2012b), the CRs' approach to performance monitoring relies upon: 1) past and future basin-wide groundwater monitoring activities performed by the Watermaster, 2) performance monitoring data collected by the Water Entities, the CRs, or other agents acting on behalf of the CRs, and 3) the use of an EPA-approved groundwater flow model to predict the effectiveness of the groundwater extraction system. At any time, should EPA determine that Performance Standards related to migration control and mass removal are not being met, the CRs will use these same methods of data collection and modeling to modify operation of the groundwater extraction system such that Performance Standards are achieved.

Watermaster basin-wide monitoring activities have served as the baseline monitoring program from which additional monitoring needs have been defined. The Watermaster has the responsibility to ensure that comprehensive water quality monitoring meets their court-decreed mission of managing Basin water production and quality, provides for predictive vulnerability assessments, and provides for monitoring so that California State Water Resources Control Board, Division of Drinking Water [DDW; formerly the Department of Health Services (DHS)] requirements for public water supplies are met. The Watermaster performs routine basin-wide water level monitoring on a semi-annual basis.

In summary, the approach to performance monitoring and evaluation consists of the following, components:

- Potentiometric head measurements in BPOU piezometers and multiport monitoring wells. These data are used to generate potentiometric surface maps for comparison to model simulation results;

- Groundwater flow modeling and particle tracking to evaluate hydraulic performance of the extraction system as it relates to limiting further migration of groundwater contamination;
- Water quality sampling of production and multiport monitoring wells to provide information on the distribution of COCs in BPOU groundwater, specifically to produce plume maps and chemical cross sections;
- Integration of the results of groundwater modeling with current plume maps and known source locations to determine whether the groundwater extraction systems are appropriately limiting the migration of COCs;
- Water quality sampling and measurement of extraction well pumping rates and production volumes; and
- Use of flow rate and water quality data from extraction wells to calculate the mass of COCs removed from the aquifer by the extraction and treatment system.

1.5 Content of Performance Evaluation Reports

As outlined in the PSEP, the Annual PE Reports should generally contain the following:

- Potentiometric maps to assist in evaluating changes in groundwater flow patterns in the BPOU;
- Groundwater plume maps and chemical cross sections and an evaluation of any changes in the extent of groundwater contamination within the BPOU;
- Statistical analysis of concentration trends and time-concentration plots for selected COCs for selected monitoring wells;
- Contaminant mass removal estimates for each extraction well using average flow rates and water quality sampling results from the extraction wells;
- Results of computer model simulations of extraction system performance and a description of any refinements to groundwater flow models used to evaluate system performance;
- An overall assessment of remedial system performance compared to the Performance Standards related to the remediation of groundwater; and
- Recommendations for changes to the monitoring program described in the PSEP including changes to the monitoring frequency and monitoring locations.

As outlined in the most recent version of the PSEP (Revision 4), EPA has requested that Annual PE Reports also address the performance of the BPOU Project in relation to “Other

Performance Standards" that are not directly related to the remediation of groundwater, but rather relate to the operational performance of, or discharge requirements for, the various Subprojects following construction. These "Other Performance Standards" include the following:

- Achievement of treated-water effluent requirements in accordance with DDW domestic water supply permits, EPA Applicable or Relevant and Appropriate Requirements (ARARs), and other DDW requirements;
- Air-emission monitoring requirements in accordance with EPA ARARs and the risk limits identified in the June 15, 2009 letter from Wayne Praskins, EPA to Scott Goulart, Aerojet as further explicated in EPA's February 3, 2011 letter;
- Monitoring and reporting of brine discharges to the Los Angeles County Sanitation Districts (LACSD) system in accordance with industrial waste discharge permits;
- Demonstration of proper disposal of waste associated with treatment operations. Applicable waste streams include, but are not limited to, spent granular activated carbon (GAC) and spent IX resins. Wastes treated or disposed of offsite must comply with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) offsite rule;
- Compliance with substantive portions of the National Pollutant Discharge Elimination System (NPDES) discharge requirements for any treated water discharged to surface water;
- Compliance with the Los Angeles Regional Water Quality Control Board's Water Quality Control Plan for the Los Angeles River Basin (the "Basin Plan"), which incorporates State Water Resources Control Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," for any discharge to land, including groundwater recharge over a spreading basin or discharge to surface water;
- The installation and operation of treatment systems necessary to ensure that the nitrate concentration in any discharge to land, to a spreading basin, or to a surface water is similar to or lower than the concentration in the receiving water, except for EPA-approved CERCLA Section 104(b) activities that will result in temporary high flow, high volume discharges;
- Compliance with substantive requirements in 22 CCR Sections 66264.601-66264.603 for miscellaneous units and related substantive closure requirements in 22 CCR Sections 66264.111-66264.115 for air strippers or GAC contactors; and

- Compliance with DDW requirements for Emergency Preparedness Plans including Spill/Release Response Plans for the various subprojects.

2. STATUS OF REMEDIAL ACTIONS

This section presents the status of remedial actions undertaken in 2018 to implement the BPOU interim remedy. These actions include operation of the Valley County Water District (VCWD) Lante Subproject in Subarea 1, and operation of the La Puente Valley County Water District (LPVCWD) Subproject, the San Gabriel Valley Water Company (SGVWC) B6 Subproject, the SGVWC B5 Subproject, and the CDWC Treatment Plant in Subarea 3. The status of the BPOU Subprojects is also described in the monthly progress reports submitted to EPA pursuant to Paragraph 85, Section XV of the UAO.

2.1 Subarea 1 Remedial Action Status

Subarea 1 remedial actions currently consist of groundwater extraction from the VCWD SA1-1 and SA1-3 (Lante) wells and treatment at the VCWD Lante Treatment Plant, which is owned and operated by VCWD. The report, "Revised Draft Interim Remedial Action Report" (Stetson, 2005), prepared and submitted to EPA in March 2005, provides a summary of the VCWD Lante Subproject background, construction, and completion activities. Construction of the VCWD Lante Treatment Plant began in 2002 and was completed in 2005. The original construction activities included drilling and equipping two new extraction wells (SA1-1 and SA1-2), re-equipping the SA1-3 (Lante) well, installing associated piezometers, constructing raw and treated water pipelines, and constructing the treatment plant. Additional construction work in 2006 and 2007 included adding LPGAC treatment and replacing the resin-based vapor control system with vapor-phase granular activated carbon (VPGAC). The treatment plant currently consists of four air-stripping towers and associated VPGAC off-gas treatment units for VOC removal, LPGAC for 1,2,3-TCP removal, single pass IX for perchlorate removal, one regenerable IX carousel (Calgon Ionic Separation Process [ISEP]) for nitrate removal, and four UV/oxidation units (UVTerra) for 1,4-dioxane and NDMA removal. Treated water is conveyed via a treated water pipeline to the Suburban Water Systems (SWS) Plant 121; however, a portion of the treated water can be directed to the VCWD distribution system if desired.

On November 11, 2005, DDW issued domestic water supply Permit Amendment 1910009PA 003, authorizing VCWD to operate the VCWD Lante Treatment Plant. In January 2006, 1,2,3-TCP was detected in the VCWD extraction wells and subsequent testing confirmed the presence of 1,2,3-TCP. Beginning on February 21, 2006, VCWD began discharging treated water to Big Dalton Wash while a 1,2,3-TCP treatment technology was selected and constructed. LPGAC was selected as the treatment technology and the design and construction of a LPGAC system was completed in Spring 2007. LPGAC startup testing was completed in May 2007 and on July 18, 2007, DDW issued an amended permit to VCWD to resume delivering potable water.

As a result of operational problems, the resin-based off-gas control system was removed and replaced with VPGAC. A temporary VPGAC system was installed while a permanent system was designed and constructed. The temporary system began operation in June 2007 and the permanent system became fully operational in April 2008. The permanent VPGAC system consists of four 20,000-pound adsorbers with associated heaters operated in parallel.

The air strippers also experienced operational problems with calcium carbonate precipitation in the towers and packing. Tower cleaning was initiated in October 2007 and was completed in February 2008. A study was conducted to evaluate precipitation mitigation alternatives that included anti-scalant dosing, acid cleaning, and packing replacement. One air stripper was acid washed in December 2008 to test the efficacy and cost of this alternative. The results of the acid wash testing were summarized in a February 18, 2009 memorandum "Summary and Evaluation Air Stripper No. 4 Acid Cleaning" (Stetson 2009). Based on the pilot testing, the acid washing was not a cost-effective method to mitigate calcium carbonate precipitation problems. Air strippers are now routinely inspected, and the towers and packing cleaned and replaced as necessary.

The process to replace the ISEP with single pass IX was initiated in 2008. A request for proposal was released in January 2008 and bids were received and evaluated in April and May of 2008. The work was awarded to RC Foster and a notice to proceed was issued in August 2008. California Environmental Quality Act (CEQA) work associated with the single pass IX was completed in September 2008 and design work was completed in early 2009. As part of the ISEP replacement work, nitrate treatment alternatives were also evaluated (Malcolm Pirnie, 2008).

Design and construction of the single pass IX system was completed in 2009. The associated booster pump upgrade was completed in November 2009. In October 2010, VCWD and the CRs released a Request for Qualifications (RFQ) requesting process engineering and nitrate management qualifications to selected engineering firms. Qualifications were received, reviewed, and CDM Smith was selected to provide process treatment and nitrate management engineering expertise. CDM Smith began reviewing nitrate management alternatives in 2011 and a report with recommendations was submitted in March of 2012. Per the CRs request, CDM submitted an addendum to their report on nitrate management in November of 2012, summarizing alternatives, which include blending using the Lante two-million-gallon reservoir.

The CRs also submitted an evaluation of extraction system performance for Subarea 1 in August 2012 (CDM Smith, 2012). In a letter dated December 12, 2012, EPA approved the proposed groundwater extraction plan of 5,000 gpm extraction at the SA1-3 location (from the SA1-3 well and reactivated Arrow well) and 1,000 gpm extraction at the SA1-1 well and concluded that this provides adequate hydraulic containment while optimizing mass removal in Subarea 1. VCWD evaluated various options to increase production at the Lante Treatment

Plant including a potential new well, reactivating the Arrow well, and upgrading the Lante well (Civiltec Engineering Inc. [Civiltec] 2013).

On February 13, 2014, the BPOU Project Committee approved the development and construction of a monitoring well to evaluate the need for a potential new extraction well at the treatment plant site, as part of an effort to assess the best way to achieve a pumping capacity of 5,000 gpm at the Lante Treatment Plant site. Construction of the monitoring well was completed in March 2016. The new monitoring well was retested in June 2016. After evaluating the water quality results, VCWD and the CRs elected to move forward with plans to reactivate the Arrow Well instead of constructing a new extraction well. In August - October 2017, the casing in the Arrow well was rehabilitated and redeveloped using mechanical and chemical treatment methods followed by pumping development at flow rates as high as 4,500 gpm. The final Arrow Well Startup Testing Plan was prepared in February 2018 and VCWD submitted the permit application documentation to DDW for review on March 20, 2018. As of April 2019, DDW was still reviewing the application. The Arrow Well building was demolished in September of 2018 and rebuilt in December 2018. The Arrow well startup is expected by mid-2019.

On March 13, 2014, the BPOU Project Committee approved the Joint Proposed Conceptual Plan Relative to Nitrate Management and a Notice to Proceed was issued to the engineering contractor to proceed with the modifications at the end of March 2014. VCWD submitted all design documents to DDW for review and compliance with the Prop 84 grant funding agreement. DDW approved the submittals in the fall of 2014. Proposition 84 funding for the nitrate management work was approved in late 2014 and work began in 2015. In April 2016, the DDW approved an amended drinking water permit allowing the use of the fixed bed IX system for the treatment of perchlorate and allowing modifications to be made to the ISEP system to treat and blend nitrates. Nitrate specific resin was loaded into ISEP B in June 2016. The ISEP B modifications were completed in July 2016 and ISEP A has been taken out of service permanently. Programming and startup testing was conducted throughout 2017 and into 2018 at various flowrates as required by the startup test plan to support DDW permitting. The DDW required startup testing of the nitrate treatment and bypass system at flow rates as high as 6,600 gpm, was completed in May 2018.

Other VCWD Lante Treatment Plant improvements or evaluations initiated in 2018 included:

- In January 2018, VCWD changed out approximately 2,600 cubic feet of air stripper packing material as a result of restricted flows due to accumulated calcification. The mist eliminator and support grid were also replaced at this time. An additional 5,200 cubic feet of air stripper packing was changed out in February 2018.

- Construction of the nitrate-by-pass system was completed in January 2018 and DDW startup testing was completed in May 2018;
- Between June and August 2018 the SA1-1 and SA1-2 well pumps were removed, inspected, repaired and upgraded; and
- The VCWD Modicon controls hardware and software are being upgraded. All long-lead equipment were received in December 2018. Pretesting and startup are anticipated to be completed in the 2nd quarter of 2019.

Technical performance reports are prepared under Provision 42 of the DDW operating permit and are required to be submitted annually to DDW. The most recent of these reports, "2018 Annual Technical Performance Report for the Lante Plant" (Stetson, 2019a), was submitted in March 2018 and describes the status and performance of the VCWD Lante Treatment Plant for the period January 1 to December 31, 2018. In addition, VCWD submits monthly compliance reports to DDW; these compliance reports are included in the monthly progress reports provided to EPA.

In 2018, VCWD treated 3,862 acre-feet of water with an average flow rate of 2,395 gpm (Table 2-1). Operation of SA1-3 accounted for 97.6% of the water extracted during 2018, with SA1-1 responsible for only 94 acre-feet in 2018. Rehabilitation of Well SA1-2 was completed in January of 2012 and redevelopment performed in March 2012; however, there are no current plans to put this well back into service due to low COC concentrations. Production decreased from the prior year's average flow rate of 2,898 gpm and was 39.9% of the EPA-approved extraction rate. The failure to achieve the EPA-approved extraction rate was primarily due to shutdown of the air strippers for packing replacement during the first quarter of 2018, peroxide quenching issues and shutdown of the plant due to programming issues, as well as other operational issues and maintenance activities that resulted in extended downtimes throughout the year, as described in Section 4.1. In the long-term, it is anticipated that the VCWD treatment plant will be able to meet the target extraction rate once the Arrow well is equipped and online, controls work is completed, the revised Subarea 1 extraction plan is implemented, and DDW approvals are received.

2.2 Subarea 3 Remedial Action Status

Subarea 3 remedial actions consist of the operation of the LPVCWD, SGVWC B6, SGVWC B5, and CDWC Subprojects. On January 15, 2015, EPA modified the Subarea 3 extraction plan to include the requirement that a minimum of 8,000 gpm be produced from the CDWC Bassett Wellfield. The target extraction rate for these Subprojects is 23,750 gpm (design capacity 33,100 gpm), as discussed below.

2.2.1 La Puente Valley County Water District Subproject Status

The LPVCWD Subproject extracts, treats, and delivers water to the public under a DDW permit that was issued on February 15, 2001, and amended as Permit No. 1910060PA-000 issued on May 8, 2002 with subsequent amendments. The LPVCWD Subproject consists of extraction wells LPVCWD 2, LPVCWD 3, LPVCWD 5, two air strippers and associated off-gas treatment for VOC removal, single pass IX (replacing ISEP in July 2010) for perchlorate removal, and UV/oxidation (UVTerra) for 1,4-dioxane and NDMA removal operating at a capacity of up to 2,500 gpm (EPA approved extraction rate is 2,250 gpm). Treated water is conveyed to LPVCWD's distribution system and, when available, a portion of the treated water is also provided to SWS.

To address sanding problems in LPVCWD 2 and 3, a new well, LPVCWD 5, was drilled and installed in 2007. The LPVCWD 5 well was equipped, developed, and tested in 2008. On December 19, 2008, DDW issued an amended permit to allow LPVCWD 5 to be used as a drinking water source. The LPVCWD 5 well installation activities are summarized in "Well No. 5 Well Completion Report" prepared by Stetson and submitted in final on July 2, 2008 (Stetson, 2008). DDW issued a permit amendment for the operation of the LPVCWD 5 well on December 19, 2008. The well became operational in January 2009 and currently serves as LPVCWD's primary water supply well, with LPVCWD 2 and 3 used as backup water supply wells when Well 5 is offline. COC concentrations in LPVCWD 2 have consistently been greater than those observed in LPVCWD 3 and LPVCWD 5. In 2015, the EPA requested the LPVCWD identify actions to increase pumping at LPVCWD 2 to capture the higher concentrations of COCs in LPVCWD 2. LPVCWD is evaluating treatment plant modifications necessary to increase pumping from LPVCWD 2 to increase mass removal rates.

To mitigate perchlorate-bearing brine discharges to the LACSD brine line, the LPVCWD Subproject Committee approved replacing the ISEP with single pass IX equipment. The single pass IX system was designed, and construction was completed in 2009. A draft Compliance Test Plan and Operation, Maintenance, and Monitoring Plan for the single pass IX were prepared and submitted to DDW for review. In June 2009, the EPA issued a letter supporting temporary discharges of water during startup testing of the new single-pass IX system to the Walnut Wash. The Los Angeles County Department of Public Works (LACDPW) issued a discharge permit for LPVCWD on November 17, 2009. The IX system was tested during startup activities in December 2009. The DDW issued an amended permit for the single pass IX system on June 15, 2010 and the system became operational on July 30, 2010. In February 2018, LPVCWD received a temporary approval letter from the DDW to operate Air Stripper #2 at a minimum air to water ratio of 45 to 1. The lower air to water ratio in Air Stripper 2 will decrease backpressure in the VPGAC system and will allow the plant to operate at higher flows to achieve target extraction rates. LPVCWD submitted the final technical memorandum on Air

Stripper No. 2 in March 2018. LPVCWD plans to submit a permit amendment request in late 2019 to modify the air to water ratio requirement for Air Stripper No. 2, add a nitrate treatment system, approve PSR II Plus resin for treatment of perchlorate, and additional updates to the OM&M plan.

Technical performance reports are prepared under Provision 33 of the DDW operating permit and are required to be submitted annually to DDW. The most recent of these reports, "Technical Performance Report for the La Puente Valley County Water District Treatment Facility, Annual Report 2017-2018" (LPVCWD, 2018), was submitted in November 2018 and describes the status and performance of the LPVCWD facility for the period August 1, 2017 to July 31, 2018. In addition, LPVCWD submits monthly compliance reports to DDW; these compliance reports are included in the monthly progress reports provided to EPA.

Treatment system improvements or evaluations initiated in 2018 included:

- LPVCWD tested Dow PSR II Plus resin for perchlorate removal in the single pass IX system; and
- Replacement of Booster No. 2 VFD in March 2018.

In 2018, approximately 3,672 acre-feet of groundwater was extracted and treated equating to an average annual flow rate of 2,266 gpm (Table 2-1). Groundwater extraction was primarily from Well 5, accounting for approximately 94% of the water produced by LPVCWD during 2018. Production from Well 2 and Well 3 were 153 acre-feet and 55 acre-feet, respectively, in 2018. The average annual extraction rate was slightly above the EPA approved extraction rate of 2,250 gpm and was slightly more than last year's average extraction rate of 2,175 gpm. As a result, the total production increased from 3,506 acre-feet in 2017 to 3,672 acre-feet in 2018.

2.2.2 San Gabriel Valley Water Company B6 Subproject Status

The SGVWC B6 Subproject remedial action consists of groundwater extraction from the SGVWC B25A, B25B, B26A, and B26B wells (with B6C and B6D included as backup wells) and treatment at the SGVWC B6 Treatment Plant, which is owned and operated by SGVWC. Construction of the SGVWC B6 Subproject began in 2002 and the SGVWC B6 Treatment Plant was completed in 2005. Construction activities included drilling, installing, and equipping the new extraction wells, installing associated piezometers, constructing raw and treated water pipelines, and constructing the treatment plant. The treatment plant originally consisted of four air-stripping towers and associated carbon off-gas treatment units for VOC removal, two ISEP carousels for perchlorate removal, and four UV/oxidation units (UVTerra) for 1,4-dioxane and NDMA removal. Treated water is conveyed to the SGVWC distribution system. The "Interim Remedial Action Report" (Stetson, 2004) prepared and submitted to EPA in

September 2004 provides a summary of SGVWC B6 Subproject background, construction, and completion activities.

On June 8, 2005, DDW issued domestic water supply Permit Amendment No. 1910039PA-002, authorizing SGVWC to operate the SGVWC B6 Treatment Plant using the existing onsite B6C and B6D wells. SGVWC began delivering potable water from the SGVWC B6 Treatment Plant to customers on July 12, 2005. The permit was further amended by DDW with Permit Amendment No. 1910039-004 on February 17, 2006, to incorporate the operation of offsite wells B25A, B25B, B26A, and B26B.

To mitigate perchlorate-bearing brine discharges to the LACSD brine line, the SGVWC B6 Subproject Committee approved replacing the ISEP with single pass IX equipment. The single pass IX design was initiated in June 2008. Since there is limited space at the SGVWC B6 Treatment Plant, the IX equipment was constructed on three properties that were purchased on the north side of Corak Street. Geotechnical work was completed on the properties in July 2008 and existing structures were demolished in the fall of 2008. CEQA work related to the IX project was filed and the public review process closed on October 6, 2008, without any comments received. Construction of the single pass IX system was completed in November 2009. The new IX system was integrated into the treatment system in March and April of 2013 and startup testing was initiated in May 2013. SGVWC received the DDW permit for the single pass IX system on August 25, 2014 and began serving water into its distribution system on September 5, 2014.

On November 1, 2010, SGVWC issued an RFP to provide design services for an IX system to treat nitrate. SGVWC awarded the contract to Worley Parsons for the design of additional treatment for nitrates at the B6 treatment plant. The nitrate treatment system design for the B6 treatment plant was submitted to City of Baldwin Park for review in September 2011. WQA received approval for project funding under Proposition 84 in June of 2012 and coordinated with DDW to receive the contracts and finalize the funding amounts. In early 2013, SGVWC purchased the remaining parcels to house the nitrate IX equipment. The CEQA requirements were completed in 2013. SGVWC completed the design of the additional IX treatment system for nitrates at the B6 treatment plant and construction began in October 2014. In August 2015, construction of the additional IX treatment system for nitrates was complete, and the Southern California Edison (SCE) power supply was complete in June 2017. Testing of the new IX treatment system was performed from July to October 2017. In May 2018, the DDW issued a water supply permit amendment to operate the IX treatment system and the nitrate treatment system was put into operation, replacing the interim nitrate blending operation.

In January 2018, SGVWC received conditional funding approval from the State Water Resources Control Board (SWRCB) for a grant of up to $1.1 million to test new UV technologies

at Plant B6. SGVWC is in the design phase and will continue to coordinate with SWRCB to satisfy the grant funding requirements.

Technical performance reports are prepared under Provision 15 of the DDW operating permit and are required to be submitted annually to DDW. The most recent report, "Technical Performance Report (2014-2015) for Plant B6 Water Treatment Facility" (Stetson, 2018a), was submitted in March 2018 and describes the status and performance of the SGVWC B6 Treatment Plant for the period April 1, 2014 to March 31, 2015. Subsequent technical performance reports for the period are currently in draft and have not yet been submitted to DDW. SGVWC also submits monthly compliance reports to DDW; these compliance reports are included in the monthly progress reports provided to EPA.

Treatment system improvements or evaluations initiated in 2018 included:

- SGVWC replaced two 1,500 gallon chlorine tanks in February 2018; and
- An air stripper inspection was performed in December 2018.

In 2018, the SGVWC B6 Subproject extracted and treated approximately 10,546 acre-feet of water equating to an average annual flow rate of 6,541 gpm (Table 2-1); a slight increase from the 6,496 gpm average annual extraction rate in 2017. Despite the treatment plant operating at about half capacity for parts of June and July due to a VFD failure, SGVWC B6 effectively achieved the EPA-approved extraction rate of 6,500 gpm during 2018.

2.2.3 San Gabriel Valley Water Company B5 Subproject Status

The SGVWC B5 Subproject remedial actions consist of groundwater extraction from the SGVWC B5B, B5E, and City of Industry (COI) 5 wells and treatment at the SGVWC B5 Treatment Plant, which is owned and operated by SGVWC. In addition, the SGVWC B5D well is used as a standby water source. The treatment plant consists of LPGAC for VOC removal, single-pass IX for perchlorate removal, and UV/oxidation units (UVPhox) for 1,4-dioxane and NDMA removal. The "Interim Remedial Action Report" (Stetson, 2006c) prepared and submitted to EPA in September 2006 provides a summary of SGVWC B5 Subproject background, construction, and completion activities. Construction was largely completed in early 2007.

Startup testing conducted to support permitting was completed in March 2007 and DDW issued amended drinking water permit 1910039PA-008 for the B5 Treatment Plant on April 21, 2008. SGVWC began delivering potable water to its system on July 8, 2008. Prior to delivering potable water, extracted water was treated and discharged to the San Gabriel River. The DDW issued a permit amendment to allow for the addition of the COI 5 well in July 2009. The COI 5 well went online in July 2009.

In June 2017, SGVWC began a pilot study to evaluate the use of reactivated liquid phase granular activated carbon at Plant B5, which continued into 2018. SGVWC submitted the Final Technical Memorandum No. 2 on the reactivated/reused liquid phase granular activated carbon pilot study at Plant B5 in June 2018.

Technical performance reports are prepared under Provision 53 of the DDW operating permit and are required to be submitted annually to DDW. The annual report, "Technical Performance Report for the San Gabriel Valley Water Company Plant B5 Water Treatment Facility" (Stetson, 2014b), was submitted in January 2014 and describes the status and performance of the SGVWC B5 Treatment Plant for the period July 1, 2011 to June 30, 2012. Subsequent technical performance reports are currently in draft and have not yet been submitted to DDW. In addition, SGVWC submits monthly compliance reports to DDW; these compliance reports are included in the monthly progress reports provided to EPA.

The B5 Treatment Plant operated nearly uninterrupted in 2018. SGVWC continues to evaluate the impact of decreasing water levels on extraction rates and the reason for reduced extraction rates from Well B5E. SGVWC began rehabilitating Well B5E in April 2018 and anticipates completion by early 2019.

In 2018, the SGVWC B5 Subproject extracted and treated approximately 8,783 acre-feet of water equating to an average flow rate of 5,451 gpm (Table 2-1). This represents a decrease from the 2017 production rate of 5,918 gpm; and remained below the EPA-approved extraction rate of 7,000 gpm. The decrease in production rate was partially due to Well B5B being offline for part of June, all of July and about half of August, due to damaged well shaft caused by a seized pump and broken impellers. The overall inability to meet the EPA approved extraction rate is due to a reduced pumping capacity from the B5B and B5E wells caused by lower water levels and/or a reduction of the specific capacity of the wells, and a decision by SGVWC to reduce pumping during winter months due to low water demand. SGVWC is reviewing alternatives to increase pumping capacity during the low basin water levels and further evaluating the reason for reduced extraction rates in certain wells. Overall production at the SGVWC B5 Subproject decreased by approximately 500 gpm each year from 2012 to 2015 (7,569 gpm in 2012; 7,036 gpm in 2013, 6,546 gpm in 2014, 5,971 gpm in 2015) and has since leveled off at around 6,000 gpm.

2.2.4 California Domestic Water Company Status

The CDWC Bassett Wellfield consists of groundwater extraction from seven extraction wells (Wells 2, 3, 5A, 6, 8, 10, 14). Construction of an interconnection pipeline between SGVWC and CDWC distribution systems was completed in November 2017 and the installation of controls was completed in April 2018. SGVWC began delivering water to CDWC on May 14, 2018. CDWC supplies water to about 400 domestic connections, a plant nursery, two schools, and

three water wholesalers, which include the City of La Habra (La Habra), the City of Brea (Brea), and SWS. The CDWC provides a prescribed entitlement of water from the Main San Gabriel Basin to each of its member agencies who own or lease stock in the company.

Groundwater produced by wells within CDWC Bassett Wellfield requires treatment for VOCs, NDMA and perchlorate. On December 31, 1999, DDW issued Permit No. 04-15-99P-032 to CDWC to operate two air stripping towers to remove VOCs from wells at the Bassett Wellfield. On September 12, 2001, DDW issued Permit Amendment No. 04-15-01-PA-000 to CDWC to operate a UV light/oxidation treatment facility to remove NDMA from CDWC Well No. 14. On July 17, 2002, DDW issued Permit Amendment No. 1910199PA-001 to CDWC for an IX treatment facility to remove perchlorate from wells at the Bassett Wellfield. On May 30, 2003, DDW issued Permit Amendment No. 1910199-PA-002 to CDWC to expand the VOC treatment facility at the Bassett Wellfield. On April 15, 2005, DDW issued Permit Amendment No. 1910199PA-003 to CDWC to replace the UV light/oxidation treatment facility with a more efficient UV light treatment facility and install an additional 5,000 gpm UV light/oxidation (UVPhox) treatment unit for Well No. 3 for the removal of NDMA.

Wells 3 and 14 receive treatment from the IX system, which removes perchlorate, and the UVPhox system, which removes NDMA. That treated water is then blended in a wet well with water from Wells 5A and 6 and VOCs are removed using air stripping towers. The treated water is then blended with water from Wells 2 and 8, which do not receive treatment, and is chlorinated and delivered to a 5 million-gallon (MG) reservoir. The wells are operated such that a lead well is operated full-time and the other wells are added in the following order to provide additional water – Well 2, 3, 5A, 6, 8, and 10. The lead well is currently Well 3. Well 14 was formerly the lead well and was capable of producing up to 4,500 gpm. Well 14 performance was hindered by sanding and it was shutdown in February 2008. It was rehabilitated and resumed operation at the end of 2010. After rehabilitation, Well 14 is only capable of producing up to 3,400 gpm. Between October 30, 2012 and November 3, 2012, Well No. 14 was operated when Well No. 3 was temporarily out of service. However, Well 14 has not been operated since that time. In 2016, CDWC constructed a pipeline from Well 10 to the IX system influent.

The IX system for perchlorate treatment consists of five sets of IX vessels, each with two vessels operating in series in a lead-lag configuration, for a total of 10 vessels. The total treatment capacity is 5,000 gpm and each set of IX vessels treats up to 1,000 gpm of flow.

The UVPhox System treats NDMA and 1,4-dioxane and consists of two independent trains. Each train consists of two reactor chambers and each chamber contains two UV reactors (UVRs). Each UVR contains 72 UV lamps and sleeves. The treatment capacity of each train is 5,000 gpm. The UVPhox is designed to treat NDMA at concentrations as high as 200 ng/L to below the detection level of 2 ng/L. Hydrogen peroxide may be injected into the water from

Well No. 3 before entering the UVPhox system in the event 1, 4-dioxane is detected. There are three air strippers used for the removal of VOCs that are capable of treating a total of up to 15,000 gpm.

CDWC received a permit amendment from DDW to operate Well 10 in May 2016. Operation of Well 10 began in June due to motor failure on Well 6. In October 2016, CDWC completed construction of the influent pipeline connecting Well 10 to the ion exchange system.

Technical performance reports for the IX and UVPhox systems are prepared under Provision 36 of Permit Amendment No. 1910199PA-001 and Provisions 59 of the Permit Amendment 191 0199PA-003, respectively, and are required to be submitted annually to DDW. The annual report, "N-Nitrosodimethylamine (NDMA) UVPHOX Treatment Facility Technical Performance Report" (Stetson, 2019a), was submitted in March 2019 and describes the status and performance of the UVPhox treatment system for the calendar year of 2018. The annual report, "Technical Performance Report California Domestic Water Company Perchlorate Treatment Facility (Stetson, 2018b) was submitted on August 31, 2018 and describes the status and performance of the IX treatment system for the period July 1, 2017 to June 30, 2018. In addition, CDWC submits monthly compliance reports to DDW.

Treatment system improvements or evaluations initiated in 2018 included:

- Several drawdown tests were performed on Well 3 throughout the year and a pilot pump was installed in October 2018;
- Rewinding of Air Stripper No. 3 50 horsepower (hp) reservoir pump motor was performed in February and September 2018;
- Leaks on the M-line were repaired in March, May, and July 2018;
- Vibration analysis was performed on the blowers and the belts were replaced in March 2018;
- The strainer on Vessel 4 was replaced in March 2018;
- The booster pumps on Air Strippers No. 1 and No.2 were rebuilt in April 2018;
- The motor on Air Stripper No. 2 was balanced and the bowls were adjusted in April 2018;
- The annual inspections of Air Strippers No. 1, No. 2 and No.3 were performed in May 2018;
- A resin pilot test was conducted in August 2018;
- In September 2018, the Air Stripper No. 3 flow control Cla-Valve was serviced;

- The UPS on Well 3 was replaced in September 2018;
- Meters on the IX System were replaced in October 2018; and
- In December 2018, the quartz sleeves at the UV plant were replaced.

In 2018, the CDWC Subproject extracted and treated approximately 19,014 acre-feet of water equating to an average flow rate of 11,709 gpm (Table 2-1). Although this was a decrease from the 21,142 acre-feet (13,145 gpm) extracted during 2017, it exceeds the minimum extraction rate of 8,000 gpm for the Bassett Wellfield as requested by EPA.

3. PERFORMANCE MONITORING ACTIVITIES

As described in the PSEP, monitoring activities for the assessment of the interim remedy performance consist of two phases. The first phase consisted of baseline potentiometric and water quality monitoring prior to extraction well startup and was completed in April 2005. The second phase involves more frequent potentiometric and water quality monitoring during startup and initial operation of the extraction wells, followed by reduced monitoring frequencies after several years of continuous operation. The second phase of monitoring began in April 2005, although not all the extraction wells were fully operational at that time. Potentiometric monitoring was performed on an increased frequency, as required, from April 2005 through November 2006.

The FSP and QAPP describe monitoring methods and laboratory analyses of groundwater samples collected in the BPOU and were initially approved by EPA with the modifications to the PSEP in a letter dated February 12, 2007. The FSP and QAPP have been periodically updated to address modifications to the performance monitoring components of the PSEP. The most recent updates to the QAPP (Rev. 5) and the FSP (Rev. 7) were submitted to EPA in April 2013 (AMEC, 2013a and AMEC, 2013b) and approved by EPA in a letter dated May 21, 2013.

As described in Section 1.1, a revised version of the PSEP (Rev. 4) was prepared to address EPA comments received in late 2012 and early 2013. Revisions to the PSEP included the addition of 1,2,3-TCP as a COC, clarification of monitoring and reporting requirements for non-COCs such as EDB, and the modification of remedial action objectives outlined in Sections 2.2.1 and 2.2.2 (AMEC, 2013c). EPA approved the revised PSEP in a letter dated May 21, 2013.

Potentiometric monitoring, water quality monitoring, and groundwater modeling activities that were completed in support of performance evaluation activities during 2018 are discussed in the following sections.

3.1 Potentiometric Monitoring

Potentiometric monitoring of wells included in the PSEP monitoring program continued to be conducted by the Watermaster and CRs throughout 2018. Locations of the wells included in the BPOU potentiometric monitoring program are shown on Figure 3-1 and their monitoring schedules are presented in Table 3-1. Potentiometric monitoring completed for the PSEP monitoring program during 2018 is summarized below.

- Potentiometric data were collected during the second quarter of 2018 in eight extraction wells and in the fourth quarter of 2018 in ten extraction wells with the following exceptions:

  - Potentiometric data were not collected in the second quarter of 2018 from the COI 5 project extraction well, LPVCWD 5 project extraction well, and SGVWC B5B project extraction well;
  - Potentiometric data were not collected in the fourth quarter of 2018 from LPVCWD 5 project extraction well;
- Potentiometric data were collected semi-annually in 19 multiport monitoring wells and 17 piezometer clusters with the following exceptions:
  - Potentiometric data were not collected from piezometer cluster PZ3-1A in 2018. Per the 12 May 2016 email to the Watermaster, EPA approved suspension of piezometric monitoring at PZ3-1A S/D until further notice due to access considerations and infeasibility of road closure due to the hospital emergency vehicle route;
  - Potentiometric data were not collected from multiport monitoring well MW 5-19 in 2018 because an updated access agreement could not be secured with Los Angeles County (LACO). The Watermaster continues to follow up regularly with LACO regarding the access permit; however, LACO has not yet provided approval for accessing the site; and
  - Potentiometric data were not collected from multiport monitoring wells MW 5-01 and MW 5-03 in the fourth quarter of 2018.
- Potentiometric data were collected weekly in one conventional monitoring well, the Los Angeles County (LACO) Key Well, by the Main San Gabriel Basin Watermaster.

3.2 Water Quality Monitoring

Water quality monitoring of existing wells included in the PSEP continued to be conducted by the Watermaster and the CRs throughout 2018. Locations of wells included in the BPOU groundwater quality monitoring program are shown on Figure 3-2 and their monitoring schedules are presented in Table 3-2.

Groundwater samples were analyzed for the 21 COCs listed in PSEP Table 2-1 (AMEC, 2013c), including: 1,4-dioxane, NDMA, perchlorate, and VOCs. Although no longer required for the PSEP, groundwater samples were analyzed for nitrate and sulfate to satisfy DDW permit requirements. Groundwater quality monitoring completed for the PSEP monitoring program during 2018 is summarized below.

- Monthly DDW-required groundwater samples collected in 18 extraction wells were used to fulfill the quarterly monitoring and annual requirements for the PSEP with the following exceptions:
    - Due to the inoperation of certain extraction wells, groundwater samples were not collected from the following extraction wells:
        - LPVCWD 05 in the third and fourth quarters of 2018;
        - SA1-1 in the first, third, and fourth quarters of 2018; and
        - SA1-2 in all of 2018;
    - Groundwater samples in most extraction wells were not analyzed for acetone and carbon disulfide because these analytes are not required by DDW.
- Annual groundwater samples were collected from all 18 multiport wells and in the MW5-28 monitoring well cluster. The PSEP sampling requirements were achieved with the following exceptions:
    - The uppermost sampling ports in multiport monitoring wells MW5-01 (Port 13), MW5-03 (Port 10), MW5-17 (Port 3), and WHICO MP-1 (Ports 5 and 6) were dry in 2018; therefore, annual groundwater samples were not collected from these ports;
    - As described above, Watermaster was unable to secure an access permit with LACO for the multiport monitoring well MW5-19 site in 2018. Therefore, MW5-19 was not sampled in 2018; and
    - The NDMA analysis for the groundwater sample collected from multiport monitoring well MW5-27 (Port 6) was not completed within the required holding time; therefore, no usable NDMA result was available for the annual requirement;
- Annual groundwater samples were collected from six of the seven conventional monitoring wells required by the PSEP including AJMW-2R, AJMW-6, ALRMW-1R, ALRMW-3, ALRMW-8, and ALRMW-9. The PSEP sampling requirements were achieved with the following exceptions:
    - Monitoring well AJ MW-4 was dry in 2018; therefore, groundwater samples were not collected from this well; and
    - The LACO Key Well was not sampled in 2018. The Watermaster previously informed EPA that sampling of this well has been discontinued because the collection of groundwater samples results in the disturbance of water level

measurements in this well which is used to assess basin water-level conditions.

- Groundwater samples were collected from 9 of the 11 production wells. The PSEP sampling requirements were achieved with the following exception:
    - Production well CIC Baldwin 1 was not in operation in 2018 due to work being performed on the CIC Baldwin well field. In previous years when the CIC Baldwin 1 well was not in operation, samples were substituted from either the CIC Baldwin 2 or Baldwin 3 wells. However, in 2018, none of the CIC Baldwin wells were operational so no samples were collected from this location.

Additional groundwater quality monitoring was also performed by the WEs to satisfy the requirements of DDW drinking water permits. Results of the water quality monitoring performed in 2018 are presented in Section 5.2.

3.3 Groundwater Model Updates

As described in the PSEP, the BPOU groundwater model is the primary tool for assessing extraction system performance. The BPOU groundwater model consists of a transient, finite element model developed using the proprietary FEFLOW software code (FEFLOW) developed by the DHI Group. The development and configuration of the BPOU groundwater model is described in the Comprehensive Groundwater Modeling Report, dated July 29, 2005 (Geomatrix, 2005), the Addendum to the Comprehensive Groundwater Modeling Report, dated September 8, 2006, (Geomatrix, 2006c), and the Addendum to the 2014 Annual Performance Evaluation Report (Geosyntec, 2015b).

As described in the 2016 Annual PE Report, Geosyntec made improvements to the FEFLOW model to reduce numerical instability and improve the accuracy of model simulations. These improvements included use of an automatic time-step control scheme, a convergence criterion that is 10 times smaller than the previous version of the model and shortening the historical period of record in the model from Model Year (MY) 1982-83 through MY 2015-16 (33 years) to MY 2003-04 through MY 2015-16 (12 years).

For the 2018 Annual PE Report, the BPOU groundwater model was updated with the annual dataset through the end of MY 2017-18 (July 1, 2017 - June 30, 2018). The model updates are described in detail below in Sections 3.3.1 through 3.3.3. Annual updates included quarterly-averaged well pumping rates, net recharge (both regional recharge due to precipitation and irrigation return flows, and local recharge from water bodies/recharge basins), and model boundary water fluxes. The extent of the model domain, vertical discretization, and hydrogeological parameterization were deemed appropriate and were unchanged. Consequently, updates to the model reported herein consist of adding recently available

information and do not represent a reconfiguration of the model or change to the conceptual site model.

3.3.1 Groundwater Pumping Updates

For the 2018 model update, groundwater pumping was updated based on production records obtained from the Watermaster for MY 2017-18. Figure 3-4 shows the pumping wells used in the model. Figure 3-5 shows the cumulative quarterly pumping over the revised simulation period described above and for the current model update (cumulatively MY 2003-04 through MY 2017-18).

Groundwater pumping in MY 2017-18 continued to exhibit similar seasonal trends as previous years; the largest amount of pumping occurred during the peak of the dry season in the third quarter of the calendar year, and the smallest amount of pumping occurred during the peak of the wet season in the first quarter of the calendar year. Figure 3-6 shows simulated quarterly recharge rates and Figure 3-7 shows a comparison of annual recharge and annual pumping throughout the revised simulation period. As shown on Figure 3-7, groundwater pumping exceeded recharge by approximately 24,000 acre-feet during MY 2017-18.

3.3.2 Groundwater Recharge Updates

Groundwater is recharged in the model using spreading basins, river losses to the underlying aquifer, and infiltrating precipitation and irrigation return flows.

For the MY 2017-18 groundwater model update, spreading basin and river reach recharge data for MY 2017-18 were obtained from LACDPW and input into the top layer of the BPOU groundwater model. Table 3-3 summarizes the quarterly recharge rates for each spreading basin and river reach used in the model for the revised model simulation period (MY 2003-04 through MY 2017-18). Additional details on the application of recharge data to spreading basins and San Gabriel River reaches are described in the Addendum to 2014 Annual Performance Evaluation Report and the Revised Final 2015 Annual PE Report (Geosyntec, 2015b and Geosyntec & ERM, 2016, respectively).

As described in the Addendum to 2014 Annual Performance Evaluation Report, recharge derived from precipitation and irrigation return flows was initially assigned in the model after evaluating precipitation records made available by LACDPW and the magnitude of recorded groundwater pumping (assumed to be indicative of applied irrigation and related irrigation return flows). Thereafter, recharge from precipitation and irrigation return flows was modified on a trial-and-error basis to obtain an acceptable match between simulated and observed water levels during the model period simulated (7/1/2003 through 6/30/2018), with emphasis on ensuring a reasonable match to peak high and low water levels. Table 3-4 summarizes the

quarterly recharge rates from precipitation and irrigation return flows for each recharge zone used in the model for the revised simulation period. The recharge zone locations and extents were unchanged during the model update and are shown on Figure 3-8. Figure 3-6 presents the quarterly recharge volumes from all simulated water conservation facilities (spreading basins and river reaches) and from regionally-distributed recharge (precipitation and irrigation return flows) for the revised model simulation period.

3.3.3 Boundary Condition Updates

Boundary conditions for MY 2017-18 were updated in the same manner as during previous model updates. Water level data from MY 2017-18 were obtained from the LACDPW to update the time-variant head boundaries that were used to simulate inflows to the flow system from various locations around the perimeter of the San Gabriel Basin and groundwater outflows to Whittier Narrows. The nodal locations for each boundary condition were unchanged from previous modeling efforts.

3.3.4 Model Simulations of Extraction System Performance

Model simulations of extraction system performance were conducted using the updated BPOU groundwater model and transient particle tracking methods within FEFLOW. As described in the Comprehensive Groundwater Modeling Report (Geomatrix, 2005) and in the PSEP (AMEC, 2013), the groundwater model simulates transient boundary conditions (both internal and external) using quarterly stress periods. Therefore, groundwater withdrawals from project extraction wells and other production wells are simulated using average quarterly pumping rates. The average quarterly pumping rates for each well are estimated by measuring the total volume (in acre-feet) that was pumped during the quarter, dividing the total volume by the number of days in the quarter, and then converting the result to an average quarterly pumping rate (in meters cubed per day). Simulated pumping rates for the five-year particle tracking simulations are summarized in Table 3-5.

Transient forward particle tracking methods were used to evaluate the hydraulic performance of the project extraction wells under actual pumping conditions for a five-year time period. Forward particle tracking was performed for this reporting period by starting particles during MY 2013-14 (exact release time was 7/1/2013) and then simulating the forward paths of the particles under the transient groundwater flow conditions through the end of MY 2017-18. The starting locations for the particles were distributed uniformly within the interpreted extent of the plume of the total concentration of the six COCs normalized to their respective MCLs or NLs. The development of this total normalized COC plume is described in detail in Section 5.3.1. The horizontal grid spacing for particle starting locations is 150 meters by 150 meters with a vertical grid spacing of 15 meters. The grid was rotated 45 degrees to orient it parallel

to the general groundwater flow direction (northeast-southwest) across the BPOU. The uniformly distributed starting particle locations allows for the simulation of both captured and uncaptured particles throughout the vertical extent of contamination.

Particle tracking results used to evaluate extraction system performance are presented in Section 5.0. The simulated tracks of particles released below -600 ft msl in the vicinity of Subarea 2 wells MW5-24 and MW5-25 tend to conform to dipping FEFLOW model layers, rather than observed potentiometric head measurements and simulated potentiometric heads generated by the model. As a result, simulated particle tracks in areas with steeply dipping FEFLOW model layers were determined not to be representative of actual groundwater flow paths in the vicinity of wells MW5-24 and MW5-25. This issue was discussed with EPA representatives during a conference call held on March 11, 2019. As recommended by CR representatives during the conference call, the simulated potentiometric heads from June 30, 2018 were used to develop interpreted particle flow paths in this deeper portion of the plume for the MY 2017-2018 particle tracking analysis presented in this report. As shown on Figure 5-32, flow paths originating in the lower ports of MW5-24 were manually projected orthogonal to the simulated potentiometric head contours until they reached the nearest downgradient project extraction wells (i.e., SGVWC B26A and B26B).

It is important to note that the particles do not represent contaminant mass; rather, they solely represent the advective movement of groundwater to depict the likely zones of hydraulic capture as the particles flow downgradient during the five-year particle tracking simulation period. The resulting particle tracks cannot be utilized to infer, suggest, or demonstrate the source of any contamination. Further, since these particles do not represent contaminant mass and are not representative of solute transport, they do not incorporate processes such as retardation, diffusion, dispersion, and degradation. Given the limitations of the particle tracking results, depictions of hydraulic capture presented in this report should not be considered representative of longer-term extraction system performance.

4. TREATMENT PLANT MONITORING ACTIVITIES

This section summarizes methods used to monitor treatment plant performance. The performance monitoring program is described in the PSEP (AMEC, 2013c) and the QAPP (AMEC, 2013a). Treatment plant operational results are presented in Section 6.0.

4.1 Subarea 1 – Valley County Water District Lante Treatment Plant

The VCWD Lante Treatment Plant operated at a limited capacity for much of 2018. The plant also did not operate for the entire month of April and for the last three weeks of December due to the replacement of air stripper packing due to calcification, which caused reduced plant flows. Operational issues were experienced throughout the year, including, but not limited to:

- March: 132 hours of downtime due to plant maintenance, ISEP B misalignment and high flow alarm on the ISEP bypass line;
- May: 247 hours of downtime due to power outage at SA1-1 well, low backwash flow, brine vault meter test, nitrates level exiting plant reaching 35 ppm and cleaning of the ISEP table resin;
- June: 145 hours of downtime due to low chlorine residual leaving the plant and not enough rotational units operating on the UV system;
- July: 174 hours of downtime due to not enough rotational units operating on the UV system, ISEP auxiliary panel lost power, low peroxide residual in UV trains and over-temp on SA1-3.
- August: 220 hours of downtime due to faulty actuator on UV Reactors 1 and 3, improper flow balancing on UV system, and chlorine pump failure.
- September: 258 hours of downtime due to faulty actuator on UV Reactor 3, improper flow balancing on UV system, leak on port 30 acid injection pump, and replacement of two analog cards controlling the 26% and 7% brine pumps.
- December: 509 hours of downtime due to low chlorine residual to SWS and high peroxide levels.

During 2016, SA1-3 returned to functioning as the primary extraction well for the VCWD Lante Subproject. VCWD installed a monitoring well in March 2016 to evaluate options to increase production from the VCWD treatment Plant area according to the modified extraction plan. Based on results from the new monitoring well VCWD elected to move forward with plans to reactivate the Arrow Well. The casing in the Arrow well was rehabilitated and redeveloped between August and October 2017. The permit application for the Arrow Well was submitted

to DDW for review on March 20, 2018, but DDW has not yet provided approval or comment. The Lante Plant programmable control systems are currently being upgraded and is expected to be completed by mid-2019. Following the completion of control system upgrades and testing, the startup of the Arrow well is expected following the completion of DDW startup testing and DDW approval.

Raw water, partially treated water, and fully treated water were routinely sampled and analyzed for COCs including 1,2,3-TCP, inorganic chemicals, and other diagnostic parameters to evaluate the effectiveness of treatment processes and to monitor the quality of the fully treated water. Treated water was delivered to SWS Plant 121 for delivery in the SWS distribution system. Water quality data, as obtained, are summarized in the DDW compliance reports appended to the monthly progress reports to EPA.

In August 2006, by mutual agreement among EPA, South Coast Air Quality Management District (SCAQMD), and VCWD, the air stripper and off gas control system permits with SCAQMD were cancelled and EPA assumed compliance oversight with respect to operations formerly covered by the SCAQMD permits. The air stripper vapor abatement equipment consists of four 20,000-pound carbon adsorption systems equipped with heaters. Air compliance samples were collected according to the revised protocol approved by EPA on February 3, 2011. The revised protocol requires air sampling immediately after a carbon change out, every other month for 6 months, and then monthly thereafter. The CRs submitted a revised QAPP for air and waste water discharges to the EPA in September of 2012 (AMEC, 2012a) and the Field Sampling and Analysis Plan for air and waste water discharges was issued in July 2013 (Stetson 2013b). All air samples were analyzed by EPA Method TO-15.

VCWD changed out approximately 424 cubic feet of resin in each of July, October and December, as well as 848 cubic feet of resin in August 2018. Carbon and resin change outs since 2004 are summarized in Table 4-1. Spent carbon and resin are managed at facilities that are authorized to accept CERCLA wastes. As they are received, certificates of disposal and reactivation are provided to EPA in the monthly progress reports.

Waste brine and water softener wastes produced by the ISEP system were discharged under Industrial Wastewater Permit No. 22058 from the LACSD. The new Industrial Wastewater Permit No. 22058 was issued on May 17, 2017. Brine discharges occurred throughout 2018, with the exception of April, as the plant did not operate that month. Total annual discharge during 2018 was approximately 3.46 million gallons, which was a decrease of approximately half a million gallons from 2017. Brine discharges for VCWD are summarized in Section 6.1. Brine discharge samples were collected and analyzed in accordance with permit requirements. Self-Monitoring Reports (SMRs) were submitted to LACSD and EPA on a semi-annual basis covering January to June and July to December 2018, respectively. The SMRs summarize flow, and brine quality data collected during the reporting period.

4.2 Subarea 3 – La Puente Valley County Water District Treatment Plant

The LPVCWD Treatment Plant operated on a full-time basis in 2018, experiencing periodic downtime associated with routine maintenance and infrequent and unplanned operational interruptions. The 2018 extraction volume for LPVCWD was just above the 2,250 gpm EPA approved extraction rate.

Well 5 accounted for approximately 94% of the groundwater extracted during 2018, with Well 2 and Well 3 accounting for only approximately 4.2% and 1.5%, respectively. The majority (approximately 80%) of the water extracted by Well 2 occurred between July and September, with September alone accounting for 60% of Well 2's annual production. Well 3 was primarily used between January and July, with July accounting for 40% of Well 3's annual production.

Raw and treated water sampling was performed in accordance with the DDW permit and included weekly sampling for VOCs, perchlorate, 1,4-dioxane, NDMA, 1,2,3-TCP, and various inorganic and physical parameters. The weekly sampling results are included in monthly progress reports submitted to DDW as a requirement of LPVCWD's drinking water permit. These results are also included in the monthly progress reports to EPA.

In August 2006, by mutual agreement among EPA, SCAQMD, and LPVCWD, air strippers and off-gas unit permits were cancelled, and EPA assumed compliance oversight with respect to operations formerly covered by the SCAQMD permits. The VOC treatment equipment consists of a 30-foot tall air-stripping tower with a single 7,000-pound VPGAC adsorber and a 41-foot-tall air-stripping tower with a single 20,400-pound VPGAC adsorber. Air compliance samples were collected and analyzed by EPA Method TO-15 according to the revised protocol approved by EPA on February 3, 2011. The revised protocol requires air sampling immediately after a carbon change out and monthly thereafter. In November 2014, the EPA approved revised procedures for air monitoring and carbon change outs that were implemented in 2015. The revised procedures require air sampling immediately after a carbon change out, every other month for 6 months, and then monthly thereafter.

No VPGAC change outs were performed during 2018. The VPGAC will continue to be managed at facilities approved by EPA to accept CERCLA wastes. Three resin change outs of 425 cubic feet each were conducted in April, August and October 2018. As they are received, copies of disposal manifests for spent carbon and resin are provided to EPA in the monthly progress reports. Carbon and resin change outs are summarized in Table 4-1.

Waste brine and water-softener wastes were discharged under Industrial Wastewater Discharge Permit 21905 issued by LACSD. This new permit reflects the transition of treatment technology from the ISEP to the single-pass IX process on July 30, 2010. As a result of this transition, the continuous discharge of brine to the sewer has stopped and discharges consist

predominantly of ion exchange rinse water. LPVCWD discharged approximately 59,600 gallons during 2018. Discharges from the LPVCWD Brine Vault are summarized in Section 6.2. Semi-annual wastewater discharge sampling was performed in accordance with permit requirements during 2018. SMRs were prepared and submitted to LACSD and EPA covering the January to June and July to December periods.

4.3 Subarea 3 – San Gabriel Valley Water Company B6 Treatment Plant

The SGVWC B6 Treatment Plant operated on a full-time basis in 2018, although it operated at approximately half capacity during parts of June and July due to VFD failure on Air Stripper No. 3 and Air Stripper Wetwell Booster No. 5, which resulted in a slight decrease in production during those months. In addition, the plant experienced periodic downtime associated with routine maintenance and infrequent and unplanned operational interruptions. The average production rate for the year met the target extraction rate of 6,500 gpm. Production was primarily from B25A and B25B, accounting for approximately 38% and 35%, respectively of the total production during the year. Wells B26A and B26B accounted for approximately 12% and 15%, respectively of the remaining production. Standby wells B6C and B6D did not operate during 2018.

Raw and treated water sampling were performed in accordance with the DDW permit and included sampling for COCs, 1,2,3-TCP, inorganic chemicals, and other diagnostic parameters. Water quality data are summarized in monthly reports to DDW and are included in the monthly progress reports to EPA.

In August 2006, by mutual agreement among EPA, SCAQMD, and SGVWC, permits for the four air strippers and off-gas units were cancelled and EPA assumed compliance oversight with respect to operations formerly covered by the SCAQMD permits. Air compliance samples were collected according to the revised protocol approved by EPA on February 3, 2011. The revised protocol requires air sampling immediately after a carbon change out, every other month for 6 months, and then monthly thereafter. The air compliance sampling data were included in the monthly progress reports to EPA.

Approximately 40,000 lbs of VPGAC was changed out on January 19, 2018. VPGAC change outs of 20,000 lbs each were conducted on April 17, 2018 and November 9, 2018. An additional 60,000 lbs were changed out on December 14, 17 and 18, 2018. The VPGAC is managed at facilities approved by EPA to accept CERCLA wastes. Seven resin change out events were conducted during 2018; four of 424 cubic yards each, two of 848 cubic yards each and one of 1,696 cubic yards. The 424 cubic yard change outs were performed in May, June, November, and December, respectively. Change outs of 848 cubic feet each were conducted in March and April, respectively, and 1,696 cubic feet of resin was changed out in September 2018. As they are received, copies of disposal manifests for change out of spent VPGAC and resin are

provided to EPA in the monthly progress reports. Carbon and resin change outs are summarized in Table 4-1.

Waste brine and water-softener wastes were discharged under Industrial Wastewater Discharge Permit Nos. 21630 and 21657 issued by LACSD. Permit No. 21630 reflects the transition of treatment technology to the single-pass IX process in May 2018. Discharges in 2018 consisted predominantly of ion exchange rinse water. Permit No. 21657 reflects the discharges of rinse water, backwash water, and waste brine from the nitrate treatment system. The B6 plant discharged approximately 7,162,936 gallons during 2018. Brine discharges for the San Gabriel B6 plant are summarized in Section 6.3. Brine discharge samples were collected and analyzed in accordance with permit requirements. The semi-annual Self-Monitoring Report (SMRs) was submitted to LACSD and EPA covering July to December 2018. The SMRs summarize flow, and brine quality data collected during the reporting period.

4.4 Subarea 3 – San Gabriel Valley Water Company B5 Treatment Plant

The SGVWC B5 Treatment Plant operated continuously in 2018, until December, when it was intentionally taken offline for approximately 314 hours due to chemical treatment of Well B5E, so that the other nearby wells did not run the risk of pulling chemicals into the treatment system. Extraction rates were below the EPA-approved extraction rate of 7,000 gpm due primarily to lower pumping capacity of the B5B and B5E wells caused by lower water levels and/or a reduction of the specific capacity of extraction wells and a decision by SGVWC to reduce pumping during winter months due to low water demand. Production was primarily from wells B5B and B5E, accounting for approximately 42% and 27%, respectively, of the 10,546 acre-feet of water extracted during 2018. COI 5 was responsible for an additional 18% of the water extracted, with production from standby well B5D accounting for the remaining 13% of total water extracted. The average annual production rates for B5B, B5E, B5D and COI 5 were 2,319 gpm, 1,459 gpm, 701 gpm and 973 gpm, respectively. B5D is typically operated while LPGAC is being changed out.

Raw and treated water sampling was performed in accordance with the DDW permit and included sampling for COCs, 1,2,3-TCP, inorganic chemicals, and other diagnostic parameters. Water quality data are summarized in monthly reports to DDW and are included in the monthly progress reports to EPA.

VOCs are removed using LPGAC. LPGAC change outs during 2018 included change outs of 80,000 lbs each in February, March, May, June and September, respectively. Change outs of 40,000 lbs each also occurred in October and November. SGVWC initiated a pilot study to evaluate the use of reactivated/reused LPGAC at the B5 plant in September 2017 and continued into the first half of 2018. SGVWC submitted the Final Technical Memorandum No.

2 on the reactivated/reused liquid phase granular activated carbon pilot study in June 2018, which concluded that significant savings could be realized from using reactivated carbon. Single pass IX resin used to remove perchlorate was replaced three times during 2018; in March and August 848 cubic feet of resin were replaced during each event, and in September, 1,272 cubic feet was changed out. Copies of disposal manifests for change outs of spent carbon and resin are provided in monthly progress reports to EPA as they are received. Carbon and resin change outs are summarized in Table 4-1.

SGVWC B5 Treatment Plant discharges relatively low volumes of GAC backwash under Industrial Wastewater Permit No. 017075 from the LACSD, issued on July 11, 2006, subsequently revised and reissued in 2011, and reissued again on October 4, 2016. The total annual discharge for 2018 was approximately 413,600 gallons. Discharges for SGVWC B5 are summarized in Section 6.4. Discharge samples were collected and analyzed in accordance with permit requirements. SMRs were submitted to LACSD and EPA on a semi-annual basis covering January to June and July to December 2018, respectively. The SMRs summarize flow, and discharge quality data collected during the reporting period.

4.5 Subarea 3 – California Domestic Water Company Treatment Plant

The CDWC Treatment Plant operated continuously in 2018, experiencing periodic downtime associated with routine maintenance and infrequent unplanned interruptions. The total volume of water extracted at CDWC exceeded the EPA target rate of 8,000 gpm by approximately 50%. The plant exceeded 10,000 gpm every month except March, May, November and December 2018. The lowest average monthly extraction rate during 2018 was 8,171 gpm, during the month of December whereas extraction rates were nearly twice the target extraction rate of 8,000 gpm during the summer months. Production from Well 3 and 5A, accounted for over half (61%) of the 19,014 acre-feet of water produced during 2018. Wells 2, 6, 8 and 10 contributed an additional 10%, 8%, 16% and 6%, respectively, while Well 14 did not operate during 2018.

Raw and treated water sampling was performed in accordance with the DDW permit and included sampling for COCs, inorganic chemicals, and other diagnostic parameters. Water quality data are summarized in monthly reports to DDW and are included in the monthly progress reports to EPA.

CDWC performed vapor phase carbon change outs on January 10, 2018 and October 4, 2018, during which approximately 21,000 lbs of vapor phase carbon were changed out during each event. A third event occurred on June 11, 2018, during which an additional 40,000 lbs pf VPGAC was changed out. No single pass IX resin change out events occurred during 2018. Copies of disposal manifests for change out of spent carbon and resin are provided in monthly progress reports to EPA, as they are received.

5. PERFORMANCE MONITORING RESULTS

Potentiometric and groundwater quality monitoring data obtained for the PSEP monitoring program during 2018 were collected in support of performance monitoring during continued operation of the BPOU remedy. Results of potentiometric monitoring, water quality sampling, and groundwater modeling activities are presented in the following sections.

5.1 Potentiometric Monitoring Results

The primary objective of the potentiometric monitoring described in Section 3.1 is to verify that the BPOU groundwater flow model accurately reflects the observed flow field and to verify that the remedy is limiting further migration of COCs in groundwater. As noted in Section 5.2 of the PSEP, results from potentiometric monitoring are also used to develop potentiometric surface maps to assist in evaluating changes in groundwater flow patterns in the BPOU.

Key components of the assessment of potentiometric data include the following:

- Regional water level fluctuations due to basin-wide recharge and pumping conditions;
- Local-scale water level fluctuations due to ongoing groundwater production and extraction system pumping; and
- Regional and local-scale lateral and vertical hydraulic gradients and flow directions.

Potentiometric monitoring results for 2018 are discussed in the following sections.

5.1.1 Water Level Fluctuations

Long-term regional water level conditions in the BPOU are evaluated using water level data for the LACO Key Well. Figure 5-1 shows the water levels measured in the Key Well from 1982 through 2018. During 2018, groundwater levels in the LACO Key Well fluctuated seasonally with high water levels of approximately 184 feet msl in February 2018 and a low water level of approximately 169 feet msl in November 2018. Water levels recorded from September 2018 through December 2018 were all below the historical low water level of approximately 172 feet msl recorded in the third quarter of 2016, and the 21 November 2018 water level of 169.4 feet msl is a new historical low. The water level elevations at the LACO Key Well remained well below the lower end of the established operating range (200 feet msl) for the San Gabriel Basin throughout 2018. However, the overall decreasing trend in water levels since approximately January 2012 appears to have stabilized as water levels have fluctuated between approximately 170 feet msl and 185 feet msl since January 2015.

Figures 5-2 and 5-3 show water levels in multiport monitoring wells MW5-03 and MW5-20. The hydrographs for MW5-03 and MW5-20 represent water level conditions in Subarea 1, in

the northern portion of the BPOU, and in Subarea 3, in the southern portion of the BPOU, respectively. Water levels in all ports of MW5-03 were recorded only in May 2018 and showed no significant change when compared to water levels from May 2017. As shown on Figure 5-3, water levels in Subarea 3 (MW5-20) decreased by approximately 1.2 feet to 8.1 feet in 2018. Water level data depicted on Figures 5-2 and 5-3 indicate that water levels in all ports in MW5-03 and MW5-20 exhibit similar temporal trends at all depths. As discussed in Section 1.3.3.1, the difference in the observed water level trend between the shallow and deep ports of MW5-20 is likely the result of confining units in Subarea 3 that provide hydraulic separation between pumping in different elevation intervals.

5.1.2 Lateral Hydraulic Gradients

Generalized potentiometric surface maps for the shallow and deep elevation intervals were developed based on water level data collected in the multiport monitoring wells to assess observed groundwater flow patterns and hydraulic gradients across the BPOU. Figures 5-4 and 5-5 show observed groundwater flow conditions in the shallow (above -500 feet msl) and deep (below -500 feet msl) elevation intervals in May and June 2018. Figures 5-6 and 5-7 show observed groundwater flow conditions in the shallow and deep elevation intervals in December 2018. Evaluation of observed groundwater flow patterns on a more detailed scale is limited by spatial variations in hydrostratigraphy and significant short-term water level fluctuations that occur in response to variations in local recharge and pumping.

As shown on Figures 5-4 through 5-7, lateral hydraulic gradients are generally towards the west-southwest. Although it is difficult to generalize groundwater flow directions given the seasonality of pumping and recharge in the San Gabriel Basin, groundwater flow directions in the BPOU are typically more southerly during higher water level conditions and are more westerly during lower water level conditions. Groundwater flow directions based on potentiometric measurements conducted in May/June and December 2018 were generally consistent.

5.1.3 Vertical Hydraulic Gradients

Water level measurements in multiport monitoring wells and piezometer clusters installed near extraction wells indicate that vertical hydraulic gradients vary throughout the BPOU. As discussed in Section 5.1.1, hydrographs shown on Figures 5-2 and 5-3 represent water level conditions in Subarea 1 (MW5-03), in the northern portion of the BPOU, and in Subarea 3 (MW5-20), in the southern portion of the BPOU, respectively. As shown on Figure 5-2, hydrographs for ports at different depths in MW5-03 are similar, with higher water levels at depth, indicating that there is a slight upward vertical hydraulic gradient in Subarea 1. As shown on the hydrograph for MW5-20 in Figure 5-3, the vertical gradient in Subarea 3 is variable with depth. Water levels measured in MW5-20 in ports 5 to 7, at elevations

between -94.4 and -279.4 feet msl, are typically 2 to 12 feet higher than the lower ports in MW5-20, indicating that there are significant downward vertical hydraulic gradients in the shallow aquifer in Subarea 3. In the lower ports of MW5-20 between -279.4 and -625.4 feet msl, there has only been a slight downward vertical gradient during the past three years. There has been no significant vertical gradient observed between the two lowest ports of MW5-20 (Port 2 at -535.4 feet msl and Port 1 at -625.4 feet msl) since 1998.

Vertical hydraulic gradients calculated at selected multiport wells and piezometer clusters located in Subarea 1, Subarea 2, and Subarea 3 are summarized in Table 5-1. The estimates summarized in Table 5-1 are based on semi-annual water level conditions in May, June and December 2018. As shown in Table 5-1, the vertical hydraulic gradients were predominantly upward in Subarea 1 and downward in Subarea 3 and changing from downward in June to upward in December in Subarea 2 multiport wells.

Only one vertical hydraulic gradient in Subarea 1 was calculable for 2018 using measurements from the same wells utilized in previous annual reports. The vertical gradient was downward calculated as 6.0×10^{-2} ft/ft in MW5-03 in May 2018. Water levels were not measured in PZ1-1BS/D in all of 2018 and MW5-03 in the fourth quarter of 2018 such that no vertical gradients were calculable in those wells.

Calculated vertical hydraulic gradients were generally downwards in Subarea 2 multiport wells MW-5-01, MW-5-24, and MW5-25 in June 2018. Gradients ranged from 1.6×10^{-3} ft/ft to 4.3×10^{-3} ft/ft in June 2018. The gradients transitioned to upward in December 2018 and calculated at 8.0×10^{-4} ft/ft for MW-5-24 and 1.4×10^{-4} ft/ft for MW-5-25. Water levels were not measured in MW 5-01 in the fourth quarter of 2018 such that no vertical gradient was calculable in this well.

The calculated vertical hydraulic gradients in Subarea 3 piezometers PZ3-1BS/D and multiport well MW5-20 were also downwards, and ranged from 4.1×10^{-3} ft/ft to 1.6×10^{-2} ft/ft throughout 2018. As noted above, the downward gradient is most notable in the shallow portion of the aquifer in Subarea 1 as observed at multiport well MW5-20 (Figure 5-3).

5.2 Groundwater Quality Monitoring Results

Groundwater samples were collected from wells in the PSEP monitoring program to evaluate groundwater quality conditions in the BPOU. As described in Section 3.2, groundwater samples were analyzed for the 21 COCs listed in PSEP Table 2-1 including: 1,4-dioxane, NDMA, perchlorate, and VOCs. As described in Section 3.2, groundwater quality monitoring data collected to satisfy DDW permit requirements were used to supplement the PSEP monitoring program during 2018. Groundwater quality monitoring results for 2018 are discussed in the following sections.

5.2.1 Summary of PSEP Groundwater Quality Results

Groundwater quality results for the PSEP monitoring program in 2018 are summarized in Table 5-2. This report evaluates the spatial distribution and temporal trends for six selected COCs in groundwater including: 1,4-dioxane, carbon tetrachloride, NDMA, perchlorate, PCE, and TCE. This evaluation relies on depictions of the interpreted current spatial distribution of COCs and COC concentration trends. The interpreted COC plumes are further evaluated in Sections 5.3.1, as well as in Section 5.0 of Appendix A.

Results of water quality monitoring that was performed by the WEs to satisfy the requirements of DDW drinking water permits, which also satisfies monitoring requirements under the PSEP, are presented in Table 5-2, and are summarized below:

- The DDW-required monitoring for the BPOU COCs in the extraction wells fulfills the requirements of the PSEP, but the DDW requirements also include more frequent monitoring (weekly or monthly) than the PSEP (quarterly or annually). Therefore, in some instances Table 5-2 includes additional water quality results for BPOU COCs in the extraction wells than required by PSEP;
- Water quality results for 1,2,3-TCP are presented in Table 5-2. Concentrations of 1,2,3-TCP were detected at a level that exceeds the NL [0.005 micrograms per liter (µg/L)] in one well: SA1-3 Lante;
- Detections of non-COC organic compounds for all available 2018 sampling results are presented in Table 5-3. Excluding data by EPA 8270C that were rejected (see Section 5.2.2), ten non-COC organic compounds were detected in various wells. EDB was not detected above laboratory reporting limits in 2018. Consistent with our response to EPA comment #8 on the 2016 Annual PE Report, we have included the November 2017 tap water regional screening levels (RSLs) in Table 5-3 for those chemicals that have RSLs but do not have MCLs or NLs. The reported concentrations for bis(2-Ethylhexyl) phthalate exceeded the MCL of 4 µg/L in the following sampling ports in multiport monitoring wells:
    - Port 9 of MW-5-3 (33 µg/L on 12/11/2018);
    - Port 1 of MW-5-11 (15 µg/L on 12/17/2018;
    - Ports 1 and 3 of MW 5-15 (7.1J and 6.2J µg/L, respectively on 12/7/2018); and
    - Port 2 of MW 5-18 (22 µg/L on 12/3/2018).
- Detections of TICs for all available 2018 sampling results are presented in Table 5-4. TICs were identified in 8 samples collected from 8 sampling locations inclusive of individual sampling ports in multiport wells.

5.2.2 Data Validation and Data Quality Assessment

Data management activities for the BPOU Project are managed by LDC under contract to the Watermaster. LDC utilizes EDMSi, a web based environmental data management system, for the management of historical data compiled from the EPA San Gabriel Basin database, CRs, WEs, and other relevant sources. New water quality data that are collected for the PSEP monitoring program are reported to LDC by laboratories, validated in ADR.Net, and uploaded to EDMSi as part of the real-time automated Tier 1A/1B process and Tier 3 selection. As specified by the QAPP (AMEC, 2013a), Tier 1A/1B validation was performed by LDC on all water quality data collected in support of the PSEP monitoring program and manual Tier 3 validation was performed on approximately five percent for perchlorate and VOCs and ten percent for all other analyses for the PSEP. Results of the data validation are used to evaluate laboratory performance and ensure that data quality is acceptable to meet BPOU Project objectives.

Data qualifiers that were assigned during the Tier 1A/1B and Tier 3 reviews are shown with the groundwater sampling results summarized in Table 5-2. Based on the data validation efforts and the evaluation of field quality control (QC) samples, all analytical sample results are considered usable to support the BPOU Project Data Quality Objectives (DQOs).

TICs associated with EPA 524.2 and EPA 8270C analyses continue to be evaluated using procedures consistent with the Standard Operating Procedure used by the EPA's regional laboratory to identify and remove compounds that are clearly laboratory artifacts such as column bleed and laboratory contamination.

In 2018, LDC consulted the lab regarding N-Nitrosomorpholine detections in samples collected by the Water Entities and analyzed by Method 521. Though the lab indicated there was not background contamination and maintains that the method was employed without interference for N-Nitrosomorpholine, Method 521 specifically mentions the potential problems with background contamination for this analyte.

As a result, the presence of N-Nitrosomorpholine will be evaluated further in 2019 by analyzing a single round of samples from the B5 extraction wells and the three multiport wells with detectable N-Nitrosomorpholine concentrations. The laboratory will analyze these samples using Method 1625C and will be instructed to specifically calibrate and report N-Nitrosomorpholine as a target analyte.

EPA 8270C non-detect acidic compounds associated with the sample collected at MW5-03 Port 2 on December 12, 2018 and MW5-03 Port 4 on December 13, 2018 were qualified R due to especially low recovery of acid surrogates associated with the analysis.

The result for bis (2-ethylhexyl) phthalate in the samples collected on December 7, 2018 at MW5-15 Port 1 and MW5-15 Port 3 were qualified J (estimated detect) due to a technical holding time exceedance. No field or lab data quality issues were identified in samples at the remaining four locations; VCWD Paddy Ln. on November 29, 2018, at MW5-18 Port 2 on December 3, 2018, at MW5-3 Port 9 on December 11, 2018, and at MW5-11 Port 1 on December 17, 2018.

Prior to the start of the 2018 annual sampling event, the QA Manager reminded both the Field Sampling Manager and the Laboratory Project Manager of contaminants observed in field and laboratory blanks associated with the 2017 sampling event, potential sources of contaminants, and procedures to avoid contamination. The QA Manager verified the procedures were being implemented during the on-site field sampling and laboratory audits which were performed during the 2018 annual sampling event.

Results of the Tier 3 validation are described as follows:

- The result for 1,4-dioxane was qualified J (estimated detect) due to expired technical holding time for samples collected on June 8, 2018 at MW5-23 Ports 2 through 4 and June 19, 2018 at VCWD Paddy Lane;
- The result for NDMA was qualified U (non-detect) for the sample collected on June 1, 2018 at MW5-24 Port 4 due to laboratory blank contamination;
- The result for NDMA, reported below the laboratory reporting limit, was elevated to the reporting limit and qualified U (non-detect) for samples collected on June 1, 2018 at MW5-18 Ports 1 through 3 and MW5-24 Ports 1 through 3 and Port 5 due to laboratory blank contamination;
- The result for NDMA was qualified J (estimated detect) due to expired technical holding time for samples collected on June 8, 2018 at MW5-23 Ports 3 and 4;
- The result for perchlorate was qualified J (estimated detect) due to expired technical holding time for samples collected on June 8, 2018 at MW5-23 Ports 1, 2, and 4;
- The detect results for all volatile analytes were qualified J (estimated detect) and the non-detect results for were qualified UJ (estimated non-detect) for samples collected on May 31, 2018 at MW5-11 Port 2 and MW5-13 Port 1 due to surrogate recoveries exceeding criteria;
- The result for acetone, reported below the laboratory reporting limit, was elevated to the reporting limit and qualified U (non-detect) for samples collected on May 31, 2018 at MW5-11 Ports 1 through 3 and MW5-13 Ports 2 and 3 due to trip blank and field blank contamination; and

- The non-detect results for 1,1-dichloroethene, carbon disulfide, and acetone were qualified UJ (estimated non-detect) for the sample collected on May 31, 2018 at MW5-13 Port 1 due to low recovery in the matrix spike duplicate (MSD).

A Final Tier 3 validation report was submitted by LDC to the Watermaster on October 4, 2018 (LDC, 2019). The Tier 3 results are posted on a secure LDC BPOU web portal.

5.3 Groundwater Plume Modeling Results

The following sections summarize the groundwater plume modeling for MY 2017-18 including updates to the groundwater quality model and evaluation of the distribution of COCs in the BPOU. A detailed description of the approach used for the development of plume maps and chemical cross sections for the six selected COCs is presented in Appendix A.

Consistent with previous Annual PE Reports, water quality data from wells screened at selected depths within the aquifer were interpreted using three-dimensional geospatial modeling software. For annual PE reports prior to 2015, geospatial modeling of the distribution of select COCs in groundwater was performed using the EarthVision® modeling software. Beginning in 2015, the water quality modeling was performed using Earth Volumetric Studio (EVS®) software by C Tech. EVS® has superior 3D volumetric capabilities and is used to better estimate COC mass dissolved in groundwater to support the evaluation of remedy performance as described in Section 7.1.2.3. Appendix A provides a detailed description of the development of the EVS® model for geospatial modeling of the distribution of COCs in groundwater in the BPOU.

5.3.1 Distribution of Selected Chemicals of Concern

The lateral distribution of the six selected COCs in three specific elevation intervals is shown in Appendix A. The three elevation intervals are as follows:

- Elevations between the water table (or potentiometric surface) and -200 feet msl;
- Elevations between -200 feet and -500 feet msl; and
- Elevations below -500 feet msl.

The plume maps for the three elevation intervals shown in Appendix A illustrate isoconcentration contours for “composite” elevation intervals for the three elevation intervals listed above. Therefore, these “composite” isoconcentration contours represent the outermost extent of a given COC at any elevation within the elevation intervals.

Included in Figures 5-8 through 5-10 is the distribution of the total concentration of the six COCs normalized to their respective MCLs or NLs for the three elevation intervals above. The

total normalized COC (TCOC) concentration at each monitoring point was calculated by summing the concentration of each COC divided by its respective MCL or NL using the following equation:

$$C_{TCOC} = \Sigma\ (C_{PCE}/MCL)>1 + (C_{TCE}/MCL)>1 + (C_{CTC}/MCL)>1 + (C_{1,4\text{-diox}}/NL)>1 + (C_{CLO4}/MCL)>1 + (C_{NDMA}/NL)>1$$

where:

C_{TCOC} = Total normalized COC concentration (unitless)

C_{PCE}/MCL = PCE concentration normalized to MCL of 5 µg/L (unitless)

C_{TCE}/MCL = TCE concentration normalized to MCL of 5 µg/L (unitless)

C_{CTC}/MCL = carbon tetrachloride concentration normalized to MCL of 0.5 µg/L (unitless)

$C_{1,4\text{-diox}}$/NL = 1,4-dioxane concentration normalized to NL of 1 µg/L (unitless)

C_{CLO4}/MCL = perchlorate concentration normalized to MCL of 6 µg/L (unitless)

C_{NDMA}/NL = NDMA concentration normalized to NL of 10 ng/L (unitless)

Normalized COC concentrations less than one (i.e., representative of concentrations less than the MCL or NL) were assigned a zero value for the calculation. As such, the outermost contour of 1 for the TCOC plume generally represents the extent of COC concentrations in the plume that exceed the MCLs or NLs.

Chemical cross sections showing the vertical distribution of selected COCs and the TCOC plume along four discrete transects are also shown in Appendix A. Cross section A-A' represents a north-south transect that is aligned generally with the longitudinal axis of the COC plumes. Cross sections B-B', C-C', and D-D' represent east-west or northwest-southeast transects that are aligned generally perpendicular to the dominant groundwater flow direction in the BPOU. Cross sections B-B', C-C', and D-D' show the distribution of the COC plumes in the upgradient, mid-plume, and downgradient areas of the BPOU and include various production wells that are vulnerable to lateral migration of COC plumes towards the west or east.

Given the three-dimensional nature of the interpolated COC plumes, the reader should consider the three-dimensional visualization that is inset in the corner of each figure that provides the appropriate context for reviewing the two-dimensional plume maps and chemical cross sections. It should be noted that the water quality data used to create the three-dimensional plume interpretations are posted on the plume maps according to the composite elevation intervals described above. In some instances, the "composite" isoconcentration contours may not appear to correspond to water quality data that are within the elevation

interval because of the interpolation between sampling locations performed by the EVS® modeling software.

As with any approach used to interpolate data between known data points, there are uncertainties and limitations to the geospatial modeling approach that may result in alternative interpretations of the distribution of COCs in groundwater. These uncertainties and limitations are summarized as follows:

- The plume maps and chemical cross sections attempt to depict the 3D distribution of COCs in groundwater with 2D images, and they represent interpolated approximations of the distribution of COCs in groundwater based on available data. As described in Appendix A, the plume interpretations generally incorporate water quality data for the period from April through June 2018. Where data were not available for that time period, data from the next closest date during the October through December 2018 time period were utilized to represent the plumes as accurately as possible.
- Alternative interpretations of the distribution of the COC plumes are possible and may differ from the plumes depicted herein.
- The Duarte Fault is represented as a diffuse zone of faulting on the plume maps and chemical cross sections. However, no faulting was explicitly represented in the 3D model used to interpolate the plumes. The diffuse fault zone is considered to be a reasonable representation of the uncertainty in the fault's location as it has several fault splays concealed beneath alluvial deposits.
- The northern-most limits of some COCs depicted on the plume maps are uncertain due to the limited amount of data available to the CRs from other EPA-named PRPs, including the Mobil/Lockheed/Valspar group, as well as other entities that may be PRPs in the northern portions of the BPOU. In consideration of the lack of recent available groundwater data from several PRP facilities and historical detections of several COCs such as TCE and PCE in the area north of the Duarte Fault zone, isoconcentration contours for TCE and PCE are truncated at the downgradient (southern) extent of the Duarte Fault zone.

Evaluation of the TCOC plume maps (Figures 5-8 through 5-10) and chemical cross sections that are shown in Appendix A (Figures A-47 through A-50) resulted in the following general observations of the spatial distribution of COCs in the BPOU:

- Consistent with previous interpretations of individual and composite COC plumes within the BPOU, the longitudinal extent of the TCOC plume extends from the Duarte Fault zone in Subarea 1, approximately 7.5 miles towards the southwest, where the plume terminates near the confluence of Avocado Creek and the San Gabriel River;

- In the shallow elevation interval above -200 feet msl, localized areas with TCOC concentrations greater than 20 to 100 times the MCLs are observed along the longitudinal axis of the plume. These localized areas occur in Subareas 1, 2 and 3, with the largest located in Subarea 3 extending downgradient toward the CDWC Subproject wells. As shown in Figure 5-8, a localized area of TCOC concentrations exceeding 20 times the MCLs exists in the vicinity of ALR MW-3. The downgradient extent of TCOC concentrations exceeding 5 to 20 times the MCLs in Subarea 3 increased further downgradient in 2018 compared to 2017. The downgradient extent of TCOC concentrations exceeding 50 to 100 times the MCLs in Subarea 3 near MW 5-05 and MW 5-08 decreased in extent in 2018;
- In the intermediate elevation interval between -200 and -500 feet msl, the TCOC plume extends from monitoring well MW5-03 in Subarea 1 to well COI 5 near the downgradient terminus of Subarea 3. In 2018, the extent of TCOC concentration exceeding 5 times the MCLs increased slightly further downgradient to the CDWC well field. Similar to 2018, a localized area of TCOC concentrations ranging from 50 to 100 times the MCL is observed in this depth interval in Subarea 2 in the vicinity of MW5-05. A second area of TCOC concentrations greater than 50 times the MCL is observed in the vicinity of MW5-20 in Subarea 3. In 2017, the TCOC concentration in MW 5-23 exceeded 50 times the MCLs; however, in 2018 chemical concentrations decreased in this well so that the TCOC concentration exceeded 20 times the MCLs in 2018; and
- Below -500 feet msl, the TCOC plume extends from MW5-03 in Subarea 1 to near the SGVWC B5 extraction wells in Subarea 3. From MW5-03 in Subarea 1 to near the mid-plume wells MW5-05 and MW5-15, the plume consists of TCOC concentrations slightly exceeding the MCLs and a localized area exceeding 5 times the MCL near MW5-24. In Subarea 3, the plume of concentrations exceeding the MCL extends slightly further to the east compared to 2017 due to COC concentrations exceeding the MCLs or NLs in SWS 140W5. The extent of TCOC concentrations exceeding 50 times the MCLs in 2018 was similar to 2017. The maximum normalized total COC concentrations exceeding 50 times the MCL occur in a localized area between SGVWC B26B and multiport well MW5-20.

5.4 Groundwater Flow Modeling Results

As described in Section 3.3, the BPOU groundwater model was updated with pumping, recharge, and boundary condition data through the end of MY 2017-18 including an update of the comparison between simulated and observed water levels for the 14-year simulation period from MY 2003-04 through MY 2017-18. The adequacy of groundwater model calibration continued to be evaluated using water level observations at 89 monitoring and

production well locations that were selected as long-term basin-wide calibration targets, including 47 targets located in the BPOU area. Water level observations for MY 2017-18 were updated from the San Gabriel Basin Database, California Department of Water Resources, LACDPW, the United States Geological Survey National Water Information System, and from data collected as part of the PSEP monitoring program.

5.4.1 Updated Model Calibration Results

After completing the model updates described in Sections 3.3.1 through 3.3.3, the model was checked for its ability to replicate observed head levels over the revised 14-year simulation period ending in MY 2017-18. Model calibration was performed by adjusting groundwater recharge from precipitation, irrigation return flow, spreading basins, and losing streams on a trial and error basis to obtain an acceptable match between simulated and observed water levels. Recharge was revised during this modeling effort for the last two years, as LACDPW MY 2016-17 provisional data changed when finalized after the 2017 PE Report was published. The extent of the model domain, vertical discretization, and hydrogeological parameterization were deemed appropriate and were unchanged. Consequently, the updates to the model reported herein consist of adding recently available information and do not represent a reconfiguration of the model or change to the conceptual site model.

The list of observation wells used to assess the model calibration is presented in Table 5-5. Updated model calibration statistics are summarized in Table 5-6. Calibration statistics were calculated for two data sets. The first data set (herein referred to as “complete dataset”) consists of observation and pumping wells utilized during recent model calibration efforts and data from observation wells PZ-1-3B S, PZ1-3B D, PZ3-1B S, PZ3-1B-S, MW5-03 (multiport), MW5-20 (multiport), and MW5-23 (multiport). Because the model utilizes quarterly-averaged extraction rates for pumping wells, the direct comparison of model-predicted heads to instantaneous observed heads can be misleading and does not necessarily indicate error in the modeling results. Consequently, the second data set consists of the first observation data set without the pumping wells (herein referred to as the “non-pumping dataset”).

Using the complete dataset of 89 observation points (pumping and non-pumping wells), the average basin-wide model residual (the average difference between model simulated and observed heads) for the revised 14-year simulation period is -2.58 feet (Table 5-6). The average model residual for the 47 observation wells within the BPOU area is -1.89 feet for the same period. The root-mean squared error (RMSE) for the calibrated model is 11.00 feet for the entire model and 7.09 feet for the BPOU area.

Excluding pumping well observation data and using the non-pumping dataset consisting of 68 observation points (Table 5-6), the average basin-wide model residual for the revised 14-year simulation period is -2.48 feet. The average model residual for the 41 observation wells within

the BPOU area is -2.44 feet for the same period. The RMSE for the calibrated model is 6.53 feet for the entire model and 5.29 feet for the BPOU area.

Simulated and observed potentiometric heads in the BPOU for the 14-year model simulation period are compared on hydrographs presented on Figures 5-11 through 5-18. These hydrographs illustrate the model's ability to simulate temporal groundwater elevation changes and vertical gradients in Subareas 1, 2 and 3 of the BPOU. Figure 5-11 shows a good match between observed and model-predicted heads for the LACO Key Well. Simulated water levels in the Subarea 1 (Figures 5-12 and 5-13), Subarea 2 (Figures 5-14 through 5-16) and Subarea 3 (Figures 5-17 and 5-18) portions of the BPOU generally are within five feet of observed water levels.

As described in Section 5.1.3, overall, observed vertical gradients in Subarea 1 and Subarea 2 are relatively small, ranging from slightly upward in Subarea 1 to slightly downward in Subarea 2. Comparatively, the 14-year model simulation results showed that there is generally no vertical gradient to a very slight upward or downward vertical gradient simulated in the model in Subareas 1 and 2. Thus, the relatively small vertical gradients predicted by the model are consistent with the relatively small observed vertical gradients. This match in observed and simulated vertical gradients is depicted for Subarea 2 wells MW5-01, MW5-24, and MW5-25 on Figures 5-14, 5-15, and 5-16, respectively.

The vertical gradient in Subarea 3 is downward in simulated and observed data throughout the 14-year simulation. The simulated water levels in the shallowest ports in MW5-23 (ports 4 through 6) are generally lower than observed water levels by up to 15 feet (Figure 5-17). At the request of the EPA, previous consultants to the BPOU CRs conducted a detailed evaluation of the vertical head differences observed in Subarea 3 and refined the BPOU groundwater model by adding low permeability separating layers that were observed in well logs in parts of the Subarea 3 (Geomatrix, 2007). In addition, the vertical anisotropy ratio (ratio of vertical to horizontal hydraulic conductivity) assigned to various layers in the model was adjusted to increase simulated vertical gradients. Although these efforts resulted in some improvements to the match between observed and simulated vertical gradients, the model continues to locally under-predict observed vertical gradients in Subarea 3 as shown in Figure 5-17. This under-prediction of vertical gradients is most likely attributable to the smaller (local) scale heterogeneities that are present in the aquifer compared to the broader scale of heterogeneities that are represented in the model (Geomatrix, 2007).

Potentiometric surfaces simulated using the BPOU groundwater model are compared to observed water levels in Fall 2017 and Spring 2018 on Figures 5-19 through 5-26. The simulated results were exported from the model for approximately the same time period as the observed water levels. As shown on Figures 5-19 and 5-20, simulated water levels in Subarea 1 generally range from 2 feet lower to 7 feet higher than observed water levels in Fall

2017, and 0 to 5 feet higher than observed water levels in Spring 2018. Simulated potentiometric surfaces in Subarea 3 are compared to observed water levels on Figures 5-21 through 5-26 for the following elevation intervals: above -200 feet msl, between -200 and -500 feet msl, and below -500 feet msl. These elevation intervals correspond to the approximate elevations of interpreted hydrostratigraphic separating units in Subarea 3. Figures 5-21 through 5-26 show simulated water levels versus observed at multiport monitoring wells located more distal from pumping wells (MW5-20, MW5-22, and MW5-23). In the elevation interval above -200 feet msl, simulated water levels generally ranged from 4 to 13 feet lower than observed water levels in Fall 2017 and ranged from approximately 5 to 10 feet lower than observed water levels in Spring 2018. Simulated water levels in MW5-20, MW5-22, and MW5-23 in the elevation interval between -200 and -500 feet msl generally ranged from 0 to 6 feet lower than observed water levels in Fall 2017 and were 1 foot lower to 4 feet higher than observed water levels in Spring 2018. In the elevation interval below -500 feet msl, simulated water levels at these locations were 3 to 6 feet lower than observed in Fall 2017 and were 1 foot lower to 2 feet higher than observed in Spring 2018.

The largest differences between simulated and observed water levels occur in the immediate vicinity of the SGVWC B5, B6, and CDWC pumping wells in the elevation interval above -200 feet msl (Figures 5-21 and 5-24). These differences are most likely attributable to the smaller (local) scale of heterogeneities that are present in the aquifer compared to the broader scale of heterogeneities that are represented in the model. In addition, these differences in simulated and observed water levels may in part be related to variability in the pumping rates of various extraction wells in response to water supply demands as compared to the average pumping rates that are simulated using quarterly stress periods in the model.

The updated annual model water balance for each MY in the model is summarized in Table 5-7. The model water balance for MY 2017-18 is comparable to previous model years. Consistent with MY 2016-17 there was a slight positive increase in storage during this model year as the combined recharge from groundwater flux into the model, precipitation, and return flows within the model bounds was greater than sum of the groundwater flux out of the model and groundwater pumpage.

5.4.2 Results of Performance Evaluation Simulations

Groundwater flow simulations utilizing 5-year forward particle tracking from MY 2013-14 through MY 2017-18 were performed to evaluate the performance of the groundwater extraction system. Results of the transient five-year particle tracking simulation of extraction system performance are presented in plan view for Subarea 1 at two elevation intervals on Figures 5-27 and 5-28. Results for Subarea 3 are presented in plan view at three elevation intervals on Figures 5-29 through 5-31. Figure 5-32 presents particle tracking results in profile

view along the long axis of the plume (cross section A-A'). As described above, the starting locations for the particles were assigned to provide a generalized representation of groundwater originating within the inferred horizontal and vertical extent of the TCOC plume. To aid the reader in evaluating the results, the interpreted extent of the TCOC plume in 2018 is shown on Figures 5-27 through 5-32 for reference. Particle tracks are color coded on these figures; particles that are captured by project extraction wells are shown as orange and brown tracks, particles captured by the CDWC Subproject wells are shown in blue, and particles not captured during the five-year simulation period are shown in gray. Starting particle locations are shown on the figures as solid circles located at the upgradient end of each particle track.

As described in Section 3.4.4, the simulated tracks of particles released below -600 ft msl in the vicinity of Subarea 2 wells MW5-24 and MW5-25 tend to conform to dipping FEFLOW model layers, rather than observed potentiometric head measurements and simulated potentiometric heads generated by the model. As a result, simulated particle tracks in areas with steeply dipping FEFLOW model layers were determined not to be representative of actual groundwater flow paths in the vicinity of wells MW5-24 and MW5-25. This issue was discussed with EPA representatives during a conference call held on March 11, 2019. As recommended by CR representatives during the conference call, the simulated potentiometric heads from June 30, 2018 were used to develop interpreted particle flow paths in this deeper portion of the plume for the MY 2017-18 particle tracking analysis presented in this report. As shown on Figure 5-32, flow paths originating in the lower ports of MW5-24 were manually projected orthogonal to the simulated potentiometric head contours until they reached the nearest downgradient project extraction wells (i.e., SGVWC B26A and B26B).

Given the limitations of the particle tracking results described above, depictions of short-term hydraulic control presented in this report should not be considered representative of long-term extraction system performance. Additional discussion of particle tracking results in relation to remedy performance is presented in Section 7.1.3.

5.5 Groundwater Extraction and Chemical Mass Removal

Monthly groundwater extraction volumes for 2018 were compiled from monthly reports submitted to DDW and EPA in monthly progress reports. Groundwater extraction volumes for all extraction wells that were operational in 2018 are shown in Table 2-1. Average monthly and average annual extraction rates are also provided in Table 2-1 together with design extraction rates for each extraction well, target operational extraction rates, and EPA-approved extraction rates for each well. Design extraction rates are based on the peak design capacity of the treatment plants whereas target operational extraction rates generally assume ten percent downtime for each well for treatment plant maintenance. The EPA-approved extraction rates

shown in Table 2-1 are based on groundwater flow model simulations performed in support of extraction system design in 2000 and 2001 and updated in 2012 and 2013. These average extraction rates are necessary to achieve the remedial action objectives inclusive of the addition of 8,000 gpm groundwater extraction from the CDWC Bassett Wellfield as requested by EPA in January 2015.

Estimates of chemical mass removed from extracted groundwater in 2018 for the VCWD Lante, LPVCWD, SGVWC B6, SGVWC B5, and CDWC Subprojects are presented in Section 6.0.

6. TREATMENT PLANT PERFORMANCE RESULTS

This section presents a summary of the 2018 operational performance results for the BPOU Subproject treatment plants.

6.1 Subarea 1 – Valley County Water District Lante Subproject

As described earlier in this report, the VCWD Lante Treatment Plant had extensive downtime throughout 2018. During 2018, 3,862 acre-feet of groundwater were extracted and treated from the production wells (primarily SA1-3), equating to an average annual production rate of 2,395 gpm.

Table 6-1 summarizes the water quality data collected from the individual production wells and from the fully treated water. The design concentrations and expected average influent concentrations for the VCWD Lante Treatment Plant, together with applicable MCLs and NLs for the COCs, are also presented in Table 6-1. During 2018, samples were only collected from SA1-1 from May and August. SA1-1 only operated during the month of May, extracting 94 acre-feet of water during that month. Well SA1-2 was offline for all of 2018 and as a result was not sampled during the year. Well SA1-3 was sampled twice a month during January and February and monthly for the remainder of 2018, with the exception of April and December, when it was not sampled. Well SA1-3 did not operate during April 2018 because the treatment plant was down for the entire month and in December because the plant was down for the last three weeks of December. Raw water concentrations in SA1-3 and SA1-1, reported in Table 6-1, did not exceed design concentrations. No COCs were detected in the fully treated water. As shown in Table 6-1, the reporting limits are below the COCs respective MCLs or NLs. Figures 6-1 to 6-13 illustrate raw and treated water concentration trends for 2018, relative to the applicable MCL or NL.

None of the COCs were detected in the two SA1-1 samples collected during 2018. Historically concentrations were typically higher in Well SA1-3 than SA1-1, with the exception of perchlorate. However, the perchlorate concentrations observed in SA1-3 during 2018 were greater than those in SA1-1, which did not contain detectable levels of perchlorate in the 2018 samples. In well SA1-3, concentrations of 1,4-dioxane, PCE, TCE, and 1,2,3-TCP typically exceeded their respective MCLs and NLs. The perchlorate concentrations in SA1-3 fluctuated around the MCL of 6 µg/L, ranging from 4 to 6.5 µg/L. The 1,1-dichloroethene (1,1-DCE) concentrations reported in SA1-3 also fluctuated around the MCL (6 µg/L.) In addition to the COCs mentioned above, the only other COCs detected in any sample collected from SA1-3 in 2018 were cis-1,2-dichloroethene (cis-1,2-DCE), NDMA and chloroform, all of which were below their respective MCLs or NLs.

In general, COC concentrations appeared to be relatively stable in SA1-3 during 2018, with exceptions of PCE, TCE, cis-1,2-DCE and 1,2,3-TCP, which displayed a slightly decreasing trend. Concentrations of 1,4-dioxane, NDMA, perchlorate, 1,1-DCE, chloroform were fairly stable in SA1-3 during 2018.

Treated water COC concentrations remained below the MCLs/NLs in all of the 2018 sampling events. Average concentrations for the raw water influent to the treatment plant are summarized in Table 6-2.

Historical (2008 to 2018) trends for indicator COCs in the VCWD extraction wells are presented in Figures B-1 to B-7 (Appendix B). Concentrations of COCs are typically higher in SA1-3 than the other extraction wells. Most COCs show strong decreasing trends since 2008; decreasing trends were most pronounced in Well SA1-3. COC concentrations in SA1-1 have often been below the MCL/NL, which as discussed above, was also the case in both samples collected during 2018. Concentrations of 1,4-dioxane in SA1-1 had historically been above the NL, but by 2013 had decreased to below the NL. SA1-3 exhibited a decreasing trend or stable 1,4-dioxane concentrations until mid-2016 when concentrations began to increase until April 2017, after which the decreasing trend returned. Although concentrations show some variability, the overall PCE concentration trend in SA1-3 was generally stable until 2011, before displaying a strong decreasing trend from 2011 until 2015, after which it has remained relatively stable between 20 and 50 µg/L until 2017 when concentrations increased up to 90 µg/L. However, PCE concentrations in SA1-3 once again returned to a decreasing trend during 2018. TCE has displayed a similar trend, with concentrations between 2015 and November 2016 being relatively stable between 10 and 20 µg/L. However, concentrations climbed during 2017 to just above 30 µg/L, before declining again in 2018 to around 20 µg/L. Since about 2011, perchlorate has steadily declined to concentrations near the 6 µg/L MCL, where it remained during 2018.

Mass removed during 2018 was calculated by using the average raw water concentration for each COC from each of the three production wells and multiplying that result by the volume of water treated, with the appropriate dimensional conversion. In these calculations, concentrations below the detection limit were treated as zero. For the compounds considered, approximately 381 pounds of chemical mass were removed by the VCWD Lante Treatment Plant in 2018. This is less than the 475 pounds removed in 2017. The 2018 chemical mass removed was the lowest total by the VCWD since 2005 and was part of a general decreasing trends since 2011. The majority of the chemical mass removed was attributed to TCE (63 percent), with perchlorate and 1,1-DCE representing an additional 13 percent and 15% of the total mass removed, respectively. PCE, chloroform, 1,2-cis-DCE and 1,4-dioxane each represented between 2.2 percent and 2.6 percent of the total mass removed, accounting for the remaining mass removed during 2018.

Exhaust air quality data for 2018 are summarized in Table 6-3 for the four air strippers and VPGAC systems. No samples were collected during December because the plant was down for the last three weeks of the month. As expected from water quality data, PCE, TCE, 1,1-DCE, chloroform, and cis-1,2-DCE were the primary VOCs detected in the vapor phase. Table 6-4 provides a summary of air risk and hazard calculated from compounds detected in the air exhaust. Risk was calculated using SCAQMD Tier 4 procedures and compared against ARARs. Calculated risk and hazard values were below ARARs for the maximum individual cancer risk (MICR), acute hazard, chronic hazard, and cancer burden.

In 2018, the VCWD Treatment Plant discharged 3,457,613 gallons of waste brine to the LACSD sewer with an annual average discharge rate of approximately 6.6 gpm. Brine flow data are summarized in Table 6-5.

6.2 Subarea 3 – La Puente Valley County Water District Subproject

In 2018, the average annual flow rate at the LPVCWD Treatment Plant was 2,266 gpm, which slightly above the EPA-approved extraction rate of 2,250 gpm. Approximately 3,672 acre-feet of groundwater were extracted during 2018. LPVCWD 5 accounted for 94 percent of groundwater extracted and treated during 2018.

Extraction wells LPVCWD 2 and LPVCWD 3 were sampled every other month during 2018, with additional sampling events performed during the summer months, when the wells are operated. LPVCWD 5 was sampled monthly throughout the year, with 2 sample events occurring in June. Water quality data are summarized in Table 6-6. Figures 6-14 to 6-22 illustrate raw and treated water concentration trends relative to the applicable MCL or NL for selected COCs. COC concentrations in LPVCWD 2 were greater than those observed in LPVCWD 3 and LPVCWD 5. Perchlorate and TCE were the only COCs frequently detected in well LPVCWD 3. Carbon tetrachloride and NDMA were only detected in the September sample from well LPVCWD 3, both at concentrations slightly above their MCLs or NLs. Perchlorate, PCE, TCE, and NDMA were the only COCs routinely detected in well LPVCWD 5.

All three extraction wells contained perchlorate concentrations exceeding the MCL. LPVCWD 2 and LPVCWD 5 also contained NDMA and TCE concentrations greater than their respective MCLs/NLs. The concentrations of 1,2-dichloroethane (1,2-DCA), carbon tetrachloride and 1,4-dioxane were above their respective MCLs/NLs in LPVCWD 2 and below their MCLs/NLs in the other extraction wells. Concentrations of detected constituents in wells LPVCWD 3 and LPVCWD 5 were relatively stable throughout 2018. Concentrations of PCE, TCE, 1,2-cis-DCE, 1,2-DCE, 1,2-DCA, carbon tetrachloride, 1,4-dioxane and chloroform all follow a similar trend in well LPVCWD 2 during 2018; the concentrations are relatively stable until June, display a decreasing trend from June to August and then increase during the remainder of the year.

There were no instances during 2018 where COC concentrations in the fully treated water exceeded an MCL or NL.

Historical (2008 to 2018) trends for indicator COCs in the LPVCWD extraction wells are presented in Figures B-8 to B-16 (Appendix B). Since 2009, COC concentrations in LPVCWD 2 have consistently been greater than those in LPVCWD 3 and LPVCWD 5. Most COCs in LPVCWD 2 show decreasing trends with high variability in concentration between sampling events. Concentrations of PCE in LPVCWD 2 appear relatively stable. Seasonal fluctuations, with lower concentrations in the summer months and higher concentrations in the winter months were observed from 2014 to 2018, with the exception of 2017. Historically, COC concentrations in LPVCWD 3 showed a strong decrease from 2008 to 2009 and have remained relatively stable to slightly decreasing since 2009. COC concentrations in LPVCWD 3 have been near or below the MCL/NLs since 2009 with the exception of PCE. PCE displayed a steady decline in concentration in LPVCWD 3 from 2008 to 2013, when concentrations fell below the detection limit and have largely remained below 0.5 µg/L. LPVCWD 5 experienced steep declines in COC concentrations during the first six months of operation (January to June 2009). Since then most COCs have displayed a steady decline or have remained fairly stable.

Average chemical concentrations for the treatment plant raw water influent are summarized in Table 6-7 together with the volume of water treated and the total mass removed per chemical. In these calculations, concentrations below the detection limit were treated as zero. For the COCs considered, approximately 258 pounds of chemical mass were removed from groundwater. The total chemical mass removed has gradually declined since 2007, a result of the decreasing COC concentrations described above.

Air quality data collected weekly from the Small Tower and Large Tower inlet and outlet are summarized in Table 6-8. A summary of the air risk and hazard associated with the off-gas GAC systems is provided in Table 6-9. The MICR, acute hazard, chronic hazard, and cancer burden ARARs were not exceeded in 2018.

Because brine discharges from the ISEP were eliminated when perchlorate treatment changed to single pass IX, only about 59,639 gallons of wastewater, consisting predominantly of IX rinse water, were discharged to the LACSD sewer in 2018. Wastewater flows are summarized in Table 6-10. Discharges met permit requirements.

6.3 Subarea 3 – San Gabriel Valley Water Company B6 Subproject

In 2018, the average annual flow rate at the SGVWC B6 Treatment Plant was 6,541 gpm, which slightly exceeded the EPA-approved extraction rate of 6,500 gpm, despite operating at approximately half capacity during parts of June and July due to VFD failure on Air Stripper No. 3 and Air Stripper Wetwell Booster No. 5. Standby well B6C did not extract any water during

2018 and B6D extracted less than one acre-foot of water in 2018. Approximately 10,546 acre-feet of groundwater were extracted and treated in 2018.

SGVWC B6 Treatment Plant raw water is typically sampled monthly and treated water data is collected weekly (Table 6-11). With the exception of the standby wells, B6C and B6D, the extraction wells were sampled at least once a month in 2018, although wells B26A and B26B were not sampled during the month of July. Well B6D was sampled in February, May and June and B6C was not sampled during 2018. Table 6-11 also includes the design and expected average influent concentrations for the SGVWC B6 Treatment Plant together with applicable MCLs and NLs for the COCs. During 2018, the only occurrences where the raw water concentrations exceeded the design concentrations were in B26B, where the carbon tetrachloride concentrations equaled or exceeded the design concentration of 10 µg/L in three of the twelve samples collected. In March 2018, two of the weekly treated water samples had detections of NDMA at the reservoir effluent. Both NDMA detections were below the NL and NDMA was non-detect at the UV combined effluent, upstream of the treated water sample location. The laboratory is investigating the NDMA sampling results because NDMA was not detected in the treated water for the remainder of 2018. Perchlorate, 1,4-dioxane and 1,2,3-TCP were also detected in the fully treated water samples collected during 2018, but concentrations were all below the COCs respective MCL/NLs.

Figures 6-23 to 6-32 illustrate raw and treated water concentration trends relative to the applicable MCL or NL. Concentrations of 1,1-DCE, cis-1,2-DCE and chloroform were below their respective MCLs and NLs in raw water samples. The one exception was 1,1,-DCE concentrations in well B25A that were at or slightly above the MCL in the October and December samples. Raw water concentrations of PCE exceeded the MCL in wells B25A and B25B and were below the MCL in the remaining extraction wells. With a few exceptions observed during the year, concentrations of 1,2-DCA, 1,4-dioxane, carbon tetrachloride, NDMA, perchlorate, and TCE exceeded their associated MCLs and NLs in raw water samples collected from all extraction wells. Concentration trends for COCs in raw water samples were generally stable through 2018, with the following exceptions. Concentrations of NDMA in Well B26A displayed a slightly decreasing trend during 2018. Slightly increasing trends of 1,4-dioxane and cis-1,2-DCE concentrations were observed in Wells B25A, B25B and B26B. COC concentrations in Well B26B typically showed more variability than observed in the other wells, but overall were stable, with the exceptions noted above.

Historical (2008 to 2018) trends for indicator COCs in the B6 extraction wells are presented in Figures B-15 to B-21 (Appendix B). Most of the COCs in the extraction wells display relatively stable or decreasing trends, with some notable exceptions discussed below. Several COCs in B26B show increasing trends. Concentrations of 1,2-DCA, perchlorate, and TCE in B26B display increasing trends since 2008. In addition, 1,4-dioxane, PCE, and NDMA show only slightly

increasing trends in B26B. Concentrations of 1,2-DCA and 1,4-dioxane in B25A has displayed a slightly increasing trend since 2009. PCE concentrations in B25A vary more than observed in the other extraction wells, with an overall slightly increasing trend. Additionally, concentrations of 1,4-dioxane, PCE, TCE, NDMA and perchlorate in Well B25B have displayed a slightly increasing trend since 2014.

Average chemical concentrations for raw influent to the treatment plant are summarized in Table 6-12, together with the volume of water treated and the total mass removed per chemical. In these calculations, concentrations below the detection limit were treated as zero. For the compounds considered, approximately 2,118 pounds of chemical mass were removed from the aquifer, which represents a decrease from 2017 (2,970 pounds removed). This is largely result in the decrease in production from in B25A 3,517-acre-feet in 2017 to 2,517 acre-feet, which typically contains higher concentrations of COCs than the other wells. TCE makes up approximately 50 percent of the total mass removed, with perchlorate accounting for an additional 30 percent and PCE accounting for 12 percent.

SGVWC B6 Treatment Plant air quality data are summarized in Table 6-13. Table 6-14 provides summary of air risk and hazard calculated from compounds detected in the air exhaust. Risk was calculated using SCAQMD Tier 4 procedures and compared against ARARs. The annual 52-week average rolling MICR ARAR of 1×10^{-6} was not exceeded in 2018. The acute hazard, chronic hazard and cancer burden ARARs were also not exceeded in 2018.

The new IX treatment system began operation in May 2018. The SGVWC B6 Treatment Plant discharged 7,162,936 gallons of waste brine to the LACSD sewer with an average discharge rate during the period from May to December 2018 of approximately 20.3 gpm. Brine flow data are summarized in Table 6-15.

6.4 Subarea 3 – San Gabriel Valley Water Company B5 Subproject

The average annual extraction rate for the SGVWC B5 Subproject was about 5,451 gpm, which was approximately 78% of the EPA-approved extraction rate of 7,000 gpm. Approximately 8,783 acre-feet of water were extracted and treated.

Raw and treated water quality data for the SGVWC B5 Treatment Plant are provided in Table 6-16, which also includes the design and expected average influent concentrations for the SGVWC B5 Treatment Plant and applicable MCLs and NLs for the COCs. All raw water concentrations were below maximum design concentrations in the production wells throughout 2018. Figures 6-33 to 6-40 show raw and treated water concentration trends relative to the applicable MCL or NL. As mentioned above, COC concentrations in B5E tended to be higher than the other B5 extraction wells, with the exception of PCE. COC concentrations tended to be below their respective MCL/NLs, with the following exceptions. B5E was the only

extraction well where 1,2-DCA, NDMA, and TCE concentrations exceeded their respective MCLs. Perchlorate concentrations in Well B5E were consistently above the MCL and perchlorate concentrations in Well B5B were slightly above the MCL during the 2018 sampling events, with the exception of the summer months. None of the other extraction wells contained perchlorate at concentrations that exceeded the MCL. Carbon tetrachloride concentrations observed in wells B5E and B5D generally exceeded the MCL in 2018. PCE concentrations in extraction Well COI 5 exceeded the MCL of 5 µg/L throughout the year, while the only other well with exceedances of the MCL for PCE was B5B, which slightly exceeded the MCL during the September to December sampling events. No COCs were detected at concentrations exceeding their MCL or NL in the fully treated water samples. With the exception of a single 0.12 µg/L detection of 1,1-DCA (MCL = 5 µg/L), the only COCs detected in the fully treated water during 2018 was chloroform and 1,2-DCA, neither of which exceeded their respective MCLs in any of the samples.

COC concentrations in the raw water were generally stable during 2018, with the following exceptions. NDMA concentrations in well B5E were mainly stable around 0.12 µg/L during 2018, with a high outlier of 0.16 µg/L in April and a lower outlier of 0.07 µg/L in July. Carbon tetrachloride concentrations in well B5E also contained a few outliers, but were generally stable around 2 µg/L. The PCE concentrations at COI 5 experienced an increase from approximately 7 to 10 µg/L in May of 2017 and remained relatively steady around 10 to 12 µg/L for most of 2018. Concentrations of PCE in B5B were stable around 4 µg/L, below the MCL of 5 µg/L, until September 2018, when concentrations increased to between 6 and 8 µg/L for the rest of the year. Chloroform and 1,2-DCA concentrations in B5 fully treated water fluctuated throughout the year, with no apparent correlation with raw water concentrations, but remained below MCLs.

Historical (2008 to 2018) trends for COCs in the B5 extraction wells are presented in Figures B-22 to B-28 (Appendix B). Concentrations of PCE, TCE, 1,2-DCA, perchlorate, NDMA and carbon tetrachloride in well B5E have shown increasing trends from 2008 to 2013-2014. PCE concentrations post 2013-2014 continued to increase, carbon tetrachloride displayed a decreasing trend and the other chemicals generally remained stable or showed a slightly increasing trend. In contrast, 1,4-dioxane concentrations in well B5E were generally below the NL of 1 µg/L (and generally below the laboratory detection limit of 0.5 µg/L) prior to 2014 and then displayed an increasing trend from 2014 until the end of 2015, after which it has generally followed a decreasing trend.

All of the COC concentrations in well B5B have generally shown a stable or slightly decreasing trend since 2008. However, after a stable period from 2008 to 2015, PCE concentrations in well B5B have shown an increasing trend since 2015, with the trend appearing to increase in 2018. Similar trends appear to be present in COI 5, with the exceptions of PCE, which has

shown a generally increasing trend from less than 1 μg/L in 2009 to a maximum of 14 μg/L in 2018, excluding a seemingly anomalous detection of 16 μg/L in December 2015. With these exceptions, most of the COCs in the extraction wells display relatively stable or slightly decreasing concentration trends.

Average chemical concentrations for the raw influent to the treatment plant are summarized in Table 6-17, together with the volume of water treated and the total mass removed per chemical. In these calculations, concentrations below the detection limit were treated as zero. For the compounds considered, approximately 345 pounds of chemical mass were removed from groundwater, which is considerably higher than the 225 pounds and 215 pounds removed in 2017 and 2016, respectively. The increase is largely attributed to the increase in production from well B5E, which contains higher concentrations of TCE and perchlorate than the other extraction wells. Approximately 1,140 acre-feet of water was produced from well B5E during 2018, as compared to 69 acre-feet and 49 acre-feet during 2017 and 2016, respectively. Total mass removed by the B5 Plant displayed an increasing trend until 2013, where a maximum of 770 pounds of contaminant were removed. Since 2013, the total mass removed has shown a generally decreasing trend due largely to the decrease in extracted groundwater from 7,036 gpm in 2013 to 5,918 gpm in 2017. Although less water was extracted during 2018 than 2017, more COC mass was removed due to the increased production from Well B5E. During 2018, perchlorate, PCE and TCE accounted for approximately 93 percent of the mass removed, with each accounting for plus or minus 30 percent of the mass removed.

The SGVWC B5 Treatment Plant discharged approximately 413,600 gallons of wastewater from GAC backwashing to the LACSD sewer in 2018, with monthly average flow rates ranging from 0.38 to 1.64 gpm. Brine flows are summarized in Table 6-18.

6.5 Subarea 3 – California Domestic Water Company Subproject

The average annual extraction rate for the CDWC was 13,145 gpm. Approximately 19,014 acre-feet of groundwater were extracted and treated, of which approximately 61 percent was extracted from Wells 3 and 5A. An additional approximately 16 percent was from Well 8, with Well 2 accounting for 10 percent of the extracted water during 2019 and 8 percent coming from Well 6. The remainder was extracted from Well 10. Well 14 did not operate during 2018. The extraction wells were sampled at least once a month during 2018.

Raw and treated water quality data for the CDWC Treatment Plant are provided in Table 6-19, which also includes the design and expected average influent concentrations and applicable MCLs and NLs for the COCs. Carbon tetrachloride, perchlorate and NDMA concentrations in Well 3 were above MCL/NLs throughout 2018. Concentrations of carbon tetrachloride and perchlorate in Well 6 and Well 10 exceeded their respective MCLs during some of the 2018

sampling events, as discussed below. Concentrations of TCE and PCE in wells 3, 6, 5A and 10 were generally above their respective MCLs throughout the year. The PCE and TCE concentrations exceeded the design concentrations (both of which are 20 µg/L) in the majority of samples from Well 10 and some samples from Well 6 during 2018. In Well 3, the TCE concentrations exceeded the design concentrations in every sample but one, and the PCE concentrations exceeded the design concentration in four of the 12 samples. Raw water samples were only analyzed for 1,4-dioxane during the October 9th sampling event. Well 3 and Well 10 had detectable concentrations of 1,4-dioxane at 0.8 µg/L and 9.9 µg/L, respectively. TCE was the only COC detected above its respective MCLs/NLs in any of the fully treated water (Bassett Blend) samples collected in 2018 and was detected at a concentration of 6.1 µg/L on May 7. TCE was not detected above its MCL in subsequent Bassett Blend samples collected on May 8 and May 9.

Figures 6-41 to 6-47 show raw and treated water concentration trends relative to the applicable MCL or NL. Carbon tetrachloride, NDMA and perchlorate concentrations in Well 3 tended to be higher than the other extraction wells. Concentrations of PCE and TCE were generally highest in Well 10 and Well 3.

In general, concentrations of COCs showed stable or slightly decreasing trends. TCE and perchlorate concentrations in Well 3 displayed slightly increasing trends during 2018, with the following exceptions. TCE concentrations in Wells 3, 6, 10 and 14 were generally more variable that observed for other COCs. Concentrations of TCE in Well 6 during April and May appear to be outside the general trend, which otherwise shows a decreasing trend from around 28 µg/L at the beginning of the year to around 15 µg/L by the end of the year. The April and May values were all below 10 µg/L. A similar occurrence was observed for PCE concentrations in Well 6 in the April and May samples. The TCE trend in Well 3 and Well 10 were variable, but overall were generally stable. Well 14 showed slightly increasing trends for PCE, as well as for TCE; both trends appear to be a continuation of trends that started during the end of 2017. The concentrations of carbon tetrachloride in Well 10 were generally above the MCL during the first half of 2018, but decreased to below detectable concentrations for the majority of the second half of the year. An opposite trend was observed in Well 10 for perchlorate, which began the year below its MCL, but concentrations were slightly above the MCL in four of the last five sample events of 2018.

The Bassett Blend treated water samples were analyzed for PCE, TCE, and carbon tetrachloride weekly and for NDMA every other week and 1,1-DCE and 1,2-DCE were analyzed for monthly. Two samples collected during 2018 were analyzed for the entire suite of COCs, with the exception of 1,4-dioxane and NDMA. Treated water COC concentrations were below the MCLs/NLs throughout 2018, with the exception noted above.

Historical (2007 to 2018) trends for COCs in the CDWC extraction wells are presented in Figures B-29 to B-35 (Appendix B). 1,2-DCA has never been detected in any of the extraction wells. PCE and TCE concentrations in Well 3 and Well 6 show an increasing trend from 2007 until late-2013/mid-2014, after which concentrations began to decrease. PCE and TCE concentrations in the remaining extraction wells have been relatively stable, with the exception Well 14 and Well 10. In Well 14, PCE and TCE concentrations increased from around 1 µg/L in January 2012 to 20 µg/L in November 2012, followed by a general decrease to about 2 to 3 µg/L by the end of 2016. However, concentrations have since increased with a maximum PCE concentrations of 18 µg/L and maximum TCE concentration of 22 µg/ recorded in November 2018. PCE and TCE concentrations in Well 10 have been highly variable since regular monitoring began in June 2016. However, no clear trend is apparent for either COC. Perchlorate concentrations in Well 14 increased from 2012 until the end of 2014, after which concentrations have displayed a generally decreasing trend until 2018, during which concentrations increased. Well 3 has displayed a slightly increasing trend in perchlorate concentrations since 2008. Carbon tetrachloride concentrations in most of the extraction wells decreased from 2007 to 2012 and have been relatively stable since. NDMA concentrations are generally below the NL since 2008, with the exception of Well 3, which had a steady decrease from about 0.015 µg/L between 2013 and 2016. However, since that time NDMA concentrations have displayed a generally increasing trend.

Average concentrations for the raw water influent to the treatment plant are summarized in Table 6-20. Mass removed during 2018 was calculated by using the average raw water concentration for each COC from each of the six production wells and multiplying that result by the volume of water treated, with the appropriate dimensional conversion. As no water was extracted from Well 14 during 2018, no mass removal was attributed to that well. In these calculations, concentrations below the detection limit were treated as zero. For the compounds considered, approximately 1,612 pounds of chemical mass were removed by the CDWC Treatment Plant in 2018. PCE and TCE represented approximately 35 percent and 45 percent of the mass removed, respectively. Perchlorate represented another 15 percent of the total mass removed. The 2018 mass removal represented the largest removal total since 2015. By comparison, 1,201 pounds were removed during 2017. The increase in mass removal is largely attributed to increased PCE and TCE concentrations in Well 3, combined with an increase in production from that well, in addition to an increase in production from Well 10, which typically contains higher PCE and TCE concentrations that the other extraction wells.

7. EVALUATION OF REMEDY PERFORMANCE AND TREATMENT PLANT OPERATIONS

The following sections summarize the performance of the BPOU remedial action including chemical mass removed by the groundwater extraction system, long-term trends in COC concentration in PSEP wells, plume migration control, and the operation and performance of the Subproject treatment plants.

7.1 Groundwater Extraction System Performance

As described in the PSEP and Section 3.0 of this report, the evaluation of remedy performance involves both short-term and long-term evaluation of groundwater extraction system performance. Annual PE Reports evaluate the short-term performance of the groundwater extraction system using groundwater modeling and empirical data to assess whether extraction well operation is limiting further migration of groundwater contamination into less contaminated areas.

The CRs completed detailed evaluations of groundwater extraction system performance in both Subareas 1 and 3 in 2012 and 2013, respectively. An evaluation of remedy performance for Subarea 1 was completed in August 2012 (CDM Smith, 2012) and an evaluation of the Subarea 3 remedy performance was completed in March 2013 (CDM Smith, 2013). In addition to an annual update of extraction system performance relative to hydraulic performance, this report includes statistical trend evaluations of COC concentrations in groundwater and estimates of COC mass in groundwater to aid in the evaluation of chemical mass removal in support of the overall performance of the remedy. Groundwater extraction system performance is discussed in the following sections.

7.1.1 Extraction Well Performance

The VCWD Lante, LPVCWD, SGVWC B6, and SGVWC B5 Subproject wells are generally capable of achieving the design extraction rates according to the BPOU extraction plan with the exception of the SGVWC B5B and B5E wells. As noted earlier in this report, the VCWD Lante Treatment Plant did not meet EPA extraction rates in 2018 due to the shutdown of the air strippers for packing replacement during the first quarter of 2018, peroxide quenching issues and the shutdown of the plant for the installation of updated Programmable Logic Controller (PLC) system. Further, the reactivation of the Arrow Well at the VCWD Lante Treatment Plant is in progress and will allow the VCWD Subproject to increase mass removal to supplement extraction from the existing Well SA1-3 and meet the EPA-targeted extraction rate for hydraulic containment in Subarea 1. The SGVWC wells B5B and B5E are currently unable to meet the EPA approved extraction rate due to reduced pumping capacity caused by lower water levels and/or a reduction of the specific capacity of the wells, and a decision by SGVWC

to reduce pumping during winter months due to low water demand as described in Section 2.2.3.

7.1.2 Groundwater Extraction and Chemical Mass Removal

The VCWD, LPVCWD, SGVWC B6, SGVWC B5, and CDWC Treatment Plants were all operational in 2018.

- The VCWD Treatment Plant operated at 2,395 gpm, about 40% of the EPA approved average annual extraction rate of 6,000 gpm. Production remained below the EPA-approved extraction rate due primarily to shutdown of the air strippers for packing replacement during the first quarter of 2018, peroxide quenching issues and shutdown of the plant for the installation of an updated PLC system;
- The LPVCWD Treatment Plant achieved an annual average extraction rate of 2,266 gpm, which exceeded the EPA-approved extraction rate of 2,250 gpm. LPVCWD operated using LPVCWD 5 as the primary well;
- The SGVWC B6 Treatment Plant operated at an annual average flow rate of 6,541 gpm, which also exceeded the EPA-approved extraction rate of 6,500 gpm, despite operating at approximately half capacity during parts of June and July due to VFD issues;
- The SGVWC B5 Treatment Plant operated at an annual average flow rate of 5,451 gpm, which is approximately 78% of the EPA-approved extraction rate of 7,000 gpm. Production was below the EPA-approved extraction rate due to lower pumping capacity of the B5B and B5E wells caused by lower water levels and/or a reduction of the specific capacity of extraction wells and a decision by SGVWC to reduce pumping during winter months due to low water demand. Production was also impacted by Well B5B being offline for approximately 2 months and the plant being taken offline during much of December during the chemical treatment of Well B5E;
- The CDWC Treatment Plant operated at an annual average flow rate of 11,709 gpm, which is approximately 50% higher than the minimum extraction rate of 8,000 gpm for the Bassett Wellfield requested by EPA; and
- Overall, BPOU extraction from the combined BPOU treatment facilities averaged 28,362 gpm on an annual basis, which is slightly below the EPA-approved extraction rate of 29,750 gpm.

The chemical mass removed at the VCWD Lante, LPVCWD, SGVWC B6, SGVWC B5, and CDWC Treatment Plants were 381 pounds, 258 pounds, 2,118 pounds, 345 pounds, and 1,612 pounds, respectively (Table 7-1). The BPOU project-wide total mass removed in 2018 was

4,714 pounds. Since 2004, the cumulative chemical mass removed is 88,384 pounds (Table 7-1).

Table 7-1 also presents a summary of the mass removal rate in terms of pounds of COCs removed per 1,000 gpm of groundwater extracted as an indicator of mass removal efficiency. The flow-weighted mass removal rate (mass removed/groundwater extracted) in 2018 was 166 lbs/1,000 gpm, which is comparable to the 2017 mass removal rate of 168 lbs/1,000 gpm. VCWD mass removal efficiency increased from 2005 to 2009, peaked 2011 at around 1,700 lbs/1,000 gpm, decreased from 2011 to 2017 and leveled off during last year. The LPVCWD mass removal efficiency displayed a slightly decreasing trend since 2007. The B6 mass removal efficiency has displayed a slightly increasing trend since 2005. However, a decrease was observed between 2017 and 2018 due to a decrease in production from Well B25A, which typically contains higher concentrations of COCs than the other extraction wells. B5 mass removal efficiency displayed a slightly increasing from 2005 to 2013, after which a slightly decreasing trend was observed. However, an increase in mass removal efficiency increased in 2018, attributed to the increase in production from Well B5E, which contains higher concentrations of TCE and perchlorate than the other extraction wells. The CDWC mass removal efficiency displayed a slightly increasing trend from 2014 to 2016. The 2017 mass removal efficiency was nearly half that of 2016, but rebounded in 2018. Project-wide, mass removal rates peaked in 2009-2011, followed a decreasing trend until 2014 and has since remained relatively stable around 200 lbs/1000 gpm or less. However, the 2018 project-wide mass removal rate is the lowest calculated since the BPOU treatment systems became operational. The overall decrease in mass removal rates is largely a representation of reductions in COC concentrations in groundwater, particularly within Subarea 1. Mass removal rates over time for the subprojects are depicted in Figure 7-1.

7.1.2.1 Trends in COC Concentrations and Chemical Mass in Groundwater

Short-term spatial trends in groundwater quality in the BPOU as observed during 2018 are presented in Section 5.3.1. Short-term changes in groundwater quality are observed seasonally and from year-to-year. These short-term changes occur primarily in response to variations in both local and regional groundwater flow conditions throughout the basin. Long-term trends in groundwater quality are difficult to discern at specific locations within the COC plumes due to seasonal changes in groundwater levels and flow directions and the localized influences of groundwater pumping from various production and extraction wells. As a result, the PSEP outlines an approach for evaluating short-term changes in groundwater quality and extraction system performance in Annual Performance Evaluation reports.

Although the evaluation of groundwater quality trends and extraction system performance presented in this annual PE report are not specifically intended to be used to develop

conclusions regarding long-term trends in groundwater quality and extraction system performance, information provided herein will be used to support the evaluation of overall remedy performance. As described in the CRs responses to EPA comments on the 2017 Annual PE Report, since the previous Subarea 1 and 3 remedy evaluations were completed in 2012 and 2013, the CRs have added detailed evaluations of performance data to the annual PE reports to provide much of the same information provided in the 2012 and 2013 remedy evaluations. These additional detailed evaluations include: 1) Mann-Kendall trend analysis of target COC concentrations in project monitoring wells to statistically evaluate temporal changes in COC concentrations, 2) estimates of the dissolved chemical mass remaining in groundwater to track changes in mass removal trends, and 3) development of TCOC concentration maps to provide a composite evaluation of changes in the distribution of COCs in groundwater. As a result, these additional evaluations of performance data combined with the other components of the annual PE reports including continued refinements to model simulations of groundwater capture satisfy the requirements of the more detailed Five-Year remedy evaluations described in the Performance Standards Evaluation Plan.

7.1.2.2 Evaluation of COC Concentration Trends in PSEP Wells

The Mann-Kendall statistical analysis was performed to evaluate long-term trends in concentration for the six selected COCs (1,4-dioxane, carbon tetrachloride, NDMA, perchlorate, PCE, and TCE) for the majority of the wells in the PSEP for the period 2004 through 2018. The Mann-Kendall analysis is a rank based, non-parametric test used to detect trends in time series data. A detailed description of the Mann-Kendall method is included in Appendix C. Figures 7-2 through 7-19 show the distribution of individual COCs in groundwater within the BPOU for elevation intervals between the water table and -200 feet msl, between -200 and -500 feet msl, and below -500 feet msl, and the calculated Mann-Kendall concentration trend for the majority of PSEP monitoring wells.

Appendix C includes the detailed Mann-Kendall statistics and calculated trend for each COC in the PSEP monitoring points. Tables C-1 through C-6 show the Mann-Kendall statistical parameters and trend results for the six COCs for all PSEP monitoring points. Charts showing the COC time-concentration trends for all PSEP multiport monitoring wells, trend line, Mann-Kendall trend statistic, and calculated trend are included in Appendix C, chart groups C-1 through C-6. The charts are organized by Subareas 1 and 3 and by the depth intervals described above. Non-detect results are treated as follows: the lowest method detection limit associated with the non-detect results is divided by 2, and this value is used as the result for all non-detects. This prevents a non-detect result that has a reporting limit higher than the minimum detected result giving rise to an apparent increasing trend.

Summary statistics for COC concentration trends calculated using the Mann-Kendall statistical analysis are presented in Table 7-2 and the spatial locations of these trends are displayed in plan view on Figures 7-2 through 7-19. Because not all well locations have results for each of the six COCs, the number of sample results for each area and COC varies. Therefore, interpretations for the collective six COCs are described below as comprising a range of results (see Table 7-2 for underlying data for individual COCs by subarea and BPOU-wide).

For the BPOU as a whole, the Mann-Kendall statistical evaluation was performed on 26,426 samples collected from 2004 – 2018 at 474 sampling locations for the six primary COCs. The following summarizes the Mann-Kendall statistics for the six COCs in combination, organized by depth intervals (the shallow depth interval above -200 feet msl, the intermediate depth interval between -200 and -500 feet msl, and the deep interval below -500 feet msl). In the shallow interval of the BPOU, approximately 55% of the sampling locations showed decreasing concentrations whereas approximately 7% were increasing. In the intermediate interval of the BPOU, approximately 43% of the sampling locations showed decreasing concentrations whereas approximately 41% were increasing. In the deep interval of the BPOU, approximately 16% of the sampling locations showed decreasing concentrations whereas approximately 49% were increasing.

Examination of the Mann-Kendall trends in Table 7-2, Figures 7-2 through 7-19, and in Appendix C leads to the following observations and general conclusions regarding COC concentration trends in Subarea 1, Subarea 2 (mid-plume area), and Subarea 3.

SUBAREA 1

The following presents the summary of Mann-Kendall trend statistics for the 6,367 samples collected from 258 sampling locations for the six primary COCs in combination in Subarea 1 from 2004 – 2018. In the shallow interval of Subarea 1, approximately 53% of the sampling locations showed decreasing concentrations whereas approximately 3% were increasing. In the intermediate interval of Subarea 1, approximately 55% of the sampling locations showed decreasing concentrations whereas approximately 18% were increasing. In the deep interval of Subarea 1, one of the sampling locations showed an increasing trend; the other 11 sample locations had no discernable concentration trend.

Wells Located within Subarea 1

Monitoring wells within Subarea 1 include MW5-03, MW5-11, MW5-13, MW5-17, MW5-18, Whico MP-3, AJ-, and ALR- monitoring wells, and are considered to be general indicators of the quality of groundwater that is flowing toward downgradient extraction wells installed for the VCWD Lante Subproject. The predominant trend in COC concentrations for these wells continues to be stable or decreasing based on the Mann-Kendall statistical evaluation

presented on Figures 7-2 through 7-19. Several exceptions to these general trends include the following:

- Port 3 of MW5-13 shows an increasing trend for 1,4-dioxane in the elevation interval above -200 feet msl;
- The trend for perchlorate in Port 1 of MW5-17 in the elevation interval above -200 feet msl is probably increasing;
- The trend for PCE in AJ MW-2R in the elevation interval above -200 feet msl is probably increasing;
- Port 3 of MW5-03 in the elevation interval between -200 and -500 feet msl shows an increasing trend for perchlorate. Port 1 of MW5-18 in the same elevation interval shows an increasing trend for PCE; however, concentrations are consistently below the MCLs; and
- Port 1 of MW5-03 located below -500 feet msl shows an increasing trend for TCE.

SUBAREA 2

The following presents the summary of Mann-Kendall trend statistics for the 5,808 samples collected from 282 sampling locations for the six primary COCs in combination in Subarea 2 from 2004 – 2018. In the shallow interval of Subarea 2, approximately 60% of the sampling locations showed decreasing concentrations whereas approximately 8% were increasing. In the intermediate interval of Subarea 2, approximately 52% of the sampling locations showed decreasing concentration trends whereas approximately 29% were increasing. In the deep interval of Subarea 2, approximately 38% of the sampling locations showed decreasing concentration trends whereas approximately 38% were increasing; it should be noted that only 8 of the 54 sample locations in the deep interval had discernable concentration trends.

Wells Located within Subarea 2, Immediately Downgradient of Subarea 1

Monitoring wells located within Subarea 2, immediately downgradient of Subarea 1, include MW5-01, MW5-24, and MW5-25, and are considered to be general indicators of the quality of groundwater that is located immediately downgradient of Subarea 1 extraction wells installed for the VCWD Lante Subproject. The following describes the trends observed for the COCs in specific monitoring wells in this portion of Subarea 2 based on the Mann-Kendall statistical evaluation presented on Figures 7-2 through 7-19:

- The concentration trends for 1,4-dioxane, carbon tetrachloride, and NDMA are predominantly stable or decreasing, and near the MCLs in many monitoring points.

However, the trend for 1,4-dioxane in Port 1 of MW5-24 located below-500 feet msl is increasing;

- The concentration trend for perchlorate in MW5-01, MW5-24, and MW5-25 in the elevation interval above -200 feet msl continues to be predominantly decreasing at or below the MCL. Further, the concentration trend for perchlorate in MW5-24 in Port 4 in the elevation interval between -200 and -500 feet msl is stable at or below the MCL. However, the perchlorate trend in well MW5-25 is predominantly increasing in the deeper elevation intervals, and the perchlorate trend in well MW5-01 is increasing in the upper Port 5 of the elevation interval below -500 feet msl; and
- The concentration trends for PCE and TCE in monitoring points located above -200 feet msl are predominantly stable or decreasing and are below MCLs in MW5-25. Further, the TCE trends in the interval between -200 and -500 feet msl are predominantly decreasing. The PCE trends in MW5-24 and MW5-25 in this same interval vary from probably decreasing to increasing; despite the indication of an increasing trend in Port 3 of MW5-25, the concentrations of PCE are consistently below the MCLs. Due to a low frequency of detection, trends were not calculated for PCE and TCE below -500 feet msl.

Wells Located within Subarea 2, Mid-Plume Area

Monitoring wells located within the mid-plume area of Subarea 2, downgradient of Subarea 1 and upgradient of Subarea 3 include MW5-05, MW5-08, and MW5-15. These wells are considered to be general indicators of the quality of groundwater that is flowing downgradient toward the SGVWC B6, LPVCWD, and CDWC Subproject extraction wells. The ports in these wells show varying COC concentration trends across the three elevation intervals based on the Mann-Kendall statistical evaluation presented on Figures 7-2 through 7-19 as summarized below:

- The concentration trends for all COCs in the elevation intervals above -200 feet msl and between -200 and -500 feet msl in well MW5-15, located in the eastern portion of the plumes, are predominantly decreasing and most are near MCLs or NLs;
- The predominant trend in COC concentration in well MW5-08, located in the western portion of the plumes, is stable to decreasing, with some trends not being discernable due to infrequency of detections. With exception, the PCE and TCE concentration trends in this well in the interval -200 to -500 feet msl are either not discernable or increasing; and
- In well MW5-05, located in the center of the plumes, several increasing trends were observed in the elevation intervals above -200 feet msl and between -200 and -500

feet msl. However, a decreasing trend for carbon tetrachloride and NDMA was calculated for Port 3 located above -200 feet msl, and a stable trend for carbon tetrachloride was calculated for Port 1 located between -200 and -500 feet msl. No trend was calculated for perchlorate and PCE in Port 4, and no trend was calculated for TCE in Port 2.

SUBAREA 3

The following presents the summary of Mann-Kendall trend statistics for the 14,258 samples collected from 342 sampling locations for the six primary COCs in combination in Subarea 3 from 2004 – 2018. In the shallow interval of Subarea 3, approximately 49% of the sampling locations showed decreasing concentrations whereas approximately 18% were increasing. In the intermediate interval of Subarea 3, approximately 37% of the sampling locations showed decreasing concentrations whereas approximately 51% were increasing. In the deep interval of Subarea 3, approximately 13% of the sampling locations showed decreasing concentrations whereas approximately 50% were increasing.

Wells Located Within Subarea 3, Upgradient of SGVWC B5 and CDWC Extraction Wells

Monitoring wells located within Subarea 3, upgradient of the SGVWC B5 and the CDWC Bassett extraction wells include MW5-19, MW5-20, and MW5-23. These wells are considered to be general indicators of groundwater quality flowing toward the SGVWC B5 and CDWC Bassett extraction wells. The ports in these wells show varying COC concentration trends across the three elevation intervals based on the Mann-Kendall statistical evaluation presented on Figures 7-2 through 7-19 as summarized below:

- The predominant concentration trend for monitoring points above -200 feet msl is stable or decreasing, and most are at or below MCLs. However, PCE and TCE are increasing in Port 7 of MW5-20;
- Within the elevation interval -200 to -500 feet msl, the concentration trend for carbon tetrachloride is predominantly decreasing. In the same elevation interval, trends in NDMA, perchlorate, PCE, and TCE range from decreasing to increasing; the COC trends in MW5-19 located in the western portion of the plumes are predominantly increasing; and
- In the elevation interval below -500 feet msl, concentration trends range from no observable trend to increasing for perchlorate, PCE, and TCE. Concentrations of most COCs and in most ports below -500 feet msl are consistently at or below MCLs. It should be noted that a trend was not discernable for all COCs in this elevation interval in MW5-19, which is located in the western portion of the plumes.

Wells Located Within Subarea 3, Downgradient of SGVWC B5 and CDWC Extraction Wells

Monitoring wells located within Subarea 3, downgradient of the SGVWC B5 and CDWC Bassett extraction wells include MW5-26 and MW-27. These wells are considered to be general indicators of groundwater quality downgradient from the SGVWC B5 and CDWC Bassett extraction wells, and the BPOU project as a whole. Monitoring results for these wells were generally consistent with previous years with all detectable concentrations in 2018 below applicable MCLs or NLs. Since 2005, COC concentrations in these wells have generally been below laboratory reporting limits with the exception of infrequent and inconsistent detections of various COCs. These detections are typically at concentrations that are below MCLs or NLs. These trends indicate that there has been no significant migration of COC mass southwest of the Subarea 3 extraction wells and CDWC wells. In addition, with the exception of PCE and TCE in COI 5, COC concentrations in COI 5 and CDWC, near the terminus of the BPOU plume, are relatively stable.

7.1.2.3 Evaluation of Chemical Mass in Groundwater in the BPOU

The overall extent of COC plumes in the BPOU has been relatively stable since the implementation of the PSEP monitoring and reporting program in 2004. With the exception of SGVWC well B26B, and to a lesser extent B25A and B25B, mass removal rates determined for influent groundwater to the various subproject treatment systems have generally declined since 2010 (Table 7-1 and Appendix B). As described in Section 6.4, the recent increase in chemical mass removal by the SGVWC B5 Subproject is largely attributed to the increase in production from well B5E, which contains higher concentrations of TCE and perchlorate than the other extraction wells.

To further evaluate changes in chemical mass within the BPOU over time, as described in the 2015 Annual PE Report, estimates of the remaining chemical mass dissolved in groundwater in the BPOU for the time period 2004 through 2014 were developed by calculating the total volume of each isoconcentration shell in each of the 6 primary COC plumes using the EarthVision® geospatial modeling software, and multiplying the volumes by an assumed effective porosity value of 0.20 and by the median COC concentration in each isoconcentration shell.

Beginning in 2015, the dissolved chemical mass remaining was calculated using the new EVS® model. The EVS® software more accurately estimates plume mass because it explicitly calculates chemical mass based on the interpolated concentrations within the model grid cells and an assumed effective porosity (0.20).

In EVS®, the mass of remaining COCs was calculated using the following equation:

$$\text{Mass in Groundwater} = \sum C_i . V . n$$

where:

C_i = concentration of COC, per cell, in groundwater

V = the volume of the cell

n = effective porosity of the soil (0.20)

Following the calculation of the COC masses in each model grid cell, the COC masses in each cell were summed to arrive at a total mass for the entire area for each compound.

The estimates for remaining dissolved mass for each COC and the total dissolved COC mass are shown in Table 7-3. The estimated total dissolved COC mass is also shown on Figure 7-20. As described in the 2016 Annual PE Report, due to the differences in methodologies used for estimation of dissolved COC mass between EarthVision® and EVS, the pre-2014 mass estimates are not comparable to the post-2014 estimates. The estimated remaining total dissolved COC mass in 2018 was 46,039. As shown in Figure 7-20, since 2014, the total dissolved COC mass exhibits a decreasing trend similar in magnitude to the long-term decreasing trend beginning in 2006. The estimated remaining total dissolved COC mass in 2018 was slightly higher than the estimated mass remaining in 2017. However, the EVS model calculated a 8,371-pound decrease in estimated total dissolved mass remaining from 2016 to 2018. As shown in Table 7-1, the total estimated mass removed by the BPOU project extraction wells in 2017 and 2018 was approximately 9,861 pounds. Therefore, the total estimated dissolved COC mass removal predicted by the model for 2017 and 2018 is approximately 15% lower than the actual mass removal from the project wells. Despite the difference in simulated total dissolved COC mass removed compared to the actual mass removed, we believe that mass estimates provide a useful method to support the evaluation of long-term temporal trends in COC mass dissolved in groundwater in the BPOU. Because of the apparent sensitivity of the mass estimation methodology to changes in COC concentrations, we believe that the methodology is best utilized to evaluate long-term trends rather than short-term changes in plume mass from year to year.

7.1.3 Assessment of Migration Control

As described in the PSEP, the BPOU groundwater model is the primary tool for assessing extraction system performance. Evaluations of extraction system performance were performed using the updated BPOU groundwater model and forward particle tracking based on actual pumping and water level conditions for the five-year period from MY 2013-14 through MY 2017-18. Because particle tracking simulations only cover a five-year period which may or may not be indicative of long-term aquifer conditions, particle tracking results based

on short-term (five year) simulations of groundwater flow are subject to various limitations and should not be considered representative of long-term extraction system performance.

Based on the evaluation of equipotential contours (Figures 5-19 through 5-26) and forward particle tracking results (Figures 5-27 through 5-32), the general observations regarding extraction system performance are described below:

- The operation of the VCWD SA1-3 (Lante) extraction well continued to have a reduced effect on hydraulic control and chemical mass removal in Subarea 1 as compared to prior years (Figures 5-27 and 5-28). As described previously, the Lante well operated well below the EPA-approved extraction rate in MY 2017-18 due to plant shutdowns primarily related to packing replacement in the air strippers, peroxide quenching issues, and the installation of an updated PLC system. The Lante well was responsible for approximately 98% of the pumping from the VCWD Subproject in 2018. The SA1-1 extraction well was responsible for the remaining 2% of production in 2018. As shown in Figure 5-27, pumping of the SA1-1 extraction well in 2017-18 had a negligible effect on hydraulic control. Overall, chemical mass removal efficiency of SA1-1 is poor because of the location of this well in relation to the distribution of COCs, and the resultant lower COC concentrations in groundwater extracted from this well. The SA1-2 extraction well was not operated during the five-year particle tracking simulation period (MY 2013-14 – MY 2017-18). Hydraulic containment of groundwater is expected to be enhanced with the rehabilitation of the Arrow well and other ongoing improvements at the VCWD Lante Treatment Plant site;
- Production from the SGVWC B6 Subproject extraction wells increased significantly from MY 2013-14 when the subproject experienced reduced pumping due to operational problems associated with the ISEP treatment system and the conversion of the ISEP treatment system to the One-Pass ion exchange technology. The sustained increased production in the B6 Subproject wells to near the EPA approved extraction rates continues to provide significant hydraulic control as shown by the five-year particle tracking results (Figures 5-29 through 5-32);
- Despite the decrease in production from the SGVWC B5 Subproject in 2018 and production remaining below the EPA-approved extraction rate of 7,000 gpm, operation of the SGVWC B5 extraction wells combined with the operation of the CDWC production wells provided significant hydraulic control in the downgradient portion of Subarea 3 as demonstrated by the five-year particle tracking simulation results (Figure 5-39 through 5-32);

- The operation of La Puente Valley County Water District (LPVCWD) extraction well(s) continue to provide consistent hydraulic control and chemical mass removal throughout the five-year particle tracking simulation period;
- The CDWC Subproject wells continue to provide effective hydraulic control and chemical mass removal in Subarea 3 throughout the five-year particle tracking simulation period; and
- Consistent with previous years, operation of the COI 5 extraction well provided limited benefit related to hydraulic control or chemical mass removal when compared to other project extraction wells. As shown on Figure 5-30, the COI 5 well is interpreted to be located at the southern terminus of the TCOC plume contour of 1 (unitless) in the depth interval extending from -200 to -500 feet msl. As a result, the lateral and vertical extent of COC concentrations exceeding MCLs or NLs in the vicinity of the COI 5 well appears to be limited.

In summary, the overall performance of project extraction wells continued to limit the migration of COCs in groundwater and removed chemical mass consistent with the Performance Standards established in the PSEP.

7.2 Treatment System Operations

The treatment plant operations that were described in detail earlier in this report are summarized below.

7.2.1 Subarea 1 – Valley County Water District Lante Subproject

The VCWD Lante Treatment Plant operated under its DDW drinking water permit and delivered most of the fully treated water to SWS. The VCWD Subproject extracted and treated groundwater at an annual rate of about 2,395 gpm, which was approximately 40% of the extraction target. This was largely due to the shutdown of the air strippers for packing replacement during the first quarter of 2018, peroxide quenching issues and shutdown of the plant for the installation of an updated PLC system, as well as other operational issues and maintenance activities that resulted in extended downtimes throughout the year. The treatment plant reliably treated extracted groundwater to drinking water standards. Treatment plant modifications and other operational improvements are discussed in Section 2.1; operational problems and other issues that impacted operations and performance in 2018 are described in Section 4.1. Future operational improvements include:

- VCWD will bring the Arrow Well online following DDW issuance of an operational permit amendment for the reactivation of the Arrow well;
- VCWD will address peroxide quenching issues; and

- VCWD will complete the upgrades of the PLC system at the Lante Plant.

7.2.2 Subarea 3 – La Puente Valley County Water District Subproject

The LPVCWD Subproject extracted and treated groundwater at an annual rate of about 2,266 gpm, which met the extraction target of 2,250 gpm. The plant reliably treated raw water to drinking water standards for all COCs.

Treatment plant modifications and other operational improvements are discussed in Section 2.2.1; operational problems and other issues that impacted operations and performance in 2018, are described in Section 4.2. Future operational improvements include:

- LPVCWD will conduct an engineering evaluation of improvements to the electrical service to Well 2 to allow an increase pumping from Well 2 as requested by EPA; and
- LPVCWD plans to submit a permit amendment request in late 2019 to modify the air to water ratio requirement for Air Stripper No. 2, add a nitrate treatment system, approve PSR II Plus resin for treatment of perchlorate, and additional updates to the OM&M plan.

7.2.3 Subarea 3 – San Gabriel Valley Water Company B6 Subproject

The SGVWC B6 Treatment Plant operated at an annual average flow rate of 6,541 gpm, which met the EPA-approved extraction rate of 6,500 gpm. The plant reliably treated raw water to drinking water standards for all COCs.

Treatment plant modifications and other operational improvements are discussed in Section 2.2.2; operational problems and other issues that impacted operations and performance in 2018 are described in Section 4.3. Future operational improvements include:

- SGVWC has been awarded the grant to test new UV technology at Plant B6. SGVWC will begin the design and continue to coordinate with SWRCB to satisfy the grant funding requirements; and
- SGVWC will continue to evaluate the drought impact on production and the treatment technologies for Plant B6.

7.2.4 Subarea 3 – San Gabriel Valley Water Company B5 Subproject

The SGVWC B5 Treatment Plant operated at an average annual flow rate of 5,451 gpm, which is approximately 78% of the EPA-approved extraction rate of 7,000 gpm. Production was below the EPA-approved extraction rate due primarily to lower pumping capacity of the B5B and B5E wells caused by lower water levels and/or a reduction of the specific capacity of extraction wells and a decision by SGVWC to reduce pumping during winter months due to low

water demand. In addition, Well B5B was offline for part of June, all of July and about half of August, due to damaged well shaft caused by a seized pump and broken impellers. The plant reliably treated raw water to drinking water standards for all COCs.

Operational improvements are described in Section 2.2.3 and operational problems and other issues that impacted operations and performance in 2018 are described in Section 4.4. Future operational improvements include:

- The SGVWC B5 Treatment Plant plans to review alternatives to increase pumping capacity;
- SGVWC will complete the rehabilitation of Well B5E;
- SGVWC will continue to evaluate the use of reactivated/reused liquid phase granular activated carbon at Plant B5; and
- SGVWC has applied to SWRCB for a grant to test a new UV technology.

7.2.5 Subarea 3 – California Domestic Water Company Treatment Plant

The CDWC Treatment Plant operated at an average annual flow rate of 11,709 gpm, which exceeds the EPA target extraction rate of 8,000 gpm. The plant reliably treated raw water to drinking water standards for all COCs.

Treatment plant modifications and other operational improvements are described in Section 2.2.4; operational problems and other issues that impacted operations and performance in 2018 are described in Section 4.5. Controls for the SGVWC-CDWC interconnection pipeline was completed in 2018 and SGVWC began delivering treated water to CDWC on May 14, 2018.

8. SUMMARY AND RECOMMENDATIONS

Although two of the five subprojects (VCWD Lante and SGVWC B5) experienced operational interruptions for portions of 2018, operation of project extraction wells continued to limit the migration of COCs in groundwater and removed chemical mass consistent with the remedial objectives established in the UAO.

From the Mann-Kendall statistical evaluation summarized in Section 7.1.2.2, the relatively low percentage of sampling points with increasing concentrations in Subarea 1 as compared to Subareas 2 and 3 is consistent with previously reported observations regarding chemical mass removal by Subarea 1 extraction wells and decreasing COC concentrations in Subarea 1. The slightly higher percentage of sampling locations with increasing concentration trends in Subareas 2 and 3 is consistent with the downgradient migration of dissolved chemical mass in groundwater from areas of formerly higher COC concentration (Subarea 1) to downgradient areas with lower COC concentrations (Subareas 2 and 3).

As described in Section 7.1.2.3, the total dissolved COC mass removed in the BPOU calculated by the EVS® geospatial modeling software was within 15% of the actual estimated COC mass removed by the project extraction wells. The estimates of remaining mass post-2014 continue to demonstrate a decreasing trend in chemical mass dissolved in groundwater within the BPOU consistent with the long-term trend observed since 2004. This decrease is also reflected in the mass removal rates observed at the treatment plants (Table 7-1 and Figure 7-1). Mass removal rates peaked in 2009-2011 and have declined since then largely reflecting reductions in COC concentrations in groundwater, particularly within Subarea 1.

Recommendations and operational issues to be addressed for the BPOU in 2019 include:

- Complete reactivation and begin full time operation of the Arrow Well at the VCWD Lante Treatment Plant as part of the implementation of the EPA approved modified extraction scheme in Subarea 1;
- Complete pre-testing and startup of the upgraded PLC system at the Lante Treatment Plant;
- Following DDW approval, complete the modification of the air to water ratio for Air Stripper No. 2 at the LPVCWD Treatment Plant to allow extraction rates to achieve the EPA annual target extraction rate of 2,250 gpm;
- Continue to evaluate alternatives to increase pumping in SGVWC B5 Subproject wells during the low basin water levels and evaluate the reason for reduced extraction rates in certain wells;

- Continue to track carbon and resin change outs and provide disposal certificates to EPA in the monthly progress reports;
- Implement BPOU Extraction Well Performance and Evaluation Program including completion of rehabilitation of the SGVWC B5E well; and
- Continue to evaluate and improve operational efficiency of the LPVCWD, VCWD Lante, SGVWC B6, SGVWC B5, and CDWC Subprojects.

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TABLES

TABLE 2-1
MONTHLY GROUNDWATER EXTRACTION VOLUMES AND RATES (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Extraction Well	Design Extraction Rates	EPA Approved Extraction Rates	January 2018		February 2018		March 2018		April 2018		May 2018		June 2018		July 2018		August 2018		September 2018		October 2018		November 2018		December 2018		Total Annual Production	Average Production to Date	Variance to Date
			Well Production	Average Production Rate[1]	Well Production	Average Production Rate[1]	Well Production	Average Production Rate[1]	Well Production	Average Production Rate[1]	Well Production	Average Production Rate[1]	Well Production	Average Production Rate[1]	Well Production	Average Production Rate[1]	Well Production	Average Production Rate[1]	Well Production	Average Production Rate[1]	Well Production	Average Production Rate[1]	Well Production	Average Production Rate[1]	Well Production	Average Production Rate[1]			
	(gpm)	(gpm)	(acre-feet)	(gpm)	(acre-feet)	(gpm)	(acre-feet)	(gpm)	(acre-feet)	(gpm)	(acre-feet)	(gpm)	(acre-feet)	(gpm)	(acre-feet)	(gpm)	(acre-feet)	(gpm)	(acre-feet)	(gpm)	(acre-feet)	(gpm)	(acre-feet)	(gpm)	(acre-feet)	(gpm)	(acre-feet)	(gpm)	(%)
Subarea 1																													
VCWD SA-1 Subproject																													
SA1-1	3,400	3,000	0.000	0	0.000	0	0.000	0	0.000	0	94.415	689	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	94	**57**	
SA1-2	2,400	2,000	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0	**0**	
SA1-3 (VCWD Lante)	2,000	1,000	414.503	3,026	377.752	3,053	372.151	2,717	0.000	0	303.721	2,217	349.953	2,640	347.015	2,533	319.790	2,334	266.465	2,010	435.117	3,176	437.573	3,301	143.379	1,047	3,767	**2,338**	
Subtotal	**7,800**	**6,000**	**414.503**	**3,026**	**377.752**	**3,053**	**372.151**	**2,717**	**0.000**	**0**	**398.136**	**2,906**	**349.953**	**2,640**	**347.015**	**2,533**	**319.790**	**2,334**	**266.465**	**2,010**	**435.117**	**3,176**	**437.573**	**3,301**	**143.379**	**1,047**	**3,862**	**2,395**	**39.9**
Subarea 3																													
LPVCWD Subproject																													
LPVCWD 2	Standby	Standby	4.373	32	4.846	39	5.711	42	0.000	0	4.741	35	4.002	30	18.337	134	10.210	75	92.828	700	6.647	49	0.617	5	0.911	7	153	**96**	
LPVCWD 3	Standby	Standby	5.079	37	5.588	45	6.610	48	0.000	0	5.539	40	4.686	35	22.087	161	3.072	22	0.761	6	0.000	0	0.641	5	0.608	4	55	**34**	
LPVCWD 5	2,500	2,250	291.977	2,131	273.478	2,210	319.241	2,330	300.499	2,267	315.316	2,302	308.420	2,326	291.207	2,126	280.742	2,049	137.142	1,034	314.797	2,298	303.817	2,292	327.131	2,388	3,464	**2,146**	
Subtotal	**2,500**	**2,250**	**301.429**	**2,200**	**283.912**	**2,177**	**331.562**	**2,420**	**300.499**	**2,267**	**325.596**	**2,377**	**317.108**	**2,391**	**331.631**	**2,421**	**294.024**	**2,146**	**230.731**	**1,740**	**321.444**	**2,347**	**305.075**	**2,302**	**328.650**	**2,399**	**3,672**	**2,266**	**100.7**
SGVWC B6 Subproject																													
B6C	-	-	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0	**0**	
B6D	-	-	0.000	0	0.046	0	0.000	0	0.000	0	0.073	1	0.000	0	0.078	1	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0	**0**	
B25A (SA3-1S)	2,800	2,500	336.090	2,453	307.792	2,487	338.597	2,472	328.198	2,475	337.626	2,465	330.163	2,490	367.094	2,680	347.647	2,538	341.981	2,580	308.689	2,253	349.780	2,638	365.989	2,671	4,060	**2,517**	
B25B (SA3-1D)	2,800	2,500	327.922	2,394	299.828	2,423	328.292	2,396	316.612	2,388	323.294	2,360	304.435	2,296	316.538	2,311	298.763	2,181	293.694	2,215	246.832	1,802	298.423	2,251	313.717	2,290	3,668	**2,276**	
B26A (SA3-2S)	1,100	750	98.620	720	90.950	735	100.436	733	96.820	730	95.484	697	73.113	551	60.994	445	137.353	1,003	134.249	1,013	121.830	889	116.623	880	131.118	957	1,258	**779**	
B26B (SA3-2D)	1,100	750	167.948	1,226	153.418	1,240	169.529	1,237	163.292	1,232	156.768	1,144	95.702	722	56.100	410	126.345	922	123.379	931	108.804	794	115.723	873	123.579	902	1,561	**969**	
Subtotal	**7,800**	**6,500**	**930.580**	**6,793**	**852.034**	**6,885**	**936.854**	**6,838**	**904.922**	**6,825**	**913.245**	**6,667**	**803.413**	**6,059**	**800.804**	**5,847**	**910.108**	**6,644**	**893.303**	**6,739**	**786.155**	**5,738**	**880.549**	**6,642**	**934.403**	**6,820**	**10,546**	**6,541**	**100.6**
SGVWC B5 Subproject																													
B5B	3,300	3,000	409.022	2,986	345.424	2,792	331.478	2,420	375.939	2,836	392.282	2,863	277.367	2,092	0.000	0	207.080	1,512	389.454	2,938	396.878	2,897	374.908	2,828	227.353	1,660	3,727	**2,319**	
B5E	3,300	3,000	272.351	1,988	237.179	1,917	243.926	1,781	259.828	1,960	265.227	1,936	253.140	1,909	248.363	1,813	222.952	1,627	231.403	1,745	113.845	831	0.000	0	0.000	0	2,348	**1,459**	
B5D	Standby	Standby	0.448	3	1.279	10	33.244	243	6.049	46	1.185	9	61.827	466	298.517	2,179	144.449	1,054	1.864	14	149.027	1,088	274.729	2,072	167.505	1,223	1,140	**701**	
COI 5	1,200	1,000	144.341	1,054	124.679	1,008	128.939	941	136.676	1,031	143.928	1,051	138.271	1,043	139.899	1,021	133.967	978	132.362	998	136.366	995	130.096	981	78.322	572	1,568	**973**	
Subtotal	**7,800**	**7,000**	**826.162**	**6,031**	**708.561**	**5,727**	**737.587**	**5,385**	**778.492**	**5,873**	**802.622**	**5,859**	**730.605**	**5,510**	**686.779**	**5,013**	**708.448**	**5,171**	**755.083**	**5,695**	**796.116**	**5,811**	**779.733**	**5,881**	**473.180**	**3,455**	**8,783**	**5,451**	**77.9**
Total	**25,900**	**21,750**	**2,472.674**	**18,050**	**2,222.259**	**17,842**	**2,378.154**	**17,360**	**1,983.913**	**14,965**	**2,439.599**	**17,809**	**2,201.079**	**16,600**	**2,166.229**	**15,814**	**2,232.370**	**16,295**	**2,145.582**	**16,184**	**2,338.832**	**17,072**	**2,402.930**	**18,126**	**1,879.612**	**13,721**	**26,863**	**16,653**	**76.6**
CDWC Project																													
2			188.802	1,256	224.320	1,813	110.110	859	305.599	2,161	164.738	1,202	28.212	213	248.900	1,817	180.702	1,319	93.861	759	144.346	990	121.660	949	1.857	14	1,813	**1,113**	
3	5,000	NA	622.144	4,140	516.687	4,175	511.242	3,989	590.776	4,178	415.962	3,036	535.767	4,041	548.150	4,001	551.963	4,029	493.037	3,985	573.829	3,935	507.617	3,961	570.505	4,164	6,438	**3,970**	
5A	5,000	NA	501.589	3,338	413.889	3,345	412.374	3,218	471.214	3,332	327.500	2,390	436.299	3,291	436.210	3,184	437.702	3,195	396.602	3,205	466.051	3,196	414.513	3,234	440.246	3,213	5,154	**3,178**	
6	5,000	NA	88.173	587	128.650	1,040	53.437	417	76.972	544	96.983	708	258.060	1,947	238.937	1,744	221.088	1,614	48.147	389	138.542	950	19.050	149	70.397	514	1,438	**884**	
8			253.887	1,690	257.227	2,079	175.264	1,367	367.638	2,600	251.230	1,834	331.979	2,504	325.163	2,373	326.683	2,384	260.333	2,104	345.684	2,370	92.766	724	0.484	4	2,988	**1,836**	
10			21.107	140	18.896	153	13.340	104	15.537	110	41.026	299	89.904	678	177.479	1,295	201.878	1,474	252.096	2,037	282.158	1,935	32.555	254	35.948	262	1,182	**728**	
14	NA	NA	**Well 14 WAS OFFLINE FOR ALL OF 2018**																										
Subtotal	**15,000**	**8,000**	**1,675.702**	**11,151**	**1,559.669**	**12,605**	**1,275.767**	**9,954**	**1,827.736**	**12,925**	**1,297.439**	**9,469**	**1,680.221**	**12,674**	**1,974.839**	**14,414**	**1,920.016**	**14,015**	**1,544.076**	**12,479**	**1,950.610**	**13,376**	**1,188.161**	**9,271**	**1,119.437**	**8,171**	**19,014**	**11,709**	**146.4**

Notes:
[1] - Average production rates estimated by dividing the total monthly well production by the number of minutes in each month.
gpm - gallons per minute.
1 acre-foot = 325,851 gallons.
NA - Not Applicable

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TABLE 3-1
2018 POTENTIOMETRIC MONITORING NETWORK AND MEASUREMENT FREQUENCY
Baldwin Park Operable Unit
San Gabriel Valley, California

Well Name	Site ID	Measurement Frequency		
		Weekly	Quarterly	Semi-Annual
Extraction Wells				
COI 5	08000097		x	
LPVCWD 05	08000209		x	
SA1-1	08000185		x	
SA1-2	08000186		x	
SA1-3 (LANTE)	08000060		x	
SGVWC B25A	08000187		x	
SGVWC B25B	08000188		x	
SGVWC B26A	08000189		x	
SGVWC B26B	08000190		x	
SGVWC B5B	61900719		x	
SGVWC B5E	08000205		x	
Piezometers				
PZ1-1AD	PZ1-1AD		x	
PZ1-1AS	PZ1-1AS		x	
PZ1-1BD	PZ1-1BD		x	
PZ1-1BS	PZ1-1BS		x	
PZ1-2AD	PZ1-2AD		x	
PZ1-2AS	PZ1-2AS		x	
PZ1-2BD	PZ1-2BD		x	
PZ1-2BS	PZ1-2BS		x	
PZ1-3AD	PZ1-3AD		x	
PZ1-3AS	PZ1-3AS		x	
PZ1-3BD	PZ1-3BD		x	
PZ1-3BS	PZ1-3BS		x	
PZ3-1AD	PZ3-1AD		x	
PZ3-1AS	PZ3-1AS		x	
PZ3-1BD	PZ3-1BD		x	
PZ3-1BS	PZ3-1BS		x	
PZ3-2AD	PZ3-2AD		x	
PZ3-2AS	PZ3-2AS		x	
PZ3-2BD	PZ3-2BD		x	
PZ3-2BS	PZ3-2BS		x	
PZ3-5EAD	PZ3-5EAD		x	
PZ3-5EAS	PZ3-5EAS		x	
PZ3-5EBD	PZ3-5EBD		x	
PZ3-5EBS	PZ3-5EBS		x	
PZ3-CI5AD	PZ3-CI5AD		x	
PZ3-CI5AS	PZ3-CI5AS		x	
PZ3-CI5BD	PZ3-CI5BD		x	
PZ3-CI5BS	PZ3-CI5BS		x	

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TABLE 3-1
2018 POTENTIOMETRIC MONITORING NETWORK AND MEASUREMENT FREQUENCY
Baldwin Park Operable Unit
San Gabriel Valley, California

Well Name	Site ID	Measurement Frequency		
		Weekly	Quarterly	Semi-Annual
PZ3-LP3AD	PZ3-LP3AD		x	
PZ3-LP3AS	PZ3-LP3AS		x	
PZ3-LP3BD	PZ3-LP3BD		x	
PZ3-LP3BS	PZ3-LP3BS		x	
PZ3-5BA	PZ3-5BAS		x	
PZ3-5BB	PZ3-5BBS		x	
SGVWC B5A	61900718		x	
Multiport Monitoring Wells				
MW 5-01	EPAW51			x
MW 5-03	BPW503			x
MW 5-05	BPW505			x
MW 5-08	BPW508			x
MW 5-11	BPW511			x
MW 5-13	BPW513			x
MW 5-15	BPW515			x
MW 5-17	BPW517			x
MW 5-18	BPW518			x
MW 5-19	BPW519			x
MW 5-20	BPW520			x
MW 5-22	BPW522			x
MW 5-23	BPW523			x
MW 5-24	BPW524			x
MW 5-25	BPW525			x
MW 5-26	BPW526			x
MW 5-27	BPW527			x
WHICO MP-1	W10WHMP1			x
Other Monitoring Wells				
LACO KEY	Z1000006	x		

TABLE 3-2
SUMMARY OF PSEP AND DDW REQUIREMENTS FOR SOURCE WATER AND UPGRADIENT SURVEILLANCE MONITORING
Baldwin Park Operable Unit
San Gabriel Valley, California

Well Name	Site ID	Port or Sampling Depth (ft bgs)	PSEP Requirements					DDW Requirements									
			Analytes and Sampling Frequency[a]														
			VOCs	123-TCP	1,4-Dioxane	NDMA	Perchlorate	VOCs including TICs	NDMA	Nitrosamines (NMOR)	Perchlorate	NO_3	SO_4	1,4-Dioxane	SVOCs including TICs	123-TCP	Various Metals	Title 22 Non-Volatile SOCs and chlorate[c]
			EPA Method 8260B or 524.2	EPA Method 524.2 SIM (MOD)	EPA Method 8270C (MOD)	EPA Method 1625C (MOD)	EPA Method 314.0	EPA Method 524.2	EPA Method 1625C (MOD)	EPA Method 521	EPA Method 314.0	EPA Method 300.0	EPA Method 300.0	EPA Method 8270C (MOD)	EPA Method 525.2 or 625 or 8270C	EPA Method 524.2 SIM (MOD)	Various Methods	Various Methods
Extraction Wells																		
COI 5	08000097		Q	Q		Q	Q	M	M	M	M	M		M	A	M	Q	
LPVCWD 05	08000209		Q	A	Q	Q	Q	M[b]	M		M	M	M	M	A	A		
SA1-1	08000185		Q	Q	Q	Q	Q	M[b]	M		M	M	M	M	A	M		
SA1-2	08000186		Q	Q	Q	Q	Q	M[b]	M		M	M	M	M	A	M		
SA1-3 (Lante)	08000060		Q	Q	Q	Q	Q	M[b]	M		M	M	M	M	A	M		
SGVWC B25A	08000187		Q	Q	Q	Q	Q	M[b]	M		M	M	TIE	M	A	M		
SGVWC B25B	08000188		Q	Q	Q	Q	Q	M[b]	M		M	M	TIE	M	A	M		
SGVWC B26A	08000189		Q	Q	Q	Q	Q	M[b]	M		M	M	TIE	M	A	M		
SGVWC B26B	08000190		Q	Q	Q	Q	Q	M[b]	M		M	M	TIE	M	A	M		
SGVWC B5B	61900719		Q	Q	Q	Q	Q	M[b]	M	M	M	M	TIE	M	A	M		
SGVWC B5E	08000205		Q	Q	Q	Q	Q	M[b]	M	M	M	M	TIE	M	A	M		
CDWC 02	01901181		A[d]		A	A	A	M[d]	M		M	M	TIE				TIE	
CDWC 03	01903057		A[d]		A	A	A	M[d]	M		M	M	TIE				TIE	
CDWC 05A	08000100		A[d]		A	A	A	M[d]	M		M	M	TIE				TIE	
CDWC 06	01902967		A[d]		A	A	A	M[d]	M		M	M	TIE				TIE	
CDWC 08	01903081		A[d]		A	A	A	M[d]	M		M	M	TIE				TIE	
CDWC 10	08000223		A[d]		A	A	A	M[d]	M		M	M	TIE				TIE	
CDWC 14	08000174		A[d]		A	A	A	M[d]	M		M	M	TIE				TIE	
Multiport Monitoring Wells																		
MW5-01	BPW501	Port 13	A		A	A	A											
		Port 12	A		A	A	A											
		Port 11	A		A	A	A											
		Port 10	A		A	A	A											
		Port 9	A		A	A	A											
		Port 8	A			A	A											
		Port 7	A			A	A											
		Port 6	A			A	A											
		Port 5	A			A	A											
		Port 4	A			A	A											
		Port 3	A			A	A											
		Port 2	A			A	A											
		Port 1	A			A	A											
MW5-03	BPW503	Port 10	A	A	A	A	A	A[b]	A	A	A	A		A	A	A	A	A
		Port 9	A	A	A	A	A	A[b]	A		A	A		A	A	A	A	A
		Port 8	A	A	A	A	A	A[b]	A		A	A		A	A	A	A	
		Port 7	A	A	A	A	A	A[b]	A		A	A		A	A	A	A	
		Port 6	A	A	A	A	A	A[b]	A		A	A		A	A	A	A	
		Port 5	A	A		A	A	A[b]	A		A	A		A	A	A	A	
		Port 4	A	A		A	A	A[b]	A		A	A		A	A	A	A	
		Port 3	A	A		A	A	A[b]	A		A	A		A	A	A	A	
		Port 2	A	A		A	A	A[b]	A		A	A		A	A	A	A	
		Port 1	A	A		A	A	A[e]	A		A	A		A	A	A	A	
MW5-05	BPW505	Port 4	A		A	A	A	A[b]	A		A	A		A	A		A	
		Port 3	A		A	A	A	A[b]	A		A	A		A	A		A	
		Port 2	A		A	A	A	A[b]	A		A	A		A	A		A	
		Port 1	A		A	A	A	A[b]	A		A	A		A	A		A	
MW5-08	BPW508	Port 4	A		A	A	A	A[b]	A		A	A		A	A		A	
		Port 3	A		A	A	A	A[b]	A		A	A		A	A		A	
		Port 2	A		A	A	A	A[b]	A		A	A		A	A		A	
		Port 1	A			A	A	A[b]	A		A	A		A	A		A	

TABLE 3-2
SUMMARY OF PSEP AND DDW REQUIREMENTS FOR SOURCE WATER AND UPGRADIENT SURVEILLANCE MONITORING
Baldwin Park Operable Unit
San Gabriel Valley, California

Well Name	Site ID	Port or Sampling Depth (ft bgs)	PSEP Requirements					DDW Requirements									
			Analytes and Sampling Frequency[a]														
			VOCs	123-TCP	1,4-Dioxane	NDMA	Perchlorate	VOCs including TICs	NDMA	Nitrosamines (NMOR)	Perchlorate	NO_3	SO_4	1,4-Dioxane	SVOCs including TICs	123-TCP	Various Metals	Title 22 Non-Volatile SOCs and chlorate[c]
			EPA Method 8260B or 524.2	EPA Method 524.2 SIM (MOD)	EPA Method 8270C (MOD)	EPA Method 1625C (MOD)	EPA Method 314.0	EPA Method 524.2	EPA Method 1625C (MOD)	EPA Method 521	EPA Method 314.0	EPA Method 300.0	EPA Method 300.0	EPA Method 8270C (MOD)	EPA Method 525.2 or 625 or 8270C	EPA Method 524.2 SIM (MOD)	Various Methods	Various Methods
MW5-11	BPW511	Port 3	A	A	A	A	A	A[b]	A	A	A	A		A	A	A	A	A
		Port 2	A	A	A	A	A	A[b]	A		A	A		A	A	A	A	A
		Port 1	A	A	A	A	A	A[b]	A		A	A		A	A	A	A	
MW5-13[e]	BPW513	Port 3	A	BIE	A	A	A	BIE	BIE	BIE	BIE	BIE		BIE	BIE	BIE	BIE	BIE
		Port 2	A	BIE	A	A	A	BIE	BIE		BIE	BIE		BIE	BIE	BIE	BIE	BIE
		Port 1	A	BIE	A	A	A	BIE	BIE		BIE	BIE		BIE	BIE	BIE	BIE	
MW5-15	BPW515	Port 3	A		A	A	A	A[b]	A		A	A		A	A		A	
		Port 2	A		A	A	A	A[b]	A		A	A		A	A		A	
		Port 1	A		A	A	A	A[b]	A		A	A		A	A		A	
MW5-17[e]	BPW517	Port 3	A	BIE	A	A	A	BIE	BIE	BIE	BIE	BIE		BIE	BIE	BIE	BIE	BIE
		Port 2	A	BIE	A	A	A	BIE	BIE		BIE	BIE		BIE	BIE	BIE	BIE	BIE
		Port 1	A	BIE	A	A	A	BIE	BIE		BIE	BIE		BIE	BIE	BIE	BIE	
MW5-18	BPW518	Port 3	A	A	A	A	A	A[b]	A	A	A	A		A	A	A	A	A
		Port 2	A	A	A	A	A	A[b]	A		A	A		A	A	A	A	A
		Port 1	A	A		A	A	A[b]	A		A	A		A	A	A	A	
MW5-19	BPW519	Port 6	A		A	A	A											
		Port 5	A		A	A	A											
		Port 4	A		A	A	A											
		Port 3	A			A	A											
		Port 2	A			A	A											
		Port 1	A			A	A											
MW5-20	BPW520	Port 7	A			A	A											
		Port 6	A			A	A											
		Port 5	A		A	A	A											
		Port 4	A		A	A	A											
		Port 3	A		A	A	A											
		Port 2	A		A	A	A											
		Port 1	A			A	A											
MW5-22	BPW522	Port 6	A	A		A	A	A[b]	A		A	A		A	A	A		
		Port 5	A	A		A	A	A[b]	A		A	A		A	A	A		
		Port 4	A	A		A	A	A[b]	A		A	A		A	A	A		
		Port 3	A	A		A	A	A[b]	A		A	A		A	A	A		
		Port 2	A	A		A	A	A[b]	A		A	A		A	A	A		
		Port 1	A	A		A	A	A[b]	A		A	A		A	A	A		
MW5-23	BPW523	Port 6	A			A	A											
		Port 5	A		A	A	A											
		Port 4	A		A	A	A											
		Port 3	A		A	A	A											
		Port 2	A		A	A	A											
		Port 1	A			A	A											
MW5-24	BPW524	Port 7	A		A	A	A											
		Port 6	A		A	A	A											
		Port 5	A		A	A	A											
		Port 4	A		A	A	A											
		Port 3	A		A	A	A											
		Port 2	A		A	A	A											
		Port 1	A		A	A	A											

TABLE 3-2
SUMMARY OF PSEP AND DDW REQUIREMENTS FOR SOURCE WATER AND UPGRADIENT SURVEILLANCE MONITORING
Baldwin Park Operable Unit
San Gabriel Valley, California

Well Name	Site ID	Port or Sampling Depth (ft bgs)	PSEP Requirements					DDW Requirements									
			Analytes and Sampling Frequency[a]														
			VOCs	123-TCP	1,4-Dioxane	NDMA	Perchlorate	VOCs including TICs	NDMA	Nitrosamines (NMOR)	Perchlorate	NO_3	SO_4	1,4-Dioxane	SVOCs including TICs	123-TCP	Various Metals	Title 22 Non-Volatile SOCs and chlorate[c]
			EPA Method 8260B or 524.2	EPA Method 524.2 SIM (MOD)	EPA Method 8270C (MOD)	EPA Method 1625C (MOD)	EPA Method 314.0	EPA Method 524.2	EPA Method 1625C (MOD)	EPA Method 521	EPA Method 314.0	EPA Method 300.0	EPA Method 300.0	EPA Method 8270C (MOD)	EPA Method 525.2 or 625 or 8270C	EPA Method 524.2 SIM (MOD)	Various Methods	Various Methods
MW5-25	BPW525	Port 7	A			A	A											
		Port 6	A			A	A											
		Port 5	A		A	A	A											
		Port 4	A		A	A	A											
		Port 3	A		A	A	A											
		Port 2	A		A	A	A											
		Port 1	A		A	A	A											
MW5-26	BPW526	Port 7	A			A	A											
		Port 6	A			A	A											
		Port 5	A			A	A											
		Port 4	A			A	A											
		Port 3	A			A	A											
		Port 2	A			A	A											
		Port 1	A			A	A											
MW5-27	BPW527	Port 7	A			A	A											
		Port 6	A			A	A											
		Port 5	A			A	A											
		Port 4	A			A	A											
		Port 3	A			A	A											
		Port 2	A			A	A											
		Port 1	A			A	A											
WHICO MP-1	W10WHMP1	Port 6	A		A	A	A											
		Port 5	A		A	A	A											
		Port 4	A		A	A	A											
		Port 3	A		A	A	A											
		Port 2	A		A	A	A											
		Port 1	A		A	A	A											
Monitoring Wells																		
AJMW-2R	W11AJMW2R		A		A	A	A											
AJMW-4	W11AJMW4		A		A	A	A											
AJMW-6	W11AJMW6		A		A	A	A											
ALR MW-1R	W11AZW01R		A		A	A	A											
ALR MW-3	W11AZW03		A	A	A	A	A											
ALR MW-8	W11AZW08		A		A	A	A											
ALR MW-9	W11AZW09		A		A	A	A											
LACO Key	Z1000006		A		A	A	A											
Monitoring Well Cluster																		
MW 5-28D	BPW528D		A		A	A	A											
MW 5-28I	BPW528I		A		A	A	A											
MW 5-28S	BPW528S		A		A	A	A											

TABLE 3-2
SUMMARY OF PSEP AND DDW REQUIREMENTS FOR SOURCE WATER AND UPGRADIENT SURVEILLANCE MONITORING
Baldwin Park Operable Unit
San Gabriel Valley, California

Well Name	Site ID	Port or Sampling Depth (ft bgs)	PSEP Requirements						DDW Requirements										
			Analytes and Sampling Frequency[a]																
			VOCs	123-TCP	1,4-Dioxane	NDMA	Perchlorate		VOCs including TICs	NDMA	Nitrosamines (NMOR)	Perchlorate	NO_3	SO_4	1,4-Dioxane	SVOCs including TICs	123-TCP	Various Metals	Title 22 Non-Volatile SOCs and chlorate[c]
			EPA Method 8260B or 524.2	EPA Method 524.2 SIM (MOD)	EPA Method 8270C (MOD)	EPA Method 1625C (MOD)	EPA Method 314.0		EPA Method 524.2	EPA Method 1625C (MOD)	EPA Method 521	EPA Method 314.0	EPA Method 300.0	EPA Method 300.0	EPA Method 8270C (MOD)	EPA Method 525.2 or 625 or 8270C	EPA Method 524.2 SIM (MOD)	Various Methods	Various Methods
Production Wells																			
CIC Baldwin 1	01900885		A			A	A												
LACO SF1	08000070		A		A	A	A												
SGVWC B6D	08000098		A		A	A	A		M[b]	M		M	M	TIE	M	A	M		
SWS 139W2	01901599	285	A			A	A												
		370	A			A	A												
SWS 139W6	08000152	975	A			A	A												
SWS 140W5	08000145		A			A	A		M	M		M	M	TIE				A	
VCWD Big Dalton	01900035	275	A		A	A	A		A[b]	A		A	A		A	A	A	A	
VCWD E Maine	01900027		A			A	A		Q			A	Q	TIE				TIE	
VCWD Morada	01900029	430	A		A	A	A												
		510	A		A	A	A												
VCWD Paddy Lane	01900031	340	A		A	A	A		A[b]	A		A	A		A	A		A	
		460	A		A	A	A												
VCWD W Maine	01900028		A			A	A		Q			A	Q	TIE				TIE	

[a] Sampling frequency:
BIE (Biennial - every two years; odd number years)
A (Annual)
SA (Semi-annual)
Q (Quarterly)
M (Monthly)
BIW (Biweekly)
TIE (Triennial - every three years)

[b] TIC analysis annually

[c] Non-volatile synthetic organic chemicals - includes Ethylene Bromide

[d] DDW VOC analyses required for only 1,2-DCA, CTC, PCE, and TCE. DDW required VOC analyses will be used to satisfy PSEP requirement.

[e] Multiport well needs to be sampled for PSEP requirement when DDW does not sample biennially.

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TABLE 3-3
SPREADING BASIN AND RIVER RECHARGE
GROUNDWATER FLOW MODEL
Baldwin Park Operable Unit
San Gabriel Valley, California

Volumes of water spread in acre-feet

	Spreading Basins														San Gabriel River					Rio Hondo	
Date/Quarter	Ben Lomond	Big Dalton	Buena Vista	Citrus	Eaton Basin	Fish Canyon	Forbes	Irwindale/ Manning	Little Dalton	Peck Road	San Gabriel Canyon	Santa Fe	Sawpit	Walnut	Morris Dam - Foothill Blvd	Foothill Blvd - Santa Fe Dam	Santa Fe Dam - Valley Blvd	Valley Blvd - Station E322	Station E322 - Whittier Narrows	Rio Hondo at Whittier Narrows	Total
2003/Q3[a]	2,877	0	66	0	95	593	450	5,280	0	2,097	9,232	20,983	55	459	4,561	1,512	0	0	0	2,224	50,484
2003/Q4[b]	719	0	110	86	286	533	225	2,031	777	1,049	8,771	19,031	0	422	3,421	504	1,473	875	725	4,448	45,486
2004/Q1[c]	142	0	195	169	472	997	167	1,741	871	2,075	6,392	20,272	108	776	3,384	498	0	0	0	4,400	42,659
2004/Q2[d]	0	0	108	85	94	821	0	1,741	307	519	3,653	0	108	597	1,692	0	1,457	866	717	4,400	17,165
2004/Q3	1,870	0	44	0	95	1,126	169	1,895	0	0	5,539	0	0	362	1,710	0	1,473	875	725	4,448	20,331
2004/Q4	719	0	110	428	573	1,778	281	1,760	0	4,195	8,771	0	0	784	1,710	504	2,947	1,750	1,449	6,228	33,987
2005/Q1	2,252	687	86	1,841	1,120	1,160	385	3,973	0	33,342	7,677	38,666	1,120	708	27,888	13,061	38,916	23,117	19,851	23,499	239,349
2005/Q2	2,134	405	22	677	472	2,286	612	2,812	307	5,705	5,936	50,680	863	1,050	10,715	4,485	5,829	2,597	2,867	6,600	107,054
2005/Q3	3,021	643	22	171	286	2,074	393	3,249	52	524	8,771	25,862	436	712	4,561	2,015	1,473	875	725	1,335	57,200
2005/Q4	575	58	22	257	286	1,600	225	2,031	311	1,049	8,309	17,567	218	471	7,982	4,031	4,420	2,626	2,174	4,448	58,660
2006/Q1	281	114	43	502	934	1,275	110	795	51	1,026	6,774	19,094	160	378	6,135	2,957	2,883	1,712	1,418	9,574	56,216
2006/Q2	2,846	1,157	1,344	1,016	661	1,641	334	2,544	0	1,556	8,675	29,443	432	752	11,279	5,731	4,372	2,597	2,151	7,480	86,011
2006/Q3	144	292	44	684	859	1,896	56	1,624	0	524	9,694	3,416	109	422	4,561	2,267	2,947	1,750	1,449	2,224	34,962
2006/Q4	432	0	44	428	191	1,837	56	271	0	524	9,232	1,952	0	362	2,281	1,008	2,947	1,750	1,449	4,004	28,768
2007/Q1	0	343	43	335	840	754	0	397	152	1,026	3,161	0	53	555	1,116	0	4,324	2,569	2,127	3,481	21,276
2007/Q2	0	116	22	254	94	528	0	402	0	1,037	4,566	0	0	442	1,128	0	4,372	2,597	2,151	2,200	19,909
2007/Q3	0	0	22	0	95	178	0	271	52	524	923	0	0	326	570	0	2,947	1,750	1,449	4,448	13,555
2007/Q4	0	0	44	171	95	533	0	677	0	524	3,693	0	109	398	570	0	1,473	875	725	3,559	13,446
2008/Q1	427	405	65	339	472	1,817	56	536	154	1,556	6,849	1,931	324	549	2,256	748	1,457	866	717	8,360	29,884
2008/Q2	1,708	116	22	169	94	1,348	111	0	51	1,037	457	0	108	573	1,692	249	1,457	866	717	4,840	15,615
2008/Q3	0	0	0	0	0	1,600	0	0	0	1,049	6,463	488	0	265	14,824	4,786	5,893	3,501	2,899	6,673	48,441
2008/Q4	288	58	22	171	286	1,185	0	0	0	1,573	6,463	0	0	157	1,710	252	2,947	1,750	7,247	8,007	32,116
2009/Q1	141	286	21	251	467	1,739	55	0	405	2,052	4,516	0	107	236	1,116	986	4,324	2,569	7,799	6,092	33,162
2009/Q2	0	231	0	169	189	1,583	0	402	0	0	5,479	0	54	310	564	0	2,915	1,731	3,584	1,320	18,531
2009/Q3	0	0	0	0	95	1,422	0	0	0	4,195	11,079	0	0	48	4,561	252	4,420	2,626	2,174	4,004	34,876
2009/Q4	0	0	0	0	191	1,185	56	406	0	1,049	6,001	0	0	181	570	1,008	2,947	1,750	8,697	10,676	34,717
2010/Q1	422	114	0	335	560	1,971	55	2,119	152	3,078	5,871	3,819	0	449	5,020	6,408	7,207	4,281	16,306	7,833	66,000
2010/Q2	996	116	0	592	189	2,228	445	3,348	1,075	1,556	5,479	22,203	162	203	11,843	15,698	10,201	6,060	4,301	5,720	92,415
2010/Q3	144	0	0	0	95	1,719	0	9,476	0	1,573	5,078	6,832	109	72	6,842	9,573	5,893	3,501	3,624	2,224	56,755
2010/Q4	575	0	0	684	382	1,245	56	1,760	1,398	4,195	6,924	17,079	0	133	14,254	18,894	4,420	2,626	5,073	14,680	94,378
2011/Q1	281	801	0	753	560	1,681	275	3,311	456	4,104	5,419	29,119	107	425	7,809	11,336	2,883	1,712	7,090	13,055	91,177
2011/Q2	711	1,215	0	1,523	566	1,700	500	3,615	512	6,224	6,392	19,307	485	442	10,715	14,702	10,201	6,060	2,151	4,400	91,421
2011/Q3	1,439	175	0	941	95	1,896	56	5,821	155	2,097	7,386	14,151	0	36	8,552	7,810	7,367	4,376	1,449	5,338	69,140
2011/Q4	432	0	0	0	191	1,482	112	3,114	673	2,622	5,078	11,711	0	145	9,693	3,023	1,473	875	2,174	8,897	51,695
2012/Q1	0	0	0	169	283	1,172	0	536	102	1,556	3,196	0	108	167	2,256	249	1,457	866	3,584	5,720	21,421
2012/Q2	854	405	0	931	283	1,231	167	1,071	51	1,556	7,762	0	162	251	1,128	0	2,915	1,731	2,151	1,760	24,409
2012/Q3	2,733	117	0	1,455	191	1,541	337	2,301	0	524	2,770	0	164	12	1,140	0	2,947	1,750	1,449	4,004	23,435
2012/Q4	575	0	175	171	286	830	0	3,790	207	524	11,079	4,392	327	48	7,412	1,260	2,947	1,750	2,174	5,783	43,730

TABLE 3-3
SPREADING BASIN AND RIVER RECHARGE
GROUNDWATER FLOW MODEL
Baldwin Park Operable Unit
San Gabriel Valley, California

Volumes of water spread in acre-feet

	Spreading Basins														San Gabriel River					Rio Hondo	
Date/Quarter	Ben Lomond	Big Dalton	Buena Vista	Citrus	Eaton Basin	Fish Canyon	Forbes	Irwindale/ Manning	Little Dalton	Peck Road	San Gabriel Canyon	Santa Fe	Sawpit	Walnut	Morris Dam - Foothill Blvd	Foothill Blvd - Santa Fe Dam	Santa Fe Dam - Valley Blvd	Valley Blvd - Station E322	Station E322 - Whittier Narrows	Rio Hondo at Whittier Narrows	Total
2013/Q1	0	0	0	167	280	696	0	132	51	1,026	4,064	0	160	94	1,116	0	1,441	856	2,836	3,046	15,965
2013/Q2	0	58	0	0	94	410	56	0	154	519	7,306	0	162	95	1,128	0	1,457	866	1,434	2,640	16,379
2013/Q3	0	0	0	0	95	237	0	0	52	524	4,616	0	109	48	570	0	1,473	875	3,624	1,335	13,558
2013/Q4	0	0	0	86	95	296	0	406	673	524	3,693	9,271	164	72	10,833	1,260	1,473	875	5,073	4,893	39,687
2014/Q1	141	0	0	335	280	116	0	265	253	513	1,355	0	160	130	3,347	493	1,441	856	3,545	6,092	19,322
2014/Q2	0	0	0	169	94	410	0	134	0	519	457	0	54	119	564	0	1,457	866	2,151	2,200	9,194
2014/Q3	0	0	0	86	95	830	0	271	0	524	5,078	0	0	12	1,140	0	1,473	875	2,174	2,224	14,782
2014/Q4	288	0	0	257	382	178	0	135	0	524	5,539	0	0	121	1,140	252	2,947	1,750	4,348	7,117	24,978
2015/Q1	0	0	0	167	187	116	0	0	0	513	4,967	0	0	189	1,116	0	2,883	1,712	2,836	3,917	18,603
2015/Q2	0	0	0	85	94	117	0	0	0	519	4,566	0	54	0	2,256	249	1,457	866	4,301	1,760	16,324
2015/Q3	7	3	1	123	113	1,020	3	131	3	363	7,684	25	18	27	4,779	67	2,061	1,261	3,236	4,204	25,129
2015/Q4	5	2	1	70	83	339	2	5	360	426	3,747	8,067	82	0	7,553	1,956	5,535	3,391	2,647	5,633	39,904
2016/Q1	205	3	1	345	500	370	3	249	2	1,140	2,598	21	172	0	4,000	227	1,651	1,009	6,295	12,706	31,497
2016/Q2	5	2	1	161	96	718	2	16	2	497	5,365	16	151	0	726	36	1,931	1,182	420	1,868	13,195
2016/Q3	2,106	2	1	2,234	33	2	159	661	10	289	6,619	6,240	4	1	14,587	1,233	1,719	1,052	30	432	37,414
2016/Q4	159	4	1	248	320	219	95	714	858	315	3,883	9,651	33	1	9,487	1,088	6,466	3,526	3,010	16,170	56,248
2017/Q1	606	31	2	1,045	409	827	163	1,657	31	2,096	2,067	3,630	170	1	5,364	2,103	6,886	2,717	2,318	16,648	48,771
2017/Q2	4	613	1	173	152	1,384	2	4	869	1,535	6,334	2,726	145	0	6,537	750	1,260	906	906	4,148	28,449
2017/Q3	6	2	1	20	123	389	2	6	478	4,101	4,292	16,070	27	24	14,946	8,123	1,940	1,188	715	3,363	55,816
2017/Q4	821	2	1	245	111	414	194	4	775	355	7,033	7,005	50	86	3,261	2,115	3,494	2,141	1,418	5,232	20,284
2018/Q1	1,301	3	1	515	405	458	98	755	550	558	5,491	8,506	171	85	2,727	2,819	2,280	1,394	1,203	10,454	14,745
2018/Q2	1,881	76	1	411	184	464	72	73	2	435	2,931	1,845	171	60	1,853	464	3,343	2,048	1,279	2,928	39,702

Notes:
a. Q3 = Third quarter; July, August, September
b. Q4 = Fourth quarter; October, November, December
c. Q1 = First quarter; January, February, March
d. Q2 = Second quarter; April, May, June
Recharge values obtained from Los Angeles County Department of Public Works. Q4, Q1, and Q2 data for current reporting period considered provisional and are subject to revision in subsequent report.

TABLE 3-4
PRECIPITATION AND RETURN FLOW RECHARGE
GROUNDWATER FLOW MODEL
Baldwin Park Operable Unit
San Gabriel Valley, California

		Recharge Zone 1 Area = 2,464 acres	Recharge Zone 2 Area = 19,585 acres	Recharge Zone 3 Area = 31,675 acres	Recharge Zone 4 Area = 19,667 acres	Recharge Zone 5 Area = 11,375 acres	Recharge Zone 6 Area = 5,858 acres	Recharge Zone 7 Area = 2,962 acres	Recharge Zone 8 Area = 463 acres	Recharge Zone 9 Area = 6 acres	Total Model Domain Area = 94,054 acres
Date / Quarter	Average Precipitation [1] (in/qtr)	Recharge Volume: Return Flow and Precipitation (ac-ft/qtr)	Recharge Volume: Return Flow and Precipitation (ac-ft/qtr)	Recharge Volume: Return Flow and Precipitation (ac-ft/qtr)	Recharge Volume: Return Flow and Precipitation (ac-ft/qtr)	Recharge Volume: Return Flow and Precipitation (ac-ft/qtr)	Recharge Volume: Return Flow and Precipitation (ac-ft/qtr)	Recharge Volume: Return Flow and Precipitation (ac-ft/qtr)	Recharge Volume: Return Flow and Precipitation (ac-ft/qtr)	Recharge Volume: Return Flow and Precipitation (ac-ft/qtr)	Recharge Volume: Return Flow and Precipitation (ac-ft/qtr)
2003/Q3 [2]	0.07	40	402	660	421	251	274	141	23	0.2	2,212
2003/Q4 [3]	3.27	95	946	1,568	997	591	649	336	54	0.4	5,236
2004/Q1 [4]	8.24	171	1,696	2,818	1,791	1,060	1,048	541	86	0.8	9,211
2004/Q2 [5]	0.88	51	509	842	534	316	313	162	26	0.2	2,753
2004/Q3	0.00	40	396	660	416	247	244	126	20	0.2	2,149
2004/Q4	15.26	308	3,062	5,077	3,229	1,912	1,888	976	156	1.4	16,610
2005/Q1	28.08	539	5,355	8,885	5,650	3,345	3,304	1709	273	2.5	29,063
2005/Q2	1.41	63	626	1,040	663	391	387	200	32	0.3	3,402
2005/Q3	0.34	37	367	612	392	230	228	118	19	0.2	2,003
2005/Q4	2.36	62	621	1,033	659	388	384	199	32	0.3	3,377
2006/Q1	8.98	151	1,498	2,478	1,574	934	922	477	76	0.7	8,110
2006/Q2	4.56	100	994	1,645	1,051	621	614	318	51	0.5	5,395
2006/Q3	0.02	34	343	564	362	213	212	109	17	0.2	1,855
2006/Q4	0.92	39	390	650	416	244	242	125	20	0.2	2,127
2007/Q1	2.68	68	671	1,113	708	420	415	214	34	0.3	3,644
2007/Q2	1.02	46	450	747	476	282	278	144	23	0.2	2,446
2007/Q3	0.80	46	461	755	481	285	283	146	23	0.2	2,480
2007/Q4	3.51	76	751	1,252	795	470	465	241	38	0.3	4,089
2008/Q1	11.27	186	1,848	3,064	1,949	1,155	1,140	590	94	0.9	10,027
2008/Q2	0.88	44	439	719	458	272	269	139	22	0.2	2,362
2008/Q3	0.08	32	319	535	338	199	198	102	16	0.1	1,741
2008/Q4	5.49	102	1,011	1,673	1,069	632	624	323	52	0.5	5,485
2009/Q1	8.09	132	1,313	2,170	1,382	820	809	418	67	0.6	7,111
2009/Q2	0.23	30	304	501	317	190	187	96	15	0.1	1,642
2009/Q3	0.00	30	307	507	321	189	187	97	15	0.1	1,655
2009/Q4	4.85	97	969	1,606	1,021	604	598	309	49	0.4	5,255
2010/Q1	13.82	210	2,088	3,461	2,201	1,303	1,287	666	106	1.0	11,322
2010/Q2	1.74	50	497	823	523	309	306	158	25	0.2	2,691
2010/Q3	0.01	29	290	478	303	179	177	92	15	0.1	1,562
2010/Q4	17.17	268	2,660	4,417	2,808	1,662	1,643	849	136	1.2	14,443
2011/Q1	8.75	143	1,423	2,357	1,498	887	877	454	72	0.7	7,712
2011/Q2	0.57	32	322	530	335	200	198	102	16	0.1	1,734
2011/Q3	0.04	58	579	975	617	364	361	186	30	0.3	3,170
2011/Q4	4.13	161	1,584	2,639	1,674	996	980	508	81	0.7	8,622

Geosyntec consultants

TABLE 3-4
PRECIPITATION AND RETURN FLOW RECHARGE
GROUNDWATER FLOW MODEL
Baldwin Park Operable Unit
San Gabriel Valley, California

		Recharge Zone 1 Area = 2,464 acres	Recharge Zone 2 Area = 19,585 acres	Recharge Zone 3 Area = 31,675 acres	Recharge Zone 4 Area = 19,667 acres	Recharge Zone 5 Area = 11,375 acres	Recharge Zone 6 Area = 5,858 acres	Recharge Zone 7 Area = 2,962 acres	Recharge Zone 8 Area = 463 acres	Recharge Zone 9 Area = 6 acres	Total Model Domain Area = 94,054 acres
Date / Quarter	Average Precipitation [1] (in/qtr)	Recharge Volume: Return Flow and Precipitation (ac-ft/qtr)	Recharge Volume: Return Flow and Precipitation (ac-ft/qtr)	Recharge Volume: Return Flow and Precipitation (ac-ft/qtr)	Recharge Volume: Return Flow and Precipitation (ac-ft/qtr)	Recharge Volume: Return Flow and Precipitation (ac-ft/qtr)	Recharge Volume: Return Flow and Precipitation (ac-ft/qtr)	Recharge Volume: Return Flow and Precipitation (ac-ft/qtr)	Recharge Volume: Return Flow and Precipitation (ac-ft/qtr)	Recharge Volume: Return Flow and Precipitation (ac-ft/qtr)	Recharge Volume: Return Flow and Precipitation (ac-ft/qtr)
2012/Q1	4.43	88	865	1,437	916	543	535	277	44	0.4	4,706
2012/Q2	2.41	63	632	1,040	663	394	388	201	32	0.3	3,414
2012/Q3	0.12	244	2,409	3,992	2,538	1,502	1,490	769	123	1.1	13,066
2012/Q4	4.59	68	678	1,125	716	425	420	217	35	0.3	3,684
2013/Q1	2.85	34	333	558	352	211	206	107	17	0.2	1,819
2013/Q2	0.77	158	1,579	2,601	1,673	985	971	504	80	1.0	8,552
2013/Q3	0.01	157	1,570	2,587	1,664	979	965	501	80	1.1	8,505
2013/Q4	1.66	83	807	1,353	840	503	492	258	41	3.5	4,379
2014/Q1	4.11	236	2,371	3,928	2,497	1,478	1,453	752	120	1.0	12,837
2014/Q2	0.54	43	424	709	448	267	262	136	22	0.4	2,312
2014/Q3	0.09	21	214	347	223	133	130	68	11	0.3	1,148
2014/Q4	5.73	304	2,446	4,063	2,590	1,532	809	419	67	0.9	12,231
2015/Q1	2.42	147	1,186	1,964	1,249	739	391	202	32	0.4	5,911
2015/Q2	1.39	207	1,652	2,695	1,695	989	514	262	41	0.6	8,056
2015/Q3	2.54	317	2,542	4,147	2,612	1,528	796	407	64	0.9	12,413
2015/Q4	1.97	155	1,237	2,025	1,272	745	388	198	31	0.4	6,052
2016/Q1	7.31	116	941	1,582	1,019	611	326	170	27	0.4	4,793
2016/Q2	1.40	12	97	158	99	58	30	15	2.4	0.0	473
2016/Q3	0.01	15	122	198	123	71	37	19	2.9	0.0	589
2016/Q4	6.87	269	2,164	3,601	2,298	1,365	720	374	60	0.8	10,851
2017/Q1	16.17	310	2,529	4,287	2,787	1,685	904	476	77	1.1	13,058
2017/Q2	0.62	111	889	1,447	901	523	271	137	22	0.3	4,302
2017/Q3	0.12	62	495	801	498	288	148	75	12	0.2	8,324
2017/Q4	0.10	21	167	271	168	97	50	25	4	0.1	7,235
2018/Q1	7.11	228	1,810	2,993	1,858	1,182	640	334	52	0.9	11,737
2018/Q2	0.49	110	877	1,418	887	516	266	135	21	0.4	843

Notes:
Recharge zones represent precipitation areas in California Department of Water Resources (DWR) Bulletin No. 104-2, Appendix A: Geohydrology, 1966. Precipitation zones are characterized by the measured long-term average annual precipitation amounts.
Recharge volumes represent the total recharge rate from precipitation and irrigated return flows over the area of each recharge zone in the groundwater flow model.

1. Average quarterly precipitation calculated from daily precipitation totals measured at 14 stations in the San Gabriel Basin. Daily measurements provided by Los Angeles County Department of Public Works.
2. Q3 = Third quarter: July, August, September
3. Q4 = Fourth quarter: October, November, December
4. Q1 = First quarter: January, February, March
5. Q2 = Second quarter: April, May, June

TABLE 3-5
SIMULATED EXTRACTION WELL PUMPING RATES
GROUNDWATER FLOW MODEL
Baldwin Park Operable Unit
San Gabriel Valley, California

Well Name	Site ID	Design Extraction Rates (gpm)	Target Operational Extraction Rates (gpm)	EPA Approved Extraction Rates (gpm)	2013/Q3		2013/Q4		2014/Q1		2014/Q2		2014/Q3		2014/Q4		2015/Q1		2015/Q2		2015/Q3		2015/Q4		2016/Q1		2016/Q2		2016/Q3		2016/Q4		2017/Q1		2017/Q2		2017/Q3		2017/Q4		2018/Q1		2018/Q2	
					Acre-ft	gpm	Acre-ft	gpm	Acre-ft	gpm	Acre-ft	gpm	Acre-ft	gpm	Acre-ft	gpm	Acre-ft	gpm	Acre-ft	gpm	Acre-ft	gpm	Acre-ft	gpm	Acre-ft	gpm	Acre-ft	gpm	Acre-ft	gpm	Acre-ft	gpm	Acre-ft	gpm	Acre-ft	gpm	Acre-ft	gpm	Acre-ft	gpm	Acre-ft	gpm
Subarea 1																																									
VCWD SA-1 Subproject																																									
SA1-1	08000185	3,400	3,000	1,000	0	0	0	0	0	0	0	0	0	0	726	1806	1217	3094	331	832	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SA1-2	08000186	2,400	2,200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SA1-3 (LANTE)	08000060	2,000	1,800	5,000	917	2281	117	292	564	1418	1324	3328	1323	3289	347	863	0	0	811	2038	1165	2898	1193	2967	1271	3231	1294	3254	591	1468	796	1978	428	1088	1050	2640	1268	3153	1213	3016	1181	2970	639	1607
Subtotal		**7800**	**7000**	**6000**	**917**	**2281**	**117**	**292**	**564**	**1418**	**1324**	**3328**	**1323**	**3289**	**1073**	**2669**	**1217**	**3094**	**1142**	**2871**	**1165**	**2898**	**1193**	**2967**	**1271**	**3231**	**1294**	**3254**	**591**	**1468**	**796**	**1978**	**428**	**1088**	**1050**	**2640**	**1268**	**3153**	**1213**	**3016**	**1181**	**2970**	**639**	**1607**
Subarea 3																																									
LPVCWD Subproject																																									
LPVCWD 2	01901460	Standby	Standby	Standby	16	41	15	38	13	32	134	338	185	461	109	271	21	53	8	21	12	31	8	20	13	33	48	121	4	10	18	46	15	38	13	33	134	333	29	72	15	38	9	22
LPVCWD 3	01902859	Standby	Standby	Standby	21	53	24	59	148	373	195	491	51	126	0	0	0	0	6	16	16	39	9	24	15	38	54	135	5	12	23	57	18	46	16	39	155	385	34	84	17	43	10	26
LPVCWD 5	08000209	2,500	2,250	2,250	890	2213	874	2173	585	1471	517	1299	418	1038	732	1820	842	2142	890	2238	879	2185	899	2235	842	2140	734	1846	854	2122	882	2193	836	2126	832	2091	590	1467	835	2076	885	2224	924	2324
Subtotal		**2500**	**2250**	**2250**	**928**	**2307**	**913**	**2270**	**746**	**1875**	**846**	**2128**	**653**	**1625**	**841**	**2091**	**863**	**2195**	**905**	**2274**	**907**	**2255**	**916**	**2279**	**870**	**2211**	**836**	**2102**	**863**	**2145**	**923**	**2295**	**869**	**2210**	**861**	**2163**	**879**	**2185**	**898**	**2232**	**917**	**2305**	**943**	**2371**
SGVWC B6 Subproject																																									
SGVWC B25A	08000187	2,800	2,500	2,500	664	1651	0	0	0	0	622	1565	620	1542	602	1496	828	2105	991	2491	1007	2504	999	2485	1025	2606	697	1752	884	2197	911	2266	958	2435	904	2274	944	2346	999	2483	982	2470	996	2504
SGVWC B25B	08000188	2,800	2,500	2,500	718	1785	0	0	0	0	883	2221	957	2380	939	2334	1027	2611	1000	2513	1012	2515	1053	2618	1079	2742	823	2069	1041	2589	1056	2626	1055	2681	944	2372	961	2390	978	2432	956	2404	944	2374
SGVWC B26A	08000189	1,100	1,000	750	212	527	0	0	0	0	217	545	223	555	205	510	193	489	192	482	181	449	213	531	211	537	200	502	187	464	212	527	233	591	247	620	255	635	293	728	290	729	265	667
SGVWC B26B	08000190	1,100	1,000	750	291	724	0	0	0	0	378	951	432	1073	473	1176	482	1225	484	1216	430	1070	398	991	398	1012	379	952	356	884	390	971	375	953	394	991	450	1118	489	1215	491	1234	416	1045
Subtotal		**7800**	**7000**	**6500**	**1885**	**4687**	**0**	**0**	**0**	**0**	**2100**	**5281**	**2232**	**5550**	**2218**	**5516**	**2529**	**6430**	**2666**	**6702**	**2629**	**6538**	**2664**	**6624**	**2713**	**6897**	**2098**	**5275**	**2467**	**6135**	**2570**	**6389**	**2620**	**6660**	**2489**	**6257**	**2610**	**6489**	**2758**	**6859**	**2719**	**6837**	**2622**	**6591**
SGVWC B5 Subproject																																									
SGVWC B5B	61900719	3,300	3,000	3,000	1169	2906	906	2252	1094	2750	1072	2694	1067	2654	810	2014	497	1263	1149	2887	1183	2942	1154	2869	861	2189	1113	2799	1107	2754	1068	2655	846	2151	1160	2915	1133	2817	1100	2736	1086	2730	1046	2629
SGVWC B5E	08000205	3,300	3,000	3,000	1212	3015	1192	2964	1122	2820	1446	3634	1145	2848	1128	2805	1071	2724	1360	3420	966	2402	1050	2611	1071	2723	1127	2834	941	2340	904	2249	945	2403	1361	3421	859	2135	828	2059	753	1894	1134	2852
COI 5	08000097	1,200	1,000	1,000	466	1159	468	1165	428	1075	202	508	425	1056	440	1093	464	1179	58	147	413	1028	171	426	383	974	276	694	418	1038	430	1070	388	987	0	0	432	1075	427	1063	396	996	59	148
Subtotal		**7800**	**7000**	**7000**	**2847**	**7080**	**2566**	**6381**	**2643**	**6645**	**2719**	**6837**	**2637**	**6558**	**2378**	**5912**	**2032**	**5165**	**2567**	**6454**	**2563**	**6372**	**2376**	**5907**	**2315**	**5886**	**2517**	**6327**	**2466**	**6132**	**2402**	**5973**	**2179**	**5540**	**2520**	**6336**	**2424**	**6027**	**2356**	**5858**	**2236**	**5621**	**2239**	**5629**
CDWC Project																																									
CDWC 2	01901181	NA	NA	---	967	2403	270	672	208	524	531	1334	548	1363	156	388	143	363	320	805	172	428	190	472	562	1429	800	2010	812	2020	176	437	134	342	779	1957	951	2364	922	2294	523	1315	499	1253
CDWC 3	01903057	NA	NA	---	1700	4228	1744	4336	1672	4204	1636	4114	1585	3940	1551	3856	1655	4207	1426	3586	1533	3812	1313	3264	546	1389	1612	4052	1570	3903	1532	3809	1619	4115	1638	4117	1644	4089	1591	3956	1650	4148	1543	3878
CDWC 5A	08000100	NA	NA	---	1482	3684	1422	3536	1370	3443	1450	3645	1393	3464	1317	3276	1418	3605	1312	3298	1357	3374	1271	3162	1408	3579	1351	3397	1305	3244	1217	3026	1300	3304	1267	3184	1294	3219	1301	3235	1328	3338	1235	3105
CDWC 6	01902967	NA	NA	---	817	2031	37	92	97	244	660	1660	1289	3206	726	1805	330	839	681	1712	647	1610	95	236	267	679	549	1380	711	1769	699	1739	385	978	1126	2830	753	1873	443	1101	270	679	432	1086
CDWC 8	01903081	NA	NA	---	1098	2730	534	1327	556	1398	932	2344	941	2341	704	1750	458	1164	816	2051	807	2005	616	1533	852	2166	855	2149	566	1408	119	296	66	167	718	1806	977	2429	825	2052	686	1726	951	2391
Subtotal		**NA**	**NA**	**8000**	**6064**	**15077**	**4007**	**9963**	**3904**	**9814**	**5209**	**13097**	**5756**	**14313**	**4454**	**11075**	**4003**	**10177**	**4555**	**11452**	**4516**	**11230**	**3485**	**8666**	**3635**	**9241**	**5166**	**12988**	**4965**	**12344**	**3743**	**9307**	**3503**	**8906**	**5527**	**13895**	**5620**	**13973**	**5082**	**12637**	**4458**	**11207**	**4659**	**11713**

Notes:
1 - Average production rates estimated by dividing the total monthly well production by the number of minutes in each quarter.
gpm - gallons per minute.
1 acre-foot = 325,851 gallons.
NA - Not Applicable.

TABLE 4-1
CARBON AND RESIN CHANGEOUT SUMMARY 2009 - 2018
Baldwin Park Operable Unit
Los Angeles County, California

Plant	Date	Resin or Carbon	Volume	Certificates Received
VCWD	23 to 30-Mar-09	Liquid Phase Carbon	80,000 lbs	Yes
	1-Apr-09	Liquid Phase Carbon	120,000 lbs	Yes
	29-Jun-09	Vapor Phase Carbon	20,000 lbs	Yes
	13-Jul-09	Vapor Phase Carbon	20,000 lbs	Yes
	21 & 28-Oct-09	Vapor Phase Carbon	40,000 lbs	Yes
	10-Feb-10	Liquid Phase Carbon	200,000 lbs	Yes
	23, 24 & 28-Sept-10	Liquid Phase Carbon	100,000 lbs	Yes
	1, 5 & 7-Oct-10	Liquid Phase Carbon	100,000 lbs	Yes
	14 & 15-Oct-10	Vapor Phase Carbon	40,000 lbs	Yes
	25 & 26-Jan-11	Vapor Phase Carbon	20,000 lbs	Yes
	10, 13, 16, 20, 23-June-11	Liquid Phase Carbon	200,000 lbs	Yes
	18-Aug-11	Vapor Phase Carbon	20,000 lbs	Yes
	2-Feb-12	Vapor Phase Carbon	20,000 lbs	Yes
	8 to 23-March-12	Liquid Phase Carbon	200,000 lbs	Yes
	23-Mar-12	Vapor Phase Carbon	20,000 lbs	Yes
	6-Apr-12	Vapor Phase Carbon	20,000 lbs	Yes
	21, 22, 23, 24, 25-Oct-12	Liquid Phase Carbon	160,000 lbs	Yes
	18-Dec-12	Liquid Phase Carbon	20,000 lbs	Yes
	5 to 19-Sept-13	Liquid Phase Carbon	200,000 lbs	Yes
	5-May-14	Vapor Phase Carbon	20,000 lbs	Yes
	14-Feb-14	ISEP Resin	1,950 cubic feet	Yes
	11-Nov-14	Vapor Phase Carbon	20,000 lbs	Yes
	27-Jan-15	Vapor Phase Carbon	20,000 lbs	Yes
	22-29-Sept-15	Liquid Phase Carbon	120,000 lbs	Yes
	1-6-Oct-15	Liquid Phase Carbon	80,000 lbs	Yes
	16 to 21-May-16	SPIX Resin	5,100 cubic feet	Not Applicable
	12-May-17	Vapor Phase Carbon	20,000 lbs	No
	3-Aug-17	SPIX Resin	424 cubic feet	No
	12-Oct-17	SPIX Resin	424 cubic feet	Yes
	13, 15, 18, 20, 22-Dec-17	Liquid Phase Carbon	200,000 lbs	Yes
	8-Dec-17	SPIX Resin	424 cubic feet	Yes
	13-Dec-17	SPIX Resin	424 cubic feet	Yes
	10-Jul-18	SPIX Resin	424 cubic feet	No
	23, 29-Aug-18	SPIX Resin	848 cubic feet	No
	8-Oct-18	SPIX Resin	424 cubic feet	No
	6-Dec-18	SPIX Resin	424 cubic feet	No
LPVCWD	9-Mar-09	Vapor Phase Carbon	27,400 lbs	Yes
	15-May-09	Vapor Phase Carbon	27,400 lbs	Yes
	23-Jul-09	Vapor Phase Carbon	27,400 lbs	Yes
	1-Oct-09	Vapor Phase Carbon	27,400 lbs	Yes
	10-Dec-09	Vapor Phase Carbon	27,400 lbs	Yes
	18-Feb-10	Vapor Phase Carbon	27,400 lbs	Yes
	28-Apr-10	Vapor Phase Carbon	27,400 lbs	Yes
	7-Jul-10	Vapor Phase Carbon	27,400 lbs	Yes
	14-Sep-10	Vapor Phase Carbon	27,400 lbs	Yes
	23-Nov-10	Vapor Phase Carbon	27,400 lbs	Yes
	1-Feb-11	Vapor Phase Carbon	27,400 lbs	Yes
	11-Apr-11	Vapor Phase Carbon	27,400 lbs	Yes
	17, 18, 19-May-11	Resin	850 cubic feet	Yes
	3-Nov-11	Vapor Phase Carbon	27,400 lbs	Yes
	19, 20-Dec-11	Resin	850 cubic feet	Yes
	4, 5-June-12	Resin	850 cubic feet	Yes
	2-Jul-12	Vapor Phase Carbon	27,400 lbs	Yes
	3-Jan-13	Resin	425 cubic feet	Yes
	2-Jul-13	Vapor Phase Carbon	27,400 lbs	Yes
	8, 28-Aug-13	Resin	850 cubic feet	Yes
	15-Jan-14	Resin	425 cubic feet	Yes
	17-Mar-14	Resin	425 cubic feet	Yes
	25-Jul-14	Vapor Phase Carbon	27,400 lbs	Yes
	12, 19-Jan-15	Resin	850 cubic feet	Yes
	18-Mar-15	Resin	425 cubic feet	Yes
	11, 12-Aug-15	Resin	425 cubic feet	Yes
	27-Aug-15	Vapor Phase Carbon	27,400 lbs	Yes
	22-Dec-15	Resin	425 cubic feet	Yes
	27, 28-Apr-16	Resin	425 cubic feet	Yes
	29, 30-Jun-16	Resin	425 cubic feet	Yes
	9, 10-Nov-16	Resin	425 cubic feet	Yes
	1, 2-Feb-17	Resin	425 cubic feet	Yes
	12, 13-Jun-17	Resin	425 cubic feet	Yes
	12, 13-Sep-17	Resin	425 cubic feet	Yes
	26-Oct-17	Vapor Phase Carbon	27,400 lbs	Yes
	21-Dec-17	Resin	425 cubic feet	Yes
	10, 11-Apr-18	Resin	425 cubic feet	Yes
	7-Aug-18	Resin	425 cubic feet	Yes
	30, 31-Oct-18	Resin	425 cubic feet	No

TABLE 4-1
CARBON AND RESIN CHANGEOUT SUMMARY 2009 - 2018
Baldwin Park Operable Unit
Los Angeles County, California

Plant	Date	Resin or Carbon	Volume	Certificates Received
B5	5-Feb-09	Liquid Phase Carbon	320,000 lbs	Yes
	27 & 29-May-09	Liquid Phase Carbon	40,000 lbs	Yes
	2, 4, 9, 11, 16, 18, 23, 25, & 3(	Liquid Phase Carbon	200,000 lbs	Yes
	2 & 14-Jul-09	Liquid Phase Carbon	40,000 lbs	Yes
	19-Oct-09	Liquid Phase Carbon	40,000 lbs	Yes
	3, 6, 12, 16, 20, 23, & 25-Nov	Liquid Phase Carbon	140,000 lbs	Yes
	10, 11, & 18-Dec-09	Resin	1272 cubic feet	Yes
	5, 12 & 17-Feb-10	Liquid Phase Carbon	120,000 lbs	Yes
	26-Feb-10	Liquid Phase Carbon	40,000 lbs	Yes
	30, 31-Mar-10	Resin	1272 cubic feet	Yes
	3, 7, 11, 14, 18, 25-Jun-10	Liquid Phase Carbon	240,000 lbs	Yes
	29-Jun-10	Resin	848 cubic feet	Yes
	2, 12, 17, 24-Aug-10	Liquid Phase Carbon	160,000 lbs	Yes
	9, 16, 23, 29-Nov-10	Liquid Phase Carbon	160,000 lbs	Yes
	1, 8, 15, 22-Feb-11	Liquid Phase Carbon	140,000 lbs	Yes
	8-Mar-11	Liquid Phase Carbon	20,000 lbs	Yes
	15-Mar-11	Resin	850 cubic feet	No
	11, 13-Apr-11	Resin	1696 cubic feet	??
	3-May-11	Resin	848 cubic feet	No
	24-May-11	Liquid Phase Carbon	40,000 lbs	Yes
	1-Jun-11	Liquid Phase Carbon	40,000 lbs	Yes
	9, 14-June -11	Liquid Phase Carbon	80,000 lbs	Yes
	10, 16, 23, 30-Aug -11	Liquid Phase Carbon	160,000 lbs	Yes
	21, 28-Oct -11	Liquid Phase Carbon	80,000 lbs	Yes
	4, 10-Nov -11	Liquid Phase Carbon	80,000 lbs	Yes
	20, 26-Jan -12	Liquid Phase Carbon	80,000 lbs	Yes
	2, 9-Feb -12	Liquid Phase Carbon	80,000 lbs	Yes
	22-Mar-12	Liquid Phase Carbon	80,000 lbs	Yes
	3, 10-Apr -12	Liquid Phase Carbon	80,000 lbs	Yes
	21, 30-May -12	Liquid Phase Carbon	80,000 lbs	Yes
	22-May-12	Resin	850 cubic feet	No
	5, 12-June -12	Liquid Phase Carbon	80,000 lbs	Yes
	10, 18, 25-July -12	Liquid Phase Carbon	160,000 lbs	Yes
	6, 24, 26-July -12	Resin	2,550 cubic feet	No
	4, 11, 18, 25-Sept -12	Liquid Phase Carbon	160,000 lbs	Yes
	5, 13, 16, 30-Nov -12	Liquid Phase Carbon	160,000 lbs	Yes
	9, 12, 18, 23-Jan -13	Liquid Phase Carbon	160,000 lbs	Yes
	15, 21, 28-Feb -13	Liquid Phase Carbon	160,000 lbs	Yes
	19-Feb-13	Resin	850 cubic feet	No
	5-Mar-13	Resin	425 cubic feet	No
	8-Mar-13	Liquid Phase Carbon	40,000 lbs	Yes
	4, 18, 25, 30-Apr-13	Liquid Phase Carbon	320,000 lbs	Yes
	5, 24-Apr-13	Resin	1,275 cubic feet	No
	3, 16, 23, 30 -July-13	Liquid Phase Carbon	160,000 lbs	Yes
	13, 20, 27-Aug-13	Liquid Phase Carbon	160,000 lbs	Yes
	1, 4, 10, 17-Oct-13	Liquid Phase Carbon	140,000 lbs	Yes
	25-Nov-13	Resin	848 cubic feet	??
	9, 16, 23, 30-Dec-13	Liquid Phase Carbon	160,000 lbs	Yes
	17-Dec-13	Resin	848 cubic feet	No
	19, 20-Dec-13	Resin	1,272 cubic feet	No
	23-Jan-14	Liquid Phase Carbon	40,000 lbs	Yes
	6, 11, 18-Feb-14	Liquid Phase Carbon	120,000 lbs	Yes
	27-Feb-14	Resin	424 cubic feet	No
	4, 9, 15, 22, 24-Apr-14	Liquid Phase Carbon	200,000 lbs	Yes
	17, 23-June-14	Liquid Phase Carbon	80,000 lbs	Yes
	1-Jul-14	Liquid Phase Carbon	40,000 lbs	Yes
	7-Aug-14	Liquid Phase Carbon	40,000 lbs	Yes
	2, 11, 18-Sep-14	Liquid Phase Carbon	120,000 lbs	Yes
	23-Oct-14	Liquid Phase Carbon	40,000 lbs	Yes
	30-Oct-14	Resin	424 cubic feet	No
	6-Nov-14	Resin	424 cubic feet	No
	14, 20, 25-Nov-14	Liquid Phase Carbon	120,000 lbs	Yes
	3,4-Dec-14	Resin	848 cubic feet	Yes
	19-Dec-14	Resin	848 cubic feet	Yes
	15-Jan-15	Liquid Phase Carbon	40,000 lbs	Yes
	12, 18, 26-Feb-15	Liquid Phase Carbon	120,000 lbs	Yes
	24-Mar-15	Resin	424 cubic feet	Yes
	2-Apr-15	Resin	424 cubic feet	Yes
	2-Apr-15	Liquid Phase Carbon	40,000 lbs	Yes
	12, 20, 27-May-15	Liquid Phase Carbon	120,000 lbs	Yes
	7-Jul-15	Liquid Phase Carbon	40,000 lbs	Yes
	11, 18-Aug-15	Liquid Phase Carbon	80,000 lbs	Yes
	9, 16-Sept-15	Liquid Phase Carbon	80,000 lbs	Yes
	16-Nov-15	Liquid Phase Carbon	40,000 lbs	Yes

TABLE 4-1
CARBON AND RESIN CHANGEOUT SUMMARY 2009 - 2018
Baldwin Park Operable Unit
Los Angeles County, California

Plant	Date	Resin or Carbon	Volume	Certificates Received
	19-Nov-15	Resin	848 cubic feet	Yes
	24-Nov-15	Resin	848 cubic feet	Yes
	2-Dec-15	Resin	424 cubic feet	No
	14-Dec-15	Resin	848 cubic feet	No
	3, 9, 17-Dec-15	Liquid Phase Carbon	120,000 lbs	Yes
	12, 18, 23-Feb-16	Liquid Phase Carbon	120,000 lbs	Yes
	1-Mar-16	Liquid Phase Carbon	40,000 lbs	Yes
	6-Apr-16	Resin	424 cubic feet	No
	28-Apr-16	Liquid Phase Carbon	40,000 lbs	Yes
	2, 9, 16-May-16	Liquid Phase Carbon	120,000 lbs	Yes
	5, 12, 19, 26-Jul-16	Liquid Phase Carbon	160,000 lbs	Yes
	22-Sep-16	Liquid Phase Carbon	40,000 lbs	Yes
	6, 13, 20-Oct-16	Liquid Phase Carbon	120,000 lbs	Yes
	21, 27-Dec-16	Resin	1696 cubic feet	No
	10, 17, 24, 31-Jan-17	Liquid Phase Carbon	160,000 lbs	Yes
	6, 9-Mar-17	Resin	848 cubic feet	No
	27-Apr-17	Liquid Phase Carbon	40,000 lbs	No
	4, 11, 18-May-17	Liquid Phase Carbon	120,000 lbs	No
	1, 8, 15, 22-Aug-17	Liquid Phase Carbon	160,000 lbs	No
	19-Oct-17	Resin	848 cubic feet	No
	31-Oct-17	Liquid Phase Carbon	40,000 lbs	No
	6, 11-Nov-17	Resin	848 cubic feet	No
	7-Nov-17	Resin	848 cubic feet	No
	14, 21, 28-Nov-17	Liquid Phase Carbon	120,000 lbs	No
	8, 22-Feb-18	Liquid Phase Carbon	80,000 lbs	Yes
	1, 8-Mar-18	Liquid Phase Carbon	80,000 lbs	Yes
	29-Mar-18	Resin	848 cubic feet	No
	22, 29-May-18	Liquid Phase Carbon	80,000 lbs	No
	5, 12-Jun-18	Liquid Phase Carbon	80,000 lbs	No
	30-Aug-18	Resin	848 cubic feet	No
	13, 20-Sep-18	Liquid Phase Carbon	80,000 lbs	No
	10, 28-Sep-18	Resin	1272 cubic feet	No
	30-Oct-18	Liquid Phase Carbon	40,000 lbs	No
	1-Nov-18	Liquid Phase Carbon	40,000 lbs	No
B6	9-Jan-09	Vapor Phase Carbon	20,000 lbs	Yes
	30-Jan-09	Vapor Phase Carbon	20,000 lbs	Yes
	20-Feb-09	Vapor Phase Carbon	20,000 lbs	Yes
	23-Feb-09	Vapor Phase Carbon	20,000 lbs	Yes
	4-Nov-09	Vapor Phase Carbon	20,000 lbs	Yes
	4-Dec-09	Vapor Phase Carbon	20,000 lbs	Yes
	2-Mar-10	Vapor Phase Carbon	40,000 lbs	Yes
	21-May-10	Vapor Phase Carbon	20,000 lbs	Yes
	4-Nov-10	Vapor Phase Carbon	20,000 lbs	Yes
	1-Mar-11	Vapor Phase Carbon	60,000 lbs	Yes
	1, 27-Dec -11	Vapor Phase Carbon	80,000 lbs	Yes
	24-May-12	Vapor Phase Carbon	20,000 lbs	Yes
	5-Apr-13	Vapor Phase Carbon	40,000 lbs	Yes
	21-Jun-13	Vapor Phase Carbon	20,000 lbs	Yes
	8, 9-May -14	Vapor Phase Carbon	80,000 lbs	Yes
	18-Aug-14	Resin	848 cubic feet	Yes
	22-Aug-14	Resin	848 cubic feet	Yes
	7, 9, 11-Oct -14	Vapor Phase Carbon	80,000 lbs	No
	16-Oct-14	Resin	424 cubic feet	Yes
	12-Nov-14	Resin	424 cubic feet	Yes
	13-Feb-15	Resin	424 cubic feet	Yes
	24-Mar-15	Resin	424 cubic feet	Yes
	14-Apr-15	Resin	848 cubic feet	Yes

Geosyntec consultants

TABLE 5-1
2018 VERTICAL HYDRAULIC GRADIENTS
Baldwin Park Operable Unit
San Gabriel Valley, California

Subarea 1

Date	Groundwater Elevation (ft msl)[a] PZ1-1BS	PZ1-1BD	Vertical Distance between Mid-Screens (ft)	Estimated Vertical Hydraulic Gradient (ft/ft)[b,c]
6/28/2018	dry	188.29	350.00	NC
12/21/2018	dry	185.86		NC

Date	Groundwater Elevation (ft msl)[a] MW 5-03 Port 9	MW 5-03 Port 1	Vertical Distance between Mid-Screens (ft)	Estimated Vertical Hydraulic Gradient (ft/ft)[b,c]
5/29/2018	239.06	188.17	850.00	6.0E-02

Subarea 2

Date	Groundwater Elevation (ft msl)[a] MW 5-01 Port 13	MW 5-01 Port 1	Vertical Distance between Mid-Screens (ft)	Estimated Vertical Hydraulic Gradient (ft/ft)[b,c]
6/21/2018	186.12	180.56	1280.00	4.3E-03

Date	Groundwater Elevation (ft msl)[a] MW 5-24 Port 7	MW 5-24 Port 1	Vertical Distance between Mid-Screens (ft)	Estimated Vertical Hydraulic Gradient (ft/ft)[b,c]
6/1/2018	182.57	181.11	920.00	1.6E-03
12/21/2018	177.02	177.76		-8.0E-04

Date	Groundwater Elevation (ft msl)[a] MW 5-25 Port 7	MW 5-25 Port 1	Vertical Distance between Mid-Screens (ft)	Estimated Vertical Hydraulic Gradient (ft/ft)[b,c]
6/4/2018	183.93	182.00	900.00	2.1E-03
12/21/2018	178.15	178.28		-1.4E-04

Subarea 3

Date	Groundwater Elevation (ft msl)[a] PZ3-1BS	PZ3-1BD	Vertical Distance between Mid-Screens (ft)	Estimated Vertical Hydraulic Gradient (ft/ft)[b,c]
6/28/2018	168.55	166.82	425.00	4.1E-03
12/21/2018	164.08	158.94		1.2E-02

Date	Groundwater Elevation (ft msl)[a] MW 5-20 Port 7	MW 5-20 Port 1	Vertical Distance between Mid-Screens (ft)	Estimated Vertical Hydraulic Gradient (ft/ft)[b,c]
6/12/2018	179.45	167.84	720.00	1.6E-02
12/20/2018	173.54	164.14		1.3E-02

Notes:

a. Groundwater elevations obtained from the LDC database

b. Differences in mid-screen depth used for all calculations.

c. Negative vertical gradients indicate upward gradient.

ft msl - feet above mean sea level

ft/ft - feet per feet

NC - not calculable

TABLE 5-2
2018 GROUNDWATER QUALITY MONITORING RESULTS
Baldwin Park Operable Unit
San Gabriel Valley, California

Geosyntec consultants

Well Name	Site ID	Port [a]	Sample Date	Field Duplicate	1,1,1-Trichloroethane (µg/L)	1,1-Dichloroethane (µg/L)	1,1-Dichloroethene (µg/L)	1,2,3-Trichloropropane [b] (µg/L)	1,2-Dichloroethane (µg/L)	1,4-Dioxane (µg/L)	Acetone (µg/L)	Benzene (µg/L)	Carbon Disulfide (µg/L)	Carbon Tetrachloride (µg/L)	Chloroform (µg/L)	cis-1,2-Dichloroethene (µg/L)	Ethylbenzene (µg/L)	Methylene Chloride (µg/L)	NDMA [c] (ng/L)	Perchlorate (µg/L)	Tetrachloroethene (µg/L)	Toluene (µg/L)	trans-1,2-Dichloroethene (µg/L)	Trichloroethene (µg/L)	Xylenes, Total [d] (µg/L)
Federal or California State MCL (NL) [SMCL] [e]					**200**	**5**	**6**	**0.005**	**0.5**	**(1)**	**--**	**1**	**160**	**0.5**	**80**	**6**	**300**	**5**	**(10)**	**6**	**5**	**150**	**10**	**5**	**1750**
Extraction Wells																									
COI 5	8000097		1/2/2018		0.5 U	0.5 U	1.8	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2.8	**12**	0.5 U	0.5 U	3.3	1 U
			2/5/2018		0.5 U	0.5 U	1.7	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	3.7	**10**	0.5 U	0.5 U	3	1 U
			3/5/2018		0.5 U	0.5 U	1.7	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2.6	**9.7**	0.5 U	0.5 U	2.8	1 U
			4/2/2018		0.5 U	0.5 U	1.7	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2.5	**11**	0.5 U	0.5 U	3.2	1 U
			5/7/2018		0.5 U	0.5 U	1.7	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2	**9.6**	0.5 U	0.5 U	2.8	1 U
			5/30/2018		0.5 U	0.5 U	2.2	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1000 U	--	**11**	0.5 U	0.5 U	3	1 U
			6/4/2018		0.5 U	0.5 U	1.8	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2	**11**	0.5 U	0.5 U	3.3	1 U
			7/2/2018		0.5 U	0.5 U	1.9	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2.6 J	**11**	0.5 U	0.5 U	3.1	1 U
			8/6/2018		0.5 U	0.5 U	2.1	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	3.2	**13**	0.5 U	0.5 U	3.5	1 U
			9/4/2018		0.5 U	0.5 U	1.8	0.005 U	0.5 U	0.55	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	3.1	**12**	0.5 U	0.5 U	3.4	1 U
			10/1/2018		0.5 U	0.5 U	1.4	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	3	**7.7**	0.5 U	0.5 U	2.3	1 U
			11/5/2018		0.5 U	0.5 U	1.8	0.005 U	0.5 U	0.55	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2.7	**10**	0.5 U	0.5 U	2.8	1 U
			12/3/2018		0.5 U	0.5 U	2.4	0.005 U	0.5 U	0.54	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	3.1	**14**	0.5 U	0.5 U	3.9	1 U
LPVCWD 2	1901460		1/30/2018		0.5 U	0.5 U	0.5 U	0.5 U	**1.3**	**1.3**	--	0.5 U	--	**2.2**	1.4	1	0.5 U	0.5 U	**120**	**37**	2.9	0.5 U	0.5 U	**53**	1 U
			3/15/2018		0.5 U	0.5 U	0.5 U	0.5 U	**1.5**	**1.1**	--	0.5 U	--	**2.3**	1.6	0.73	0.5 U	0.5 U	**96**	**36**	2.6	0.5 U	0.5 U	**61**	1 U
			5/1/2018		0.5 U	0.5 U	0.5 U	0.5 U	**1.4**	**1.1**	--	0.5 U	--	**2.2**	1.4	0.97	0.5 U	0.5 U	**98**	**20**	3.3	0.5 U	0.5 U	**50**	1 U
			6/6/2018		0.5 U	0.5 U	0.5 U	0.5 U	**1.5**	**1.1**	--	0.5 U	--	**2**	1.5	0.97	0.5 U	0.5 U	**110**	**34**	2.9	0.5 U	0.5 U	**55**	1 U
			7/9/2018		0.5 U	0.5 U	0.5 U	0.5 U	**1.2**	**1**	--	0.5 U	--	**1.5**	1.2	0.79	0.5 U	0.5 U	**110**	**33**	2.5	0.5 U	0.5 U	**43**	1 U
			9/19/2018		0.5 U	0.5 U	0.5 U	0.5 U	**1.2**	**1.2**	--	0.5 U	--	**2**	1.4	0.76	0.5 U	0.5 U	**96 J**	**28**	2.6	0.5 U	0.5 U	**50**	1 U
			11/20/2018		0.5 U	0.5 U	0.5 U	0.5 U	**1.5**	**2**	--	0.5 U	--	**2.6**	1.4	1.1	0.5 U	0.5 U	**84**	**36**	3.8	0.5 U	0.5 U	**58**	1 U
			12/11/2018		0.5 U	0.6	0.5 U	0.5 U	**1.9**	--	--	0.5 U	--	**3.3**	1.9	1.2	0.5 U	0.5 U	1000 U	--	4.2	0.5 U	0.5 U	**72**	1 U
LPVCWD 3	1902859		1/30/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	**8.2**	0.5 U	0.5 U	0.5 U	0.52	1 U
			3/15/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	**8.3**	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			5/1/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	6	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			6/6/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	**6.9**	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			7/9/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	**6.3**	0.5 U	0.5 U	0.5 U	0.51	1 U
			9/19/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	**0.54**	0.5 U	0.5 U	0.5 U	0.5 U	**19 J**	**14**	0.83	0.5 U	0.5 U	**14**	1 U
			11/20/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	**9.2**	0.5 U	0.5 U	0.5 U	0.96	1 U
			12/11/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.85	1 U
LPVCWD 5	8000209		1/2/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	**0.51**	0.5 U	0.5 U	0.5 U	0.5 U	**24**	**15**	1	0.5 U	0.5 U	**12**	1 U
			2/5/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**23**	**16**	0.89	0.5 U	0.5 U	**12**	1 U
			3/5/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	**0.52**	0.5 U	0.5 U	0.5 U	0.5 U	**21**	**16**	0.84	0.5 U	0.5 U	**12**	1 U
			4/3/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	**15**	0.98	0.5 U	0.5 U	**10**	1 U
			5/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			6/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			7/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			8/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			9/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			10/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			11/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			12/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VCWD SA1-1	8000185		1/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			2/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			3/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			4/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			5/22/2018		0.5 U	0.5 U	1.6	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.7	0.5 U	0.5 U	0.5 U	2 U	5.5	1.3	0.5 U	0.5 U	1.6	1 U
			6/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			7/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			8/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			9/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			10/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			11/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			12/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VCWD SA1-2	8000186		1/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			2/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			3/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			4/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			5/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			6/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			7/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			8/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			9/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			10/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			11/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			12/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SA1-3 (LANTE)	8000060		1/17/2018		0.5 U	0.5 U	**6.1**	**0.0073**	0.5 U	**1.4**	--	0.5 U	--	0.5 U	1	1.3	0.5 U	0.5 U	2 U	5.9	**77**	0.5 U	0.5 U	**31**	1 U
			1/23/2018		0.5 U	0.5 U	5.7	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	1.1	1.2	0.5 U	0.5 U	--	--	**67**	0.5 U	0.5 U	**28**	1 U
			2/14/2018		--	--	--	**0.0089**	--	**1.2**	--	--	--	--	--	--	--	--	2.2	**6.5**	--	--	--	--	--
			3/19/2018		0.5 U	0.5 U	5.1	**0.0088**	0.5 U	**1.1**	--	0.5 U	--	0.5 U	0.9	1.3	0.5 U	0.5 U	2.2	**6.2**	**67**	0.5 U	0.5 U	**28**	1 U
			4/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			5/14/2018		0.5 U	0.5 U	**6.2**	**0.008**	0.5 U	**1.3**	--	0.5 U	--	0.5 U	1	1.3	0.5 U	0.5 U	2 U	4	**63**	0.5 U	0.5 U	**27**	1 U

TABLE 5-2
2018 GROUNDWATER QUALITY MONITORING RESULTS
Baldwin Park Operable Unit
San Gabriel Valley, California

Geosyntec consultants

Well Name	Site ID	Port [a]	Sample Date	Field Duplicate	1,1,1-Trichloroethane (µg/L)	1,1-Dichloroethane (µg/L)	1,1-Dichloroethene (µg/L)	1,2,3-Trichloropropane [b] (µg/L)	1,2-Dichloroethane (µg/L)	1,4-Dioxane (µg/L)	Acetone (µg/L)	Benzene (µg/L)	Carbon Disulfide (µg/L)	Carbon Tetrachloride (µg/L)	Chloroform (µg/L)	cis-1,2-Dichloroethene (µg/L)	Ethylbenzene (µg/L)	Methylene Chloride (µg/L)	NDMA [c] (ng/L)	Perchlorate (µg/L)	Tetrachloroethene (µg/L)	Toluene (µg/L)	trans-1,2-Dichloroethene (µg/L)	Trichloroethene (µg/L)	Xylenes, Total [d] (µg/L)
Federal or California State MCL (NL) [SMCL] [e]					**200**	**5**	**6**	**0.005**	**0.5**	**(1)**	**--**	**1**	**160**	**0.5**	**80**	**6**	**300**	**5**	**(10)**	**6**	**5**	**150**	**10**	**5**	**1750**
SA1-3 (LANTE)	8000060		6/18/2018		0.5 U	0.5 U	**6**	**0.0057**	0.5 U	0.5 U	--	0.5 U	--	0.5 U	1	0.8	0.5 U	0.5 U	2 U	5.2	**64**	0.5 U	0.5 U	**29**	1 U
			7/18/2018		0.5 U	0.5 U	5.3	**0.006**	0.5 U	**1.1**	--	0.5 U	--	0.5 U	0.94	0.82	0.5 U	0.5 U	2.1	**6.2**	**51**	0.5 U	0.5 U	**22**	1 U
			8/22/2018		0.5 U	0.5 U	**7.9**	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	1.1	0.86	0.5 U	0.5 U	2 U	5.8	**51**	0.5 U	0.5 U	**24**	1 U
			9/12/2018		0.5 U	0.5 U	**6.3**	**0.0056**	0.5 U	**1.3**	--	0.5 U	--	0.5 U	1	0.83	0.5 U	0.5 U	1000 U	5.4	**48**	0.5 U	0.5 U	**23**	1 U
			10/3/2018		0.5 U	0.5 U	5.5	0.005 U	0.5 U	**1.2**	--	0.5 U	--	0.5 U	0.88	0.74	0.5 U	0.5 U	2 U	5.7	**36**	0.5 U	0.5 U	**18**	1 U
			11/6/2018		0.5 U	0.5 U	**6.4**	**0.0054**	0.5 U	**1**	--	0.5 U	--	0.5 U	1.1	0.91	0.5 U	0.5 U	2 U	6	**57**	0.5 U	0.5 U	**24**	1 U
			12/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SGVWC B25A	8000187		1/3/2018		0.5 U	0.57	4.4	0.0016 J	**1.2**	**2.1**	--	0.5 U	--	**2.1**	1.9	3.9	0.5 U	0.5 U	**93**	**46**	**26**	0.5 U	0.5 U	**61**	1 U
			2/6/2018		0.5 U	0.62	4.7	0.0024 J	**1.3**	**2.1**	--	0.5 U	--	**2.3**	2.1	4	0.5 U	0.5 U	**75 J**	**50**	**30**	0.5 U	0.5 U	**77**	1 U
			3/6/2018		0.5 U	0.68	5.2	0.005 U	**1.4**	**2.4**	--	0.5 U	--	**2.4**	2.1	5.4	0.5 U	0.5 U	**75**	**51**	**31**	0.5 U	0.5 U	**73**	1 U
			4/3/2018		0.5 U	0.6	4.3	0.0023 J	**1.3**	**2.1**	--	0.5 U	--	**2.1**	2	4.1	0.5 U	0.5 U	**96 J**	**51**	**27**	0.5 U	0.5 U	**65**	1 U
			5/1/2018		0.5 U	0.64	4.2	0.0018 J	**1.3**	**2**	--	0.5 U	--	**2.6**	2.2	4.1	0.5 U	0.5 U	**77 J**	**31**	**30**	0.5 U	0.5 U	**72**	1 U
			6/5/2018		0.5 U	0.58	4.6	0.0022 J	**1.3**	**2.2**	--	0.5 U	--	**2.2**	2	4.7	0.5 U	0.5 U	**89**	**48**	**27**	0.5 U	0.5 U	**72**	1 U
			7/3/2018		0.5 U	0.55	4.4	0.0014 J	**1.2**	**2.1**	--	0.5 U	--	**2.3**	2	4.5	0.5 U	0.5 U	**59**	**39**	**30**	0.5 U	0.5 U	**64**	1 U
			8/7/2018		0.5 U	0.63	4.5	0.0013 J	**1.2**	**2.1**	--	0.5 U	--	**2.1**	2.1	4	0.5 U	0.5 U	**81**	**45**	**28**	0.5 U	0.5 U	**64**	1 U
			9/5/2018		0.5 U	0.64	4.9	0.0015 J	**1.4**	**2.6**	--	0.5 U	--	**2.1**	2.2	4.2	0.5 U	0.5 U	**110**	**45**	**27**	0.5 U	0.5 U	**62**	1 U
			10/2/2018		0.5 U	0.62	**6**	0.0018 J	**1.3**	**2.3**	--	0.5 U	--	**2.5**	2	5.2	0.5 U	0.5 U	**92**	**44**	**30**	0.5 U	0.5 U	**71**	1 U
			11/6/2018		0.5 U	0.51	3.8	0.0019 J	**1.2**	**2.3**	--	0.5 U	--	**1.6**	1.8	3.6	0.5 U	0.5 U	**86**	**47**	**22**	0.5 U	0.5 U	**63**	1 U
			12/4/2018		0.5 U	0.69	**6.3**	0.0016 J	**1.4**	**2.3**	--	0.5 U	--	**3 J**	2.1	5.3	0.5 U	0.5 U	**78**	**51**	**33**	0.5 U	0.5 U	**80**	1 U
			12/10/2018		0.5 U	0.71	**6.4**	0.5 U	**1.4**	--	--	0.5 U	--	**2.9**	2.2	5.2	0.5 U	0.5 U	1000 U	--	**35**	0.5 U	0.5 U	**81**	1 U
SGVWC B25B	8000188		1/3/2018		0.5 U	0.5 U	1.5	0.005 U	**0.58**	**1.1**	--	0.5 U	--	**4**	0.82	1.7	0.5 U	0.5 U	**42**	**21**	**6.3**	0.5 U	0.5 U	**28**	1 U
			2/6/2018		0.5 U	0.5 U	1.4	0.005 U	**0.63**	**1.1**	--	0.5 U	--	**4.2**	0.9	1.6	0.5 U	0.5 U	**40 J**	**24**	**6.4**	0.5 U	0.5 U	**34**	1 U
			3/6/2018		0.5 U	0.5 U	1.7	0.005 U	**0.67**	**1**	--	0.5 U	--	**4.2**	0.93	2.3	0.5 U	0.5 U	**33**	**24**	**7.4**	0.5 U	0.5 U	**33**	1 U
			4/3/2018		0.5 U	0.5 U	1.4	0.005 U	**0.65**	**1**	--	0.5 U	--	**3.9**	0.86	1.7	0.5 U	0.5 U	**43 J**	**23**	**6.5**	0.5 U	0.5 U	**31**	1 U
			5/1/2018		0.5 U	0.5 U	1.3	0.005 U	**0.66**	0.95	--	0.5 U	--	**4.6**	0.95	1.6	0.5 U	0.5 U	34 J	**16**	**6.7**	0.5 U	0.5 U	**33**	1 U
			6/5/2018		0.5 U	0.5 U	1.4	0.005 U	**0.68**	**1.1**	--	0.5 U	--	**3.9**	0.87	2	0.5 U	0.5 U	**32**	**22**	**6.4**	0.5 U	0.5 U	**32**	1 U
			7/3/2018		0.5 U	0.5 U	1.4	0.005 U	**0.6**	**1**	--	0.5 U	--	**4.2**	0.91	1.8	0.5 U	0.5 U	**34**	**19**	**7.2**	0.5 U	0.5 U	**33**	1 U
			8/7/2018		0.5 U	0.5 U	1.5	0.005 U	**0.7**	**1.1**	--	0.5 U	--	**4.2**	1	1.8	0.5 U	0.5 U	**52**	**23**	**7.1**	0.5 U	0.5 U	**35**	1 U
			9/5/2018		0.5 U	0.5 U	1.6	0.005 U	**0.81**	**1.4**	--	0.5 U	--	**4**	1	1.9	0.5 U	0.5 U	**42**	**24**	**6.7**	0.5 U	0.5 U	**33**	1 U
			10/2/2018		0.5 U	0.5 U	1.9	0.005 U	**0.8**	**1.2**	--	0.5 U	--	**5.1**	1	2.2	0.5 U	0.5 U	**40**	**23**	**7.8**	0.5 U	0.5 U	**38**	1 U
			11/6/2018		0.5 U	0.5 U	1.4	0.005 U	**0.74**	**1.4**	--	0.5 U	--	**3.5**	0.93	1.8	0.5 U	0.5 U	**39**	**27**	**5.9**	0.5 U	0.5 U	**36**	1 U
			12/4/2018		0.5 U	0.5 U	2	0.005 U	**0.86**	**1.4**	--	0.5 U	--	**5.7 J**	1.1	2.3	0.5 U	0.5 U	**49**	**28**	**8.4**	0.5 U	0.5 U	**43**	1 U
			12/10/2018		0.5 U	0.5 U	1.7	0.5 U	**0.91**	--	--	0.5 U	--	**5.5**	1.1	2.2	0.5 U	0.5 U	1000 U	--	**8.3**	0.5 U	0.5 U	**43**	1 U
SGVWC B26A	8000189		1/3/2018		0.5 U	0.5 U	0.5	0.005 U	**1.5**	**1.2**	--	0.5 U	--	**1.3**	1.5	1	0.5 U	0.5 U	**120**	**40**	2.5	0.5 U	0.5 U	**32**	1 U
			2/6/2018		0.5 U	0.5 U	0.5 U	0.002 J	**1.7**	**1.2**	--	0.5 U	--	**1.5**	1.8	1	0.5 U	0.5 U	**120 J**	**41**	2.9	0.5 U	0.5 U	**44**	1 U
			3/6/2018		0.5 U	0.5 U	0.57	0.005 U	**1.6**	**1.1**	--	0.5 U	--	**1.4**	1.7	1.4	0.5 U	0.5 U	**150**	**43**	3.2	0.5 U	0.5 U	**39**	1 U
			4/3/2018		0.5 U	0.5 U	0.5 U	0.0014 J	**1.4**	**1.1**	--	0.5 U	--	**1.2**	1.5	0.95	0.5 U	0.5 U	**140 J**	**42**	2.7	0.5 U	0.5 U	**33**	1 U
			5/1/2018		0.5 U	0.5 U	0.5 U	0.005 U	**1.5**	0.94	--	0.5 U	--	**1.4**	1.6	0.91	0.5 U	0.5 U	**140 J**	**26**	2.7	0.5 U	0.5 U	**37**	1 U
			6/5/2018		0.5 U	0.5 U	0.5 U	0.0016 J	**1.4**	**1.1**	--	0.5 U	--	**1.2**	1.4	1	0.5 U	0.5 U	**130**	**38**	2.6	0.5 U	0.5 U	**33**	1 U
			8/7/2018		0.5 U	0.5 U	0.5 U	0.005 U	**1.2**	0.99	--	0.5 U	--	**1.1**	1.4	0.8	0.5 U	0.5 U	**94**	**35**	2.3	0.5 U	0.5 U	**31**	1 U
			9/5/2018		0.5 U	0.5 U	0.5	0.005 U	**1.5**	**1.2**	--	0.5 U	--	**1.2**	1.5	0.93	0.5 U	0.5 U	**130**	**36**	2.6	0.5 U	0.5 U	**31**	1 U
			10/2/2018		0.5 U	0.5 U	0.6	0.0012 J	**1.5**	**1.1**	--	0.5 U	--	**1.5**	1.5	1.1	0.5 U	0.5 U	**110**	**35**	3	0.5 U	0.5 U	**36**	1 U
			11/6/2018		0.5 U	0.5 U	0.5 U	0.0012 J	**1.1**	**1.2**	--	0.5 U	--	**1**	1.2	0.79	0.5 U	0.5 U	**100**	**39**	2	0.5 U	0.5 U	**30**	1 U
			12/4/2018		0.5 U	0.5 U	0.63	0.0012 J	**1.7**	**1.3**	--	0.5 U	--	**1.8 J**	1.6	1.2	0.5 U	0.5 U	**93**	**42**	3.4	0.5 U	0.5 U	**42**	1 U
			12/10/2018		0.5 U	0.5 U	0.6	0.5 U	**1.7**	--	--	0.5 U	--	**1.7**	1.6	1.1	0.5 U	0.5 U	1000 U	--	3.4	0.5 U	0.5 U	**42**	1 U
SGVWC B26B	8000190		1/3/2018		0.5 U	0.5 U	0.5 U	0.5 U	**2.3**	**2.6**	--	0.5 U	--	**9.9**	2.2	1.2	0.5 U	0.5 U	**140**	**60**	2.3	0.5 U	0.5 U	**80**	1 U
			1/5/2018		--	--	--	0.005 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			2/6/2018		0.5 U	0.5 U	0.5 U	0.0018 J	**2.5**	**2.6**	--	0.5 U	--	**10**	2.4	1.1	0.5 U	0.5 U	**120 J**	**64**	2.4	0.5 U	0.5 U	**100**	1 U
			3/6/2018		0.5 U	0.5 U	0.5 U	0.005 U	**2.6**	**2.6**	--	0.5 U	--	**10**	2.4	1.6	0.5 U	0.5 U	**120**	**66**	3	0.5 U	0.5 U	**93**	1 U
			4/3/2018		0.5 U	0.5 U	0.5 U	0.005 U	**2.3**	**2.5**	--	0.5 U	--	**8.8**	2.1	1.1	0.5 U	0.5 U	**160 J**	**64**	2.5	0.5 U	0.5 U	**79**	1 U
			5/1/2018		0.5 U	0.5 U	0.5 U	0.005 U	**2.3**	**2.7**	--	0.5 U	--	**11**	2.3	1.1	0.5 U	0.5 U	**190 J**	**41**	2.5	0.5 U	0.5 U	**87**	1 U
			6/5/2018		0.5 U	0.5 U	0.5 U	0.0018 J	**2.4**	**2.6**	--	0.5 U	--	**9.2**	2.2	1.3	0.5 U	0.5 U	**150**	**63**	2.6	0.5 U	0.5 U	**93**	1 U
			8/7/2018		0.5 U	0.5 U	0.5 U	0.005 U	**2.4**	**2.9**	--	0.5 U	--	**9.8**	2.5	1.2	0.5 U	0.5 U	**110**	**61**	2.7	0.5 U	0.5 U	**88**	1 U
			9/5/2018		0.5 U	0.5 U	0.5 U	0.005 U	**2.7**	**3.3**	--	0.5 U	--	**9.6**	2.5	1.3	0.5 U	0.5 U	**180**	**60**	2.7	0.5 U	0.5 U	**82**	1 U
			10/2/2018		0.5 U	0.5 U	0.53	0.0013 J	**2.8**	**2.9**	--	0.5 U	--	**13**	2.6	1.5	0.5 U	0.5 U	**150**	**56**	3.3	0.5 U	0.5 U	**110**	1 U
			11/6/2018		0.5 U	0.5 U	0.5 U	0.0014 J	**2**	**3**	--	0.5 U	--	**8.5**	2	1.1	0.5 U	0.5 U	**120**	**66**	2.1	0.5 U	0.5 U	**89**	1 U
			12/4/2018		0.5 U	0.5 U	0.5	0.005 U	**2.8**	**3**	--	0.5 U	--	**13 J**	2.5	1.5	0.5 U	0.5 U	**120**	**68**	3.3	0.5 U	0.5 U	**110**	1 U
			12/10/2018		0.5 U	0.5 U	0.5 U	0.5 U	**2.8**	--	--	0.5 U	--	**13**	2.5	1.4	0.5 U	0.5 U	1000 U	--	3.2	0.5 U	0.5 U	**110**	1 U
SGVWC B5B	61900719		1/2/2018		0.5 U	0.5 U	0.51	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.22 J	0.58	0.5 U	0.5 U	0.5 U	2 U	**6.9**	4.3	0.5 U	0.5 U	2.4	1 U
			2/5/2018		0.5 U	0.5 U	0.49 J	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.19 J	0.58	0.5 U	0.5 U	0.5 U	2 U	**7.2**	3.9	0.5 U	0.5 U	2.2	1 U
			3/5/2018		0.5 U	0.5 U	0.44 J	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.19 J	0.6	0.5 U	0.5 U	0.5 U	2 U	**6.3**	3.8	0.5 U	0.5 U	2.2	1 U
			4/2/2018		0.5 U	0.5 U	0.49 J	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.17 J	0.55	0.5 U	0.5 U	0.5 U	2.2	**6.3**	3.8	0.5 U	0.5 U	2.3	1 U
			5/7/2018		0.5 U	0.5 U	0.51	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.16 J	0.53	0.5 U	0.5 U	0.5 U	2 U	4.2	3.7	0.5 U	0.5 U	2.2	1 U
			5/30/2018		0.5 U	0.5 U	0.53	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.56	0.5 U	0.5 U	0.5 U	1000 U	--	3.8	0.5 U	0.5 U	2.3	1 U
			6/4/2018		0.5 U	0.5 U	0.7	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.21 J	0.64	0.5 U	0.5 U	0.5 U	2 U	5.6	4	0.5 U	0.5 U	2.4	1 U
			8/20/2018		0.5 U	0.5 U	0.69	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.21 J	0.72	0.5 U	0.5 U	0.5 U	2 U	5.5	**7.3**	0.5 U	0.5 U	2	1 U
			9/4/2018		0.5 U	0.5 U	0.59	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.18 J	0.68	0.5 U	0.5 U	0.5 U	2 U	**6.1**	**5.7**	0.5 U	0.5 U	2.4	1 U
			10/1/2018		0.5 U	0.5 U	0.63	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.57	0.5 U	0.5 U	0.5 U	2.1	**6.2**	**5.6**	0.5 U	0.5 U	2.2	1 U
			11/5/2018		0.5 U	0.5 U	0.59	0.005 U	0.5 U	0.5	--	0.5 U	--	0.17 J	0.55	0.5 U	0.5 U	0.5 U	2 U	**6.1 J**	**5.8**	0.5 U	0.5 U	2.2	1 U
			12/3/2018		0.5 U	0.5 U	0.82	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.27 J	0.5 U	0.5 U	0.5 U	0.5 U	2 U	**7.3**	**8**	0.5 U	0.5 U	3.1	1 U
SGVWC B5D	8000160		1/2/2018		0.5 U	0.5 U	0.5 U	0.005 U	0.5 U	0.5 U	--	0.5 U	--	**0.83**	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			2/5/2018		0.5 U	0.5 U	0.5 U	0.005 U	0.5 U	0.5 U	--	0.5 U	--	**0.75**	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U

TABLE 5-2
2018 GROUNDWATER QUALITY MONITORING RESULTS
Baldwin Park Operable Unit
San Gabriel Valley, California

Geosyntec consultants

Well Name	Site ID	Port [a]	Sample Date	Field Duplicate	1,1,1-Trichloroethane (µg/L)	1,1-Dichloroethane (µg/L)	1,1-Dichloroethene (µg/L)	1,2,3-Trichloropropane [b] (µg/L)	1,2-Dichloroethane (µg/L)	1,4-Dioxane (µg/L)	Acetone (µg/L)	Benzene (µg/L)	Carbon Disulfide (µg/L)	Carbon Tetrachloride (µg/L)	Chloroform (µg/L)	cis-1,2-Dichloroethene (µg/L)	Ethylbenzene (µg/L)	Methylene Chloride (µg/L)	NDMA [c] (ng/L)	Perchlorate (µg/L)	Tetrachloroethene (µg/L)	Toluene (µg/L)	trans-1,2-Dichloroethene (µg/L)	Trichloroethene (µg/L)	Xylenes, Total [d] (µg/L)
Federal or California State MCL (NL) [SMCL] [e]					**200**	**5**	**6**	**0.005**	**0.5**	**(1)**	**--**	**1**	**160**	**0.5**	**80**	**6**	**300**	**5**	**(10)**	**6**	**5**	**150**	**10**	**5**	**1750**
SGVWC B5D	8000160		3/5/2018		0.5 U	0.5 U	0.5 U	0.005 U	0.5 U	0.5 U	--	0.5 U	--	**0.78**	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			4/2/2018		0.5 U	0.5 U	0.5 U	0.005 U	0.5 U	0.5 U	--	0.5 U	--	**0.65**	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			5/7/2018		0.5 U	0.5 U	0.5 U	0.005 U	0.5 U	0.5 U	--	0.5 U	--	**0.63**	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			5/30/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	**0.79**	0.5 U	0.5 U	0.5 U	0.5 U	1000 U	--	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			6/4/2018		0.5 U	0.5 U	0.5 U	0.005 U	0.5 U	0.5 U	--	0.5 U	--	**0.81**	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			7/2/2018		0.5 U	0.5 U	0.5 U	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.42 J	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			8/6/2018		0.5 U	0.5 U	0.5 U	0.005 U	0.5 U	0.5 U	--	0.5 U	--	**0.56**	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			9/4/2018		0.5 U	0.5 U	0.5 U	0.005 U	0.5 U	0.5 U	--	0.5 U	--	**0.64**	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			10/1/2018		0.5 U	0.5 U	0.5 U	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.33 J	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			11/5/2018		0.5 U	0.5 U	0.5 U	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.48 J	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			12/3/2018		0.5 U	0.5 U	0.5 U	0.005 U	0.5 U	0.5 U	--	0.5 U	--	**0.76**	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U
SGVWC B5E	8000205		1/2/2018		0.5 U	0.16 J	0.72	0.005 U	**0.91**	0.61	--	0.5 U	--	**2.3**	0.84	0.91	0.5 U	0.5 U	**110**	**19**	3.2	0.5 U	0.5 U	**21**	1 U
			2/5/2018		0.5 U	0.16 J	0.69	0.005 U	**0.89**	0.58	--	0.5 U	--	**2**	0.84	0.88	0.5 U	0.5 U	**130 J**	**20**	3	0.5 U	0.5 U	**19**	1 U
			3/5/2018		0.5 U	0.15 J	0.71	0.005 U	**0.87**	0.5 U	--	0.5 U	--	**2.1**	0.86	0.81	0.5 U	0.5 U	**130**	**21**	2.9	0.5 U	0.5 U	**19**	1 U
			4/2/2018		0.5 U	0.12 J	0.6	0.005 U	**0.93**	0.54	--	0.5 U	--	**1.8**	0.79	1.1	0.5 U	0.5 U	**160**	**20**	3.3	0.5 U	0.5 U	**17**	1 U
			5/7/2018		0.5 U	0.14 J	0.74	0.005 U	**0.81**	0.51	--	0.5 U	--	**1.6**	0.74	1.1	0.5 U	0.5 U	**110**	**12**	3.1	0.5 U	0.5 U	**15**	1 U
			5/30/2018		0.5 U	0.5 U	0.81	0.5 U	**0.97**	--	--	0.5 U	--	**2**	0.86	1.2	0.5 U	0.5 U	1000 U	--	3.4	0.5 U	0.5 U	**19**	1 U
			6/4/2018		0.5 U	0.17 J	1	0.005 U	**1**	0.5 U	--	0.5 U	--	**2.4**	1	0.98	0.5 U	0.5 U	**120**	**20**	3.7	0.5 U	0.5 U	**22**	1 U
			7/2/2018		0.5 U	0.14 J	0.78	0.005 U	**0.85**	0.5 U	--	0.5 U	--	**1.2**	0.8	0.93	0.5 U	0.5 U	**67 J**	16 J	3.1	0.5 U	0.5 U	**17**	1 U
			8/6/2018		0.5 U	0.18 J	0.74	0.005 U	**0.86**	0.5 U	--	0.5 U	--	**1.8**	0.86	0.86	0.5 U	0.5 U	**120**	**18**	3.2	0.5 U	0.5 U	**18**	1 U
			9/4/2018		0.5 U	0.15 J	0.71	0.005 U	**0.91**	0.68	--	0.5 U	--	**1.8**	0.85	1.2	0.5 U	0.5 U	**120**	**18**	3.2	0.5 U	0.5 U	**18**	1 U
			10/1/2018		0.5 U	0.15 J	0.81	0.005 U	**0.77**	0.54	--	0.5 U	--	**2**	0.78	0.89	0.5 U	0.5 U	**130**	**18**	3	0.5 U	0.5 U	**17**	1 U
			11/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			12/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CDWC 2	1901181		1/2/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	3.1 J	1	--	--	0.9	--
			2/5/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	2.8	0.78	--	--	0.65	--
			3/5/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U	3.2	--	--	--	--	--
			3/26/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	--	--	0.5	--	--	0.5 U	--
			4/2/2018		0.5 U	0.5 U	0.5 U	--	0.5 U	--	--	0.5 U	--	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	2.5 J	0.71	0.5 U	0.5 U	0.62	0.5 U
			5/7/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	2.4	0.6	--	--	0.5 U	--
			6/4/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	1.1	0.5 U	--	--	0.5 U	--
			7/2/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	1.7	0.5 U	--	--	0.5 U	--
			8/6/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	4 J	0.89	--	--	0.73	--
			9/4/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	3.8	0.91	--	--	1	--
			10/4/2018		0.5 U	0.5 U	0.5 U	--	0.5 U	--	--	0.5 U	--	0.5 U	1 U	0.5 U	0.5 U	0.5 U	2 U	1.7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
			10/9/2018		--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			11/12/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	3.4	0.76	--	--	0.85	--
			12/3/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	2.6	0.5 U	--	--	0.5 U	--
CDWC 3	1903057		1/2/2018		--	--	--	--	0.5 U	--	--	--	--	**1.7**	--	--	--	--	**18 J**	13 J	**23**	--	--	**34**	--
			2/5/2018		--	--	--	--	0.5 U	--	--	--	--	**1.5**	--	--	--	--	**23**	**13**	**18**	--	--	**28**	--
			3/5/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	**20**	**13**	--	--	--	--	--
			3/26/2018		--	--	--	--	0.5 U	--	--	--	--	**1.3**	--	--	--	--	--	--	**23**	--	--	**29**	--
			4/2/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**11**	--	--	--	--	--
			4/23/2018		2 U	2 U	3.7	--	2 U	--	--	2 U	--	**1.9**	4 U	3.1	2 U	2 U	--	--	**18**	2 U	2 U	**27**	2 U
			5/7/2018		--	--	--	--	0.5 U	--	--	--	--	**1.6**	--	--	--	--	**20**	**12**	**26**	--	--	**41**	--
			6/4/2018		--	--	--	--	0.5 U	--	--	--	--	**1.8**	--	--	--	--	**24 J**	**11**	**21**	--	--	**29**	--
			7/2/2018		--	--	--	--	0.5 U	--	--	--	--	**1.1**	--	--	--	--	**23 J**	**11**	**12**	--	--	**19**	--
			8/6/2018		--	--	--	--	0.5 U	--	--	--	--	**1.3**	--	--	--	--	**18 J**	14 J	**17**	--	--	**22**	--
			9/4/2018		--	--	--	--	0.5 U	--	--	--	--	**1.5**	--	--	--	--	**19**	**12**	**17**	--	--	**29**	--
			10/1/2018		0.5 U	0.5 U	4	--	0.5 U	--	--	0.5 U	--	**1.5**	1 U	2.4	0.5 U	0.5 U	**19**	**11**	**14**	0.5 U	0.5 U	**20**	0.5 U
			10/9/2018		--	--	--	--	--	0.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			11/5/2018		--	--	--	--	0.5 U	--	--	--	--	**1.5**	--	--	--	--	**23**	**13**	**15**	--	--	**27**	--
			12/3/2018		--	--	--	--	0.5 U	--	--	--	--	**1.6**	--	--	--	--	**21**	**14**	**18**	--	--	**29**	--
CDWC 5A	8000100		1/2/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	1.2 J	**8.7**	--	--	**8.2**	--
			2/5/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	1.4	**7.8**	--	--	**7.9**	--
			3/5/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U	1.5	--	--	--	--	--
			3/26/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	--	--	**8.3**	--	--	**6.3**	--
			4/2/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4 U	--	--	--	--	--
			4/23/2018		0.5 U	0.5 U	1.6	--	0.5 U	--	--	0.5 U	--	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	--	**7**	0.5 U	0.5 U	**6.7**	0.5 U
			5/7/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2	1.5	**8.7**	--	--	**8**	--
			6/4/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	1.2	**7.7**	--	--	**7**	--
			7/2/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	1.1	4.8	--	--	4.1	--
			8/6/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	1.2 J	**6.1**	--	--	**5.2**	--
			9/4/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	1.3	**6.9**	--	--	**7.6**	--
			10/1/2018		0.5 U	0.5 U	1.7	--	0.5 U	--	--	0.5 U	--	0.5 U	1 U	0.71	0.5 U	0.5 U	2 U	4 U	**6.3**	0.5 U	0.5 U	**6.3**	0.5 U
			10/9/2018		--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			11/5/2018		--	--	--	--	0.5 U	--	--	--	--	**0.51**	--	--	--	--	2 U	1.3	**8.9**	--	--	**7.6**	--
			12/3/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2.1 U	1.7	**8.7**	--	--	**9.3**	--
CDWC 6	1902967		1/2/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	2.8 J	**5.1**	--	--	4.9	--
			2/5/2018		--	--	--	--	0.5 U	--	--	--	--	**0.87**	--	--	--	--	2.6	**6.6**	**24**	--	--	**28**	--
			3/5/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U	3.9	--	--	--	--	--
			3/26/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	--	--	**8.5**	--	--	**6.6**	--

TABLE 5-2
2018 GROUNDWATER QUALITY MONITORING RESULTS
Baldwin Park Operable Unit
San Gabriel Valley, California

Geosyntec consultants

Well Name	Site ID	Port [a]	Sample Date	Field Duplicate	1,1,1-Trichloroethane (µg/L)	1,1-Dichloroethane (µg/L)	1,1-Dichloroethene (µg/L)	1,2,3-Trichloropropane [b] (µg/L)	1,2-Dichloroethane (µg/L)	1,4-Dioxane (µg/L)	Acetone (µg/L)	Benzene (µg/L)	Carbon Disulfide (µg/L)	Carbon Tetrachloride (µg/L)	Chloroform (µg/L)	cis-1,2-Dichloroethene (µg/L)	Ethylbenzene (µg/L)	Methylene Chloride (µg/L)	NDMA [c] (ng/L)	Perchlorate (µg/L)	Tetrachloroethene (µg/L)	Toluene (µg/L)	trans-1,2-Dichloroethene (µg/L)	Trichloroethene (µg/L)	Xylenes, Total [d] (µg/L)
Federal or California State MCL (NL) [SMCL] [e]					**200**	**5**	**6**	**0.005**	**0.5**	**(1)**	**--**	**1**	**160**	**0.5**	**80**	**6**	**300**	**5**	**(10)**	**6**	**5**	**150**	**10**	**5**	**1750**
CDWC 6	1902967		4/2/2018		0.5 U	0.5 U	0.5 U	--	0.5 U	--	--	0.5 U	--	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	3.1 J	0.89	0.5 U	0.5 U	0.85	0.5 U
			4/23/2018		0.5 U	0.5 U	0.79	--	0.5 U	--	--	0.5 U	--	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	--	3.6	0.5 U	0.5 U	3.4	0.5 U
			5/7/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	3.5	**8.6**	--	--	**7.5**	--
			6/4/2018		--	--	--	--	0.5 U	--	--	--	--	**1.2**	--	--	--	--	6 J	**6.4**	**24**	--	--	**27**	--
			7/2/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2.4 J	4.8	**13**	--	--	**16**	--
			8/6/2018		--	--	--	--	0.5 U	--	--	--	--	**0.91**	--	--	--	--	2.9 J	**7.1 J**	**23**	--	--	**24**	--
			9/4/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	4.2	**16**	--	--	**19**	--
			10/1/2018		0.5 U	0.5 U	4.2	--	0.5 U	--	--	0.5 U	--	0.5 U	1 U	2.1	0.5 U	0.5 U	2 U	4 U	**16**	0.5 U	0.5 U	**15**	0.5 U
			10/9/2018		--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			11/5/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	4.4	**12**	--	--	**13**	--
			12/4/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	4.7	**16**	--	--	**18**	--
CDWC 8	1903081		1/2/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	1.3 J	1.2	--	--	0.5 U	--
			2/5/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	1.4	1.2	--	--	0.5 U	--
			3/5/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U	1.4	--	--	--	--	--
			3/26/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	--	--	1	--	--	0.5 U	--
			4/2/2018		0.5 U	0.5 U	0.5 U	--	0.5 U	--	--	0.5 U	--	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	1.4 J	1.1	0.5 U	0.5 U	0.5 U	0.5 U
			5/7/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	1.3	1	--	--	0.5 U	--
			6/4/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	1.3	1	--	--	0.5 U	--
			7/2/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	1.5	0.72	--	--	0.5 U	--
			8/6/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	1.4 J	0.8	--	--	0.5 U	--
			9/4/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	1.4	1	--	--	0.5 U	--
			10/1/2018		0.5 U	0.5 U	0.5 U	--	0.5 U	--	--	0.5 U	--	0.5 U	1 U	0.5 U	0.5 U	0.5 U	2 U	1.8	0.97	0.5 U	0.5 U	0.5 U	0.5 U
			10/9/2018		--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			11/5/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	1.5	1	--	--	0.5 U	--
			12/3/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	1.6	2.7	--	--	0.5 U	--
CDWC 10	CDWC10		1/2/2018		--	--	--	--	0.5 U	--	--	--	--	**0.8**	--	--	--	--	2 U	3.5 J	**15**	--	--	**16**	--
			2/5/2018		--	--	--	--	0.5 U	--	--	--	--	**0.75**	--	--	--	--	2.3	6	**26**	--	--	**31**	--
			3/5/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.3	**6.2**	--	--	--	--	--
			3/26/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	--	--	**30**	--	--	**28**	--
			4/2/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4 U	--	--	--	--	--
			4/23/2018		0.5 U	0.5 U	2.7	--	0.5 U	--	--	0.5 U	--	**0.68**	1 U	1.4	0.5 U	0.5 U	--	--	**12**	0.5 U	0.5 U	**13**	0.5 U
			5/7/2018		--	--	--	--	0.5 U	--	--	--	--	**0.57**	--	--	--	--	2.2	5.2	**32**	--	--	**39**	--
			6/4/2018		--	--	--	--	0.5 U	--	--	--	--	**0.55**	--	--	--	--	2 U	5.3	**31**	--	--	**32**	--
			7/2/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2.1 J	5.8	**21**	--	--	**19**	--
			8/6/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2.9 J	**7.4 J**	**30**	--	--	**29**	--
			9/4/2018		--	--	--	--	0.5 U	--	--	--	--	**0.56**	--	--	--	--	2	5.4	**24**	--	--	**30**	--
			10/1/2018		0.5 U	0.5 U	2.2	--	0.5 U	--	--	0.5 U	--	0.5 U	1 U	2.4	0.5 U	0.5 U	3.1	**7.8**	4.4	0.5 U	0.5 U	**11**	0.5 U
			10/9/2018		--	--	--	--	--	0.99	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			11/5/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	3	**7.1**	**38**	--	--	**40**	--
			12/3/2018		--	--	--	--	0.5 U	--	--	--	--	**0.51**	--	--	--	--	2.5	**7.3**	**26**	--	--	**32**	--
CDWC 14	8000174		1/2/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	1 U	--	--	--	4.2 J	3.7 J	2.7	--	--	3.1	--
			2/5/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	4.9	**11**	--	--	**12**	--
			3/5/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**6.6**	--	--	--	--	--
			3/26/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	--	--	**5.5**	--	--	4.6	--
			4/2/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**9.2 J**	--	--	--	--	--
			4/23/2018		0.5 U	0.5 U	0.76	--	0.5 U	--	--	0.5 U	--	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	--	3	0.5 U	0.5 U	3.2	0.5 U
			5/7/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	5.4	5.4	2	--	--	2.4	--
			6/4/2018		--	--	--	--	0.5 U	--	--	--	--	**0.56**	--	--	--	--	2 U	5.6	**11**	--	--	**13**	--
			6/11/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			7/2/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2 U	**7.7**	**6.5**	--	--	**6.5**	--
			8/6/2018		--	--	--	--	0.5 U	--	--	--	--	**0.51**	--	--	--	--	2.3 J	**9.8 J**	**12**	--	--	**13**	--
			9/4/2018		--	--	--	--	0.5 U	--	--	--	--	**0.52**	--	--	--	--	2.3	5.4	**11**	--	--	**14**	--
			10/1/2018		0.5 U	0.5 U	1.3	--	0.5 U	--	--	0.5 U	--	0.5 U	1 U	0.69	0.5 U	0.5 U	2 U	**12**	**6.2**	0.5 U	0.5 U	**6.4**	0.5 U
			10/9/2018		--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			11/5/2018		--	--	--	--	0.5 U	--	--	--	--	**0.73**	--	--	--	--	3.7	**7.8**	**18**	--	--	**22**	--
			12/3/2018		--	--	--	--	0.5 U	--	--	--	--	0.5 U	--	--	--	--	2.1 U	**11**	**7.5**	--	--	**9.1**	--
Multiport Monitoring Wells																									
EPA MW 5-01	EPAW51	1	6/21/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	4 U	1 U	1 U	1 U	1 U	1 U
		2	6/21/2018		1 U	1 U	1 U	--	0.5 U	--	1.2 J	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1.7 J	4 U	1 U	1 U	1 U	1 U	1 U
		3	6/21/2018		1 U	1 U	1 U	--	**0.57**	--	0.89 J	1 U	1 U	0.5 U	1 U	0.62 J	0.76 J	1 U	0.89 J	4 U	1 U	1 U	1 U	0.71 J	0.68 J
		4	6/21/2018		1 U	1 U	1 U	--	0.5 U	--	1.1 J	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	0.59 J	**7.7**	1 U	1 U	1 U	1 U	1 U
		5	6/21/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	0.63 J	**10**	1 U	1 U	1 U	1 U	1 U
		6	6/21/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1.9 J	**8.9**	1 U	1 U	1 U	1 U	1 U
		7	6/22/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	0.55 J	**7.3**	1 U	1 U	1 U	1 U	1 U
		8	6/22/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	1 J	1 U	1 U	1 U	1 U	1 U
		9	6/22/2018		1 U	1 U	1 U	--	0.5 U	1 U	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	0.91 J	4 U	1 U	1 U	1 U	1 U	1 U
		10	6/22/2018		1 U	1 U	1 U	--	0.5 U	1 U	0.84 J	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2.1	4 U	1 U	1 U	1 U	1 U	1 U
		11	6/22/2018		1 U	1 U	1 U	--	0.5 U	1 U	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1.2 J	4 U	1 U	1 U	1 U	1 U	1 U
		12	6/22/2018		1 U	1 U	1 U	--	0.5 U	1 U	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	4 U	1 U	1 U	1 U	1 U	1 U
		13	6/22/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW 5-03	BPW503	1	5/29/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	0.5 J	4 U	1 U	1 U	1 U	1 U	1 U
		1	12/12/2018		0.5 U	0.5 U	0.5 U	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1000 U	--	0.5 U	0.5 U	0.5 U	0.68	1 U

TABLE 5-2
2018 GROUNDWATER QUALITY MONITORING RESULTS
Baldwin Park Operable Unit
San Gabriel Valley, California

Geosyntec consultants

Well Name	Site ID	Port [a]	Sample Date	Field Duplicate	1,1,1-Trichloroethane (µg/L)	1,1-Dichloroethane (µg/L)	1,1-Dichloroethene (µg/L)	1,2,3-Trichloropropane [b] (µg/L)	1,2-Dichloroethane (µg/L)	1,4-Dioxane (µg/L)	Acetone (µg/L)	Benzene (µg/L)	Carbon Disulfide (µg/L)	Carbon Tetrachloride (µg/L)	Chloroform (µg/L)	cis-1,2-Dichloroethene (µg/L)	Ethylbenzene (µg/L)	Methylene Chloride (µg/L)	NDMA [c] (ng/L)	Perchlorate (µg/L)	Tetrachloroethene (µg/L)	Toluene (µg/L)	trans-1,2-Dichloroethene (µg/L)	Trichloroethene (µg/L)	Xylenes, Total [d] (µg/L)
Federal or California State MCL (NL) [SMCL] [e]					**200**	**5**	**6**	**0.005**	**0.5**	**(1)**	**--**	**1**	**160**	**0.5**	**80**	**6**	**300**	**5**	**(10)**	**6**	**5**	**150**	**10**	**5**	**1750**
MW 5-03	BPW503	2	5/29/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	3.8	**11**	0.6 J	1 U	1 U	1 U	1 U
		2	12/12/2018		0.5 U	0.5 U	0.5 U	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1000 U	--	1.1	0.5 U	0.5 U	0.5 U	1 U
		3	5/29/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1.4 J	**14**	0.52 J	1 U	1 U	1 U	1 U
		3	12/13/2018		0.5 U	0.5 U	0.5 U	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1000 U	--	1.1	0.5 U	0.5 U	0.5 U	1 U
		4	5/29/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	4.5	4.8	0.53 J	1 U	1 U	1 U	1 U
		4	12/13/2018		0.5 U	0.5 U	0.5 U	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1000 U	--	0.9	0.5 U	0.5 U	0.5 U	1 U
		5	5/29/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1.2 J	**6.8**	0.84 J	1 U	1 U	1 U	1 U
		5	12/13/2018		0.5 U	0.5 U	0.5 U	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1000 U	--	1.6	0.5 U	0.5 U	0.5 U	1 U
		6	5/29/2018		1 U	1 U	1 U	--	0.5 U	1 U	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	0.59 J	2 J	1.6	1 U	1 U	1 U	1 U
		6	12/10/2018		0.5 U	0.5 U	0.5 U	0.005 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1000 U	--	1.5	0.5 U	0.5 U	0.5 U	1 U
		7	5/29/2018		1 U	1 U	1 U	--	0.5 U	1 U	5 U	1 U	1 U	0.5 U	0.6 J	1 U	1 U	1 U	0.55 J	1.6 J	0.73 J	1 U	1 U	0.51 J	1 U
		7	12/10/2018		0.5 U	0.5 U	0.6	0.005 U	0.5 U	--	--	0.5 U	--	0.5 U	0.61	0.5 U	0.5 U	0.5 U	1000 U	--	1.4	0.5 U	0.5 U	0.51	1 U
		8	5/29/2018		1 U	1 U	0.91 J	--	0.5 U	1 U	5 U	1 U	1 U	0.5 U	0.64 J	1 U	1 U	1 U	0.74 J	2.1 J	0.75 J	1 U	1 U	1.2	1 U
		8	12/11/2018		0.5 U	0.5 U	3.3	0.005 U	0.5 U	--	--	0.5 U	--	0.5 U	0.78	0.5 U	0.5 U	0.5 U	1000 U	--	1.2	0.5 U	0.5 U	2.4	1 U
		9	5/29/2018		1 U	1 U	**7.7**	--	0.5 U	**2**	5 U	1 U	1 U	0.5 U	0.74 J	1 U	1 U	1 U	0.54 J	1.9 J	2.3	1 U	1 U	**15**	1 U
		9	12/11/2018		0.5 U	0.69	**30**	0.005 U	0.5 U	--	--	0.5 U	--	0.5 U	1	0.5 U	0.5 U	0.5 U	2 U	--	4.8	0.5 U	0.5 U	**33**	1 U
		10	5/29/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW 5-05	BPW505	1	5/30/2018		1 U	1.6	**6**	--	**3.6**	**6.7**	5 U	1 U	1 U	**3.6**	7.7	**7.9**	1 U	1 U	**830**	**150**	**44**	1 U	1 U	**170**	1 U
		1	11/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		2	5/30/2018		1 U	2.6	**11**	--	**2.4**	**13**	5 U	1 U	1 U	**1.2**	5.4	**18**	1 U	1 U	**360**	**72**	**130**	1 U	1 U	**150**	1 U
		2	11/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		3	5/30/2018		1 U	2.6	**5.7**	--	**0.86**	**7.1**	5 U	1 U	1 U	0.5 U	2.6	**14**	1 U	1 U	**16**	**39**	**34**	1 U	1 U	**71**	1 U
		3	11/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		4	5/30/2018		1 U	1 U	0.53 J	--	0.5 U	0.74 J	5 U	1 U	1 U	0.5 U	0.72 J	1.8	1 U	1 U	2 U	**10**	4.1	1 U	1 U	**11**	1 U
		4	11/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW 5-08	BPW508	1	5/30/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	0.51 J	4 U	2.4	1 U	1 U	2	1 U
		1	12/4/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1000 U	--	4.5	0.5 U	0.5 U	3.6	1 U
		2	5/30/2018		1 U	1 U	0.71 J	--	0.5 U	1 U	5 U	1 U	1 U	0.5 U	1 U	0.77 J	1 U	1 U	2 U	4 U	**7.5**	1 U	1 U	**6.9**	1 U
		2	12/4/2018		0.5 U	0.5 U	3	0.5 U	0.5 U	--	--	0.5 U	--	**0.86**	0.82	1.7	0.5 U	0.5 U	1000 U	--	**25**	0.5 U	0.5 U	**20**	1 U
		3	5/30/2018		1 U	1 U	0.53 J	--	0.5 U	1 U	5 U	1 U	1 U	0.5 U	1 U	0.67 J	1 U	1 U	2 U	4 U	5	1 U	1 U	5	1 U
		3	12/4/2018		0.5 U	0.5 U	0.76	0.5 U	0.5 U	--	--	0.5 U	--	**1.2**	0.5 U	0.5 U	0.5 U	0.5 U	1000 U	--	**6.3**	0.5 U	0.5 U	4.3	1 U
		4	5/30/2018		1 U	1.3	**9.2**	--	**0.72**	**6.4**	5 U	1 U	1 U	0.5 U	8.9	**14**	1 U	1 U	**19**	**28**	**76**	1 U	1 U	**100**	1 U
		4	12/4/2018		0.5 U	2	**30**	0.5 U	**0.76**	--	--	0.5 U	--	**0.67**	11	**20**	0.5 U	0.5 U	1000 U	--	**180**	0.5 U	0.5 U	**130**	1 U
MW 5-11	BPW511	1	5/31/2018		1 U	1 U	1 U	--	0.5 U	1 U	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	5.6	4 U	2.6	1 U	1 U	0.61 J	1 U
		1	12/17/2018		0.5 U	0.5 U	0.5 U	0.005 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1000 U	--	2.3	0.5 U	0.5 U	0.5 U	1 U
		2	5/31/2018		1 U	1 U	1 U	--	0.5 U	1 U	5 U	1 U	1 U	0.5 U	1.1 J	1 U	1 U	1 U	2 U	4 U	2.4 J	1 U	1 U	1.4 J	1 U
		2	12/17/2018		0.5 U	0.5 U	0.5 U	0.005 U	0.5 U	--	--	0.5 U	--	0.5 U	1.7	0.5 U	0.5 U	0.5 U	1000 U	--	3.3	0.5 U	0.5 U	1	1 U
		3	5/31/2018		1 U	1 U	0.59 J	--	0.5 U	**6.1**	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	**7**	**9.7**	1 U	1 U	2.3	1 U
		3	12/18/2018		0.5 U	0.5 U	2.1	0.005 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	--	**11**	0.5 U	0.5 U	2.8	1 U
MW 5-13	BPW513	1	5/31/2018		1 U	1 U	1 U	--	0.5 U	1 U	5 U	1 U	1 U	0.5 U	0.61 J	0.5 J	1 U	1 U	2 U	4 U	1.5 J	1 U	1 U	1.4 J	1 U
		1	11/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		2	5/31/2018		1 U	1 U	1 U	--	0.5 U	1 U	5 U	1 U	1 U	0.5 U	0.7 J	1	1 U	1 U	2 U	4 U	**6.8**	1 U	1 U	4.8	1 U
		2	11/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		3	5/31/2018		1 U	1 U	1 U	--	0.5 U	**3.3**	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	5.9	0.76 J	1 U	1 U	0.93 J	1 U
		3	11/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW 5-15	BPW515	1	6/6/2018		1 U	1 U	1 U	--	0.5 U	0.27 J	5 U	1 U	1 U	0.5 U	0.81 J	1 U	1 U	1 U	2.2	**7.3**	1.8	1 U	1 U	**15**	1 U
		1	12/7/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1000 U	--	0.92	0.5 U	0.5 U	**8.8**	1 U
		2	6/6/2018		1 U	1.3	5.4	--	0.5 U	0.55 J	5 U	1 U	1 U	0.5 U	1 U	1	1 U	1 U	2 U	1.4 J	3.2	1 U	1 U	4.2	1 U
		2	12/7/2018		0.5 U	1.1	**7.8**	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.67	0.5 U	0.5 U	1000 U	--	2.6	0.5 U	0.5 U	3.6	1 U
		3	6/6/2018		1 U	1 U	1 U	--	0.5 U	0.29 J	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	**7.5**	**5.8**	1 U	1 U	2.6	1 U
		3	12/7/2018		0.5 U	0.5 U	0.5	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1000 U	--	**7.5**	0.5 U	0.5 U	3.7	1 U
MW 5-17	BPW517	1	6/4/2018		1 U	1 U	1 U	--	0.5 U	1 U	5 U	1 U	1 U	0.5 U	0.46 J	1 U	1 U	1 U	3.8	0.98 J	1.2	1 U	1 U	0.57 J	1 U
		2	6/4/2018		1 U	1 U	1 U	--	0.5 U	1 U	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	0.93 J	4 U	**6.8 J**	1 U	1 U	**8.5 J**	1 U
		3	6/4/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW 5-18	BPW518	1	6/1/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	2 J	1.2	1 U	1 U	0.54 J	1 U
		1	12/3/2018		0.5 U	0.5 U	0.5 U	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1000 U	--	1.2	0.5 U	0.5 U	0.5 U	1 U
		2	6/1/2018		1 U	1 U	1 U	--	0.5 U	1 U	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	2.2 J	1.1	1 U	1 U	1 U	1 U
		2	12/3/2018		0.5 U	0.5 U	0.5 U	0.005 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	--	1.8	0.5 U	0.5 U	0.5 U	1 U
		3	6/1/2018		1 U	1 U	1 U	--	0.5 U	1 U	5 U	1 U	1 U	0.5 U	1.2 J	1 U	1 U	1 U	2 U	1.5 J	0.82 J	1 U	1 U	0.52 J	1 U
		3	11/28/2018		0.5 U	0.5 U	0.5 U	0.005 U	0.5 U	--	--	0.5 U	--	0.5 U	1.3	0.5 U	0.5 U	0.5 U	1000 U	--	0.68	0.5 U	0.5 U	0.5 U	1 U
MW 5-19	BPW519	1	5/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		2	5/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		3	5/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		4	5/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		5	5/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		6	5/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW 5-20	BPW520	1	6/12/2018		1 U	1 U	1 U	--	**3.8**	--	1.7 J	1 U	1 U	**4**	2.5	1.4	1 U	1 U	**110**	**93**	2	1 U	1 U	**94**	1 U
		2	6/12/2018		1 U	1 U	1 U	--	0.5 U	1 U	0.86 J	1 U	1 U	**3.3 J**	1 U	1 U	1 U	1 U	2.2	4.2	1 U	1 U	1 U	1.8 J	1 U
		3	6/12/2018		1 U	1.7	2	--	**3.4**	**3.4**	1.1 J	1 U	1 U	**5**	3.5	**6.6**	1 U	1 U	**150**	**130**	**9.3**	1 U	1 U	**87**	1 U
		4	6/12/2018		1 U	0.8 J	0.55 J	--	**2.7**	**2.4**	1.6 J	1 U	1 U	**1.4**	2.2	2.7	1 U	1 U	**250 J**	**75**	4.2	1 U	1 U	**45**	1 U
		5	6/12/2018		1 U	1 U	1 U	--	**2.7**	**1.7**	1.4 J	1 U	1 U	**1**	1.4	0.82 J	1 U	1 U	**530 J**	**57**	1.4	1 U	1 U	**25**	1 U
		6	6/12/2018		1 U	1 U	1 U	--	0.5 U	--	0.98 J	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2.1	**16**	0.5 J	1 U	1 U	0.73 J	1 U

TABLE 5-2
2018 GROUNDWATER QUALITY MONITORING RESULTS
Baldwin Park Operable Unit
San Gabriel Valley, California

Geosyntec consultants

Well Name	Site ID	Port [a]	Sample Date	Field Duplicate	1,1,1-Trichloroethane (µg/L)	1,1-Dichloroethane (µg/L)	1,1-Dichloroethene (µg/L)	1,2,3-Trichloropropane [b] (µg/L)	1,2-Dichloroethane (µg/L)	1,4-Dioxane (µg/L)	Acetone (µg/L)	Benzene (µg/L)	Carbon Disulfide (µg/L)	Carbon Tetrachloride (µg/L)	Chloroform (µg/L)	cis-1,2-Dichloroethene (µg/L)	Ethylbenzene (µg/L)	Methylene Chloride (µg/L)	NDMA [c] (ng/L)	Perchlorate (µg/L)	Tetrachloroethene (µg/L)	Toluene (µg/L)	trans-1,2-Dichloroethene (µg/L)	Trichloroethene (µg/L)	Xylenes, Total [d] (µg/L)
Federal or California State MCL (NL) [SMCL] [e]					**200**	**5**	**6**	**0.005**	**0.5**	**(1)**	**--**	**1**	**160**	**0.5**	**80**	**6**	**300**	**5**	**(10)**	**6**	**5**	**150**	**10**	**5**	**1750**
MW 5-20	BPW520	7	6/12/2018		1 U	1 U	0.66 J	--	0.5 U	--	1.1 J	1 U	1 U	0.5 U	0.65 J	1 U	1 U	1 U	0.57 J	2.2 J	2.3	1 U	1 U	3.8	1 U
MW 5-22	BPW522	1	6/6/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	**1.3**	1 U	1 U	1 U	1 U	2 U	4 U	1 U	1 U	1 U	1 U	1 U
		1	12/19/2018		0.5 U	0.5 U	0.5 U	0.005 U	0.5 U	0.5 U	--	0.5 U	--	**2.8**	0.5 U	0.5 U	0.5 U	0.5 U	1000 U	--	0.5 U	0.5 U	0.5 U	0.5 U	1 U
		2	6/6/2018		1 U	1 U	0.81 J	--	**0.85**	--	5 U	1 U	1 U	**4.2**	0.91 J	1.3	1 U	1 U	**99**	**25**	2.5	1 U	1 U	**15**	1 U
		2	12/19/2018		0.5 U	0.5 U	0.92	0.005 U	**0.78**	0.67	--	0.5 U	--	**5.3**	0.85	1.1	0.5 U	0.5 U	1000 U	--	2.2	0.5 U	0.5 U	**17**	1 U
		3	6/7/2018		1 U	1 U	1.1	--	**3.4**	--	5 U	1 U	1 U	**2.8**	2	2.6	1 U	1 U	**410 J**	**91**	4.7	1 U	1 U	**42**	1 U
		3	12/19/2018		0.5 U	0.5 U	1.5	0.005 U	**3.3**	**2.6**	--	0.5 U	--	**4.4**	2	2.4	0.5 U	0.5 U	1000 U	--	5	0.5 U	0.5 U	**51**	1 U
		4	6/7/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	**0.76 J**	1 U	1 U	1 U	1 U	1.5 J	4.1 J	1 U	1 U	1 U	2.3 J	1 U
		4	12/20/2018		0.5 U	0.5 U	0.5 U	0.005 U	0.5 U	0.5 U	--	0.5 U	--	**0.5 U**	0.5 U	0.5 U	0.5 U	0.5 U	1000 U	--	0.5 U	0.5 U	0.5 U	1.1	1 U
		5	6/7/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	0.66 J	1 U	1 U	1 U	1.3 J	4.1 J	1 U	1 U	1 U	1 U	1 U
		5	12/20/2018		0.5 U	0.5 U	0.5 U	0.005 U	0.5 U	0.5 U	--	0.5 U	--	0.5 U	0.73	0.5 U	0.5 U	0.5 U	1000 U	--	0.5 U	0.5 U	0.5 U	0.5 U	1 U
		6	6/7/2018		1 U	1 U	1.2	--	0.5 U	--	5 U	1 U	1 U	0.5 U	0.48 J	1 U	1 U	1 U	0.64 J	2.6 J	1.6	1 U	1 U	0.53 J	1 U
		6	12/20/2018		0.5 U	0.5 U	2.3	0.005 U	0.5 U	0.68	--	0.5 U	--	0.5 U	0.6	0.5 U	0.5 U	0.5 U	1000 U	--	2.1	0.5 U	0.5 U	0.69	1 U
MW 5-23	BPW523	1	6/8/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	**3.1**	1 U	1 U	1 U	1 U	1.6 J	2 J	0.6 J	1 U	1 U	2.3	1 U
		2	6/8/2018		1 U	1 U	0.63 J	--	0.5 U	0.12 J	5 U	1 U	1 U	**4.9**	0.51 J	1	1 U	1 U	**11**	11 J	2.1	1 U	1 U	**9.1**	1 U
		3	6/8/2018		1 U	1.5	2	--	**4**	**0.9 J**	5 U	1 U	1 U	**1.8**	4.7	**9.1**	1 U	1 U	**370 J**	**100**	**11**	1 U	1 U	**72**	1 U
		4	6/8/2018		1 U	1 U	1 U	--	**2.9**	**4.4 J**	5 U	1 U	1 U	**1.1**	1.5	1 U	1 U	1 U	**440 J**	44 J	1	1 U	1 U	**18**	1 U
		5	6/11/2018		1 U	1 U	1 U	--	0.5 U	0.064 J	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	0.54 J	**8.7**	1.7	1 U	1 U	2.4	1 U
		6	6/11/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	0.82 J	4 U	1 U	1 U	1 U	1 U	1 U
MW 5-24	BPW524	1	6/1/2018		1 U	1 U	1 U	--	0.5 U	**7.5**	5 U	1 U	1 U	**0.75**	1 U	1 U	1 U	1 U	2 U	4 U	1 U	1 U	1 U	1 U	1 U
		2	6/1/2018		1 U	1 U	1 U	--	0.5 U	**4.5**	5 U	1 U	1 U	**0.89**	1 U	1 U	1 U	1 U	2 U	4 U	1 U	1 U	1 U	1 U	1 U
		3	6/1/2018		1 U	1 U	1 U	--	0.5 U	0.069 J	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	1 J	2.1	1 U	1 U	2.7	1 U
		4	6/1/2018		1 U	1 U	1 U	--	0.5 U	0.32 J	5 U	1 U	1 U	0.5 U	1 U	0.65 J	1 U	1 U	2 U	2.7 J	**25**	1 U	1 U	**33**	1 U
		5	6/1/2018		1 U	1 U	1 U	--	0.5 U	0.11 J	5 U	1 U	1 U	0.5 U	1 U	1.9	1 U	1 U	2 U	**6.9**	**54**	1 U	1 U	**39**	1 U
		6	6/1/2018		1 U	0.99 J	**6.8**	--	**0.57**	**1.2**	5 U	1 U	1 U	0.48 J	1.3	**6.4**	1 U	1 U	**12**	**16**	**110**	1 U	1 U	**58**	1 U
		7	6/1/2018		1 U	1 U	0.53 J	--	0.5 U	**2.1**	5 U	1 U	1 U	0.5 U	0.5 J	0.68 J	1 U	1 U	2 U	**13**	**6.2**	1 U	1 U	3.6	1 U
MW 5-25	BPW525	1	6/4/2018		1 U	1 U	1 U	--	0.5 U	1 U	5 U	1 U	1 U	**0.9**	1 U	1 U	1 U	1 U	2.6	2.8 J	1 U	1 U	1 U	1 U	1 U
		2	6/5/2018		1 U	1 U	1 U	--	0.5 U	1 U	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2.9	**7.4**	1 U	1 U	1 U	1 U	1 U
		3	6/5/2018		1 U	1 U	1 U	--	0.5 U	1 U	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	5.5	**20**	2.9	1 U	1 U	1 U	1 U
		4	6/5/2018		1 U	1 U	1 U	--	0.5 U	1 U	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	**20**	1.7 J	1 U	1 U	1 U	1 U
		5	6/5/2018		1 U	1 U	1 U	--	0.5 U	1 U	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	0.81 J	**8.5**	0.56 J	1 U	1 U	1 U	1 U
		6	6/5/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	0.97 J	4 U	1 U	1 U	1 U	1 U	1 U
		7	6/5/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	4 U	1 U	1 U	1 U	1 U	1 U
MW 5-26	BPW526	1	6/25/2018		1 U	1 U	1 U	--	**0.5 U**	--	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	0.62 J	4 U	1 U	1 U	1 U	1 U	1 U
		2	6/25/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	4 U	1 U	1 U	1 U	1 U	1 U
		3	6/25/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	4 U	1 U	1 U	1 U	1 U	1 U
		4	6/25/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	4 U	1 U	1 U	1 U	1 U	1 U
		5	6/25/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	4 U	1 U	1 U	1 U	1 U	1 U
		6	6/25/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	4 U	0.87 J	1 U	1 U	1 U	1 U
		7	6/25/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	4 U	1 U	1 U	1 U	1 U	1 U
MW 5-27	BPW527	1	6/7/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2.2	4 U	1 U	1 U	1 U	1 U	1 U
		2	6/7/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2.8	4 U	1 U	1 U	1 U	1 U	1 U
		3	6/7/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1.1 J	4 U	1 U	1 U	1 U	1 U	1 U
		4	6/8/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	4 U	1 U	1 U	1 U	1 U	1 U
		5	6/8/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	4 U	1 U	1 U	1 U	1 U	1 U
		6	6/8/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	--	4 U	1 U	1 U	1 U	1 U	1 U
		7	6/8/2018		1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	4 U	1 U	1 U	1 U	1 U	1 U
WHICO MP-1	W10WHMP1	1	6/11/2018		1 U	1 U	1 U	--	0.5 U	1 U	5 U	1 U	1 U	0.5 U	0.57 J	1 U	1 U	1 U	1 J	4 U	**5.5 J**	1 U	1 U	2.1 J	1 U
		2	6/11/2018		1 U	1 U	1 U	--	0.5 U	1 U	5 U	1 U	1 U	0.5 U	0.68 J	1 U	1 U	1 U	1.5 J	4 U	3.2	1 U	1 U	4.8	1 U
		3	6/11/2018		1 U	1 U	1 U	--	0.5 U	1 U	5 U	1 U	1 U	0.5 U	0.82 J	1 U	1 U	1 U	0.6 J	4 U	**12**	1 U	1 U	**7.2**	1 U
		4	6/11/2018		1 U	1 U	1 U	--	0.5 U	0.32 J	5 U	1 U	1 U	0.5 U	0.89 J	3.5	1 U	1 U	7.8	4 U	**69**	1 U	1 U	**25**	1 U
		5	6/11/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		6	6/11/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Other Monitoring Wells																									
AJ MW-2R	W11AJMW2R		1/26/2018		0.5 U	0.5 U	3	1 U	0.5 U	0.66	--	0.5 U	--	0.5 U	4.1	**9.8**	0.5 U	2 U	1.9 U	2.2	**89**	0.5 U	0.5 U	**53**	0.5 U
			4/13/2018		0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.67	--	0.5 U	--	0.5 U	19	5.6	0.5 U	2 U	2 U	2.5	**44**	0.5 U	0.85	**27**	0.5 U
			7/2/2018		0.5 U	0.5 U	3	1 U	0.5 U	0.68	--	0.5 U	--	0.5 U	2.5	**10**	0.5 U	2 U	9.2	5.9	**240**	0.5 U	0.5 U	**82**	0.5 U
			10/16/2018		0.5 U	0.5 U	1.5	1 U	0.5 U	**1**	--	0.5 U	--	0.5 U	10	**7.1**	0.5 U	2 U	2 U	**6.1**	3	0.5 U	0.5 U	**15**	0.5 U
AJ MW-6	W11AJMW6		1/26/2018		0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.44	--	0.5 U	--	0.5 U	4.4	2.1	0.5 U	2 U	1.9 U	2.1	**14**	0.5 U	0.5 U	**32**	0.5 U
			1/26/2018	X	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.44	--	0.5 U	--	0.5 U	4.5	2	0.5 U	2 U	2 U	2	**13**	0.5 U	0.5 U	**30**	0.5 U
			4/13/2018		0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.41	--	0.5 U	--	0.5 U	2	1.5	0.5 U	2 U	2.1 U	2.8	2.2	0.5 U	0.5 U	**17**	0.5 U
			4/13/2018	X	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.44	--	0.5 U	--	0.5 U	1.8	1.5	0.5 U	2 U	2 U	2.6	2.3	0.5 U	0.5 U	**17**	0.5 U
			7/2/2018		0.5 U	0.5 U	0.5 U	1 U	0.5 U	**1.2**	--	0.5 U	--	**0.64**	3.5	5.5	0.5 U	2 U	8.9	**140**	**78**	0.5 U	0.5 U	**58**	0.5 U
			7/2/2018	X	0.5 U	0.5 U	0.5 U	1 U	0.5 U	**1.3**	--	0.5 U	--	**0.64**	3.5	5.6	0.5 U	2 U	9	**140**	**78**	0.5 U	0.5 U	**57**	0.5 U
			10/16/2018		0.5 U	0.5 U	0.5 U	1 U	0.5 U	**1.4**	--	0.5 U	--	0.5 U	4.3	3.9	0.5 U	2 U	2 U	**85**	1.5	0.5 U	0.5 U	**12**	0.5 U
			10/16/2018	X	0.5 U	0.5 U	0.5 U	1 U	0.5 U	**1.2**	--	0.5 U	--	0.5 U	4.3	4	0.5 U	2 U	2 U	**65**	1.5	0.5 U	0.61	**14**	0.5 U
ALR MW-1R	W11AZW1R		4/17/2018		0.5 U	0.5 U	0.68	0.02 U	0.5 U	1 U	10 U	0.5 U	1 U	0.5 U	1	0.5 U	0.5 U	1 U	2 U	4 U	0.73	0.5 U	0.5 U	0.71	1 U
			10/18/2018		0.5	0.51	**20**	0.02 U	0.5 U	1 U	10 U	0.5 U	1 U	0.5 U	0.78	0.15 J	0.5 U	1 U	2 U	4 U	2.1	0.5 U	0.5 U	**17**	1 U
ALR MW-2R	W11AZW2R		4/18/2018		0.5 U	0.5 U	0.5 U	0.02 U	0.5 U	1 U	5.2 J	0.5 U	1 U	0.5 U	1	0.5 U	0.5 U	1 U	2 U	1.2 J	0.25 J	0.5 U	0.5 U	0.5 U	1 U
			10/17/2018		0.5 U	0.5 U	0.5 U	0.02 U	0.5 U	**1 U**	6.4 J	0.5 U	1 U	0.5 U	0.63	0.5 U	0.5 U	1 U	2 U	4 U	0.5 U	0.5 U	0.5 U	0.5 U	0.28 J
ALR MW-3	W11AZW03		4/19/2018		0.5 U	0.5 U	0.5 U	**0.02 U**	0.5 U	1 U	10 U	0.5 U	1 U	0.34 J	1.4	2.4	0.5 U	1 U	4 U	**130**	**33**	0.5 U	0.5 U	**37**	1 U
			10/18/2018		0.5 U	0.5 U	0.28 J	0.02 U	0.5 U	1 U	3.3 J	0.5 U	1 U	0.49 J	6.7	3.1	0.5 U	1 U	2 U	**71**	**40**	0.5 U	0.5 U	**36**	1 U

TABLE 5-2
2018 GROUNDWATER QUALITY MONITORING RESULTS
Baldwin Park Operable Unit
San Gabriel Valley, California

Geosyntec consultants

Well Name	Site ID	Port [a]	Sample Date	Field Duplicate	1,1,1-Trichloroethane (µg/L)	1,1-Dichloroethane (µg/L)	1,1-Dichloroethene (µg/L)	1,2,3-Trichloropropane [b] (µg/L)	1,2-Dichloroethane (µg/L)	1,4-Dioxane (µg/L)	Acetone (µg/L)	Benzene (µg/L)	Carbon Disulfide (µg/L)	Carbon Tetrachloride (µg/L)	Chloroform (µg/L)	cis-1,2-Dichloroethene (µg/L)	Ethylbenzene (µg/L)	Methylene Chloride (µg/L)	NDMA [c] (ng/L)	Perchlorate (µg/L)	Tetrachloroethene (µg/L)	Toluene (µg/L)	trans-1,2-Dichloroethene (µg/L)	Trichloroethene (µg/L)	Xylenes, Total [d] (µg/L)
Federal or California State MCL (NL) [SMCL] [e]					**200**	**5**	**6**	**0.005**	**0.5**	**(1)**	**--**	**1**	**160**	**0.5**	**80**	**6**	**300**	**5**	**(10)**	**6**	**5**	**150**	**10**	**5**	**1750**
ALR MW-8	W11AZW08		4/18/2018		0.5 U	0.5 U	1.3	0.02 U	0.5 U	1 U	10 U	0.5 U	1 U	0.5 U	0.64	0.5 U	0.5 U	1 U	2 U	4 U	0.55	0.5 U	0.5 U	0.49 J	1 U
			10/18/2018		0.5 U	0.5 U	0.6	0.02 U	0.5 U	**2.3**	10 U	0.5 U	1 U	0.5 U	0.4 J	0.5 U	0.5 U	1 U	2 U	4 U	0.2 J	0.5 U	0.5 U	0.79	1 U
ALR MW-9	W11AZW09		4/18/2018		0.5 U	0.5 U	4.7	0.02 U	0.5 U	1 U	2 J	0.5 U	1 U	0.5 U	1.9	0.63	0.5 U	1 U	**43**	4 U	**19**	0.5 U	0.5 U	3.3	1 U
			10/19/2018		0.5 U	0.5 U	3.5	0.02 U	0.5 U	1 U	20	0.5 U	1 U	0.5 U	1.1	0.4 J	0.5 U	1 U	**1200 H**	**8**	**13**	0.5 U	0.5 U	3	1 U
ALR MW-10R	W11AZW10R		4/19/2018		0.5 U	0.5 U	0.5 U	0.02 U	0.5 U	1 U	10 U	0.5 U	1 U	0.5 U	1.4	0.5 U	0.5 U	1 U	2 U	1 J	0.44 J	0.5 U	0.5 U	0.5 U	1 U
			10/19/2018		0.5 U	0.5 U	0.61	0.02 U	0.5 U	1 U	7.9 J	0.5 U	1 U	0.5 U	2	0.5 U	0.5 U	1 U	2 U	1.2 J	0.29 J	0.5 U	0.5 U	0.5 U	1 U
Monitoring Well Cluster																									
MW 5-28D	BPW528D		6/18/2018		1 U	1 U	1 U	--	0.5 U	1 U	12	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	4 U	1 U	1 U	1 U	1 U	1 U
MW 5-28I	BPW528I		6/18/2018		1 U	1 U	1 U	--	0.5 U	1 U	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	4 U	1 U	1 U	1 U	1 U	1 U
MW 5-28S	BPW528S		6/18/2018		1 U	1 U	1 U	--	0.5 U	1 U	5 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	**11**	1 U	1 U	1 U	1 U	1 U
Production Wells																									
LACO SANTA FE 1	8000070		6/20/2018		1 U	1 U	1 U	--	0.5 U	1 U	1.6 J	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	4 U	1 U	1 U	1 U	1 U	1 U
			6/20/2018	X	1 U	1 U	1 U	--	0.5 U	1 U	1.3 J	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	4 U	1 U	1 U	1 U	1 U	1 U
SGVWC B6D	78000098		2/6/2018		0.5 U	0.5 U	0.5 U	0.005 U	**2.9**	**1.9**	--	0.5 U	--	**7.5**	2.7	1.7	0.5 U	0.5 U	**150**	**55**	2.4	0.5 U	0.5 U	**120**	1 U
			5/9/2018		0.5 U	0.5 U	0.5 U	0.005 U	**0.98**	0.66	--	0.5 U	--	**3.6**	1	0.66	0.5 U	0.5 U	2 U	**13**	1.3	0.5 U	0.5 U	**32**	1 U
			6/25/2018		1 U	1 U	1 U	--	**0.45 J**	**0.38 J**	5 U	1 U	1 U	**0.58**	0.61 J	1 U	1 U	1 U	**10**	**12**	1.4	1 U	1 U	**12**	1 U
SWS 121W1 [f]	8000181		2/6/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	5.6	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			5/3/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	5.7	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			6/8/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	**6.3**	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			7/6/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	3.7	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			8/7/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	5.3	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			9/26/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	5.7	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			10/3/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	5.3	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			11/6/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	5.5	0.5 U	0.5 U	0.5 U	0.5 U	1 U
SWS 139W2	1901599	285	6/20/2018		1 U	1 U	1 U	--	0.5 U	--	1 J	1 U	1 U	0.5 U	0.81 J	1 U	1 U	1 U	2 U	**26**	1 U	1 U	1 U	1 U	1 U
			6/20/2018	X	1 U	1 U	1 U	--	0.5 U	--	5 U	1 U	1 U	0.5 U	0.8 J	1 U	1 U	1 U	2 U	**25**	1 U	1 U	1 U	1 U	1 U
SWS 139W6	8000152		6/20/2018		1 U	1 U	1 U	--	0.5 U	--	2.4 J	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	4 U	1 U	1 U	1 U	1 U	1 U
			6/20/2018	X	1 U	1 U	1 U	--	0.5 U	--	4.1 J	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	4 U	1 U	1 U	1 U	1 U	1 U
SWS 140W5 [f]	8000145		1/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			2/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			3/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			4/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			5/8/2018		0.5 U	0.5 U	0.5 U	--	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	3.6	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			6/1/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	4.1	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			7/6/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	**0.5 U**	0.5 U	0.5 U	0.5 U	0.5 U	**10**	**6.4**	0.5 U	0.5 U	0.5 U	**6.8**	1 U
			8/7/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**12**	**8.7**	0.5 U	0.5 U	0.5 U	**7.7**	1 U
			9/26/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	5.6	0.5 U	0.5 U	0.5 U	0.62	1 U
			10/3/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	9.3	**7.8**	0.5 U	0.5 U	0.5 U	**7**	1 U
			11/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			12/1/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SWS 142W2	8000183		1/17/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	3.5	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			2/6/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	3.6	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			3/7/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	3.5	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			4/11/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2.6	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			5/3/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2.6	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			6/4/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2.7 J	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			7/6/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2.4	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			8/6/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	3.6	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			9/21/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	3.6	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			10/2/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	4	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			11/6/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	4.2	0.5 U	0.5 U	0.5 U	0.5 U	1 U
			12/12/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	3.8	0.5 U	0.5 U	0.5 U	0.5 U	1 U
SWS 151W2	21902518		1/17/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.4	4.1	0.5 U	0.5 U	0.5 U	3.7	1 U
			2/6/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.8	4.1	0.5 U	0.5 U	0.5 U	3.6	1 U
			3/7/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.2	3.9	0.5 U	0.5 U	0.5 U	3.9	1 U
			4/11/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5	3.2	0.5 U	0.5 U	0.5 U	3.7	1 U
			5/3/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3.1	2.9	0.5 U	0.5 U	0.5 U	3.8	1 U
			6/4/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3.3	3.5 J	0.5 U	0.5 U	0.5 U	3.8	1 U
			7/6/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.6	2.7	0.5 U	0.5 U	0.5 U	3.9	1 U
			8/6/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3.6	3.3	0.5 U	0.5 U	0.5 U	4.1	1 U
			9/21/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3	4.2	0.5 U	0.5 U	0.5 U	4.6	1 U
			10/2/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3.6	4.3	0.5 U	0.5 U	0.5 U	3.4	1 U
			11/6/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3.1 J	4.8	0.5 U	0.5 U	0.5 U	3.6	1 U
			12/4/2018		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.9	4.8	0.5 U	0.5 U	0.5 U	4.7	1 U
VCWD BIG DALTON	1900035	225	6/19/2018		1 U	1 U	1 U	--	0.5 U	1 U	2.4 J	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	**11**	1 U	1 U	1 U	1 U	1 U
			6/19/2018	X	1 U	1 U	1 U	--	0.5 U	1 U	1.3 J	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	**11**	1 U	1 U	1 U	1 U	1 U
VCWD E MAINE	1900027		6/19/2018		1 U	1 U	1 U	--	0.5 U	--	0.92 J	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	4 U	1.4	1 U	1 U	1 U	1 U
			6/19/2018	X	1 U	1 U	1 U	--	0.5 U	1 U	1.6 J	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	4 U	1.4	1 U	1 U	0.47 J	1 U
VCWD MORADA	1900029		6/19/2018		1 U	1 U	1 U	--	0.5 U	1 U	5 U	1 U	1 U	0.5 U	1.2	1 U	1 U	1 U	2 U	6	1	1 U	1 U	1 U	1 U
VCWD PADDY LN	1900031		6/19/2018		1 U	1 U	1 U	--	**1.3**	**0.93 J**	1.6 J	1 U	1 U	**0.5 U**	1.1	0.56 J	1 U	1 U	**55**	**24**	1.2	1 U	1 U	**9.8**	1 U
			11/29/2018		0.5 U	0.5 U	0.5 U	0.5 U	**0.88**	**--**	--	0.5 U	--	0.5 U	0.96	0.5 U	0.5 U	0.5 U	1000 U	--	1.2	0.5 U	0.5 U	**10**	1 U
VCWD W MAINE	1900028		6/19/2018		1 U	1 U	1 U	--	0.5 U	--	1.9 J	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	4 U	2.6	1 U	1 U	0.89 J	1 U
			6/19/2018	X	1 U	1 U	1 U	--	0.5 U	--	1.5 J	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	2 U	4 U	2.2 J	1 U	1 U	0.96 J	1 U

TABLE 5-2
2018 GROUNDWATER QUALITY MONITORING RESULTS
Baldwin Park Operable Unit
San Gabriel Valley, California

Geosyntec consultants

Notes:

a. For inactive production wells, depth (feet) of discrete low-flow sample.

b. In some instances, samples are submitted for 1,2,3-Trichloropropane (1,2,3-TCP) analysis for both the standard EPA Method 524.2, which has a reporting limit of 0.50 µg/L, and the modified low-level Sanitation and Radiation Laboratories (SRL) modified Method 524.2, which has a reporting limit of 0.005 µg/L. Where available, this table shows the results associated with the low-level SRL method.

c. In some instances, samples are submitted for NDMA analysis by two methods, EPA Method 8270C that has a reporting limit of 1 µg/L (1,000 ng/L) and EPA Method 1625C that has a reporting limit of 0.0020 µg/L (2 ng/L).

d. Total xylenes calculated as sum of xylene isomers if total xylene results not reported by laboratory.

e. Federal or California State Maximum Contaminant Level (MCL), Notification Level (NL) or Secondary MCL (SMCL).

f. Production wells SWS 121W1 and SWS 140W5 were sampled on an approximately weekly basis throughout 2017. Consistent with project extraction wells, only monthly sampling results are reported here.

-- Sample not collected, or sample not analyzed.

B - Laboratory blank contamination reported.

U - Analyte not detected at the reported quantitation limit shown in the result.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ - Analyte not detected at the reported quantitation limit shown in the result; the reported quantitation limit is estimated.

NDMA = N-Nitrosodimethylamine

Results in bold indicate MCL, NL, or SMCL exceeded.

TABLE 5-3
DETECTIONS OF NON-COC ORGANIC COMPOUNDS
Baldwin Park Operable Unit
San Gabriel Valley, California

Well Name	Sample Collection Date	Analytical Method	Analyte Name	Analyte ID	Result	Data Qualifier	Reporting Limit	Detection Limit	Units	California MCL	California NL	USEPA RSLs[2] (Tap Water)
COI 5	12/3/2018	EPA 524.2	Trichlorofluoromethane	75-69-4	0.71		0.5	0.18	ug/l	150	--	--
LPVCWD 2	1/30/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	3.1		0.5	0.12	ug/l	--	1000	--
LPVCWD 2	3/15/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	3.7		0.5	0.12	ug/l	--	1000	--
LPVCWD 2	5/1/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	3.6		0.5	0.12	ug/l	--	1000	--
LPVCWD 2	6/6/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	3.6		0.5	0.12	ug/l	--	1000	--
LPVCWD 2	7/9/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	2.4		0.5	0.12	ug/l	--	1000	--
LPVCWD 2	8/15/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	2		0.5	0.12	ug/l	--	1000	--
LPVCWD 2	9/19/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	3.2		0.5	0.12	ug/l	--	1000	--
LPVCWD 2	11/20/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	4.1		0.5	0.12	ug/l	--	1000	--
LPVCWD 2	12/11/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	5.4		0.5	0.12	ug/l	--	1000	--
LPVCWD 3	9/19/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.83		0.5	0.12	ug/l	--	1000	--
LPVCWD 5	1/2/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.1		0.5	0.12	ug/l	--	1000	--
LPVCWD 5	2/5/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.77		0.5	0.12	ug/l	--	1000	--
LPVCWD 5	3/5/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.86		0.5	0.12	ug/l	--	1000	--
LPVCWD 5	4/3/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.52		0.5	0.12	ug/l	--	1000	--
LPVCWD 5	5/2/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.52		0.5	0.12	ug/l	--	1000	--
LPVCWD 5	6/5/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.7		0.5	0.12	ug/l	--	1000	--
LPVCWD 5	7/2/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.51		0.5	0.12	ug/l	--	1000	--
LPVCWD 5	10/2/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.56		0.5	0.12	ug/l	--	1000	--
LPVCWD 5	11/5/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.66		0.5	0.12	ug/l	--	1000	--
LPVCWD 5	12/10/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.59	J	0.5	0.12	ug/l	--	1000	--
VCWD SA1-1	5/22/2018	EPA 524.2	Trichlorofluoromethane	75-69-4	4		0.5	0.18	ug/l	150	--	--
SA1-3 (LANTE)	1/17/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.92		0.5	0.12	ug/l	--	1000	--
SA1-3 (LANTE)	1/17/2018	EPA 524.2	Trichlorofluoromethane	75-69-4	0.8		0.5	0.18	ug/l	150	--	--
SA1-3 (LANTE)	1/23/2018	EPA 524.2	Trichlorofluoromethane	75-69-4	0.81		0.5	0.18	ug/l	150	--	--
SA1-3 (LANTE)	1/23/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.1		0.5	0.12	ug/l	--	1000	--
SA1-3 (LANTE)	1/23/2018	EPA 524.2	Bromodichloromethane	75-27-4	0.58		0.5	0.09	ug/l	80	--	--
SA1-3 (LANTE)	2/27/2018	EPA 524.2	Trichlorofluoromethane	75-69-4	0.62		0.5	0.18	ug/l	150	--	--
SA1-3 (LANTE)	2/27/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.86		0.5	0.12	ug/l	--	1000	--
SA1-3 (LANTE)	3/19/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.77		0.5	0.12	ug/l	--	1000	--
SA1-3 (LANTE)	3/19/2018	EPA 524.2	Trichlorofluoromethane	75-69-4	0.66		0.5	0.18	ug/l	150	--	--
SA1-3 (LANTE)	5/14/2018	EPA 524.2	Trichlorofluoromethane	75-69-4	0.72		0.5	0.18	ug/l	150	--	--
SA1-3 (LANTE)	5/14/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1		0.5	0.12	ug/l	--	1000	--
SA1-3 (LANTE)	6/18/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.88		0.5	0.12	ug/l	--	1000	--
SA1-3 (LANTE)	6/18/2018	EPA 524.2	Trichlorofluoromethane	75-69-4	0.75		0.5	0.18	ug/l	150	--	--
SA1-3 (LANTE)	7/18/2018	EPA 524.2	Trichlorofluoromethane	75-69-4	0.86		0.5	0.18	ug/l	150	--	--
SA1-3 (LANTE)	7/18/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.79		0.5	0.12	ug/l	--	1000	--
SA1-3 (LANTE)	8/22/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.6		0.5	0.12	ug/l	--	1000	--
SA1-3 (LANTE)	8/22/2018	EPA 524.2	Trichlorofluoromethane	75-69-4	1.7		0.5	0.18	ug/l	150	--	--
SA1-3 (LANTE)	9/12/2018	EPA 524.2	Trichlorofluoromethane	75-69-4	1.6		0.5	0.18	ug/l	150	--	--
SA1-3 (LANTE)	9/12/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.3		0.5	0.12	ug/l	--	1000	--
SA1-3 (LANTE)	10/3/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.96		0.5	0.12	ug/l	--	1000	--
SA1-3 (LANTE)	10/3/2018	EPA 524.2	Trichlorofluoromethane	75-69-4	1.5		0.5	0.18	ug/l	150	--	--
SA1-3 (LANTE)	11/6/2018	EPA 524.2	Trichlorofluoromethane	75-69-4	2.6		0.5	0.18	ug/l	150	--	--
SA1-3 (LANTE)	11/6/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.4		0.5	0.12	ug/l	--	1000	--
SGVWC B25A	1/3/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.4		0.5	0.12	ug/l	--	1000	--
SGVWC B25A	2/6/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.4		0.5	0.12	ug/l	--	1000	--
SGVWC B25A	3/6/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.4		0.5	0.12	ug/l	--	1000	--
SGVWC B25A	4/3/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.1		0.5	0.12	ug/l	--	1000	--
SGVWC B25A	5/1/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.3		0.5	0.12	ug/l	--	1000	--
SGVWC B25A	6/5/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.5		0.5	0.12	ug/l	--	1000	--
SGVWC B25A	7/3/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.4		0.5	0.12	ug/l	--	1000	--
SGVWC B25A	8/7/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.1		0.5	0.12	ug/l	--	1000	--
SGVWC B25A	9/5/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.7		0.5	0.12	ug/l	--	1000	--
SGVWC B25A	10/2/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.8		0.5	0.12	ug/l	--	1000	--
SGVWC B25A	11/6/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.1		0.5	0.12	ug/l	--	1000	--
SGVWC B25A	12/4/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	2	J	0.5	0.12	ug/l	--	1000	--
SGVWC B25A	12/10/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	2		0.5	0.12	ug/l	--	1000	--
SGVWC B25B	1/3/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.2		0.5	0.12	ug/l	--	1000	--
SGVWC B25B	2/6/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.1		0.5	0.12	ug/l	--	1000	--

TABLE 5-3
DETECTIONS OF NON-COC ORGANIC COMPOUNDS
Baldwin Park Operable Unit
San Gabriel Valley, California

Well Name	Sample Collection Date	Analytical Method	Analyte Name	Analyte ID	Result	Data Qualifier	Reporting Limit	Detection Limit	Units	California MCL	California NL	USEPA RSLs[2] (Tap Water)
SGVWC B25B	3/6/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1		0.5	0.12	ug/l	--	1000	--
SGVWC B25B	4/3/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.95		0.5	0.12	ug/l	--	1000	--
SGVWC B25B	5/1/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.1		0.5	0.12	ug/l	--	1000	--
SGVWC B25B	6/5/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.3		0.5	0.12	ug/l	--	1000	--
SGVWC B25B	7/3/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.1		0.5	0.12	ug/l	--	1000	--
SGVWC B25B	8/7/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1		0.5	0.12	ug/l	--	1000	--
SGVWC B25B	9/5/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.3		0.5	0.12	ug/l	--	1000	--
SGVWC B25B	10/2/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.6		0.5	0.12	ug/l	--	1000	--
SGVWC B25B	11/6/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1		0.5	0.12	ug/l	--	1000	--
SGVWC B25B	12/4/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.8	J	0.5	0.12	ug/l	--	1000	--
SGVWC B25B	12/10/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.8		0.5	0.12	ug/l	--	1000	--
SGVWC B26A	1/3/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.3		0.5	0.12	ug/l	--	1000	--
SGVWC B26A	2/6/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.4		0.5	0.12	ug/l	--	1000	--
SGVWC B26A	3/6/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.2		0.5	0.12	ug/l	--	1000	--
SGVWC B26A	4/3/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1		0.5	0.12	ug/l	--	1000	--
SGVWC B26A	5/1/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1		0.5	0.12	ug/l	--	1000	--
SGVWC B26A	6/5/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.2		0.5	0.12	ug/l	--	1000	--
SGVWC B26A	8/7/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.82		0.5	0.12	ug/l	--	1000	--
SGVWC B26A	9/5/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.4		0.5	0.12	ug/l	--	1000	--
SGVWC B26A	10/2/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.5		0.5	0.12	ug/l	--	1000	--
SGVWC B26A	11/6/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1		0.5	0.12	ug/l	--	1000	--
SGVWC B26A	12/4/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.7	J	0.5	0.12	ug/l	--	1000	--
SGVWC B26A	12/10/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.8		0.5	0.12	ug/l	--	1000	--
SGVWC B26B	1/3/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	2.7		0.5	0.12	ug/l	--	1000	--
SGVWC B26B	2/6/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	2.8		0.5	0.12	ug/l	--	1000	--
SGVWC B26B	3/6/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	2.6		0.5	0.12	ug/l	--	1000	--
SGVWC B26B	4/3/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	2.2		0.5	0.12	ug/l	--	1000	--
SGVWC B26B	5/1/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	2.4		0.5	0.12	ug/l	--	1000	--
SGVWC B26B	6/5/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	2.8		0.5	0.12	ug/l	--	1000	--
SGVWC B26B	8/7/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	2.1		0.5	0.12	ug/l	--	1000	--
SGVWC B26B	9/5/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	3		0.5	0.12	ug/l	--	1000	--
SGVWC B26B	10/2/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	3.4		0.5	0.12	ug/l	--	1000	--
SGVWC B26B	11/6/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	2.3		0.5	0.12	ug/l	--	1000	--
SGVWC B26B	12/4/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	3.6	J	0.5	0.12	ug/l	--	1000	--
SGVWC B26B	12/10/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	3.6		0.5	0.12	ug/l	--	1000	--
SGVWC B5B	11/5/2018	EPA 524.2	4-Methyl-2-Pentanone	108-10-1	1.2	J	5	0.56	ug/l	--	--	6300
SGVWC B5B	12/3/2018	EPA 524.2	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	0.31	J	5	0.27	ug/l	1200	--	--
SGVWC B5D	11/5/2018	EPA 524.2	4-Methyl-2-Pentanone	108-10-1	0.93	J	5	0.56	ug/l	--	--	6300
SGVWC B5E	1/2/2018	EPA 521	N-NITROSOMORPHOLINE	NMOR	0.0021		0.002	0.00047	ug/l	--	--	0.012
SGVWC B5E	1/2/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.47	J	0.5	0.12	ug/l	--	1000	--
SGVWC B5E	2/5/2018	EPA 521	N-NITROSOMORPHOLINE	NMOR	0.0026		0.002	0.00047	ug/l	--	--	0.012
SGVWC B5E	2/5/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.42	J	0.5	0.12	ug/l	--	1000	--
SGVWC B5E	3/5/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.52		0.5	0.12	ug/l	--	1000	--
SGVWC B5E	3/5/2018	EPA 521	N-NITROSOMORPHOLINE	NMOR	0.0026		0.002	0.00047	ug/l	--	--	0.012
SGVWC B5E	4/2/2018	EPA 521	N-NITROSOMORPHOLINE	NMOR	0.0029		0.002	0.00047	ug/l	--	--	0.012
SGVWC B5E	4/2/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.33	J	0.5	0.12	ug/l	--	1000	--
SGVWC B5E	5/7/2018	EPA 521	N-NITROSOMORPHOLINE	NMOR	0.0022		0.002	0.00047	ug/l	--	--	0.012
SGVWC B5E	5/7/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.34	J	0.5	0.12	ug/l	--	1000	--
SGVWC B5E	5/30/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.5		0.5	0.12	ug/l	--	1000	--
SGVWC B5E	6/4/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.48	J	0.5	0.12	ug/l	--	1000	--
SGVWC B5E	6/4/2018	EPA 521	N-NITROSOMORPHOLINE	NMOR	0.0026		0.002	0.00047	ug/l	--	--	0.012
SGVWC B5E	7/2/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.31	J	0.5	0.12	ug/l	--	1000	--
SGVWC B5E	8/6/2018	EPA 521	N-NITROSOMORPHOLINE	NMOR	0.0021		0.002	0.00047	ug/l	--	--	0.012
SGVWC B5E	8/6/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.32	J	0.5	0.12	ug/l	--	1000	--
SGVWC B5E	9/4/2018	EPA 521	N-NITROSOMORPHOLINE	NMOR	0.0022		0.002	0.00047	ug/l	--	--	0.012
SGVWC B5E	9/4/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.4	J	0.5	0.12	ug/l	--	1000	--
SGVWC B5E	10/1/2018	EPA 521	N-NITROSOMORPHOLINE	NMOR	0.0029		0.002	0.00047	ug/l	--	--	0.012
MW 5-03 Port 7	12/10/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.4		0.5	0.12	ug/l	--	1000	--
MW 5-03 Port 6	12/10/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	2.8		0.5	0.12	ug/l	--	1000	--
MW 5-03 Port 9	12/11/2018	EPA 524.2	Trichlorofluoromethane	75-69-4	45		0.5	0.18	ug/l	150	--	--

TABLE 5-3
DETECTIONS OF NON-COC ORGANIC COMPOUNDS
Baldwin Park Operable Unit
San Gabriel Valley, California

Geosyntec consultants

Well Name	Sample Collection Date	Analytical Method	Analyte Name	Analyte ID	Result	Data Qualifier	Reporting Limit	Detection Limit	Units	California MCL	California NL	USEPA RSLs[2] (Tap Water)
MW 5-03 Port 8	12/11/2018	EPA 524.2	Bromodichloromethane	75-27-4	0.59		0.5	0.09	ug/l	80	--	--
MW 5-03 Port 9	12/11/2018	EPA 524.2	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	5.2		5	0.27	ug/l	1200	--	--
MW 5-03 Port 9	12/11/2018	EPA 8270C	bis(2-Ethylhexyl) Phthalate	117-81-7	33		5	2.3	ug/l	4	--	--
MW 5-03 Port 9	12/11/2018	EPA 521	N-NITROSOMORPHOLINE	NMOR	0.0034		0.002	0.00047	ug/l	--	--	0.012
MW 5-03 Port 8	12/11/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.6		0.5	0.12	ug/l	--	1000	--
MW 5-03 Port 2	12/12/2018	EPA 8270C	2-Chlorophenol	95-57-8	1	R	1	0.28	ug/l	--	--	91
MW 5-03 Port 2	12/12/2018	EPA 8270C	4-Methylphenol	106-44-5	1	R	1	0.22	ug/l	--	--	--
MW 5-03 Port 2	12/12/2018	EPA 8270C	Phenol	108-95-2	1	R	1	0.16	ug/l	--	--	--
MW 5-03 Port 2	12/12/2018	EPA 8270C	2,4-Dichlorophenol	120-83-2	1	R	1	0.26	ug/l	--	--	--
MW 5-03 Port 2	12/12/2018	EPA 8270C	2-Methylphenol	95-48-7	1	R	1	0.21	ug/l	--	--	--
MW 5-03 Port 2	12/12/2018	EPA 8270C	Benzoic Acid	65-85-0	100	R	100	8.6	ug/l	--	--	--
MW 5-03 Port 2	12/12/2018	EPA 8270C	2,4,5-Trichlorophenol	95-95-4	1	R	1	0.23	ug/l	--	--	--
MW 5-03 Port 2	12/12/2018	EPA 8270C	2,4-Dinitrophenol	51-28-5	10	R	10	1.6	ug/l	--	--	--
MW 5-03 Port 2	12/12/2018	EPA 8270C	4,6-Dinitro-2-Methylphenol	534-52-1	5	R	5	1.7	ug/l	--	--	--
MW 5-03 Port 2	12/12/2018	EPA 8270C	Pentachlorophenol	87-86-5	1	R	1	0.19	ug/l	--	--	--
MW 5-03 Port 2	12/12/2018	EPA 8270C	4-Chloro-3-Methylphenol	59-50-7	1	R	1	0.23	ug/l	--	--	--
MW 5-03 Port 2	12/12/2018	EPA 8270C	2,4,6-Trichlorophenol	88-06-2	1	R	1	0.22	ug/l	--	--	--
MW 5-03 Port 2	12/12/2018	EPA 8270C	2,4-Dimethylphenol	105-67-9	1	R	1	0.3	ug/l	--	--	--
MW 5-03 Port 2	12/12/2018	EPA 8270C	2-Nitrophenol	88-75-5	1	R	1	0.26	ug/l	--	--	--
MW 5-03 Port 2	12/12/2018	EPA 8270C	4-Nitrophenol	100-02-7	5	R	5	0.45	ug/l	--	--	--
MW 5-03 Port 4	12/13/2018	EPA 8270C	2-Chlorophenol	95-57-8	1	R	1	0.28	ug/l	--	--	--
MW 5-03 Port 4	12/13/2018	EPA 8270C	2,4-Dinitrophenol	51-28-5	10	R	10	1.6	ug/l	--	--	--
MW 5-03 Port 4	12/13/2018	EPA 8270C	Pentachlorophenol	87-86-5	1	R	1	0.19	ug/l	--	--	--
MW 5-03 Port 4	12/13/2018	EPA 8270C	2,4,6-Trichlorophenol	88-06-2	1	R	1	0.22	ug/l	--	--	--
MW 5-03 Port 4	12/13/2018	EPA 8270C	4-Methylphenol	106-44-5	1	R	1	0.22	ug/l	--	--	--
MW 5-03 Port 4	12/13/2018	EPA 8270C	2-Methylphenol	95-48-7	1	R	1	0.21	ug/l	--	--	--
MW 5-03 Port 4	12/13/2018	EPA 8270C	4-Chloro-3-Methylphenol	59-50-7	1	R	1	0.23	ug/l	--	--	--
MW 5-03 Port 5	12/13/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.3		0.5	0.12	ug/l	--	1000	--
MW 5-03 Port 4	12/13/2018	EPA 8270C	Benzoic Acid	65-85-0	100	R	100	8.6	ug/l	--	--	--
MW 5-03 Port 4	12/13/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	7		0.5	0.12	ug/l	--	1000	--
MW 5-03 Port 4	12/13/2018	EPA 8270C	Phenol	108-95-2	1	R	1	0.16	ug/l	--	--	--
MW 5-03 Port 4	12/13/2018	EPA 8270C	2,4-Dimethylphenol	105-67-9	1	R	1	0.3	ug/l	--	--	--
MW 5-03 Port 4	12/13/2018	EPA 8270C	4,6-Dinitro-2-Methylphenol	534-52-1	5	R	5	1.7	ug/l	--	--	--
MW 5-03 Port 4	12/13/2018	EPA 8270C	2-Nitrophenol	88-75-5	1	R	1	0.26	ug/l	--	--	--
MW 5-03 Port 4	12/13/2018	EPA 8270C	4-Nitrophenol	100-02-7	5	R	5	0.45	ug/l	--	--	--
MW 5-03 Port 4	12/13/2018	EPA 8270C	2,4,5-Trichlorophenol	95-95-4	1	R	1	0.23	ug/l	--	--	--
MW 5-03 Port 4	12/13/2018	EPA 8270C	2,4-Dichlorophenol	120-83-2	1	R	1	0.26	ug/l	--	--	--
MW 5-08 Port 4	12/4/2018	EPA 524.2	Bromodichloromethane	75-27-4	0.76		0.5	0.09	ug/l	80	--	--
MW 5-11 Port 2	12/17/2018	EPA 524.2	Bromodichloromethane	75-27-4	0.95		0.5	0.09	ug/l	80	--	--
MW 5-11 Port 1	12/17/2018	EPA 8270C	bis(2-Ethylhexyl) Phthalate	117-81-7	15		5	2.3	ug/l	4	--	--
MW 5-11 Port 1	12/17/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	8.3		0.5	0.12	ug/l	--	1000	--
MW 5-11 Port 3	12/18/2018	EPA 521	N-NITROSOMORPHOLINE	NMOR	0.011		0.002	0.00047	ug/l	--	--	0.012
MW 5-15 Port 1	12/7/2018	EPA 8270C	bis(2-Ethylhexyl) Phthalate	117-81-7	7.1	J	5	2.3	ug/l	4	--	--
MW 5-15 Port 3	12/7/2018	EPA 8270C	bis(2-Ethylhexyl) Phthalate	117-81-7	6.2	J	5	2.3	ug/l	4	--	--
MW 5-18 Port 3	11/28/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.3		0.5	0.12	ug/l	--	1000	--
MW 5-18 Port 3	11/28/2018	EPA 524.2	Bromodichloromethane	75-27-4	0.57		0.5	0.09	ug/l	80	--	--
MW 5-18 Port 2	12/3/2018	EPA 8270C	bis(2-Ethylhexyl) Phthalate	117-81-7	22		5	2.3	ug/l	4	--	--
MW 5-18 Port 1	12/3/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	13		0.5	0.12	ug/l	--	1000	--
MW 5-18 Port 2	12/3/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	4.3		0.5	0.12	ug/l	--	1000	--
MW 5-22 Port 3	12/19/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.89		0.5	0.12	ug/l	--	1000	--
AJ MW-2R	1/26/2018	EPA 8260B	Bromodichloromethane	75-27-4	1.5		0.5	0.25	ug/l	80	--	--
AJ MW-2R	4/13/2018	EPA 8260B	Bromodichloromethane	75-27-4	0.75		0.5	0.25	ug/l	80	--	--
AJ MW-2R	7/2/2018	EPA 8260B	Bromodichloromethane	75-27-4	0.89		0.5	0.25	ug/l	80	--	--
AJ MW-2R	10/16/2018	EPA 8260B	Bromodichloromethane	75-27-4	0.78		0.5	0.25	ug/l	80	--	--
AJ MW-6	1/26/2018	EPA 8260B	2-Methoxy-2-Methylpropane	1634-04-4	0.64		0.5	0.25	ug/l	13	--	--
AJ MW-6	1/26/2018	EPA 8260B	2-Methoxy-2-Methylpropane	1634-04-4	0.75		0.5	0.25	ug/l	13	--	--
AJ MW-6	4/13/2018	EPA 8260B	2-Methoxy-2-Methylpropane	1634-04-4	0.66		0.5	0.25	ug/l	13	--	--
AJ MW-6	4/13/2018	EPA 8260B	2-Methoxy-2-Methylpropane	1634-04-4	0.66		0.5	0.25	ug/l	13	--	--
AJ MW-6	7/2/2018	EPA 8260B	2-Methoxy-2-Methylpropane	1634-04-4	0.55		0.5	0.25	ug/l	13	--	--
AJ MW-6	10/16/2018	EPA 8260B	2-Methoxy-2-Methylpropane	1634-04-4	0.57		0.5	0.25	ug/l	13	--	--

TABLE 5-3
DETECTIONS OF NON-COC ORGANIC COMPOUNDS
Baldwin Park Operable Unit
San Gabriel Valley, California

Well Name	Sample Collection Date	Analytical Method	Analyte Name	Analyte ID	Result	Data Qualifier	Reporting Limit	Detection Limit	Units	California MCL	California NL	USEPA RSLs[2] (Tap Water)
AJ MW-6	10/16/2018	EPA 8260B	2-Methoxy-2-Methylpropane	1634-04-4	0.51		0.5	0.25	ug/l	13	--	--
SGVWC B6D	2/6/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	3.5		0.5	0.12	ug/l	--	1000	--
SGVWC B6D	5/9/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	1.3		0.5	0.12	ug/l	--	1000	--
SWS 121W1	5/3/2018	EPA 524.2	Dibromochloromethane	124-48-1	0.55		0.5	0.2	ug/l	--	--	0.87
SWS 121W1	6/8/2018	EPA 524.2	Bromoform	75-25-2	0.52		0.5	0.19	ug/l	--	--	3.3
SWS 151W2	9/21/2018	EPA 524.2	Dichlorodifluoromethane	75-71-8	0.52		0.5	0.12	ug/l	--	1000	--
VCWD PADDY LN	11/29/2018	EPA 8270C	bis(2-Ethylhexyl) Phthalate	117-81-7	5	R	5	2.3	ug/l	4	--	--

Notes:
1) There is no MCL for bromodichloromethane, a trihalomethane compound. The MCL for total trihalomethanes is 80 ug/L.
2) United States Environmental Protection Agency, Regional Screening Levels, Tap Water, November 2017. Lowest of the carcinogenic RSL (target risk 1E-06) and non-carcinogenic RSL (HI=1) shown.
"--" indicates the respective MCL, NL, or RSL is not available or has not been established for this chemical

Abbreviations:
MCL = Maximum Contaminant Level
NL = Notification Level
RSL = Regional Screening Level
UG/L = micrograms per liter
USEPA = United States Environmental Protection Agency

TABLE 5-4
DETECTIONS OF TENTATIVELY IDENTIFIED COMPOUNDS
Baldwin Park Operable Unit
San Gabriel Valley, California

Geosyntec consultants

Well Name	Sample Collection Date	Analytical Method	Analyte Name	Analyte ID	Result	Units
COI 5	5/30/2018	EPA METHOD 8270C	Unknown #1 (possible benzodiazepin)	TIC-00000296	33	UG/L
VCWD SA1-3 (Lante Well)	9/12/2018	EPA METHOD 8270C	TETRACHLOROETHENE	127-18-4	12	UG/L
MW5-03 Port 2	12/12/2018	EPA METHOD 8270C	Unknown #2 (possible Alcohol MW=116)	TIC-00000312	25	UG/L
MW5-03 Port 2	12/12/2018	EPA METHOD 8270C	Unknown #3 (possible Alkane MW=140)	TIC-00000313	16	UG/L
MW5-03 Port 2	12/12/2018	EPA METHOD 8270C	Unknown #1 (possible Alkane MW=88)	TIC-00000311	74	UG/L
MW5-03 Port 2	12/12/2018	EPA METHOD 8270C	Unknown #4 (possible Ketone MW=128)	TIC-00000314	10	UG/L
MW5-03 Port 4	12/13/2018	EPA METHOD 8270C	Unknown (possible Ketone MW=128)	TIC-00000314	21	UG/L
MW5-03 Port 4	12/13/2018	EPA METHOD 8270C	Unknown (possible Alcohol MW=116)	TIC-00000306	140	UG/L
MW5-03 Port 4	12/13/2018	EPA METHOD 8270C	Unknown (possible Ester MW=90)	TIC-00000312	11	UG/L
MW5-03 Port 4	12/13/2018	EPA METHOD 8270C	Unknown (possible Alkene MW=104)	TIC-00000308	15	UG/L
MW5-03 Port 4	12/13/2018	EPA METHOD 8270C	Unknown (possible Alkane MW=140)	TIC-00000307	130	UG/L
MW5-03 Port 4	12/13/2018	EPA METHOD 8270C	Unknown (possible Ester MW=174)	TIC-00000311	580	UG/L
MW5-03 Port 4	12/13/2018	EPA METHOD 8270C	Unknown (possible Alkane MW=129)	TIC-00000315	11	UG/L
MW5-03 Port 4	12/13/2018	EPA METHOD 8270C	Unknown (possible Ether MW=86)	TIC-00000313	10	UG/L
MW5-05 Port 1	12/31/2018	EPA METHOD 8270C	TETRACHLOROETHENE	127-18-4	31	UG/L
MW5-05 Port 2	12/31/2018	EPA METHOD 8270C	TETRACHLOROETHENE	127-18-4	86	UG/L
MW5-05 Port 3	12/31/2018	EPA METHOD 8270C	TETRACHLOROETHENE	127-18-4	24	UG/L
MW5-08 Port 4	12/4/2018	EPA METHOD 8270C	TETRACHLOROETHENE	127-18-4	47	UG/L

Notes:
UG/L = micrograms per liter

TABLE 5-5
LIST OF WELLS INCLUDED IN
MODEL CALIBRATION STATISTICS
Baldwin Park Operable Unit
San Gabriel Valley, California

BPOU	
Complete Dataset	**Non-Pumping Dataset**
Well ID	**Well ID**
01900028	01900029
01900029	01900031
01900031	01900034
01900034	01900035
01900035	01900881
01900354	08000039
01900881	61900718
01900885	BPW503 Port 1
01901460	BPW503 Port 2
08000039	BPW503 Port 3
08000060	BPW503 Port 4
61900718	BPW503 Port 5
BPW503 Port 1	BPW503 Port 6
BPW503 Port 2	BPW503 Port 7
BPW503 Port 3	BPW503 Port 8
BPW503 Port 4	BPW503 Port 9
BPW503 Port 5	BPW520 Port 1
BPW503 Port 6	BPW520 Port 2
BPW503 Port 7	BPW520 Port 4
BPW503 Port 8	BPW520 Port 5
BPW503 Port 9	BPW520 Port 6
BPW520 Port 1	BPW520 Port 7
BPW520 Port 2	BPW523 Port 1
BPW520 Port 4	BPW523 Port 2
BPW520 Port 5	BPW523 Port 3
BPW520 Port 6	BPW523 Port 4
BPW520 Port 7	BPW523 Port 5
BPW523 Port 1	BPW523 Port 6
BPW523 Port 2	PZ1-3BD
BPW523 Port 3	PZ1-3BS
BPW523 Port 4	PZ3-1BD
BPW523 Port 5	PZ3-1BS
BPW523 Port 6	W11AZW03
PZ1-3BD	W11AZW06
PZ1-3BS	W11AZW1R
PZ3-1BD	W11AZW2R
PZ3-1BS	Z1000006
W11AZW03	
W11AZW06	
W11AZW1R	
W11AZW2R	
Z1000006	

Basinwide			
Complete Dataset		**Non-Pumping Dataset**	
Well ID	**Well ID**	**Well ID**	**Well ID**
01900014	BPW503 Port 6	01900029	W11AZW03
01900028	BPW503 Port 7	01900031	W11AZW06
01900029	BPW503 Port 8	01900034	W11AZW1R
01900031	BPW503 Port 9	01900035	W11AZW2R
01900034	BPW520 Port 1	01900357	Z1000002
01900035	BPW520 Port 2	01900358	Z1000006
01900354	BPW520 Port 4	01900881	Z1000007
01900355	BPW520 Port 5	01900918	Z1000009
01900357	BPW520 Port 6	01900934	
01900358	BPW520 Port 7	01901694	
01900510	BPW523 Port 1	01902077	
01900725	BPW523 Port 2	01902458	
01900828	BPW523 Port 3	01902529	
01900829	BPW523 Port 4	01902666	
01900881	BPW523 Port 5	08000039	
01900885	BPW523 Port 6	31900736	
01900918	PZ1-3BD	61900718	
01900926	PZ1-3BS	BPW503 Port 1	
01900934	PZ3-1BD	BPW503 Port 2	
01901014	PZ3-1BS	BPW503 Port 3	
01901460	W11AZW03	BPW503 Port 4	
01901692	W11AZW06	BPW503 Port 5	
01901694	W11AZW1R	BPW503 Port 6	
01901749	W11AZW2R	BPW503 Port 7	
01902027	Z1000002	BPW503 Port 8	
01902034	Z1000006	BPW503 Port 9	
01902077	Z1000007	BPW520 Port 1	
01902115	Z1000009	BPW520 Port 2	
01902458		BPW520 Port 4	
01902529		BPW520 Port 5	
01902666		BPW520 Port 6	
01902792		BPW520 Port 7	
01903019		BPW523 Port 1	
08000039		BPW523 Port 2	
08000060		BPW523 Port 3	
31900736		BPW523 Port 4	
61900718		BPW523 Port 5	
BPW503 Port 1		BPW523 Port 6	
BPW503 Port 2		PZ1-3BD	
BPW503 Port 3		PZ1-3BS	
BPW503 Port 4		PZ3-1BD	
BPW503 Port 5		PZ3-1BS	

TABLE 5-6
UPDATED MODEL CALIBRATION STATISTICS SUMMARY MODEL YEAR 2003-04 THROUGH 2017-18
GROUNDWATER FLOW MODEL
Baldwin Park Operable Unit
San Gabriel Valley, California

	Basinwide		BPOU	
	Complete Dataset	**Non-Pumping Dataset**	**Complete Dataset**	**Non-Pumping Dataset**
Number of observations	3,315	3,052	3,190	2,981
Average residual (ft)	-2.58	-2.48	-1.89	-2.44
Average absolute residual (ft)	5.20	4.07	4.40	3.92
Minimum residual (ft)	-132.42	-44.22	-33.81	-24.01
Maximum residual (ft)	62.42	35.17	62.42	35.17
Residual Standard deviation from mean (ft)	10.71	6.06	6.83	4.70
Residual Sum of Squares (ft^2)	401,193	129,944	160,130	83,569
Root mean square error (RMSE) (ft)	11.00	6.53	7.09	5.29
Observed range (ft)	525.14	518.70	138.91	124.38
Standard deviation / observed range	0.02	0.01	0.05	0.04

Notes:
Refer to Table 5-5 for a listing of wells included in the complete and non-pumping datasets.

TABLE 5-7
ANNUAL WATER BALANCE
GROUNDWATER FLOW MODEL
Baldwin Park Operable Unit
San Gabriel Valley, California

fluxes in acre-feet/year

	Model Inflows												Model Outflows			
	Boundaries								Recharge				Boundaries			
Model Year[a]	Raymond Fault	Puente	Sawpit Canyon	N. boundary bedrock	San Gabriel Canyon	Dalton Canyon	San Dimas	**Total Boundaries**	Precipitation	Spreading	**Total Recharge**	**Total Inflow**	Whittier Narrows	**Pumping**	**Total Outflow**	**Change in Storage**
2003-04	7,163	1,107	3,104	3,747	2,306	2,181	15,820	**35,428**	19,412	155,794	**175,206**	**210,634**	-310	**-234,942**	**-235,252**	**-24,618**
2004-05	7,127	1,106	3,067	3,715	3,436	1,841	16,553	**36,846**	51,224	400,721	**451,945**	**488,791**	-33,061	**-229,422**	**-262,484**	**226,308**
2005-06	6,635	1,189	3,082	3,722	1,032	1,676	18,357	**35,692**	18,884	258,087	**276,971**	**312,663**	-29,671	**-234,680**	**-264,350**	**48,312**
2006-07	6,614	1,285	3,086	3,722	2,497	1,857	16,247	**35,309**	10,071	104,915	**114,986**	**150,295**	-12,655	**-254,839**	**-267,493**	**-117,198**
2007-08	6,967	1,342	3,091	3,738	5,012	1,993	14,038	**36,181**	18,958	72,500	**91,458**	**127,639**	-6,480	**-240,281**	**-246,761**	**-119,122**
2008-09	7,380	1,383	3,101	3,750	3,347	1,984	13,752	**34,697**	15,978	132,250	**148,228**	**182,925**	-10,208	**-225,987**	**-236,195**	**-53,270**
2009-10	7,361	1,390	3,033	3,671	3,238	1,987	12,958	**33,638**	20,923	228,008	**248,931**	**282,569**	-17,129	**-207,137**	**-224,266**	**58,303**
2010-11	7,549	1,482	3,202	3,877	1,449	1,609	16,607	**35,774**	25,451	333,731	**359,182**	**394,956**	-24,283	**-214,313**	**-238,596**	**156,360**
2011-12	6,887	1,460	2,934	3,666	1,835	1,843	15,991	**34,614**	19,913	166,665	**186,578**	**221,192**	-20,183	**-205,950**	**-226,132**	**-4,940**
2012-13	6,750	1,442	2,997	3,622	3,237	1,991	13,115	**33,155**	27,121	99,509	**126,630**	**159,785**	-19,875	**-208,806**	**-228,682**	**-68,897**
2013-14	7,490	1,552	3,227	3,919	3,530	2,154	12,900	**34,773**	28,033	81,761	**109,794**	**144,567**	-8,274	**-234,871**	**-243,145**	**-98,578**
2014-15	7,059	1,411	2,929	3,546	5,204	1,994	10,767	**32,910**	27,345	74,687	**102,032**	**134,942**	-3,842	**-186,517**	**-190,359**	**-55,417**
2015-16	8,100	1,571	3,311	4,001	3,737	2,247	11,914	**34,881**	23,731	112,854	**138,509**	**173,391**	-14,040	**-180,894**	**-194,934**	**-21,543**
2016-17	7,612	1,507	3,100	3,949	1,445	1,920	11,417	**30,949**	28,799	155,628	**191,239**	**222,188**	-14,115	**-172,507**	**-186,622**	**35,566**
2017-18	7,590	1,473	3,102	3,791	2,929	1,953	11,275	**32,114**	28,140	130,547	**153,811**	**185,926**	-5,179	**-183,234**	**-188,413**	**-2,488**

Notes:

a. Period from July 1 of the first year through June 30 of the second year.

TABLE 6-1
VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT 2018 CHEMICAL CONCENTRATIONS
Baldwin Park Operable Unit
San Gabriel Valley, California

Analyte Name	Ethyl benzene	1,2-Dichloroethane	Toluene	1,4-Dioxane	Tetrachloroethene	Perchlorate	Cis-1,2-Dichloroethene	Trans-1,2-Dichloroethene	Carbon Tetrachloride	NDMA	Chloroform	Benzene	1,1,1-Trichloroethane	Methylene Chloride	1,1-Dichloroethane	1,1-Dichloroethene	Trichloroethene	1,2,3-Trichloropropane	Xylenes (Total)
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Regulatory Limits																			
MCL/NL*	700	0.5	150	1*	5	6	6	10	0.5	0.01*	100	1	200	5	5	6	5	0.005*	1750
Design Concentrations - Combined Treatment Plant Influent																			
Maximum	5	10	5	25	1000	350	50	5	10	3	10	5	20	5	10	50	1000	--	5
Expected Average	0.55	1.68	0.57	7.74	180.13	46.21	15.17	0.79	1.91	0.23145	3.55 3	0.44	5.09	1.79	3.14	17.54	202.95	--	0.73
SA1-1																			
5/3/2018	<0.50	<0.50	<0.50	--	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
8/7/2018	<0.50	<0.50	<0.50	--	<0.50	<0.95	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
SA1-2																			
SA1-2 WAS OUT OF SERVICE FOR ALL OF 2018																			
SA1-3																			
1/17/2018	<0.50	<0.50	<0.50	**1.4**	**77**	**5.9**	**1.3**	<0.50	<0.50	<0.0020	**1**	<0.50	<0.50	<0.50	<0.50	**6.1**	**31**	**0.0073**	<1.0
1/23/2018	<0.50	<0.50	<0.50	--	**67**	--	**1.2**	<0.50	<0.50	--	**1.1**	<0.50	<0.50	<0.50	<0.50	**5.7**	**28**	<0.50	<1.0
2/14/2018	--	--	--	**1.2**	--	**6.5**	--	--	--	**0.0022**	--	--	--	--	--	--	--	**0.0089**	--
2/27/2018	<0.50	<0.50	<0.50	--	**69**	--	**1.4**	<0.50	<0.50	--	**0.94**	<0.50	<0.50	<0.50	<0.50	**5.2**	**28**	<0.50	<1.0
3/19/2018	<0.50	<0.50	<0.50	**1.1**	**67**	**6.2**	**1.3**	<0.50	<0.50	**0.0022**	**0.9**	<0.50	<0.50	<0.50	<0.50	**5.1**	**28**	**0.0088**	<1.0
5/14/2018	<0.50	<0.50	<0.50	**1.3**	**63**	**4**	**1.3**	<0.50	<0.50	<0.0020	**1**	<0.50	<0.50	<0.50	<0.50	**6.2**	**27**	**0.008**	<1.0
6/18/2018	<0.50	<0.50	<0.50	<0.50	**64**	**5.2**	**0.8**	<0.50	<0.50	<0.0020	**1**	<0.50	<0.50	<0.50	<0.50	**6**	**29**	**0.0057**	<1.0
7/18/2018	<0.50	<0.50	<0.50	**1.1**	**51**	**6.2**	**0.82**	<0.50	<0.50	**0.0021**	**0.94**	<0.50	<0.50	<0.50	<0.50	**5.3**	**22**	**0.006**	<1.0
8/22/2018	<0.50	<0.50	<0.50	<0.50	**51**	**5.8**	**0.86**	<0.50	<0.50	<0.0020	**1.1**	<0.50	<0.50	<0.50	<0.50	**7.9**	**24**	<0.0050	<1.0
9/12/2018	<0.50	<0.50	<0.50	**1.3**	**48**	**5.4**	**0.83**	<0.50	<0.50	<0.0020	**1**	<0.50	<0.50	<0.50	<0.50	**6.3**	**23**	**0.0056**	<1.0
10/3/2018	<0.50	<0.50	<0.50	**1.2**	**36**	**5.7**	**0.74**	<0.50	<0.50	<0.0020	**0.88**	<0.50	<0.50	<0.50	<0.50	**5.5**	**18**	<0.0050	<1.0
11/6/2018	<0.50	<0.50	<0.50	**1**	**57**	**6**	**0.91**	<0.50	<0.50	<0.0020 J	**1.1**	<0.50	<0.50	<0.50	<0.50	**6.4**	**24**	**0.0054**	<1.0
Treated Water																			
1/2/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
1/10/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
1/17/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
1/23/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
1/29/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
2/6/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
2/14/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
2/21/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
2/27/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
3/8/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
3/13/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
3/20/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
3/26/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
5/3/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
5/8/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0

TABLE 6-1
VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT 2018 CHEMICAL CONCENTRATIONS
Baldwin Park Operable Unit
San Gabriel Valley, California

Analyte Name	Ethyl benzene	1,2-Dichloroethane	Toluene	1,4-Dioxane	Tetrachloroethene	Perchlorate	Cis-1,2-Dichloroethene	Trans-1,2-Dichloroethene	Carbon Tetrachloride	NDMA	Chloroform	Benzene	1,1,1-Trichloroethane	Methylene Chloride	1,1-Dichloroethane	1,1-Dichloroethene	Trichloroethene	1,2,3-Trichloropropane	Xylenes (Total)
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Regulatory Limits																			
MCL/NL*	700	0.5	150	1*	5	6	6	10	0.5	0.01*	100	1	200	5	5	6	5	0.005*	1750
Design Concentrations - Combined Treatment Plant Influent																			
Maximum	5	10	5	25	1000	350	50	5	10	3	10	5	20	5	10	50	1000	--	5
Expected Average	0.55	1.68	0.57	7.74	180.13	46.21	15.17	0.79	1.91	0.23145	3.55 3	0.44	5.09	1.79	3.14	17.54	202.95	--	0.73
5/14/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
5/22/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
6/1/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
6/8/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
6/12/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
6/19/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
6/26/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
7/2/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
7/10/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
7/17/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050 J	<1.0
7/24/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
7/31/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
8/7/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
8/22/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
8/28/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
9/4/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
9/12/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
9/26/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
10/3/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
10/9/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
10/16/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
10/23/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
10/30/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
11/6/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020 J	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
11/14/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
11/19/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050 J	<1.0
11/27/2018	<0.50	<0.50	<0.50	--	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
12/4/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0

Notes:

Chloroform MCL based on MCL for trihalomethanes.
J = Reported value is the approximate concentration of the analyte in the sample.
MCL = Maximum contaminant level.

Acronyms:

NA = Not analyzed or data not available.
NDMA = N-Nitrosodimethylamine.
NL = Notification Level.

TABLE 6-1
VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT 2018 CHEMICAL CONCENTRATIONS
Baldwin Park Operable Unit
San Gabriel Valley, California

Analyte Name	Ethyl benzene	1,2-Dichloroethane	Toluene	1,4-Dioxane	Tetrachloroethene	Perchlorate	Cis-1,2-Dichloroethene	Trans-1,2-Dichloroethene	Carbon Tetrachloride	NDMA	Chloroform	Benzene	1,1,1-Trichloroethane	Methylene Chloride	1,1-Dichloroethane	1,1-Dichloroethene	Trichloroethene	1,2,3-Trichloropropane	Xylenes (Total)
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Regulatory Limits																			
MCL/NL*	700	0.5	150	1*	5	6	6	10	0.5	0.01*	100	1	200	5	5	6	5	0.005*	1750
Design Concentrations - Combined Treatment Plant Influent																			
Maximum	5	10	5	25	1000	350	50	5	10	3	10	5	20	5	10	50	1000	--	5
Expected Average	0.55	1.68	0.57	7.74	180.13	46.21	15.17	0.79	1.91	0.23145	3.55 3	0.44	5.09	1.79	3.14	17.54	202.95	--	0.73

TABLE 6-2
VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT 2018 CHEMICAL MASS REMOVED
Baldwin Park Operable Unit
San Gabriel Valley, California

Compound	2017 Average Concentrations (µg/L)[1] Well SA1-1	Well SA1-2	Well SA1-3	Chemical Mass Removed[2] (kg) Well SA1-1	Well SA1-2[3]	Well SA1-3	Total Mass Removed (kg)	(lb)
1,2-Dichloroethane	0.0	OUT OF SERVICE	0.0	0.0	OUT OF SERVICE	0.0	0.0	0.0
1,4-Dioxane	0.0		**0.8**	0.0		**3.7**	**3.7**	**8.2**
Carbon tetrachloride	0.0		0.0	0.0		0.0	0.0	0.0
N-Nitrosodimethylamine	0.0		0.0	0.0		0.0	0.0	0.0
Perchlorate	0.0		**4.7**	0.0		**22.0**	**22.0**	**48.6**
Tetrachloroethene	0.0		**0.8**	0.0		**3.7**	**3.7**	**8.2**
Trichloroethene	0.0		**23.5**	0.0		**109.2**	**109.2**	**240.7**
1,1-Dichloroethane	0.0		0.0	0.0		0.0	0.0	0.0
1,1-Dichloroethene	0.0		**5.5**	0.0		**25.4**	**25.4**	**56.1**
cis-1,2-Dichloroethene	0.0		**1.0**	0.0		**4.4**	**4.4**	**9.8**
1,1,1-Trichloroethane	0.0		0.0	0.0		0.0	0.0	0.0
1,2,3-Trichloropropane	0.0		0.0	0.0		0.0	0.0	0.0
Chloroform	0.0		**0.9**	0.0		**4.2**	**4.2**	**9.4**
Total				**0.0**		**172.8**	**172.8**	**380.9**

Notes:
[1] - Average concentrations calculated using 0 ug/L for non-detects.
[2] - Chemical mass removed calculated by multiplying the average concentration from each extraction well by the total volume of water pumped from each well.

TABLE 6-3
AIR QUALITY DATA FOR VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

	PCE (ppbV)	TCE (ppbV)	Cis-1,2-DCE (ppbV)	1,1-DCE (ppbV)	1,1-DCA (ppbV)	1,1,1-Trichloroethane (ppbV)	1,1,2-Trichloro-1,2,2-Trifluoroethane (ppbV)	2-Butanone (ppbV)	Acetone (ppbV)	Bromo dichloro methane (ppbV)	Carbon Disulfide (ppbV)	Carbon Tetrachloride (ppbV)	Chloroform (ppbV)	Chloro methane (ppbV)	Dichloro difluoro methane (ppbV)	Ethanol (ppbV)	Methyl Tert-Butyl Ether (ppbV)	Toluene (ppbV)	Trichloro fluoro methane (ppbV)
Tower 1 Fluidized Bed/ GAC Adsorber Exhaust																			
01/10/2018	<2.0	8.4	3.5	29	<2.0	<2.0	<2.0	<2.0	<10	<2.0	<10	<2.0	3.4	<2.0	3.9	<10	<2.0	<2.0	3.4
05/17/2018	<2.2	7.6	4.4	24	<2.2	<2.2	<2.2	2.7	<11	<2.2	44	<2.2	3.1	<2.2	3.1	<11	<2.2	<2.2	2.3
06/19/2018	<2.2	7.6	5.1	25	<2.2	<2.2	<2.2	<2.2	<11	<2.2	<11	<2.2	3	<2.2	2.8	<11	<2.2	<2.2	2.9
07/18/2018	<2.1	9.6	7	25	<2.1	<2.1	<2.1	<2.1	<11	<2.1	<11	<2.1	4.3	<2.1	4	<11	<2.1	<2.1	2.9
08/08/2018	<2.1	9.8	4.4	24	<2.1	<2.1	<2.1	<2.1	<11	<2.1	<11	<2.1	3.7	<2.1	3.5	<11	<2.1	<2.1	3.9
09/12/2018	<2.0	10	3.9	21	<2.0	<2.0	<2.0	<2.0	<10	<2.0	<10	<2.0	3.7	<2.6	3.1	<10	<2.0	<2.0	3.9
10/10/2018	<2.2	11	4.6	18	<2.2	<2.2	<2.2	<2.2	<11	<2.2	12	<2.2	3.6	<2.2	3.2	<11	<2.2	<2.2	3.8
11/14/2018	<2.2	17	3.9	20	<2.2	<2.2	<2.2	<2.2	<11	<2.2	25 J	<2.2	3.5	<2.2	4.1	<11	<2.2	<2.2	5.9
Tower 2 Fluidized Bed/ GAC Adsorber Exhaust																			
02/26/2018	<2.0	4.8	4.4	24	<2.0	<2.0	<2.0	<2.0	<10	<2.0	<10	<2.0	2.4	<2.0	3.6	<10	<2.0	<2.0	2.4
03/14/2018	<2.2	5.9	6.8	36	<2.2	<2.2	<2.2	<2.2	<11	<2.2	95 J	<2.2	3	<2.2	4.5	<11	<2.2	<2.2	3.3
03/14/2018	<0.50	7	5.7	37	0.68	<0.50	<1.5	<1.5	<2.0	<0.50	<2.0	<0.50	2.9	0.88	4.6	<5.0	<2.0	<0.50	3.3
05/17/2018	<2.2	8.6	8	25	<2.2	<2.2	<2.2	12	18	<2.2	110	<2.2	4	<2.2	3.2	<11	<2.2	<2.2	2.3
06/19/2018	<2.2	9.6	7.1	23	<2.2	<2.2	<2.2	<2.2	<11	<2.2	14	<2.2	4.3	<2.2	3.2	<11	<2.2	<2.2	2.6
06/19/2018	<0.50	9	5.9	16	0.51	<0.50	<1.5	<1.5	9.2	<0.50	<2.0	<0.50	3.3	0.62	2.7	11	<2.0	0.91	2.5
07/18/2018	<2.2	14	6.5	19	<2.2	<2.2	<2.2	<2.2	<11	<2.2	<11	<2.2	3.9	<2.2	3.7	<11	<2.2	<2.2	2.2
08/08/2018	<2.2	51	8.6	67	<2.2	<2.2	3.8	6.9	<11	<2.2	<11	<2.2	7.2	2.5	4.8	<11	<2.2	<2.2	15
09/12/2018	<2.1	28	3.8	21	<2.1	<2.1	<2.1	<2.1	<11	<2.1	<11	<2.1	3.4	<2.1	3.4	<11	<2.1	<2.1	3.7
09/12/2018	<0.60	32	3.9	29	<0.60	<0.60	<1.8	<1.8	<2.4	1.1	<2.4	<0.60	3.6	<1.2	3.8	<6.0	<2.4	<0.60	5.5
10/10/2018	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<9.7	<1.9	<9.7	<1.9	<1.9	<1.9	<1.9	<9.7	<1.9	<1.9	<1.9
11/14/2018	<2.2	47	5.5	24	<2.2	<2.2	<2.2	<2.2	<11	<2.2	13 J	<2.2	4.1	<2.2	4.4	<11	<2.2	<2.2	6.8
Tower 3 Fluidized Bed/ GAC Adsorber Exhaust																			
01/10/2018	<2.2	3.5	4.8	26	<2.2	<2.2	<2.2	<2.2	<11	<2.2	16	<2.2	3.5	<2.2	3.6	<11	<2.2	<2.2	4.1
05/17/2018	4.5	85	26	47	3.9	**2.2**	20	2.4	13	5.5	47	3.3	23	<2.2	<2.2	<11	2.5	<2.2	8.2
Tower 4 Fluidized Bed/ GAC Adsorber Exhaust																			
01/10/2018	<2.2	<2.2	2.8	30	<2.2	<2.2	<2.2	<2.2	<11	<2.2	14	<2.2	<2.2	<2.2	3.8	<11	<2.2	<2.2	3.8
02/26/2018	<2.1	<2.1	3.3	29	<2.1	<2.1	<2.1	<2.1	<11	<2.1	<11	<2.1	<2.1	<2.1	3.8	<11	<2.1	<2.1	3.1
03/14/2018	2.1	2.2	4.5	31	<2.1	<2.1	<2.1	<2.1	<10	<2.1	15 J	<2.1	<2.1	<2.1	5	<10	<2.1	<2.1	3
05/23/2018	<2.1	2.3	3.9	37	<2.1	<2.1	<2.1	<2.1	<10	<2.1	15	<2.1	2.5	<2.1	3.8	<10	<2.1	<2.1	4.6

Notes:

All samples analyzed by method TO-15.

Abbreviations:

DCA = Dichloroethane.
PCE = Tetrachloroethane.
DCE = Dichloroethene.
TCE = Trichloroethene.
ppbV = parts per billion by volume.

The following compounds were not detected in any of the sampling events:

1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane
1,2,3-Trichloropropane
1,2,4-Trichlorobenzene
1,2,4-Trimethylbenzene
1,2-Dibromo-3-Chloropropane (Dbcp)
1,2-Dibromoethane
1,2-Dichloro-1,1,2,2-Tetrafluoroethane
1,2-Dichlorobenzene
1,2-Dichloroethane
1,2-Dichloropropane
1,3,5-Trimethylbenzene
1,3-Butadiene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
1,4-Dioxane
2,2,4-Trimethylpentane
2-Hexanone
4-Ethyltoluene
4-Methyl-2-Pentanone
Acrylonitrile
Allyl Chloride
Benzene
Benzyl Chloride
Bromoform
Bromomethane
Chlorobenzene
Chloroethane
Cis-1,3-Dichloropropene
Cyclohexane
Dibromochloromethane
Ethyl Acetate
Ethylbenzene
Hexachlorobutadiene
Isopropyl Alcohol
Methanol
Methylene Chloride
M-Xylene & P-Xylene
Naphthalene
N-Heptane
N-Hexane
O-Xylene
Propylene
Styrene
Tetrahydrofuran
Trans-1,2-Dichloroethene
Trans-1,3-Dichloropropene
Vinyl Acetate
Vinyl Bromide
Vinyl Chloride

TABLE 6-4
AIR RISK AND HAZARD SUMMARY FOR VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Date	MICR		Acute Hazard Index		Chronic Hazard Index		Cancer Burden	
ARAR	1.0 x 10-6		1.0		1.0		0.5	
	Estimated Annual Average[1]	Actual 52 Week Annual Rolling Maximum[2]	Estimated Annual Average[1]	Actual 52 Week Annual Rolling Maximum[3]	Estimated Annual Average[1]	Actual 52 Week Annual Rolling Maximum[2]	Estimated Annual Average[1]	Actual 52 Week Annual Rolling Maximum
January	0.05×10^{-6}	0.30×10^{-6}	1.97×10^{-4}	4.13×10^{-4}	1.48×10^{-3}	6.99×10^{-3}	- -	- -
February	0.02×10^{-6}	0.29×10^{-6}	8.45×10^{-5}	4.13×10^{-4}	7.45×10^{-4}	6.66×10^{-3}	- -	- -
March	0.03×10^{-6}	0.20×10^{-6}	1.54×10^{-4}	4.13×10^{-4}	1.14×10^{-3}	4.60×10^{-3}	- -	- -
April	NS8	0.08×10^{-6}	NS	4.07×10^{-4}	NS	2.09×10^{-3}	- -	- -
May	0.10×10^{-6}	0.13×10^{-6}	4.95×10^{-4}	1.96×10^{-3}	3.36×10^{-3}	4.22×10^{-3}	- -	- -
June	0.11×10^{-6}	0.14×10^{-6}	4.18×10^{-4}	1.96×10^{-3}	4.27×10^{-3}	4.47×10^{-3}	- -	- -
July	0.14×10^{-6}	0.14×10^{-6}	4.51×10^{-4}	1.96×10^{-3}	5.92×10^{-3}	4.79×10^{-3}	- -	- -
August	0.24×10^{-6}	0.16×10^{-6}	6.10×10^{-4}	1.96×10^{-3}	1.54×10^{-2}	6.02×10^{-3}	- -	- -
September	0.16×10^{-6}	0.16×10^{-6}	3.92×10^{-4}	1.96×10^{-3}	9.67×10^{-3}	6.26×10^{-3}	- -	- -
October	0.06×10^{-6}	0.16×10^{-6}	2.00×10^{-4}	1.96×10^{-3}	2.69×10^{-3}	6.24×10^{-3}	- -	- -
November	0.21×10^{-6}	0.18×10^{-6}	4.49×10^{-4}	1.96×10^{-3}	1.60×10^{-2}	8.11×10^{-3}	- -	- -
December	NS	0.18×10^{-6}	NS	1.96×10^{-3}	NS	8.26×10^{-3}	- -	- -

Notes:
MICR - Maximum individual cancer risk.
ARAR - Applicable or relevant and appropriate requirements.
NS - No Sampling occurred in April and December 2018 due to facility shutdown for operational issues.
The risk calculations presented in this table are based upon data from the TO-15 sample results taken over the past 52 weeks.
- - Not calculated because the MICR was less than 1 in 1 million.
1. Estimated Annual Average is based on the most recent value.
2. Actual 52-Week Rolling Average MICR and Chronic Hazard Index are based on air sampling results collected over the previous 12 months.
3. Actual 52-Week Rolling Maximum Acute Hazard Index is based on the maximum value over the previous 12 months.

TABLE 6-5
VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT
2018 BRINE VAULT DATA
Baldwin Park Operable Unit
San Gabriel Valley, California

Date	Total Discharge (gallons)	Average Flowrate (gpm)	Max Flowrate (gpm)
January*	303,848	6.8	36.7
February*	274,443	6.8	36.7
March*	306,083	6.9	36.7
April	0	0.0	0.0
May	351,429	7.9	137.5
June	218,018	5.0	33.2
July	259,034	5.8	33.6
August	291,346	6.5	35.8
September	292,971	6.8	37.6
October	457,714	10.3	38.5
November	543,986	12.6	51.3
December	158,741	3.6	36.6

Notes:
* Flow volumes and flow rates for January through March were estimated based on the discharges for the months of November 2017 and May 2018. Flow data was not recorded during this period due to a prolonged power outage that resulted in the recorder being offline.
Total annual discharge is 3,457,613 gallons.
gpm - Gallons per minute.

TABLE 6-6
LA PUENTE VALLEY COUNTY WATER DISTRICT TREATMENT PLANT 2018 CHEMICAL CONCENTRATIONS
Baldwin Park Operable Unit
San Gabriel Valley, California

Analyte Name	Ethyl benzene	1,2-Dichloro ethane	Toluene	1,4-Dioxane	Tetra chloro ethene	Perchlorate	Cis-1,2-Dichloro ethene	Trans-1,2-Dichloro ethene	Carbon Tetra chloride	NDMA	Chloroform	Benzene	1,1,1-Trichloro ethane	Methylene Chloride	1,1-Dichloro ethane	1,1-Dichloro ethene	Tri chloro ethene	1,2,3-Trichloro propane	Xylenes (Total)
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Regulatory Limits																			
MCL/NL*	700	0.5	150	1*	5	6	6	10	0.5	0.01*	100	1	200	5	5	6	5	0.005*	1750
Design Concentrations - Combined Treatment Plant Influent																			
Maximum	5	5	5	5	50	200	5	5	5	900	5	5	5	5	5	5	50	--	5
Expected Average	0.49	3.37	0.65	2.12	2.58	79.83	1.03	0.37	2.86	0.59183	1.91	0.26	0.32	0.51	0.48	0.45	26.74	--	0.83
Well #2																			
01/30/2018	<0.50	**1.3**	<0.50	**1.3**	**2.9**	**37**	**1**	<0.50	**2.2**	**0.12**	**1.4**	<0.50	<0.50	<0.50	<0.50	<0.50	**53**	<0.50	<1.0
03/15/2018	<0.50	**1.5**	<0.50	**1.1**	**2.6**	**36**	**0.73**	<0.50	**2.3**	**0.096**	**1.6**	<0.50	<0.50	<0.50	<0.50	<0.50	**61**	<0.50	<1.0
05/01/2018	<0.50	**1.4**	<0.50	**1.1**	**3.3**	**20**	**0.97**	<0.50	**2.2**	**0.098**	**1.4**	<0.50	<0.50	<0.50	<0.50	<0.50	**50**	<0.50	<1.0
06/06/2018	<0.50	**1.5**	<0.50	**1.1**	**2.9**	**34**	**0.97**	<0.50	**2**	**0.11**	**1.5**	<0.50	<0.50	<0.50	<0.50	<0.50	**55**	<0.50	<1.0
07/09/2018	<0.50	**1.2**	<0.50	**1**	**2.5**	**33**	**0.79**	<0.50	**1.5**	**0.11**	**1.2**	<0.50	<0.50	<0.50	<0.50	<0.50	**43**	<0.50	<1.0
08/15/2018	<0.50	**0.83**	<0.50	--	**2.1**	--	<0.50	<0.50	**1.2**	--	**1**	<0.50	<0.50	<0.50	<0.50	<0.50	**32**	--	<1.0
09/19/2018	<0.50	**1.2**	<0.50	**1.2**	**2.6**	**28**	**0.76**	<0.50	**2**	**0.096 J**	**1.4**	<0.50	<0.50	<0.50	<0.50	<0.50	**50**	<0.50	<1.0
11/20/2018	<0.50	**1.5**	<0.50	**2**	**3.8**	**36**	**1.1**	<0.50	**2.6**	**0.084**	**1.4**	<0.50	<0.50	<0.50	<0.50	<0.50	**58**	<0.50	<1.0
12/11/2018	<0.50	**1.9**	<0.50	--	**4.2**	--	**1.2**	<0.50	**3.3**	<1.0	**1.9**	<0.50	<0.50	<0.50	**0.6**	<0.50	**72**	<0.50	<1.0
Well #3																			
01/30/2018	<0.50	<0.50	<0.50	<0.50	<0.50	**8.2**	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.52**	<0.50	<1.0
03/15/2018	<0.50	<0.50	<0.50	<0.50	<0.50	**8.3**	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
05/01/2018	<0.50	<0.50	<0.50	<0.50	<0.50	**6**	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
06/06/2018	<0.50	<0.50	<0.50	<0.50	<0.50	**6.9**	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
07/09/2018	<0.50	<0.50	<0.50	<0.50	<0.50	**6.3**	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.51**	<0.50	<1.0
09/19/2018	<0.50	<0.50	<0.50	<0.50	0.83	**14**	<0.50	<0.50	**0.54**	**0.019 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**14**	<0.50	<1.0
11/20/2018	<0.50	<0.50	<0.50	<0.50	<0.50	**9.2**	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.96**	<0.50	<1.0
12/11/2018	<0.50	<0.50	<0.50	--	<0.50	--	<0.50	<0.50	<0.50	--	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.85**	<0.50	<1.0
Well #5																			
01/02/2018	<0.50	<0.50	<0.50	<0.50	**1**	**15**	<0.50	<0.50	**0.51**	**0.024**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**12**	<0.50	<1.0
02/05/2018	<0.50	<0.50	<0.50	<0.50	**0.89**	**16**	<0.50	<0.50	<0.50	**0.023**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**12**	<0.50	<1.0
03/05/2018	<0.50	<0.50	<0.50	<0.50	**0.84**	**16**	<0.50	<0.50	**0.52**	**0.021**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**12**	<0.50	<1.0
04/03/2018	<0.50	<0.50	<0.50	<0.50	**0.98**	**15**	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**10**	<0.50	<1.0
05/02/2018	<0.50	<0.50	<0.50	<0.50	**0.82**	**9.2**	<0.50	<0.50	<0.50	**0.02**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**9.5**	<0.50	<1.0
06/05/2018	<0.50	<0.50	<0.50	<0.50	**0.88**	**15**	<0.50	<0.50	<0.50	**0.017**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**10**	<0.50	<1.0
06/29/2018	<0.50	<0.50	<0.50	--	**0.98**	--	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**9.4**	<0.0050	<1.0
07/02/2018	<0.50	<0.50	<0.50	<0.50	**0.89**	**11**	<0.50	<0.50	<0.50	**0.018**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**9.6**	<0.50	<1.0
08/06/2018	<0.50	<0.50	<0.50	<0.50	**0.85**	**13**	<0.50	<0.50	<0.50	**0.016**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**8.9**	<0.50	<1.0
09/04/2018	<0.50	<0.50	<0.50	<0.50	**0.79**	**13**	<0.50	<0.50	<0.50	**0.015**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**8**	<0.50	<1.0
10/02/2018	<0.50	<0.50	<0.50	<0.50	**0.81**	**12**	<0.50	<0.50	<0.50	**0.013**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**7.1**	<0.50	<1.0
11/05/2018	<0.50	<0.50	<0.50	<0.50	**0.87**	**16**	<0.50	<0.50	<0.50	**0.014 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**8.4**	<0.50	<1.0
12/10/2018	<0.50	<0.50	<0.50	<0.50	**0.90 J**	**14**	<0.50	<0.50	<0.50	**0.018**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**9.0 J**	<0.50	<1.0
Treated Water																			
01/02/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
01/08/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
01/16/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
01/22/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
01/30/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
02/05/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
02/13/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
02/21/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
02/27/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
03/05/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
03/13/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
03/19/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
03/26/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
04/02/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
04/09/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
04/16/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
04/23/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0

TABLE 6-6
LA PUENTE VALLEY COUNTY WATER DISTRICT TREATMENT PLANT 2018 CHEMICAL CONCENTRATIONS
Baldwin Park Operable Unit
San Gabriel Valley, California

Analyte Name	Ethyl benzene	1,2-Dichloro ethane	Toluene	1,4-Dioxane	Tetra chloro ethene	Perchlorate	Cis-1,2-Dichloro ethene	Trans-1,2-Dichloro ethene	Carbon Tetra chloride	NDMA	Chloroform	Benzene	1,1,1-Trichloro ethane	Methylene Chloride	1,1-Dichloro ethane	1,1-Dichloro ethene	Tri chloro ethene	1,2,3-Trichloro propane	Xylenes (Total)
05/01/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
05/07/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
05/14/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
05/21/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
05/29/2018	--	--	--	<0.50	--	<2.0	--	--	--	<0.0020	--	--	--	--	--	--	--	--	--
05/31/2018	<0.50	<0.50	<0.50	--	<0.50	--	<0.50	<0.50	<0.50	--	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
06/04/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
06/11/2018	--	--	--	<0.50	--	--	--	--	--	<0.0020	--	--	--	--	--	--	--	--	--
06/11/2018	<0.50	<0.50	<0.50	--	<0.50	<2.0 J	<0.50	<0.50	<0.50	--	<0.50	<0.50	<0.50	< 0.50 J	<0.50	<0.50	<0.50	<0.50	<1.0
06/18/2018	--	--	--	<0.50	--	--	--	--	--	<0.0020	--	--	--	--	--	--	--	--	--
06/18/2018	<0.50	<0.50	<0.50	--	<0.50	<2.0	<0.50	<0.50	<0.50	--	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
06/25/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
06/29/2018	<0.50	<0.50	<0.50	--	<0.50	--	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
07/02/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0 J	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
07/09/2018	<0.50	<0.50	<0.50	--	<0.50	<2.0	<0.50	<0.50	<0.50	--	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
07/09/2018	--	--	--	<0.50	--	--	--	--	--	<0.0020	--	--	--	--	--	--	--	--	--
07/16/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
07/23/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
07/30/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
08/06/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
08/13/2018	<0.50	<0.50	<0.50	--	<0.50	<2.0	<0.50	<0.50	<0.50	--	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
08/20/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
08/27/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
09/04/2018	<0.50	<0.50	<0.50	--	<0.50	<2.0	<0.50	<0.50	<0.50	--	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
09/10/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
09/18/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020 J	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
09/24/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
10/01/2018	--	--	--	<0.50	--	--	--	--	--	<0.0020	--	--	--	--	--	--	--	--	--
10/08/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
10/15/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
10/23/2018	--	--	--	<0.50	--	--	--	--	--	<0.0020	--	--	--	--	--	--	--	--	--
10/29/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
11/05/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020 J	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
11/13/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
11/19/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
11/26/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
12/03/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
12/10/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
12/17/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
12/26/2018	--	--	--	<0.50	--	--	--	--	--	<0.0020	--	--	--	--	--	--	--	--	--

Notes:

MCL - Maximum contaminant level.
Chloroform MCL based on MCL for trihalomethanes.
NL - Notification Level.
U - Not detected (Detection limit reported).
J - Reported value is the approximate concentration of the analyte in the sample.
NDMA = N-Nitrosodimethylamine.
-- = Data not available

TABLE 6-7
LA PUENTE VALLEY COUNTY WATER DISTRICT TREATMENT PLANT 2018 CHEMICAL MASS REMOVED
Baldwin Park Operable Unit
San Gabriel Valley, California

Compound	2018 Average Concentrations (µg/L)[1]			Chemical Mass Removed[2] (kg)			Total Mass Removed	
	LPVCWD 2	LPVCWD 3	LPVCWD 5	LPVCWD-2	LPVCWD-3	LPVCWD 5	(kg)	(lb)
1,1-Dichloroethane	**0.1**	0.0	0.0	**0.01**	0.0	0.0	0.0	0.0
1,2-Dichloroethane	**1.4**	0.0	0.0	**0.26**	0.0	0.0	**0.3**	**0.6**
1,4-Dioxane	**1.0**	0.0	0.0	**0.18**	0.0	0.0	**0.2**	**0.4**
Carbon Tetrachloride	**2.1**	**0.1**	**0.1**	**0.41**	0.0	**0.3**	**0.7**	**1.6**
Cis-1,2-Dichloroethene	**0.8**	0.0	0.0	**0.16**	0.0	0.0	**0.2**	**0.3**
Chloroform	**1.4**	0.0	0.0	**0.27**	0.0	0.0	**0.3**	**0.6**
N-Nitrosodimethylamine	**0.1**	0.0	0.0	**0.01**	0.0	**0.1**	**0.1**	**0.2**
Perchlorate	**24.9**	**7.4**	**12.7**	**4.70**	**0.5**	**54.3**	**59.5**	**131.1**
Tetrachloroethene	**3.0**	**0.1**	**0.9**	**0.56**	0.0	**3.8**	**4.4**	**9.6**
Trichloroethene	**52.7**	**2.1**	**9.7**	**9.95**	**0.1**	**41.4**	**51.5**	**113.5**
Total				**16.5**	**0.7**	**99.8**	**117.0**	**257.9**

Notes:

[1] - Average concentrations calculated using 0 ug/L for non-detects.

[2] - Chemical mass removed calculated by multiplying the average concentration from each extraction well by the total volume of water pumped from each well.

TABLE 6-8
AIR QUALITY DATA FOR LA PUENTE VALLEY COUNTY WATER DISTRICT TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

	TCE (ppbV)	Cis-1,2-DCE (ppbV)	1,1-DCE (ppbV)	1,1-DCA (ppbV)	1,2-DCA (ppbV)	2-Butanone (ppbV)	Acetone (ppbV)	Benzene (ppbV)	Carbon Disulfide (ppbV)	Carbon Tetra chloride (ppbV)	Chloroform (ppbV)	Chloro methane (ppbV)	Dichloro difluoro methane (ppbV)	Isopropyl Alcohol (ppbV)	Propylene (ppbV)
Large Tower Outlet A															
01/10/2018	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<11	<2.1	<11	<2.1	<2.1	<2.1	2.4	<11	2.4
03/14/2018	2.4	2.3	<2.2	<2.2	<2.2	<2.2	<11	<2.2	<11	<2.2	2.4	3	3.1	<11	<2.2
05/17/2018	6.6	<2.2	<2.2	<2.2	<2.2	<2.2	<11	<2.2	180	<2.2	<2.2	<2.2	2.7	<11	<2.2
05/17/2018	4.9	1.5	<0.50	0.58	1.7	<1.5	3.3	<0.50	<2.0	1.3	1.7	0.64	1.9	<5.0	<10
06/19/2018	7.6	2.2	<2.0	<2.0	<2.0	<2.0	<10	<2.0	23	<2.0	2.2	<2.0	2.5	<10	2.5
07/11/2018	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<10	<2.1	<10	<2.1	<2.1	<2.1	<2.1	<10	<2.1
08/22/2018	12	<2.2	<2.2	<2.2	<2.2	<2.2	<11	<2.2	<11	<2.2	<2.2	<2.2	2.4	<11	<2.7
09/12/2018	14	<2.1	<2.1	<2.1	2.2	<2.1	<11	<2.1	<11	<2.1	<2.1	<2.1	<2.1	<11	<2.1
10/10/2018	16	2.3	<2.1	<2.1	2.7	<2.1	<11	<2.1	<11	<2.1	3	<2.1	2.2	<11	<2.1
11/14/2018	26	2.6	<2.0	<2.0	2.8	<2.0	19	<2.0	<10	3	2.4	<2.0	3.1	<10	<2.0
12/19/2018	28	1.7	0.52	0.68	1.9	<1.5	2	<0.50	<2.0	1.8	2	<1.0	2.1	<5.0	<10
12/19/2018	26	2	<2.0	<2.0	<2.0	<2.0	<10	<2.0	25	2.3	2.3	<2.0	3	<10	4.6
Large Tower Outlet B															
01/10/2018	3.5	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<2.0	<10	<2.0	<2.0	<2.0	2.4	<10	2.7
03/14/2018	5.8	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<2.0	<10	<2.0	<2.0	<2.0	2.3	<10	<2.0
05/17/2018	9.9	<2.2	<2.2	<2.2	<2.2	<2.2	<11	<2.2	33	<2.2	<2.2	2.2	2.4	<11	<2.2
06/19/2018	8	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<2.0	<10	<2.0	<2.0	<2.0	2.3	<10	<2.0
07/11/2018	8.2	<2.1	<2.1	<2.1	<2.1	<23	22	<2.1	14	<2.1	<2.1	<2.1	2.4	34	<5.3
08/22/2018	9.3	<2.1	<2.1	<2.1	<2.1	<2.1	<11	<2.1	<11	<2.1	<2.1	<2.1	2.4	<11	<2.8
09/12/2018	13	<2.2	<2.2	<2.2	<2.2	<2.2	<11	<2.2	<11	<2.2	<2.2	<2.2	<2.2	<11	<2.2
10/10/2018	25	2.2	<2.1	<2.1	3.2	<2.1	<11	<2.1	<11	<2.1	2.7	<2.1	<2.1	<11	<2.1
10/10/2018	25	1.7	0.52	0.72	2.4	<1.5	<2.0	<0.50	<2.0	2.6	2.8	<1.0	2	<5.0	<10
11/14/2018	31	2.4	<2.2	<2.2	2.7	<2.2	<11	<2.2	47 J	2.6	2.3	<2.2	3.2	<11	<2.2
12/19/2018	30	<2.1	<2.1	<2.1	<2.1	<2.1	<11	<2.1	30	<2.1	<2.1	<2.1	3.3	<11	<2.1
Small Tower Outlet															
01/10/2018	7	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<2.0	<10	<2.0	2.1	<2.0	2.8	<10	2.2
01/10/2018	7.7	1.5	0.61	0.61	1.5	<1.7	<2.3	0.76	<2.3	1.3	1.7	0.57	2.3	<5.7	<11
03/14/2018	20	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<2.0	<10	<2.0	<2.0	2.2	2.4	<10	<2.0
05/17/2018	24	<2.2	<2.2	<2.2	<2.2	<2.2	21	<2.2	<11	<2.2	<2.2	<2.2	2.9	<11	<2.2
06/26/2018	29	2.1	<2.1	<2.1	<2.1	<2.1	<11	<2.1	47	<2.1	2.2	<2.1	2.9	<11	2.7
07/11/2018	27	<2.1	<2.1	<2.1	<2.1	<2.1	<11	<2.1	20	<2.1	<2.1	<2.1	2.6	<11	3.4
08/22/2018	34	<2.2	<2.2	<2.2	<2.2	<2.2	<11	<2.2	<11	<2.2	<2.2	<2.2	2.8	<11	<2.2
09/12/2018	38	<2.1	<2.1	<2.1	<2.1	4.8	<11	<2.1	48	<2.1	<2.1	<2.1	2.7	<11	<2.1
10/10/2018	43	<2.2	<2.2	<2.2	3.1	<2.2	<11	<2.2	<11	<2.2	2.6	2.4	2.8	<11	<2.2
11/14/2018	50	<2.0	<2.0	<2.0	2.2	<2.0	<10	<2.0	<10	2.1	2.1	<2.0	3.2	<10	<2.0
12/19/2018	42	<2.3	<2.3	<2.3	<2.3	<2.3	<11	<2.3	<11	<2.3	<2.3	<2.3	3.6	<11	<2.3

Notes:

All samples analyzed by method TO-15.

Abbreviations:

DCA = Dichloroethane.
DCE = Dichloroethene.
TCE = Trichloroethene.
ppbV = parts per billion by volume.

The following compounds were not detected in any of the sampling events:

1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichloro-1,2,2-Trifluoroethane
1,1,2-Trichloroethane
1,2,3-Trichloropropane
1,2,4-Trichlorobenzene
1,2,4-Trimethylbenzene
1,2-Dibromo-3-Chloropropane (Dbcp)
1,2-Dibromoethane
1,2-Dichloro-1,1,2,2-Tetrafluoroethane
1,2-Dichlorobenzene
1,2-Dichloropropane
1,3,5-Trimethylbenzene
1,3-Butadiene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
1,4-Dioxane
2,2,4-Trimethylpentane
2-Hexanone
4-Ethyltoluene
4-Methyl-2-Pentanone
Acrylonitrile
Allyl Chloride
Benzyl Chloride
Bromodichloromethane
Bromoform
Bromomethane
Chlorobenzene
Chloroethane
Cis-1,3-Dichloropropene
Cyclohexane
Dibromochloromethane
Ethanol
Ethyl Acetate
Ethylbenzene
Hexachlorobutadiene
Methanol
Methyl Tert-Butyl Ether
Methylene Chloride
M-Xylene & P-Xylene
Naphthalene
N-Heptane
N-Hexane
O-Xylene
Styrene
Tetrachloroethene
Tetrahydrofuran
Toluene
Trans-1,2-Dichloroethene
Trans-1,3-Dichloropropene
Trichlorofluoromethane
Vinyl Acetate
Vinyl Bromide
Vinyl Chloride

TABLE 6-9
AIR RISK AND HAZARD SUMMARY FOR VALLEY COUNTY WATER DISTRICT LA PUENTE TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Date	MICR		Acute Hazard Index		Chronic Hazard Index		Cancer Burden	
ARAR	1.0 x 10-6		1.0		1.0		0.5	
	Estimated Annual Average[1]	Actual 52 Week Annual Rolling Maximum[2]	Estimated Annual Average[1]	Actual 52 Week Annual Rolling Maximum[3]	Estimated Annual Average[1]	Actual 52 Week Annual Rolling Maximum[2]	Estimated Annual Average[1]	Actual 52 Week Annual Rolling Maximum
January	0.09×10^{-6}	0.21×10^{-6}	1.95×10^{-4}	3.40×10^{-4}	4.52×10^{-3}	1.51×10^{-2}	- -	- -
February	NS	0.20×10^{-6}	NS	3.40×10^{-4}	NS	1.48×10^{-2}	- -	- -
March	0.12×10^{-6}	0.20×10^{-6}	7.25×10^{-5}	3.40×10^{-4}	1.30×10^{-2}	1.61×10^{-2}	- -	- -
April	NS	0.19×10^{-6}	NS	3.40×10^{-4}	NS	1.58×10^{-2}	- -	- -
May	0.13×10^{-6}	0.18×10^{-6}	9.72×10^{-5}	3.40×10^{-4}	1.57×10^{-2}	1.57×10^{-2}	- -	- -
June	0.22×10^{-6}	0.17×10^{-6}	3.13×10^{-4}	3.13×10^{-4}	1.88×10^{-2}	1.55×10^{-2}	- -	- -
July	0.13×10^{-6}	0.15×10^{-6}	3.03×10^{-5}	3.13×10^{-4}	1.62×10^{-2}	1.47×10^{-2}	- -	- -
August	0.17×10^{-6}	0.15×10^{-6}	0.00×10^{-5}	3.13×10^{-4}	2.09×10^{-2}	1.52×10^{-2}	- -	- -
September	0.20×10^{-6}	0.16×10^{-6}	6.26×10^{-5}	3.13×10^{-4}	2.34×10^{-2}	1.59×10^{-2}	- -	- -
October	0.42×10^{-6}	0.17×10^{-6}	3.57×10^{-4}	3.57×10^{-4}	2.81×10^{-2}	1.56×10^{-2}	- -	- -
November	0.61×10^{-6}	0.23×10^{-6}	3.50×10^{-4}	3.57×10^{-4}	3.37×10^{-2}	1.87×10^{-2}	- -	- -
December	0.27×10^{-6}	0.23×10^{-6}	9.51×10^{-5}	3.57×10^{-4}	2.83×10^{-2}	2.03×10^{-2}	- -	- -

Notes:
MICR - Maximum individual cancer risk.
ARAR - Applicable or relevant and appropriate requirements.
NS – No Sampling required in February 2018 and April 2018 based on current sampling requirements for units in operation.
- - Not calculated because the MICR was less than 1 in 1 million.
1. Estimated Annual Average is based on the most recent value.
2. Actual 52-Week Rolling Average MICR and Chronic Hazard Index are based on air sampling results collected over the previous 12 months.
3. Actual 52-Week Rolling Maximum Acute Hazard Index is based on the maximum value over the previous 12 months.

TABLE 6-10
LA PUENTE VALLEY COUNTY WATER DISTRICT TREATMENT PLANT
2018 BRINE VAULT DATA
Baldwin Park Operable Unit
San Gabriel Valley, California

Date	Total Discharge (gallons)	Average Flowrate (gpm)	Max Flowrate (gpm)
January	5,751	0.1	0.25
February	4,651	0.1	0.25
March	4,953	0.1	0.25
April	4,997	0.1	0.25
May	186	0.004	0.25
June	1,184	0.027	0.25
July	5,709	0.1	0.25
August	5,015	0.1	0.25
September	5,824	0.1	0.25
October	7,731	0.2	0.25
November	6,357	0.1	0.25
December	7,281	0.2	0.25

Notes:
Total annual discharge is 59,639 gallons.
gpm - Gallons per minute.

TABLE 6-11
SAN GABRIEL VALLEY WATER COMPANY B6 TREATMENT PLANT 2018 CHEMICAL CONCENTRATIONS
Baldwin Park Operable Unit
San Gabriel Valley, California

Analyte Name	Ethyl benzene	1,2-Dichloro ethane	Toluene	1,4-Dioxane	Tetra chloro ethene	Perchlorate	Cis-1,2-Dichloro ethene	Trans-1,2-Dichloro ethene	Carbon Tetra chloride	NDMA	Chloroform	Benzene	1,1,1-Trichloro ethane	Methylene Chloride	1,1-Dichloro ethane	1,1-Dichloro ethene	Tri chloro ethene	1,2,3-Trichloro propane	Xylenes (Total)
Units	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**
Regulatory Limits																			
MCL/NL*	700	0.5	150	1*	5	6	6	10	0.5	0.01*	100	1	200	5	5	6	5	0.005*	1750
Design Concentrations - Combined Treatment Plant Influent																			
Maximum	5	10	5	5	100	200	20	5	10	900	5	5	5	5	5	15	150	--	5
Expected Average	0.55	1.29	0.58	3.35	37.94	51.42	6.84	0.51	1.77	191.17	1.55	0.37	1.74	1.71	0.82	7.01	68.39	--	0.8
Well B25A																			
01/03/18	<0.50	**1.2**	<0.50	**2.1**	**26**	**46**	**3.9**	<0.50	**2.1**	**0.093**	**1.9**	<0.50	<0.50	<0.50	**0.57**	**4.4**	**61**	**0.0016 J**	<1.0
02/06/18	<0.50	**1.3**	<0.50	**2.1**	**30**	**50**	**4**	<0.50	**2.3**	**0.075 J**	**2.1**	<0.50	<0.50	<0.50	**0.62**	**4.7**	**77**	**0.0024 J**	<1.0
03/06/18	<0.50	**1.4**	<0.50	**2.4**	**31**	**51**	**5.4**	<0.50	**2.4**	**0.075**	**2.1**	<0.50	<0.50	<0.50	**0.68**	**5.2**	**73**	<0.0050	<1.0
04/03/18	<0.50	**1.3**	<0.50	**2.1**	**27**	**51**	**4.1**	<0.50	**2.1**	**0.096 J**	**2**	<0.50	<0.50	<0.50	**0.6**	**4.3**	**65**	**0.0023 J**	<1.0
05/01/18	<0.50	**1.3**	<0.50	**2**	**30**	**31**	**4.1**	<0.50	**2.6**	**0.077 J**	**2.2**	<0.50	<0.50	<0.50	**0.64**	**4.2**	**72**	**0.0018 J**	<1.0
06/05/18	<0.50	**1.3**	<0.50	**2.2**	**27**	**48**	**4.7**	<0.50	**2.2**	**0.089**	**2**	<0.50	<0.50	<0.50	**0.58**	**4.6**	**72**	**0.0022 J**	<1.0
07/03/18	<0.50	**1.2**	<0.50	**2.1**	**30**	**39**	**4.5**	<0.50	**2.3**	**0.059**	**2**	<0.50	<0.50	<0.50	**0.55**	**4.4**	**64**	**0.0014 J**	<1.0
08/07/18	<0.50	**1.2**	<0.50	**2.1**	**28**	**45**	**4**	<0.50	**2.1**	**0.081**	**2.1**	<0.50	<0.50	<0.50	**0.63**	**4.5**	**64**	**0.0013 J**	<1.0
09/05/18	<0.50	**1.4**	<0.50	**2.6**	**27**	**45**	**4.2**	<0.50	**2.1**	**0.11**	**2.2**	<0.50	<0.50	<0.50	**0.64**	**4.9**	**62**	**0.0015 J**	<1.0
10/02/18	<0.50	**1.3**	<0.50	**2.3**	**30**	**44**	**5.2**	<0.50	**2.5**	**0.092**	**2**	<0.50	<0.50	<0.50	**0.62**	**6**	**71**	**0.0018 J**	<1.0
11/06/18	<0.50	**1.2**	<0.50	**2.3**	**22**	**47**	**3.6**	<0.50	**1.6**	**0.086**	**1.8**	<0.50	<0.50	<0.50	**0.51**	**3.8**	**63**	**0.0019 J**	<1.0
12/04/18	<0.50	**1.4**	<0.50	**2.3**	**33**	**51**	**5.3**	<0.50	**3.0 J**	**0.078**	**2.1**	<0.50	<0.50	<0.50	**0.69**	**6.3**	**80**	**0.0016 J**	<1.0
12/10/18	<0.50	**1.4**	<0.50	--	**35**	--	**5.2**	<0.50	**2.9**	<1.0	**2.2**	<0.50	<0.50	<0.50	**0.71**	**6.4**	**81**	<0.50	<1.0
Well B25B																			
01/03/18	<0.50	**0.58**	<0.50	**1.1**	**6.3**	**21**	**1.7**	<0.50	**4**	**0.042**	**0.82**	<0.50	<0.50	<0.50	<0.50	**1.5**	**28**	<0.0050	<1.0
02/06/18	<0.50	**0.63**	<0.50	**1.1**	**6.4**	**24**	**1.6**	<0.50	**4.2**	**0.040 J**	**0.9**	<0.50	<0.50	<0.50	<0.50	**1.4**	**34**	<0.0050	<1.0
03/06/18	<0.50	**0.67**	<0.50	**1**	**7.4**	**24**	**2.3**	<0.50	**4.2**	**0.033**	**0.93**	<0.50	<0.50	<0.50	<0.50	**1.7**	**33**	<0.0050	<1.0
04/03/18	<0.50	**0.65**	<0.50	**1**	**6.5**	**23**	**1.7**	<0.50	**3.9**	**0.043 J**	**0.86**	<0.50	<0.50	<0.50	<0.50	**1.4**	**31**	<0.0050	<1.0
05/01/18	<0.50	**0.66**	<0.50	**0.95**	**6.7**	**16**	**1.6**	<0.50	**4.6**	**0.034 J**	**0.95**	<0.50	<0.50	<0.50	<0.50	**1.3**	**33**	<0.0050	<1.0
06/05/18	<0.50	**0.68**	<0.50	**1.1**	**6.4**	**22**	**2**	<0.50	**3.9**	**0.032**	**0.87**	<0.50	<0.50	<0.50	<0.50	**1.4**	**32**	<0.0050	<1.0
07/03/18	<0.50	**0.6**	<0.50	**1**	**7.2**	**19**	**1.8**	<0.50	**4.2**	**0.034**	**0.91**	<0.50	<0.50	<0.50	<0.50	**1.4**	**33**	<0.0050	<1.0
08/07/18	<0.50	**0.7**	<0.50	**1.1**	**7.1**	**23**	**1.8**	<0.50	**4.2**	**0.052**	**1**	<0.50	<0.50	<0.50	<0.50	**1.5**	**35**	<0.0050	<1.0
09/05/18	<0.50	**0.81**	<0.50	**1.4**	**6.7**	**24**	**1.9**	<0.50	**4**	**0.042**	**1**	<0.50	<0.50	<0.50	<0.50	**1.6**	**33**	<0.0050	<1.0
10/02/18	<0.50	**0.8**	<0.50	**1.2**	**7.8**	**23**	**2.2**	<0.50	**5.1**	**0.04**	**1**	<0.50	<0.50	<0.50	<0.50	**1.9**	**38**	<0.0050	<1.0
11/06/18	<0.50	**0.74**	<0.50	**1.4**	**5.9**	**27**	**1.8**	<0.50	**3.5**	**0.039**	**0.93**	<0.50	<0.50	<0.50	<0.50	**1.4**	**36**	<0.0050	<1.0
12/04/18	<0.50	**0.86**	<0.50	**1.4**	**8.4**	**28**	**2.3**	<0.50	**5.7 J**	**0.049**	**1.1**	<0.50	<0.50	<0.50	<0.50	**2**	**43**	<0.0050	<1.0
12/10/18	<0.50	**0.91**	<0.50	--	**8.3**	--	**2.2**	<0.50	**5.5**	<1.0	**1.1**	<0.50	<0.50	<0.50	<0.50	**1.7**	**43**	<0.50	<1.0
Well B26A																			
01/03/18	<0.50	**1.5**	<0.50	**1.2**	**2.5**	**40**	**1**	<0.50	**1.3**	**0.12**	**1.5**	<0.50	<0.50	<0.50	<0.50	**0.5**	**32**	<0.0050	<1.0
02/06/18	<0.50	**1.7**	<0.50	**1.2**	**2.9**	**41**	**1**	<0.50	**1.5**	**0.12 J**	**1.8**	<0.50	<0.50	<0.50	<0.50	<0.50	**44**	**0.0020 J**	<1.0
03/06/18	<0.50	**1.6**	<0.50	**1.1**	**3.2**	**43**	**1.4**	<0.50	**1.4**	**0.15**	**1.7**	<0.50	<0.50	<0.50	<0.50	**0.57**	**39**	<0.0050	<1.0
04/03/18	<0.50	**1.4**	<0.50	**1.1**	**2.7**	**42**	**0.95**	<0.50	**1.2**	**0.14 J**	**1.5**	<0.50	<0.50	<0.50	<0.50	<0.50	**33**	**0.0014 J**	<1.0
05/01/18	<0.50	**1.5**	<0.50	**0.94**	**2.7**	**26**	**0.91**	<0.50	**1.4**	**0.14 J**	**1.6**	<0.50	<0.50	<0.50	<0.50	<0.50	**37**	<0.0050	<1.0
06/05/18	<0.50	**1.4**	<0.50	**1.1**	**2.6**	**38**	**1**	<0.50	**1.2**	**0.13**	**1.4**	<0.50	<0.50	<0.50	<0.50	<0.50	**33**	**0.0016 J**	<1.0
08/07/18	<0.50	**1.2**	<0.50	**0.99**	**2.3**	**35**	**0.8**	<0.50	**1.1**	**0.094**	**1.4**	<0.50	<0.50	<0.50	<0.50	<0.50	**31**	<0.0050	<1.0
09/05/18	<0.50	**1.5**	<0.50	**1.2**	**2.6**	**36**	**0.93**	<0.50	**1.2**	**0.13**	**1.5**	<0.50	<0.50	<0.50	<0.50	**0.5**	**31**	<0.0050	<1.0

TABLE 6-11
SAN GABRIEL VALLEY WATER COMPANY B6 TREATMENT PLANT 2018 CHEMICAL CONCENTRATIONS
Baldwin Park Operable Unit
San Gabriel Valley, California

Analyte Name	Ethyl benzene	1,2-Dichloro ethane	Toluene	1,4-Dioxane	Tetra chloro ethene	Perchlorate	Cis-1,2-Dichloro ethene	Trans-1,2-Dichloro ethene	Carbon Tetra chloride	NDMA	Chloroform	Benzene	1,1,1-Trichloro ethane	Methylene Chloride	1,1-Dichloro ethane	1,1-Dichloro ethene	Tri chloro ethene	1,2,3-Trichloro propane	Xylenes (Total)
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
10/02/18	<0.50	**1.5**	<0.50	**1.1**	**3**	**35**	**1.1**	<0.50	**1.5**	**0.11**	**1.5**	<0.50	<0.50	<0.50	<0.50	**0.6**	**36**	**0.0012 J**	<1.0
11/06/18	<0.50	**1.1**	<0.50	**1.2**	**2**	**39**	**0.79**	<0.50	**1**	**0.1**	**1.2**	<0.50	<0.50	<0.50	<0.50	<0.50	**30**	**0.0012 J**	<1.0
12/04/18	<0.50	**1.7**	<0.50	**1.3**	**3.4**	**42**	**1.2**	<0.50	**1.8 J**	**0.093**	**1.6**	<0.50	<0.50	<0.50	<0.50	**0.63**	**42**	**0.0012 J**	<1.0
12/10/18	<0.50	**1.7**	<0.50	--	**3.4**	--	**1.1**	<0.50	**1.7**	<1.0	**1.6**	<0.50	<0.50	<0.50	<0.50	**0.6**	**42**	<0.50	<1.0
Well B26B																			
01/03/18	<0.50	**2.3**	<0.50	**2.6**	**2.3**	**60**	**1.2**	<0.50	**9.9**	**0.14**	**2.2**	<0.50	<0.50	<0.50	<0.50	<0.50	**80**	<0.50	<1.0
01/05/18	--	**--**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.0050	--
02/06/18	<0.50	**2.5**	<0.50	**2.6**	**2.4**	**64**	**1.1**	<0.50	**10**	**0.12 J**	**2.4**	<0.50	<0.50	<0.50	<0.50	<0.50	**100**	0.0018 J	<1.0
03/06/18	<0.50	**2.6**	<0.50	**2.6**	**3**	**66**	**1.6**	<0.50	**10**	**0.12**	**2.4**	<0.50	<0.50	<0.50	<0.50	<0.50	**93**	<0.0050	<1.0
04/03/18	<0.50	**2.3**	<0.50	**2.5**	**2.5**	**64**	**1.1**	<0.50	**8.8**	**0.16 J**	**2.1**	<0.50	<0.50	<0.50	<0.50	<0.50	**79**	<0.0050	<1.0
05/01/18	<0.50	**2.3**	<0.50	**2.7**	**2.5**	**41**	**1.1**	<0.50	**11**	**0.19 J**	**2.3**	<0.50	<0.50	<0.50	<0.50	<0.50	**87**	<0.0050	<1.0
06/05/18	<0.50	**2.4**	<0.50	**2.6**	**2.6**	**63**	**1.3**	<0.50	**9.2**	**0.15**	**2.2**	<0.50	<0.50	<0.50	<0.50	<0.50	**93**	0.0018 J	<1.0
08/07/18	<0.50	**2.4**	<0.50	**2.9**	**2.7**	**61**	**1.2**	<0.50	**9.8**	**0.11**	**2.5**	<0.50	<0.50	<0.50	<0.50	<0.50	**88**	<0.0050	<1.0
09/05/18	<0.50	**2.7**	<0.50	**3.3**	**2.7**	**60**	**1.3**	<0.50	**9.6**	**0.18**	**2.5**	<0.50	<0.50	<0.50	<0.50	<0.50	**82**	<0.0050	<1.0
10/02/18	<0.50	**2.8**	<0.50	**2.9**	**3.3**	**56**	**1.5**	<0.50	**13**	**0.15**	**2.6**	<0.50	<0.50	<0.50	<0.50	0.53	**110**	0.0013 J	<1.0
11/06/18	<0.50	**2**	<0.50	**3**	**2.1**	**66**	**1.1**	<0.50	**8.5**	**0.12**	**2**	<0.50	<0.50	<0.50	<0.50	<0.50	**89**	0.0014 J	<1.0
12/04/18	<0.50	**2.8**	<0.50	**3**	**3.3**	**68**	**1.5**	<0.50	**13 J**	**0.12**	**2.5**	<0.50	<0.50	<0.50	<0.50	0.5	**110**	<0.0050	<1.0
12/10/18	<0.50	**2.8**	<0.50	--	**3.2**	--	**1.4**	<0.50	**13**	<1.0	**2.5**	<0.50	<0.50	<0.50	<0.50	<0.50	**110**	<0.50	<1.0
Well B6D																			
02/06/18	<0.50	**2.9**	<0.50	**1.9**	**2.4**	**55**	**1.7**	<0.50	**7.5**	**0.15**	**2.7**	<0.50	<0.50	<0.50	<0.50	<0.50	**120**	<0.0050	<1.0
05/09/18	<0.50	**0.98**	<0.50	**0.66**	**1.3**	**13**	**0.66**	<0.50	**3.6**	<0.0020	**1**	<0.50	<0.50	<0.50	<0.50	<0.50	**32**	<0.0050	<1.0
06/25/18	<1.0	**0.45 J**	<1.0	**0.38 J**	**1.4**	**12**	<1.0	<1.0	**0.58**	**0.01**	**0.61 J**	<1.0	<1.0	<1.0	<1.0	<1.0	**12**	--	--
B6 Fully Treated																			
01/03/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
01/09/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
01/17/18	<0.50	<0.50	<0.50	**0.67**	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
01/23/18	<0.50	<0.50	<0.50	<0.50	<0.50	**3.9**	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
01/30/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.002 J	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
02/06/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.002 J	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
02/13/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
02/21/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.002 J	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
02/27/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
03/06/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
03/13/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	**0.0039**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
03/20/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	**0.0032**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
03/26/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.002 J	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
04/03/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.0012 J**	<1.0
04/10/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
04/16/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
04/24/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
05/01/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.002 J	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
05/08/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0

TABLE 6-11
SAN GABRIEL VALLEY WATER COMPANY B6 TREATMENT PLANT 2018 CHEMICAL CONCENTRATIONS
Baldwin Park Operable Unit
San Gabriel Valley, California

Analyte Name	Ethyl benzene	1,2-Dichloro ethane	Toluene	1,4-Dioxane	Tetra chloro ethene	Perchlorate	Cis-1,2-Dichloro ethene	Trans-1,2-Dichloro ethene	Carbon Tetra chloride	NDMA	Chloroform	Benzene	1,1,1-Trichloro ethane	Methylene Chloride	1,1-Dichloro ethane	1,1-Dichloro ethene	Tri chloro ethene	1,2,3-Trichloro propane	Xylenes (Total)
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
05/15/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
05/22/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
05/29/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
06/05/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.0017 J**	<1.0
06/12/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0 J	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
06/19/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
06/25/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
07/03/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0 J	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
07/10/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
07/17/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
07/24/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	0.82	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
07/31/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
08/07/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
08/14/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
08/21/18	<0.50	<0.50	<0.50	**0.75**	<0.50	<2.0	<0.50	<0.50	<0.50	<0.002 J	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
08/28/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
09/05/18	<0.50	<0.50	<0.50	**0.5**	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
09/11/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
09/18/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.002 J	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
10/02/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
10/15/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
10/23/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
10/30/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
11/06/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
11/14/18	<0.50	<0.50	<0.50	0.56	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
11/19/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
11/27/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
12/04/18	<0.50	<0.50	<0.50	**0.67**	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
12/10/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
12/17/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.002 J	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
12/27/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0

Notes:

MCL - Maximum contaminant level.
Chloroform MCL based on MCL for trihalomethanes.
NL - Notification Level.
"--" - Not analyzed or data not available.
U - Not detected (Detection limit reported).
J - Reported value is the approximate concentration of the analyte in the sample.
NDMA = N-Nitrosodimethylamine.

TABLE 6-12
SAN GABRIEL VALLEY WATER COMPANY B6 TREATMENT PLANT 2018 CHEMICAL MASS REMOVED
Baldwin Park Operable Unit
San Gabriel Valley, California

Compound	2018 Average Concentrations (µg/L)[1]					Chemical Mass Removed[2] (kg)					Total Mass Removed	
	Well B6D	Well B25A	Well B25B	Well B26A	Well B26B	Well B6D	Well B25A	Well B25B	Well B26A	Well B26B	(kg)	(lb)
1,1-Dichloroethane	0.00	**0.62**	0.00	0.00	0.00	0.0	**1.9**	0.0	0.0	0.0	1.9	4.2
1,1-Dichloroethene	0.00	**4.90**	**1.55**	**0.28**	**0.08**	0.0	**15.2**	**4.4**	**0.3**	**0.1**	19.9	44.0
1,2-Dichloroethane	**1.29**	**1.30**	**0.71**	**1.48**	**2.30**	0.0	**4.0**	**2.0**	**1.4**	**2.7**	10.2	22.5
1,4-Dioxane	**0.85**	**2.05**	**1.06**	**1.04**	**2.36**	0.0	**6.4**	**3.0**	**1.0**	**2.8**	13.1	29.0
Carbon tetrachloride	**3.89**	**2.09**	**3.95**	**1.21**	**8.68**	0.0	**6.5**	**11.1**	**1.2**	**10.4**	29.1	64.2
cis-1,2-Dichloroethene	**0.79**	**4.48**	**1.92**	**1.02**	**1.18**	0.0	**13.9**	**5.4**	**1.0**	**1.4**	21.7	47.8
Chloroform	**1.23**	**2.05**	**0.95**	**1.53**	**2.17**	0.0	**6.4**	**2.7**	**1.5**	**2.6**	13.1	28.9
N-Nitrosodimethylamine	**0.05**	**0.06**	**0.03**	**0.08**	**0.08**	0.0	**0.2**	**0.1**	**0.1**	**0.1**	0.4	1.0
Perchlorate	**26.67**	**42.15**	**21.08**	**34.75**	**51.46**	0.0	**130.8**	**59.1**	**33.4**	**61.5**	284.9	628.1
Tetrachloroethene	**1.70**	**28.92**	**7.01**	**2.78**	**2.51**	0.0	**89.8**	**19.7**	**2.7**	**3.0**	115.1	253.8
Trichloroethene	**54.67**	**69.62**	**34.77**	**35.83**	**86.23**	0.0	**216.1**	**97.6**	**34.4**	**103.1**	451.2	994.7
Total						**0.0**	**491.1**	**204.9**	**76.9**	**187.8**	**960.7**	**2,118.0**

Notes:
[1] - Average concentrations calculated using 0 ug/L for non-detects.
[2] - Chemical mass removed calculated by multiplying the average concentration from each extraction well by the total volume of water pumped from each well.

TABLE 6-13
AIR QUALITY DATA FOR SAN GABRIEL VALLEY WATER COMPANY TREATMENT PLANT B6 (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

	TCE (ppbV)	Cis-1,2-DCE (ppbV)	1,1-DCE (ppbV)	1,1-DCA (ppbV)	1,2-DCA (ppbV)	2,2,4-Trimethyl pentane (ppbV)	2-Butanone (ppbV)	Acetone (ppbV)	Carbon Disulfide (ppbV)	Carbon Tetra chloride (ppbV)	Chloroform (ppbV)	Chloro methane (ppbV)	Dichloro difluoro methane (ppbV)	Ethanol (ppbV)	M-Xylene & P-Xylene (ppbV)	Propylene (ppbV)	Trichloro fluoro methane (ppbV)
T1 Outlet of 2nd 20,000 lb Adsorber																	
01/23/2018	**2.3**	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<10	<2.0	<2.0	<2.0	**5.4**	<10	<2.0	<2.0	<2.0
03/14/2018	<2.2	<2.2	**3.6**	<2.2	<2.2	<2.2	<2.2	<11	**17 J**	<2.2	<2.2	<2.2	**5.9**	<11	<2.2	<2.2	<2.2
05/17/2018	<2.3	**8.1**	**19**	**2.4**	<2.3	<2.3	<2.3	<11	<11	<2.3	**4.1**	<2.3	**5.8**	<11	<2.3	<2.3	<2.3
07/11/2018	<2.2	**19**	**17**	**3.1**	<2.2	<2.2	<2.2	<11	<11	<2.2	**7.5**	<2.2	**5.2**	<11	<2.2	<2.2	<2.2
08/08/2018	<2.1	**23**	**20**	**3.4**	**2.8**	<2.1	<2.1	<11	<11	**2.2**	**9**	<2.1	**5.7**	<11	<2.1	<3.4	<2.1
09/12/2018	**2.8**	**23**	**15**	**3**	**4.1**	<2.2	<2.2	<11	**37**	**4.2**	**9.8**	<2.2	**5.3**	<11	<2.2	<2.2	<2.2
10/10/2018	<2.3	**26**	**16**	**3.4**	**6.4**	<2.3	<2.3	<11	<11	**6.4**	**12**	<2.3	**6.5**	<11	<2.3	<2.3	<2.3
11/14/2018	**2.2**	**30**	**18**	**4.1**	**8.8**	<2.1	<2.1	<11	**48 J**	**17**	**13**	<2.1	**7.6**	<11	<2.1	<2.1	<2.1
11/14/2018	**2.1**	**24**	**20**	**2.8**	**7.3**	<0.50	<1.5	<2.0	<2.0	**14**	**11**	<1.0	**4.4**	<5.0	<4.0	<10	**1.3**
12/19/2018	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<11	**35**	<2.2	<2.2	<2.2	**5.7**	<11	<2.2	<2.2	<2.2
T2 Outlet of 2nd 20,000 lb Adsorber																	
01/23/2018	<2.0	**25**	**18**	**3.8**	**4**	<2.0	<2.0	<10	<10	**8.6**	**11**	<2.0	**6**	<10	<2.0	<2.0	<2.0
02/16/2018	<2.0	**26**	**17**	**3.6**	**4.6**	<2.0	<2.0	<10	<10	**9.8**	**12**	<2.0	**6.2**	<10	<2.0	<2.0	<2.0
02/16/2018	**0.65**	**26**	**17**	**3.4**	**4.6**	<0.50	<1.5	<2.0	<2.0	**11**	**11**	**0.59**	**5.8**	<5.0	<2.0	<10	<1.0
03/14/2018	<2.1	**31**	**17**	**3.6**	**6**	<2.1	<2.1	<11	<11	**15**	**12**	<2.1	**6**	<11	<2.1	<2.1	<2.1
04/18/2018	**2.8**	<2.1	<2.1	<2.1	<2.1	<2.1	**5.3**	<11	<11	<2.1	<2.1	<2.1	**3**	<11	<2.1	<2.1	<2.1
06/19/2018	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.6	<11	<11	<2.1	<2.1	<2.1	<2.1	<11	<2.1	<2.1	<2.1
08/08/2018	<2.1	**13**	**21**	**3.1**	<2.1	<2.1	<2.1	<11	<11	<2.1	**4.8**	<2.1	**6.6**	<11	<2.1	<5.6	<2.1
08/08/2018	**1**	**12**	**19**	**2.3**	<0.50	<0.50	<1.5	**2**	<2.0	<0.50	**4.3**	<1.0	**5.5**	<5.0	<4.0	<10	<1.0
10/10/2018	<2.0	**5.7**	**4.2**	<2.0	<2.0	<2.0	<2.0	<10	<10	<2.0	**3**	<2.0	**2.2**	<10	<2.0	<2.0	<2.0
11/14/2018	<2.1	**39**	**23**	**4.7**	**5.7**	<2.1	<2.1	<11	**30 J**	**4.9**	**16**	<2.1	**9.7**	<11	<2.1	<2.1	<2.1
12/19/2018	**2.4**	<2.2	<2.2	<2.2	<2.2	**2.2**	<2.2	<11	<11	<2.2	<2.2	<2.2	<2.2	<11	<2.2	<2.2	<2.2
T3 Outlet of 2nd 20,000 lb Adsorber																	
1/23/18 8:15 AM	<2.1	**15**	**11**	**2.3**	<2.1	<2.1	<2.1	<11	<11	<2.1	**6.6**	<2.1	**4.3**	<11	<2.1	<5.0	<2.1
02/16/2018	<2.1	**7.7**	**5.3**	<2.1	<2.1	<2.1	<2.1	<11	<11	<2.1	**3.6**	<2.1	**2.3**	<11	<2.1	<2.1	<2.1
03/14/2018	<2.1	**3.1**	<2.1	<2.1	<2.1	<2.1	<2.1	<14	<11	<2.1	<2.1	<2.1	<2.1	**12**	<2.1	<2.1	<2.1
04/18/2018	<2.2	**7.4**	**4.8**	<2.2	<2.2	<2.2	<2.2	<11	<11	<2.2	**3.3**	<2.2	<2.2	<11	<2.2	<2.2	<2.2
05/17/2018	<2.2	**6.1**	**4**	<2.2	<2.2	<2.2	<2.2	<11	<11	<2.2	**2.8**	<2.2	<2.2	<11	<2.2	<2.2	<2.2
06/19/2018	<2.1	**8.2**	**5.1**	<2.1	**2.8**	<2.1	<3.6	**17**	**140**	**3.4**	**3.3**	**2.6**	**2.3**	<11	<2.1	<4.1	<2.1
07/18/2018	<2.2	**6.6**	**4.3**	<2.2	**2.3**	<2.2	**2.6**	**11**	**31**	**2.9**	**3**	<2.2	<2.2	<11	<2.2	<2.2	<2.2
08/08/2018	<2.1	**4.7**	**2.8**	<2.1	<2.1	<2.1	<2.1	<11	<11	**2.3**	<2.1	<2.1	<2.1	<11	<2.1	<4.7	<2.1
09/12/2018	<2.1	**4.5**	**2.7**	<2.1	<2.1	<2.1	<2.1	<11	<11	**3.5**	**2.2**	<2.1	<2.1	<11	<2.1	**2.8**	<2.1
10/10/2018	**7**	**21**	**14**	**3.1**	**10**	<2.2	<2.2	<11	<11	**20**	**11**	<2.2	**6.6**	<11	<2.2	<2.2	<2.2
11/14/2018	**2.4**	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<11	<11	<2.2	<2.2	<2.2	**7.2**	<11	<2.2	<2.2	<2.2
T4 Outlet of 2nd 20,000 lb Adsorber																	
01/23/2018	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<10	<10	<2.1	<2.1	<2.1	**5.9**	<10	<2.1	<2.1	<2.1
03/14/2018	<2.2	<2.2	**5.3**	<2.2	<2.2	<2.2	**2.9**	<11	<11	<2.2	<2.2	<2.2	**6.1**	**12**	<2.2	<3.7	<2.2
05/17/2018	<2.3	**8.8**	**18**	<2.3	<2.3	<2.3	<2.3	<11	**49**	<2.3	**4**	<2.3	**6.6**	<11	<2.3	<2.3	<2.3
07/11/2018	<2.1	**20**	**18**	**3.4**	<2.1	<2.1	<2.1	<11	<11	<2.1	**7.7**	<2.1	**5.5**	<11	<2.1	<3.5	<2.1
07/11/2018	**0.74**	**20**	**19**	**3.3**	**1.8**	<0.55	<1.7	<2.2	<2.2	**0.66**	**8.4**	<1.1	**5.4**	<5.5	<4.4	<11	<1.1
08/08/2018	<2.0	**23**	**18**	**3.5**	**2.5**	<2.0	**5.7**	<10	**30**	<2.0	**9.8**	<2.0	**6**	<10	<2.0	<6.1	<2.0
09/12/2018	<2.2	**24**	**16**	**3.3**	**3.9**	<2.2	**5.2**	<11	**19**	<2.2	**11**	<2.2	**5.7**	<11	<2.2	**3.3**	<2.2

10/10/2018	<2.1	**27**	**16**	**3.8**	**5.9**	<2.1	**3.3**	<11	<11	**3.4**	**13**	<2.1	**6.6**	<11	<2.1	<2.1	<2.1
11/14/2018	<2.1	**31**	**18**	**3.5**	**7.7**	<2.1	<2.1	<11	<11	**7.3**	**12**	<2.1	**8.6**	<11	<2.1	<2.1	<2.1
12/19/2018	**2.5**	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<11	<11	<2.2	<2.2	<2.2	**6.4**	<11	**2.5**	<2.2	<2.2

Notes:

All samples analyzed by method TO-15.

Abbreviations:

DCA = Dichloroethane.
DCE = Dichloroethene.
TCE = Trichloroethene.
ppbV = parts per billion by volume.

The following compounds were not detected in any of the sampling events:

1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichloro-1,2,2-Trifluoroethane
1,1,2-Trichloroethane
1,2,3-Trichloropropane
1,2,4-Trichlorobenzene
1,2,4-Trimethylbenzene
1,2-Dibromo-3-Chloropropane (Dbcp)
1,2-Dibromoethane
1,2-Dichloro-1,1,2,2-Tetrafluoroethane
1,2-Dichlorobenzene
1,2-Dichloropropane
1,3,5-Trimethylbenzene
1,3-Butadiene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
1,4-Dioxane
2-Hexanone
4-Ethyltoluene
4-Methyl-2-Pentanone
Acrylonitrile
Allyl Chloride
Benzene
Benzyl Chloride
Bromodichloromethane
Bromoform
Bromomethane
Chlorobenzene
Chloroethane
Cis-1,3-Dichloropropene
Cyclohexane
Dibromochloromethane
Ethyl Acetate
Ethylbenzene
Hexachlorobutadiene
Isopropyl Alcohol
Methanol
Methyl Tert-Butyl Ether
Methylene Chloride
Naphthalene
N-Heptane
N-Hexane
O-Xylene
Styrene
Tetrachloroethene
Tetrahydrofuran
Toluene
Trans-1,2-Dichloroethene
Trans-1,3-Dichloropropene
Vinyl Acetate
Vinyl Bromide
Vinyl Chloride

TABLE 6-14
AIR RISK AND HAZARD SUMMARY FOR SAN GABRIEL COUNTY WATER DISTRICT B6 TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Date	MICR		Acute Hazard Index		Chronic Hazard Index		Cancer Burden	
ARAR	1.0 x 10-6		1.0		1.0		0.5	
	Estimated Annual Average[1]	Actual 52 Week Annual Rolling Maximum[2]	Estimated Annual Average[1]	Actual 52 Week Annual Rolling Maximum[3]	Estimated Annual Average[1]	Actual 52 Week Annual Rolling Maximum[2]	Estimated Annual Average[1]	Actual 52 Week Annual Rolling Maximum
January	0.50×10^{-6}	0.73×10^{-6}	1.32×10^{-3}	3.14×10^{-3}	7.97×10^{-4}	2.92×10^{-3}	7	- -
February	0.47×10^{-6}	0.66×10^{-6}	1.15×10^{-3}	2.17×10^{-3}	7.99×10^{-4}	2.93×10^{-3}	- -	- -
March	0.73×10^{-6}	0.67×10^{-6}	1.25×10^{-3}	2.17×10^{-3}	4.77×10^{-4}	2.85×10^{-3}	- -	- -
April	0.05×10^{-6}	0.63×10^{-6}	2.34×10^{-4}	2.17×10^{-3}	9.00×10^{-4}	2.81×10^{-3}	- -	- -
May	0.14×10^{-6}	0.57×10^{-6}	8.56×10^{-4}	2.17×10^{-3}	9.13×10^{-4}	2.80×10^{-3}	- -	- -
June	0.27×10^{-6}	0.55×10^{-6}	1.03×10^{-3}	2.17×10^{-3}	3.26×10^{-4}	2.67×10^{-3}	- -	- -
July	0.32×10^{-6}	0.57×10^{-6}	1.44×10^{-3}	2.17×10^{-3}	3.17×10^{-4}	2.64×10^{-3}	- -	- -
August	0.48×10^{-6}	0.60×10^{-6}	2.00×10^{-3}	2.17×10^{-3}	4.96×10^{-4}	2.57×10^{-3}	- -	- -
September	0.64×10^{-6}	0.63×10^{-6}	2.30×10^{-3}	2.30×10^{-3}	9.79×10^{-4}	2.60×10^{-3}	- -	- -
October	1.48×10^{-6}	0.71×10^{-6}	3.01×10^{-3}	3.01×10^{-3}	2.13×10^{-3}	2.67×10^{-3}	3.66×10^{-4}	- -
November	1.60×10^{-6}	0.83×10^{-6}	3.65×10^{-3}	3.65×10^{-3}	1.73×10^{-3}	2.15×10^{-3}	5.80×10^{-4}	- -
December	0.02×10^{-6}	0.80×10^{-6}	4.49×10^{-5}	3.65×10^{-3}	1.92×10^{-3}	1.40×10^{-3}	- -	- -

Notes:

MICR - Maximum individual cancer risk.

ARAR - Applicable or relevant and appropriate requirements.

- - Not calculated because the MICR was less than 1 in 1 million.

1. Estimated Annual Average is based on the most recent value.

2. Actual 52-Week Rolling Average MICR and Chronic Hazard Index are based on air sampling results collected over the previous 12 months.

3. Actual 52-Week Rolling Maximum Acute Hazard Index is based on the maximum value over the previous 12 months.

TABLE 6-15
SAN GABRIEL VALLEY WATER COMPANY B6 TREATMENT PLANT
2018 BRINE VAULT DATA
Baldwin Park Operable Unit
San Gabriel Valley, California

Date	Total Discharge (gallons)	Average Flowrate (gpm)	Max Flowrate (gpm)
January	8,284	0.2	208
February	2,446	0.1	111
March	4,323	0.1	207
April	9,491	0.2	215
May	903,654	20.2	225
June	919,712	21.3	126
July	785,395	17.6	121
August	996,360	22.3	122
September	935,557	21.7	166
October	619,829	13.9	121
November	1,012,974	23.4	NM
December	964,910	21.6	NM

Notes:
Total annual discharge is 7,162,936 gallons.
gpm - Gallons per minute.
NM - Not Measured.

TABLE 6-16
SAN GABRIEL VALLEY WATER COMPANY B5 TREATMENT PLANT 2018 CHEMICAL CONCENTRATIONS
Baldwin Park Operable Unit
San Gabriel Valley, California

Analyte Name	Ethyl benzene	1,2-Dichloro ethane	Toluene	1,4-Dioxane	Tetra chloro ethene	Perchlorate	Cis-1,2-Dichloro ethene	Trans-1,2-Dichloro ethene	Carbon Tetrachloride	NDMA	Chloroform	Benzene	1,1,1-Trichloro ethane	Methylene Chloride	1,1-Dichloro ethane	1,1-Dichloroe thene	Trichloro ethene	1,2,3-Trichloro propane	Xylenes (Total)
Units	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**
Regulatory Limits																			
MCL/NL*	700	0.5	150	1*	5	6	6	10	0.5	0.01*	100	1	200	5	5	6	5	0.005*	1750
Design Concentrations																			
Maximum	5	10	5	5	50	150	5	5	5	700	5	5	5	5	5	5	50	--	5
Expected Average	0.4	0.61	0.61	0.61	1.71	11.41	0.56	0.3	1.57	100.8	0.84	0.28	0.54	1.11	0.34	0.52	4.95	--	0.35
Well B5B																			
01/02/18	<0.50	<0.50	<0.50	<0.50	**4.3**	**6.9**	<0.50	<0.50	**0.22 J**	<0.0020	0.58	<0.50	<0.50	<0.50	<0.50	**0.51**	**2.4**	<0.0050	<1.0
02/05/18	<0.50	<0.50	<0.50	<0.50	**3.9**	**7.2**	<0.50	<0.50	**0.19 J**	<0.002 J	0.58	<0.50	<0.50	<0.50	<0.50	**0.49 J**	**2.2**	<0.0050	<1.0
03/05/18	<0.50	<0.50	<0.50	<0.50	**3.8**	**6.3**	<0.50	<0.50	**0.19 J**	<0.0020	0.6	<0.50	<0.50	<0.50	<0.50	**0.44 J**	**2.2**	<0.0050	<1.0
04/02/18	<0.50	<0.50	<0.50	<0.50	**3.8**	**6.3**	<0.50	<0.50	**0.17 J**	**0.0022**	0.55	<0.50	<0.50	<0.50	<0.50	**0.49 J**	**2.3**	<0.0050	<1.0
05/07/18	<0.50	<0.50	<0.50	<0.50	**3.7**	**4.2**	<0.50	<0.50	**0.16 J**	<0.0020	0.53	<0.50	<0.50	<0.50	<0.50	**0.51**	**2.2**	<0.0050	<1.0
05/30/18	<0.50	<0.50	<0.50	--	**3.8**	--	<0.50	<0.50	<0.50	<1.0	0.56	<0.50	<0.50	<0.50	<0.50	**0.53**	**2.3**	<0.50	<1.0
06/04/18	<0.50	<0.50	<0.50	<0.50	**4**	**5.6**	<0.50	<0.50	**0.21 J**	<0.0020	0.64	<0.50	<0.50	<0.50	<0.50	**0.7**	**2.4**	<0.0050	<1.0
08/20/18	<0.50	<0.50	<0.50	<0.50	**7.3**	**5.5**	<0.50	<0.50	**0.21 J**	<0.002 J	0.72	<0.50	<0.50	<0.50	<0.50	**0.69**	**2**	<0.0050	<1.0
09/04/18	<0.50	<0.50	<0.50	<0.50	**5.7**	**6.1**	<0.50	<0.50	**0.18 J**	<0.0020	0.68	<0.50	<0.50	<0.50	<0.50	**0.59**	**2.4**	<0.0050	<1.0
10/01/18	<0.50	<0.50	<0.50	<0.50	**5.6**	**6.2**	<0.50	<0.50	<0.50	**0.0021**	0.57	<0.50	<0.50	<0.50	<0.50	**0.63**	**2.2**	<0.0050	<1.0
11/05/18	<0.50	<0.50	<0.50	**0.5**	**5.8**	**6.1 J**	<0.50	<0.50	**0.17 J**	<0.0020	0.55	<0.50	<0.50	<0.50	<0.50	**0.59**	**2.2**	<0.0050	<1.0
12/03/18	<0.50	<0.50	<0.50	<0.50	**8**	**7.3**	<0.50	<0.50	**0.27 J**	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	**0.82**	**3.1**	<0.0050	<1.0
Well B5D																			
01/02/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	**0.83**	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
2/5/2018	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	**0.75**	<0.002 J	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
03/05/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	**0.78**	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
04/02/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	**0.65**	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
05/07/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	**0.63**	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
05/30/18	<0.50	<0.50	<0.50	--	<0.50	--	<0.50	<0.50	**0.79**	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
06/04/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	**0.81**	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
07/02/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0 J	<0.50	<0.50	**0.42 J**	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
08/06/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	**0.56**	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
09/04/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	**0.64**	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
10/01/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	**0.33 J**	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
11/05/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0 J	<0.50	<0.50	**0.48 J**	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
12/03/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	**0.76**	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
Well B5E																			
01/02/18	<0.50	**0.91**	<0.50	**0.61**	**3.2**	**19**	**0.91**	<0.50	**2.3**	**0.11**	**0.84**	<0.50	<0.50	<0.50	**0.16 J**	**0.72**	**21**	<0.0050	<1.0
02/05/18	<0.50	**0.89**	<0.50	**0.58**	**3**	**20**	**0.88**	<0.50	**2**	**0.13 J**	**0.84**	<0.50	<0.50	<0.50	**0.16 J**	**0.69**	**19**	<0.0050	<1.0
03/05/18	<0.50	**0.87**	<0.50	<0.50	**2.9**	**21**	**0.81**	<0.50	**2.1**	**0.13**	**0.86**	<0.50	<0.50	<0.50	**0.15 J**	**0.71**	**19**	<0.0050	<1.0
4/2/2018	<0.50	**0.93**	<0.50	**0.54**	**3.3**	**20**	**1.1**	<0.50	**1.8**	**0.16**	**0.79**	<0.50	<0.50	<0.50	**0.12 J**	**0.6**	**17**	<0.0050	<1.0
5/7/2018	<0.50	**0.81**	<0.50	**0.51**	**3.1**	**12**	**1.1**	<0.50	**1.6**	**0.11**	**0.74**	<0.50	<0.50	<0.50	**0.14 J**	**0.74**	**15**	<0.005 J	<1.0
05/30/18	<0.50	**0.97**	<0.50	**--**	**3.4**	--	**1.2**	<0.50	**2**	<1.0	**0.86**	<0.50	<0.50	<0.50	<0.50	**0.81**	**19**	<0.50	<1.0
06/04/18	<0.50	**1**	<0.50	<0.50	**3.7**	**20**	**0.98**	<0.50	**2.4**	**0.12**	**1**	<0.50	<0.50	<0.50	**0.17 J**	**1**	**22**	<0.0050	<1.0
07/02/18	<0.50	**0.85**	<0.50	<0.50	**3.1**	**16 J**	**0.93**	<0.50	**1.2**	**0.067 J**	**0.8**	<0.50	<0.50	<0.50	**0.14 J**	**0.78**	**17**	<0.0050	<1.0
08/06/18	<0.50	**0.86**	<0.50	<0.50	**3.2**	**18**	**0.86**	<0.50	**1.8**	**0.12**	**0.86**	<0.50	<0.50	<0.50	**0.18 J**	**0.74**	**18**	<0.0050	<1.0
09/04/18	<0.50	**0.91**	<0.50	**0.68**	**3.2**	**18**	**1.2**	<0.50	**1.8**	**0.12**	**0.85**	<0.50	<0.50	<0.50	**0.15 J**	**0.71**	**18**	<0.0050	<1.0
10/01/18	<0.50	**0.77**	<0.50	**0.54**	**3**	**18**	**0.89**	<0.50	**2**	**0.13**	**0.78**	<0.50	<0.50	<0.50	**0.15 J**	**0.81**	**17**	<0.0050	<1.0

TABLE 6-16
SAN GABRIEL VALLEY WATER COMPANY B5 TREATMENT PLANT 2018 CHEMICAL CONCENTRATIONS
Baldwin Park Operable Unit
San Gabriel Valley, California

Analyte Name	Ethyl benzene	1,2-Dichloro ethane	Toluene	1,4-Dioxane	Tetra chloro ethene	Perchlorate	Cis-1,2-Dichloro ethene	Trans-1,2-Dichloro ethene	Carbon Tetrachloride	NDMA	Chloroform	Benzene	1,1,1-Trichloro ethane	Methylene Chloride	1,1-Dichloro ethane	1,1-Dichloroe thene	Trichloro ethene	1,2,3-Trichloro propane	Xylenes (Total)
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
COI #5																			
01/02/18	<0.50	<0.50	<0.50	<0.50	**12**	**2.8**	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	**1.8**	**3.3**	<0.0050	<1.0
02/05/18	<0.50	<0.50	<0.50	<0.50	**10**	**3.7**	<0.50	<0.50	<0.50	<0.002 J	<0.50	<0.50	<0.50	<0.50	<0.50	**1.7**	**3**	<0.0050	<1.0
03/05/18	<0.50	<0.50	<0.50	<0.50	**9.7**	**2.6**	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	**1.7**	**2.8**	<0.0050	<1.0
04/02/18	<0.50	<0.50	<0.50	<0.50	**11**	**2.5**	<0.50	<0.50	<0.50	<0.002 J	<0.50	<0.50	<0.50	<0.50	<0.50	**1.7**	**3.2**	<0.0050	<1.0
05/07/18	<0.50	<0.50	<0.50	<0.50	**9.6**	**2**	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	**1.7**	**2.8**	<0.0050	<1.0
5/30/2018	<0.50	<0.50	<0.50	--	**11**	--	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	**2.2**	**3**	<0.50	<1.0
06/04/18	<0.50	<0.50	<0.50	<0.50	**11**	**2**	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	**1.8**	**3.3**	<0.0050	<1.0
07/02/18	<0.50	<0.50	<0.50	<0.50	**11**	**2.6 J**	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	**1.9**	**3.1**	<0.0050	<1.0
08/06/18	<0.50	<0.50	<0.50	<0.50	**13**	**3.2**	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	**2.1**	**3.5**	<0.0050	<1.0
09/04/18	<0.50	<0.50	<0.50	**0.55**	**12**	**3.1**	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	**1.8**	**3.4**	<0.0050	<1.0
10/01/18	<0.50	<0.50	<0.50	<0.50	**7.7**	**3**	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	**1.4**	**2.3**	<0.0050	<1.0
11/05/18	<0.50	<0.50	<0.50	**0.55**	**10**	**2.7**	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	**1.8**	**2.8**	<0.0050	<1.0
12/03/18	<0.50	<0.50	<0.50	0.54	**14**	**3.1**	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	**2.4**	**3.9**	<0.0050	<1.0
B5 Fully Treated																			
01/02/18	<0.50	**0.15 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	**0.31 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
01/08/18	<0.50	**0.19 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	**0.32 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
01/16/18	<0.50	**0.19 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	**0.38 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
01/22/18	<0.50	**0.30 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	0.13 J	<0.002 J	**0.56**	<0.50	<0.50	<0.50	**0.12 J**	<0.50	<0.50	<0.50	<1.0
01/29/18	<0.50	**0.24 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	0.12 J	<0.002 J	**0.45 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
02/05/18	<0.50	**0.29 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	0.13 J	<0.002 J	**0.5**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
2/12/2018	<0.50	**0.19 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	0.13 J	<0.0020	**0.40 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
02/20/18	<0.50	**0.22 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	0.14 J	<0.002 J	**0.48 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
02/26/18	<0.50	**0.15 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.002 J	**0.32 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
03/05/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	**0.21 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
03/12/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
03/19/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	0.0022	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
03/27/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.002 J	**0.12 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
04/02/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	**0.18 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
04/09/18	<0.50	**0.13 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	0.0021	**0.24 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
04/18/18	<0.50	**0.14 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	**0.28 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
04/23/18	<0.50	**0.18 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	**0.35 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
04/30/18	<0.50	**0.24 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.002 J	**0.41 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
05/07/18	<0.50	**0.23 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	**0.41 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.005 J	<1.0
05/14/18	<0.50	**0.25 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	**0.45 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
05/21/18	<0.50	**0.29 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	0.18 J	<0.0020	**0.57**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
05/30/18	<0.50	**0.19 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	0.12 J	<0.0020	**0.42 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
06/04/18	<0.50	**0.14 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
06/11/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0 J	<0.50	<0.50	<0.50	<0.0020	**0.17 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
06/18/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
06/26/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
07/02/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	**0.14 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.005 J	<1.0
07/09/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	**0.16 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
07/16/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	**0.20 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0

TABLE 6-16
SAN GABRIEL VALLEY WATER COMPANY B5 TREATMENT PLANT 2018 CHEMICAL CONCENTRATIONS
Baldwin Park Operable Unit
San Gabriel Valley, California

Analyte Name	Ethyl benzene	1,2-Dichloroethane	Toluene	1,4-Dioxane	Tetrachloroethene	Perchlorate	Cis-1,2-Dichloroethene	Trans-1,2-Dichloroethene	Carbon Tetrachloride	NDMA	Chloroform	Benzene	1,1,1-Trichloroethane	Methylene Chloride	1,1-Dichloroethane	1,1-Dichloroethene	Trichloroethene	1,2,3-Trichloropropane	Xylenes (Total)
Units	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**	**UG/L**
07/23/18	<0.50	**0.14 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	**0.26 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
07/30/18	<0.50	**0.17 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	**0.30 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
08/06/18	<0.50	**0.20 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	**0.33 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
08/13/18	<0.50	**0.21 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	**0.37 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
08/27/18	<0.50	**0.26 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.002 J	**0.46 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
09/04/18	<0.50	**0.19 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	0.43 J	<0.0020	**0.37 J**	<0.50	<0.50	<0.50	<0.50	0.29 J	<0.50	<0.0050	<1.0
09/10/18	<0.50	**0.28 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	0.16 J	<0.0020	**0.53**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
09/17/18	<0.50	**0.20 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	0.13 J	<0.002 J	**0.45 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
09/24/18	<0.50	**0.14 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	0.12 J	<0.0020	**0.30 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
10/01/18	<0.50	**0.14 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	**0.30 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
10/09/18	<0.50	**0.16 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	**0.32 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
10/16/18	<0.50	**0.16 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	0.13 J	<0.0020	**0.33 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
10/22/18	<0.50	**0.16 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	**0.35 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
10/29/18	<0.50	**0.20 J**	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	0.20 J	<0.0020	**0.46 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
11/05/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0 J	<0.50	<0.50	<0.50	<0.0020	**0.14 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
11/13/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
11/20/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
11/26/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
12/03/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.0050	<1.0
12/19/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
12/26/18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.0020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0

Notes:

MCL - Maximum contaminant level.
Chloroform MCL based on MCL for trihalomethanes.
NL - Notification Level.
NA - Not analyzed or data not available.
U - Not detected (Detection limit reported).
J - Reported value is the approximate concentration of the analyte in the sample.
* - Analysis by EPA Method 8270C
NDMA = N-Nitrosodimethylamine

Table 6-17
SAN GABRIEL VALLEY WATER COMPANY TREATMENT PLANT B5 2018 CHEMICAL MASS REMOVED
Baldwin Park Operable Unit
San Gabriel Valley, California

	2017 Average Concentrations (µg/L)[1]				Chemical Mass Removed [2] (kg)				Total Mass Removed	
Compound	**Well B5B**	**Well B5D**	**Well B5E**	**COI #5**	**Well B5B**	**Well B5D**	**Well B5E**	**COI #5**	(kg)	(lb)
1,2-Dichloroethane	0.0	0.0	**0.9**	0.0	0.0	0.0	**1.2**	0.0	**1.2**	**2.75**
1,4-Dioxane	0.0	0.0	**0.3**	**0.1**	**0.2**	0.0	**0.4**	**0.2**	**0.9**	**1.93**
Carbon tetrachloride	**0.2**	**0.6**	**1.9**	0.0	**0.8**	**1.9**	**2.7**	0.0	**5.3**	**11.72**
Chloroform	**0.5**	0.0	**0.8**	0.0	**2.5**	0.0	**1.2**	0.0	**3.7**	**8.14**
N-Nitrosodimethylamine	0.0	0.0	**0.1**	0.0	0.0	0.0	**0.2**	0.0	**0.2**	**0.3**
Perchlorate	**5.6**	0.0	**16.5**	**2.6**	**25.9**	0.0	**23.3**	**5.0**	**54.1**	**119.4**
Tetrachloroethene	**5.0**	0.0	**3.2**	**10.9**	**22.9**	0.0	**4.5**	**21.1**	**48.5**	**106.9**
Trichloroethene	**2.3**	0.0	**18.4**	**3.1**	**10.7**	0.0	**25.8**	**6.0**	**42.5**	**93.7**
Total					**62.9**	**1.9**	**59.3**	**32.3**	**156.4**	**344.9**

Notes:

[1] - Average concentrations calculated using 0 ug/L for non-detects.

[2] - Chemical mass removed calculated by multiplying the average concentration from each extraction well.
by the total volume of water pumped from each well.

TABLE 6-18
SAN GABRIEL VALLEY WATER COMPANY B5 TREATMENT PLANT
2018 BRINE VAULT DATA
Baldwin Park Operable Unit
San Gabriel Valley, California

Date	Total Discharge (gallons)	Average Flowrate (gpm)	Max Flowrate (gpm)
January	21,393	0.48	NM
February	41,589	1.03	NM
March	66,198	1.48	NM
April	17,503	0.41	NM
May	30,144	0.68	NM
June	70,686	1.64	NM
July	25,208	0.56	NM
August	19,972	0.45	NM
September	31,940	0.74	NM
October	34,258	0.77	NM
November	37,998	0.88	NM
December	16,755	0.38	NM

Notes:
Total annual discharge is 413,644 gallons.
gpm - Gallons per minute.
NM - Not Measured.

TABLE 6-19
CALIFORNIA DOMESTIC WATER COMPANY TREATMENT PLANT 2018 CHEMICAL CONCENTRATIONS
Baldwin Park Operable Unit
San Gabriel Valley, California

Analyte Name	Ethyl Benzene	1,2-DCA	Toluene	1,4-Dioxane	PCE	Perchlorate	cis-1,2-DCE	trans-1,2-DCE	Carbon Tetra chloride	NDMA	Chloroform	Benzene	1,1,1-TCA	Methylene Chloride	1,1-DCA	1,1-DCE	TCE	Xylenes
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Regulatory Limits																		
MCL/NL*	700	0.5	150	1*	5	6	6	10	0.5	0.01*	100	1	200	5	5	6	5	1750
Design Concentrations - Combined Treatment Plant Influent																		
Maximum	5	5	5	5	20	50	5	5	10	200	5	5	5	5	5	5	20	5
Expected Average	0.38	0.66	0.57	0.61	1.89	12.02	0.61	0.31	1.79	108.11	0.94	0.29	0.58	1.17	0.35	0.56	5.36	0.38
Well 2																		
01/02/2018	--	<0.50	--	--	**1**	3.1 J	--	--	<0.50	<0.002 J	--	--	--	--	--	--	**0.9**	--
02/05/2018	--	<0.50	--	--	**0.78**	**2.8**	--	--	<0.50	--	--	--	--	--	--	--	**0.65**	--
03/05/2018	--	--	--	--	--	**3.2**	--	--	--	<0.002	--	--	--	--	--	--	--	--
03/26/2018	--	<0.50	--	--	**0.5**	--	--	--	<0.50	--	--	--	--	--	--	--	<0.50	--
04/02/2018	<0.50	<0.50	<0.50	--	**0.71**	2.5 J	<0.50	<0.50	<0.50	--	<1	<0.50	<0.50	<0.50	<0.50	<0.50	**0.62**	<0.50
05/07/2018	--	<0.50	--	--	**0.6**	**2.4**	--	--	<0.50	<0.002	--	--	--	--	--	--	<0.50	--
06/04/2018	--	<0.50	--	--	<0.50	**1.1**	--	--	<0.50	--	--	--	--	--	--	--	<0.50	--
07/02/2018	--	<0.50	--	--	<0.50	**1.7**	--	--	<0.50	<0.002J	--	--	--	--	--	--	<0.50	--
08/06/2018	--	<0.50	--	--	**0.89**	4.0 J	--	--	<0.50	--	--	--	--	--	--	--	**0.73**	--
09/04/2018	--	<0.50	--	--	**0.91**	**3.8**	--	--	<0.50	<0.002	--	--	--	--	--	--	**1**	--
10/04/2018	<0.50	<0.50	<0.50	--	<0.50	**1.7**	<0.50	<0.50	<0.50	<0.002	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
10/09/2018	--	--	--	<0.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11/12/2018	--	<0.50	--	--	**0.76**	**3.4**	--	--	<0.50	<0.002	--	--	--	--	--	--	**0.85**	--
12/03/2018	--	<0.50	--	--	<0.50	**2.6**	--	--	<0.50	<0.002	--	--	--	--	--	--	<0.50	--
Well 3																		
01/02/2018	--	<0.50	--	--	23	13 J	--	--	**1.7**	0.018 J	--	--	--	--	--	--	**34**	--
02/05/2018	--	<0.50	--	--	18	13	--	--	**1.5**	--	--	--	--	--	--	--	**28**	--
03/05/2018	--	--	--	--	--	13	--	--	--	**0.02**	--	--	--	--	--	--	--	--
03/26/2018	--	<0.50	--	--	23	--	--	--	**1.3**	--	--	--	--	--	--	--	**29**	--
04/02/2018	--	--	--	--	--	12 J	--	--	--	--	--	--	--	--	--	--	--	--
04/23/2018	<2	<2	<2	--	18	--	**3.1**	<2	**1.9**	--	<4	<2	<2	<2	<2	**3.7**	**27**	<2
05/07/2018	--	<0.50	--	--	26	12	--	--	**1.6**	**0.02**	--	--	--	--	--	--	**41**	--
06/04/2018	--	<0.50	--	--	21	11	--	--	**1.8**	--	--	--	--	--	--	--	**29**	--
07/02/2018	--	<0.50	--	--	12	11	--	--	**1.1**	0.023 J	--	--	--	--	--	--	**19**	--
08/06/2018	--	<0.50	--	--	17	14 J	--	--	**1.3**	0.018 J	--	--	--	--	--	--	**22**	--
09/04/2018	--	<0.50	--	--	17	12	--	--	**1.5**	0.019	--	--	--	--	--	--	**29**	--
10/01/2018	<0.50	<0.50	<0.50	--	14	13	**2.4**	<0.50	**1.5**	0.019	<1	<0.50	<0.50	<0.50	<0.50	**4**	**20**	<0.50
10/09/2018	--	--	--	**0.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11/05/2018	--	<0.50	--	--	15	13	--	--	**1.5**	**0.023**	--	--	--	--	--	--	**27**	--

TABLE 6-19
CALIFORNIA DOMESTIC WATER COMPANY TREATMENT PLANT 2018 CHEMICAL CONCENTRATIONS
Baldwin Park Operable Unit
San Gabriel Valley, California

Analyte Name	Ethyl Benzene	1,2-DCA	Toluene	1,4-Dioxane	PCE	Perchlorate	cis-1,2-DCE	trans-1,2-DCE	Carbon Tetra chloride	NDMA	Chloroform	Benzene	1,1,1-TCA	Methylene Chloride	1,1-DCA	1,1-DCE	TCE	Xylenes
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
12/03/2018	--	<0.50	--	--	18	14	--	--	**1.6**	**0.021**	--	--	--	--	--	--	**29**	--
Well 5A																		
01/02/2018	--	<0.50	--	--	**8.7**	1.2 J	--	--	<0.50	<0.002J	--	--	--	--	--	--	**8.2**	--
02/05/2018	--	<0.50	--	--	**7.8**	**1.4**	--	--	<0.50	--	--	--	--	--	--	--	**7.9**	--
03/05/2018	--	--	--	--	--	**1.5**	--	--	--	<0.002	--	--	--	--	--	--	--	--
03/26/2018	--	<0.50	--	--	**8.3**	--	--	--	<0.50	--	--	--	--	--	--	--	**6.3**	--
04/02/2018	--	--	--	--	--	1.5 J	--	--	--	--	--	--	--	--	--	--	--	--
04/23/2018	<0.50	<0.50	<0.50	--	**7**	--	<0.50	<0.50	<0.50	--	<1	<0.50	<0.50	<0.50	<0.50	**1.6**	**6.7**	<0.50
05/07/2018	--	<0.50	--	--	**8.7**	**1.5**	--	--	<0.50	**0.002**	--	--	--	--	--	--	**8**	--
06/04/2018	--	<0.50	--	--	**7.7**	**1.2**	--	--	<0.50	--	--	--	--	--	--	--	**7**	--
07/02/2018	--	<0.50	--	--	**4.8**	**1.1**	--	--	<0.50	<0.002J	--	--	--	--	--	--	**4.1**	--
08/06/2018	--	<0.50	--	--	**6.1**	1.2 J	--	--	<0.50	<0.002J	--	--	--	--	--	--	**5.2**	--
09/04/2018	--	<0.50	--	--	**6.9**	**1.3**	--	--	<0.50	<0.002	--	--	--	--	--	--	**7.6**	--
10/01/2018	<0.50	<0.50	<0.50	--	**6.3**	**1.5**	0.71	<0.50	<0.50	<0.002	<1	<0.50	<0.50	<0.50	<0.50	**1.7**	**6.3**	<0.50
10/09/2018	--	--	--	<0.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11/05/2018	--	<0.50	--	--	**8.9**	**1.3**	--	--	0.51	<0.002	--	--	--	--	--	--	**7.6**	--
12/03/2018	--	<0.50	--	--	**8.7**	**1.7**	--	--	<0.50	<0.0021	--	--	--	--	--	--	**9.3**	--
Well 6																		
01/02/2018	--	<0.50	--	--	**5.1**	2.8 J	--	--	<0.50	<0.002J	--	--	--	--	--	--	**4.9**	--
02/05/2018	--	<0.50	--	--	24	**6.6**	--	--	0.87	--	--	--	--	--	--	--	**28**	--
03/05/2018	--	--	--	--	--	**3.9**	--	--	--	<0.002	--	--	--	--	--	--	--	--
03/26/2018	--	<0.50	--	--	**8.5**	--	--	--	<0.50	--	--	--	--	--	--	--	**6.6**	--
04/02/2018	<0.50	<0.50	<0.50	--	**0.89**	3.1 J	<0.50	<0.50	<0.50	--	<1	<0.50	<0.50	<0.50	<0.50	<0.50	**0.85**	<0.50
04/23/2018	<0.50	<0.50	<0.50	--	**3.6**	--	<0.50	<0.50	<0.50	--	<1	<0.50	<0.50	<0.50	<0.50	**0.79**	**3.4**	<0.50
05/07/2018	--	<0.50	--	--	**8.6**	**3.5**	--	--	<0.50	<0.002	--	--	--	--	--	--	**7.5**	--
06/04/2018	--	<0.50	--	--	24	**6.4**	--	--	**1.2**	--	--	--	--	--	--	--	**27**	--
07/02/2018	--	<0.50	--	--	13	**4.8**	--	--	<0.50	**0.0024 J**	--	--	--	--	--	--	**16**	--
08/06/2018	--	<0.50	--	--	23	7.1 J	--	--	**0.91**	**0.0029 J**	--	--	--	--	--	--	**24**	--
09/04/2018	--	<0.50	--	--	16	**4.2**	--	--	<0.50	<0.002	--	--	--	--	--	--	**19**	--
10/01/2018	<0.50	<0.50	<0.50	--	16	**5.1**	**2.1**	<0.50	<0.50	<0.002	<1	<0.50	<0.50	<0.50	<0.50	**4.2**	**15**	<0.50
10/09/2018	--	--	--	<0.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11/05/2018	--	<0.50	--	--	12	**4.4**	--	--	<0.50	<0.002	--	--	--	--	--	--	**13**	--
12/04/2018	--	<0.50	--	--	16	**4.7**	--	--	<0.50	--	--	--	--	--	--	--	**18**	--
Well 8																		
01/02/2018	--	<0.50	--	--	**1.2**	1.3 J	--	--	<0.50	<0.002J	--	--	--	--	--	--	<0.50	--

TABLE 6-19
CALIFORNIA DOMESTIC WATER COMPANY TREATMENT PLANT 2018 CHEMICAL CONCENTRATIONS
Baldwin Park Operable Unit
San Gabriel Valley, California

Analyte Name	Ethyl Benzene	1,2-DCA	Toluene	1,4-Dioxane	PCE	Perchlorate	cis-1,2-DCE	trans-1,2-DCE	Carbon Tetra chloride	NDMA	Chloroform	Benzene	1,1,1-TCA	Methylene Chloride	1,1-DCA	1,1-DCE	TCE	Xylenes
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
02/05/2018	--	<0.50	--	--	**1.2**	**1.4**	--	--	<0.50	--	--	--	--	--	--	--	<0.50	--
03/05/2018	--	--	--	--	--	**1.4**	--	--	--	<0.002	--	--	--	--	--	--	--	--
03/26/2018	--	<0.50	--	--	**1**	--	--	--	<0.50	--	--	--	--	--	--	--	<0.50	--
04/02/2018	<0.50	<0.50	<0.50	--	**1.1**	1.4 J	<0.50	<0.50	<0.50	--	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
05/07/2018	--	<0.50	--	--	**1**	**1.3**	--	--	<0.50	<0.002	--	--	--	--	--	--	<0.50	--
06/04/2018	--	<0.50	--	--	**1**	**1.3**	--	--	<0.50	--	--	--	--	--	--	--	<0.50	--
07/02/2018	--	<0.50	--	--	**0.72**	**1.5**	--	--	<0.50	<0.002J	--	--	--	--	--	--	<0.50	--
08/06/2018	--	<0.50	--	--	**0.8**	1.4 J	--	--	<0.50	<0.002J	--	--	--	--	--	--	<0.50	--
09/04/2018	--	<0.50	--	--	**1**	**1.4**	--	--	<0.50	<0.002	--	--	--	--	--	--	<0.50	--
10/01/2018	<0.50	<0.50	<0.50	--	**0.97**	**1.8**	<0.50	<0.50	<0.50	<0.002	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
10/09/2018	--	--	--	<0.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11/05/2018	--	<0.50	--	--	**1**	**1.5**	--	--	<0.50	<0.002	--	--	--	--	--	--	<0.50	--
12/03/2018	--	<0.50	--	--	**2.7**	**1.6**	--	--	<0.50	<0.002	--	--	--	--	--	--	<0.50	--
Well 10																		
01/02/2018	--	<0.50	--	--	15	3.5 J	--	--	**0.8**	<0.002J	--	--	--	--	--	--	**16**	--
02/05/2018	--	<0.50	--	--	26	**6**	--	--	**0.75**	--	--	--	--	--	--	--	**31**	--
03/05/2018	--	--	--	--	--	**6.2**	--	--	--	**0.0023**	--	--	--	--	--	--	--	--
03/26/2018	--	<0.50	--	--	30	--	--	--	<0.50	--	--	--	--	--	--	--	**28**	--
04/02/2018	--	--	--	--	--	4.5 J	--	--	--	--	--	--	--	--	--	--	--	--
04/23/2018	<0.50	<0.50	<0.50	--	12	--	**1.4**	<0.50	**0.68**	--	<1	<0.50	<0.50	<0.50	<0.50	**2.7**	**13**	<0.50
05/07/2018	--	<0.50	--	--	32	**5.2**	--	--	**0.57**	**0.0022**	--	--	--	--	--	--	**39**	--
06/04/2018	--	<0.50	--	--	31	**5.3**	--	--	**0.55**	--	--	--	--	--	--	--	**32**	--
07/02/2018	--	<0.50	--	--	21	**5.8**	--	--	<0.50	**0.0021 J**	--	--	--	--	--	--	**19**	--
08/06/2018	--	<0.50	--	--	30	7.4 J	--	--	<0.50	**0.0029 J**	--	--	--	--	--	--	**29**	--
09/04/2018	--	<0.50	--	--	24	**5.4**	--	--	**0.56**	**0.002**	--	--	--	--	--	--	**30**	--
10/01/2018	<0.50	<0.50	<0.50	--	**4.4**	**7.8**	**2.4**	<0.50	<0.50	**0.0031**	<1	<0.50	<0.50	<0.50	<0.50	**2.2**	**11**	<0.50
10/09/2018	--	--	--	**0.99**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11/05/2018	--	<0.50	--	--	38	**7.1**	--	--	<0.50	**0.003**	--	--	--	--	--	--	**40**	--
12/03/2018	--	<0.50	--	--	26	**7.3**	--	--	**0.51**	**0.0025**	--	--	--	--	--	--	**32**	--
Well 14																		
01/02/2018	--	<0.50	--	--	**2.7**	3.7 J	--	--	<0.50	0.0042 J	<1	--	--	--	--	--	**3.1**	--
02/05/2018	--	<0.50	--	--	11	**4.9**	--	--	<0.50	--	--	--	--	--	--	--	**12**	--
03/05/2018	--	--	--	--	--	**6.6**	--	--	--	<0.002	--	--	--	--	--	--	--	--
03/26/2018	--	<0.50	--	--	**5.5**	--	--	--	<0.50	--	--	--	--	--	--	--	**4.6**	--
04/02/2018	--	--	--	--	--	9.2 J	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 6-19
CALIFORNIA DOMESTIC WATER COMPANY TREATMENT PLANT 2018 CHEMICAL CONCENTRATIONS
Baldwin Park Operable Unit
San Gabriel Valley, California

Analyte Name	Ethyl Benzene	1,2-DCA	Toluene	1,4-Dioxane	PCE	Perchlorate	cis-1,2-DCE	trans-1,2-DCE	Carbon Tetra chloride	NDMA	Chloroform	Benzene	1,1,1-TCA	Methylene Chloride	1,1-DCA	1,1-DCE	TCE	Xylenes
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
04/23/2018	<0.50	<0.50	<0.50	--	**3**	--	<0.50	<0.50	<0.50	--	<1	<0.50	<0.50	<0.50	<0.50	**0.76**	**3.2**	<0.50
05/07/2018	--	<0.50	--	--	**2**	**5.4**	--	--	<0.50	**0.0054**	--	--	--	--	--	--	**2.4**	--
06/04/2018	--	<0.50	--	--	11	**5.6**	--	--	**0.56**	--	--	--	--	--	--	--	**13**	--
07/02/2018	--	<0.50	--	--	**6.5**	**7.7**	--	--	<0.50	<0.002J	--	--	--	--	--	--	**6.5**	--
08/06/2018	--	<0.50	--	--	12	9.8 J	--	--	**0.51**	**0.0023 J**	--	--	--	--	--	--	**13**	--
09/04/2018	--	<0.50	--	--	11	**5.4**	--	--	**0.52**	**0.0023**	--	--	--	--	--	--	**14**	--
10/01/2018	<0.50	<0.50	<0.50	--	**6.2**	12	**0.69**	<0.50	<0.50	--	<1	<0.50	<0.50	<0.50	<0.50	**1.3**	**6.4**	<0.50
10/09/2018	--	--	--	<0.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11/05/2018	--	<0.50	--	--	18	**7.8**	--	--	**0.73**	**0.0037**	--	--	--	--	--	--	**22**	--
12/03/2018	--	<0.50	--	--	**7.5**	11	--	--	<0.50	<0.0021	--	--	--	--	--	--	**9.1**	--
Bassett Blend																		
01/02/2018	--	--	--	--	**0.7**	--	<0.50	--	<0.50	--	--	--	--	--	--	<0.50	**0.9**	--
01/10/2018	--	--	--	--	**0.7**	--	--	--	<0.50	--	--	--	--	--	--	--	**0.9**	--
01/15/2018	--	--	--	--	**0.7**	--	--	--	<0.2	--	--	--	--	--	--	--	**0.8**	--
01/22/2018	--	--	--	--	**0.6**	--	--	--	<0.50	--	--	--	--	--	--	--	**0.9**	--
01/29/2018	--	--	--	--	**0.5**	--	--	--	<0.2	--	--	--	--	--	--	--	**0.7**	--
02/05/2018	--	--	--	--	**0.7**	--	<0.50	--	<0.50	--	--	--	--	--	--	<0.50	**0.9**	--
02/12/2018	--	--	--	--	**0.5**	--	--	--	<0.50	--	--	--	--	--	--	--	**0.6**	--
02/20/2018	--	--	--	--	<0.50	--	--	--	<0.2	--	--	--	--	--	--	--	<0.50	--
02/26/2018	--	--	--	--	**0.6**	--	--	--	<0.50	--	--	--	--	--	--	--	**0.9**	--
03/05/2018	--	--	--	--	**0.6**	--	<0.50	--	<0.2	--	--	--	--	--	--	<0.50	**0.8**	--
03/12/2018	--	--	--	--	**0.7**	--	--	--	<0.50	--	--	--	--	--	--	--	**1.1**	--
03/19/2018	--	--	--	--	**0.6**	--	--	--	<0.50	--	--	--	--	--	--	--	**0.6**	--
03/26/2018	--	--	--	--	**0.9**	--	--	--	<0.2	--	--	--	--	--	--	--	**1**	--
04/02/2018	<0.50	<0.50	<0.50	--	**0.71**	<4 +++	<0.50	<0.50	<0.50	--	<1	<0.50	<0.50	<0.50	<0.50	<0.50	**0.75**	<0.50
04/09/2018	--	--	--	--	**0.64**	--	--	--	<0.50	--	--	--	--	--	--	--	**0.72**	--
04/16/2018	--	--	--	--	**0.56**	--	--	--	<0.50	--	--	--	--	--	--	--	**0.63**	--
04/23/2018	--	--	--	--	**0.53**	--	--	--	<0.50	--	--	--	--	--	--	--	**0.72**	--
04/30/2018	--	--	--	--	<0.50	--	--	--	<0.2	--	--	--	--	--	--	--	<0.50	--
05/07/2018	--	--	--	--	**3.2**	--	**0.75**	--	<0.50	--	--	--	--	--	--	<0.50	**6.1**	--
05/08/2018	--	--	--	--	**2.5**	--	**0.52**	--	<0.2	--	--	--	--	--	--	<0.50	**3.8**	--
05/09/2018	--	--	--	--	**0.81**	--	--	--	<0.2	--	--	--	--	--	--	--	**1**	--
05/14/2018	--	--	--	--	**0.79**	--	--	--	<0.2	--	--	--	--	--	--	--	**0.9**	--
05/21/2018	--	--	--	--	**0.61**	--	--	--	<0.50	--	--	--	--	--	--	--	**1.5**	--
05/29/2018	--	--	--	--	<0.50	--	--	--	<0.50	--	--	--	--	--	--	--	<0.50	--

TABLE 6-19
CALIFORNIA DOMESTIC WATER COMPANY TREATMENT PLANT 2018 CHEMICAL CONCENTRATIONS
Baldwin Park Operable Unit
San Gabriel Valley, California

Analyte Name	Ethyl Benzene	1,2-DCA	Toluene	1,4-Dioxane	PCE	Perchlorate	cis-1,2-DCE	trans-1,2-DCE	Carbon Tetra chloride	NDMA	Chloroform	Benzene	1,1,1-TCA	Methylene Chloride	1,1-DCA	1,1-DCE	TCE	Xylenes
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
06/04/2018	--	--	--	--	**0.51**	--	<0.50	--	<0.50	--	--	--	--	--	--	<0.50	**0.67**	--
06/11/2018	--	--	--	--	**0.59**	--	--	--	<0.2	--	--	--	--	--	--	--	**0.75**	--
06/18/2018	--	--	--	--	<0.50	--	--	--	<0.2	--	--	--	--	--	--	--	<0.50	--
06/25/2018	--	--	--	--	**0.69**	--	--	--	<0.50	--	--	--	--	--	--	--	**0.77**	--
07/02/2018	--	--	--	--	**0.67**	--	<0.50	--	<0.20	--	--	--	--	--	--	<0.50	**0.76**	--
07/09/2018	--	--	--	--	**0.62**	--	--	--	<0.20	--	--	--	--	--	--	--	**0.65**	--
07/16/2018	--	--	--	--	**0.51**	--	--	--	<0.20	--	--	--	--	--	--	--	**0.59**	--
07/23/2018	--	--	--	--	**0.57**	--	--	--	<0.20	--	--	--	--	--	--	--	**0.75**	--
07/30/2018	--	--	--	--	**0.67**	--	--	--	<0.20	--	--	--	--	--	--	--	**0.92**	--
08/06/2018	--	--	--	--	--	--	<0.50	--	--	--	--	--	--	--	--	<0.50	--	--
08/13/2018	--	--	--	--	**0.6**	--	--	--	<0.20	--	--	--	--	--	--	--	**0.9**	--
08/20/2018	--	--	--	--	<0.50	--	--	--	<0.20	--	--	--	--	--	--	--	**0.71**	--
08/27/2018	--	--	--	--	**0.56**	--	--	--	<0.20	--	--	--	--	--	--	--	**0.66**	--
09/04/2018	--	--	--	--	**0.51**	--	<0.50	--	<0.20	--	--	--	--	--	--	<0.50	**0.66**	--
09/10/2018	--	--	--	--	<0.50	--	--	--	<0.20	--	--	--	--	--	--	--	**0.68**	--
09/17/2018	--	--	--	--	**0.6**	--	--	--	<0.20	--	--	--	--	--	--	--	**0.84**	--
09/24/2018	--	--	--	--	**0.72**	--	--	--	<0.20	--	--	--	--	--	--	--	**1.2**	--
10/01/2018	<0.50	<0.50	<0.50	--	<0.50	<4.0 +++	<0.50	<0.50	<0.50	--	<1	<0.50	<0.50	<0.50	<0.50	<0.50	**0.58**	<0.50
10/08/2018	--	--	--	--	<0.50	--	--	--	<0.20	--	--	--	--	--	--	--	<0.50	--
10/15/2018	--	--	--	--	<0.50	--	--	--	<0.20	--	--	--	--	--	--	--	**0.54**	--
10/22/2018	--	--	--	--	<0.50	--	--	--	<0.20	--	--	--	--	--	--	--	**0.59**	--
10/29/2018	--	--	--	--	**0.6**	--	--	--	<0.20	--	--	--	--	--	--	--	**0.8**	--
11/05/2018	--	--	--	--	<0.50	--	<0.50	--	<0.20	--	--	--	--	--	--	<0.50	**0.54**	--
11/12/2018	--	--	--	--	<0.50	--	--	--	<0.20	--	--	--	--	--	--	--	**0.74**	--
11/19/2018	--	--	--	--	**0.52**	--	--	--	<0.20	--	--	--	--	--	--	--	<0.50	--
11/26/2018	--	--	--	--	**0.51**	--	--	--	<0.20	--	--	--	--	--	--	--	**0.62**	--
12/03/2018	--	--	--	--	<0.50	--	<0.50	--	<0.20	--	--	--	--	--	--	<0.50	**0.69**	--
12/10/2018	--	--	--	--	<0.50	--	--	--	<0.20	--	--	--	--	--	--	--	**0.71**	--
12/18/2018	--	--	--	--	<0.50	--	--	--	<0.20	--	--	--	--	--	--	--	**0.58**	--
12/26/2018	--	--	--	--	<0.50	--	--	--	<0.20	--	--	--	--	--	--	--	**0.7**	--

Notes:

MCL - Maximum contaminant level.

SMCL - Secondary maximum contaminant level.

NL - Notification Level.

TABLE 6-19
CALIFORNIA DOMESTIC WATER COMPANY TREATMENT PLANT 2018 CHEMICAL CONCENTRATIONS
Baldwin Park Operable Unit
San Gabriel Valley, California

Analyte Name	Ethyl Benzene	1,2-DCA	Toluene	1,4-Dioxane	PCE	Perchlorate	cis-1,2-DCE	trans-1,2-DCE	Carbon Tetra chloride	NDMA	Chloroform	Benzene	1,1,1-TCA	Methylene Chloride	1,1-DCA	1,1-DCE	TCE	Xylenes
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L

ND - Not detected above reporting limit.

J - Reported value is the approximate concentration of the analyte in the sample.

NDMA = N-Nitrosodimethylamine.

-- = Not analyzed.

* results represent NDs and are reported as MCL based on MCLs presented in sample lab reports

+++ - Analyzed by EPA Method 314.0

TABLE 6-20
CALIFORNIA DOMESTIC WATER COMPANY TREATMENT PLANT 2018 CHEMICAL MASS REMOVED
Baldwin Park Operable Unit
San Gabriel Valley, CA

Compound	2017 Average Concentrations (µg/L)[1]							Chemical Mass Removed[2] (kg)							Total Mass Removed	
	Well 2	Well 3	Well 5A	Well 6	Well 8	Well 10	Well 14	Well 2	Well 3	Well 5A	Well 6	Well 8	Well 10	Well 14	(kg)	(lb)
Ethylbenzene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,2-Dichloroethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,4-Dioxane[3]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Toluene	0.0	0.1	0.0	0.0	0.0	**0.1**	0.0	0.0	**0.4**	0.0	0.0	0.0	**0.1**	0.0	**0.5**	**1.1**
Tetrachloroethene	**0.5**	**18.5**	**7.5**	**13.1**	**1.1**	**24.1**	**8.0**	**1.1**	**146.9**	**47.6**	**23.3**	**4.2**	**35.2**	0.0	**258.3**	**569.4**
Perchlorate	**2.3**	**10.1**	**1.1**	**3.8**	**1.4**	**6.0**	**7.4**	**5.2**	**79.9**	**6.9**	**6.7**	**5.3**	**8.7**	0.0	**112.7**	**248.5**
Cis-1,2-Dichloroethene	0.0	**0.4**	0.0	**0.1**	0.0	**1.9**	**0.3**	0.0	**2.9**	**0.3**	**0.2**	0.0	**2.8**	0.0	**6.2**	**13.7**
Trans-1,2-Dichloroethene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carbon Tetrachloride	0.0	**1.5**	0.0	**0.2**	0.0	**0.4**	**0.2**	0.0	**12.1**	**0.3**	**0.4**	0.0	**0.5**	0.0	**13.3**	**29.4**
NDMA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.2**	0.0	0.0	0.0	0.0	0.0	**0.2**	**0.4**
Chloroform	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Benzene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,1,1-Trichloroethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Methylene Chloride	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,1-Dichloroethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,1-Dichloroethene	0.0	**0.5**	**0.2**	**0.3**	0.0	**2.5**	**1.0**	0.0	**4.1**	**1.4**	**0.6**	0.0	**3.6**	0.0	**9.6**	**21.2**
Trichloroethene	**0.4**	**27.8**	**7.0**	**14.1**	0.0	**26.7**	**9.1**	**0.9**	**221.0**	**44.6**	**25.0**	0.0	**38.9**	0.0	**330.3**	**728.3**
Total								**7.2**	**467.4**	**101.1**	**56.2**	**9.5**	**89.7**	**0.0**	**731.2**	**1,612.0**

Notes:

[1] - Average concentrations calculated using 0 ug/L for non-detects.

[2] - Chemical mass removed calculated by multiplying the average concentration from each extraction well by the total volume of water pumped from each well.

[3] - Average 1,4-Dioxane concentration is based on a single measurement from 9 October 2018.

TABLE 7-1
TOTAL CHEMICAL MASS REMOVED BY YEAR, 2004-2018
Baldwin Park Operable Unit
San Gabriel Valley, California

Year	VCWD			LPVCWD			SGVWC B6			SGVWC B5			CDWC			Total		
	Mass Removed[1]	Average Extraction Rate[2]	Pounds Removed per 1000 gpm	Mass Removed[1]	Average Extraction Rate[2]	Pounds Removed per 1000 gpm	Mass Removed[1]	Average Extraction Rate[2]	Pounds Removed per 1000 gpm	Mass Removed[1]	Average Extraction Rate[2]	Pounds Removed per 1000 gpm	Mass Removed[1]	Average Extraction Rate[2]	Pounds Removed per 1000 gpm	Mass Removed[1]	Average Extraction Rate[2]	Pounds Removed per 1000 gpm
2004	--	--	--	680	1,724	394	--	--	--	--	--	--	--	--	--	680	1,724	394
2005	350	403	868	1,135	2,283	497	686	2,106	326	--	--	--	--	--	--	2,171	4,792	453
2006	2,117	2,659	796	587	1,887	311	1,593	6,174	258	--	--	--	--	--	--	4,297	10,720	401
2007	4,725	4,963	952	1,010	2,449	412	2,302	7,235	318	119	2,455	48	--	--	--	8,156	17,102	477
2008	3,639	4,869	747	896	2,326	385	2,392	6,443	371	421	5,635	75	--	--	--	7,348	19,273	381
2009	7,424	5,092	1,458	612	2,295	267	1,553	4,694	331	427	6,294	68	--	--	--	10,016	18,375	545
2010	6,384	4,262	1,498	658	2,288	288	1,743	4,531	385	455	6,833	67	--	--	--	9,240	17,914	516
2011	7,024	4,149	1,693	639	2,271	281	2,036	5,302	384	526	7,170	73	--	--	--	10,225	18,892	541
2012	4,352	5,301	821	472	2,127	222	1,099	2,980	369	604	7,569	80	--	--	--	6,526	17,977	363
2013	1,675	2,972	564	359	2,192	164	757	2,784	272	770	7,036	109	--	--	--	3,561	14,984	238
2014	1,269	2,199	577	337	1,911	176	1,640	4,042	406	426	6,546	65	1,930	15,038	128	5,602	29,736	188
2015	523	2,927	179	333	2,227	150	2,797	6,505	430	331	5,971	55	1,469	10,073	146	5,453	27,702	197
2016	722	2,438	296	313	2,147	146	2,714	6,086	446	215	6,085	35	1,284	8,134	158	5,247	24,891	211
2017	475	2,898	164	275	2,175	127	2,970	6,496	457	225	5,918	38	1,201	13,145	91	5,147	30,632	168
2018	381	2,395	159	258	2,266	114	2,118	6,541	324	345	5,451	63	1,612	11,709	138	4,714	28,362	166
Total	**41,061**			**8,563**			**26,401**			**4,864**			**7,495**			**88,384**		

Notes:
[1]=Mass removed in pounds.
[2] = Extraction rate in gallons per minute.
gpm = gallons per minute.

TABLE 7-2
SUMMARY OF MANN-KENDALL STATISTICAL ANALYSIS OF CHEMICAL TRENDS (2004-2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Summary of 1,4-Dioxane Concentration Trends (2004 - 2018)
Mann-Kendall Analysis of 1,4-Dioxane Concentrations

	Subarea 1		Subarea 2		Subarea 3		BPOU-Wide	
Concentration Trend	**Total**	**% of Total**	**Total**	**% of Total**	**Total**	**% of Total**	**Total**	**% of Total**
above -200 feet MSL								
Increasing	1	5.9%	2	15.4%	1	50.0%	4	12.5%
Probably Increasing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
No Trend	6	35.3%	4	30.8%	0	0.0%	10	31.3%
Stable	3	17.6%	2	15.4%	0	0.0%	5	15.6%
Probably Decreasing	2	11.8%	1	7.7%	1	50.0%	4	12.5%
Decreasing	5	29.4%	4	30.8%	0	0.0%	9	28.1%
Not Available	19	NA	13	NA	15	NA	47	NA
between -200 and -500 feet MSL								
Increasing	0	0.0%	1	25.0%	5	62.5%	6	50.0%
Probably Increasing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
No Trend	0	0.0%	0	0.0%	2	25.0%	2	16.7%
Stable	0	0.0%	1	25.0%	0	0.0%	1	8.3%
Probably Decreasing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Decreasing	0	0.0%	2	50.0%	1	12.5%	3	25.0%
Not Available	5	NA	8	NA	12	NA	25	NA
below -500 feet MSL								
Increasing	0	0.0%	1	50.0%	2	66.7%	3	60.0%
Probably Increasing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
No Trend	0	0.0%	1	50.0%	1	33.3%	2	40.0%
Stable	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Probably Decreasing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Decreasing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Available	2	NA	7	NA	17	NA	26	NA
Total No. of Sampling Locations	43		47		57		147	
Total No. of Samples	930		803		1708		3441	

Summary of Carbon Tetrachloride Concentration Trends (2004 - 2018)
Mann-Kendall Analysis of Carbon Tetrachloride Concentrations

	Subarea 1		Subarea 2		Subarea 3		BPOU-Wide	
Concentration Trend	**Total**	**% of Total**	**Total**	**% of Total**	**Total**	**% of Total**	**Total**	**% of Total**
above -200 feet MSL								
Increasing	0	0.0%	1	14.3%	0	0.0%	1	8.3%
Probably Increasing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
No Trend	1	33.3%	1	14.3%	0	0.0%	2	16.7%
Stable	2	66.7%	0	0.0%	0	0.0%	2	16.7%
Probably Decreasing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Decreasing	0	0.0%	5	71.4%	2	100.0%	7	58.3%
Not Available	33	NA	19	NA	15	NA	67	NA
between -200 and -500 feet MSL								
Increasing	0	0.0%	0	0.0%	1	7.7%	1	4.8%
Probably Increasing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
No Trend	0	0.0%	0	0.0%	1	7.7%	1	4.8%
Stable	0	0.0%	1	12.5%	2	15.4%	3	14.3%
Probably Decreasing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Decreasing	0	0.0%	7	87.5%	9	69.2%	16	76.2%
Not Available	5	NA	4	NA	7	NA	16	NA
below -500 feet MSL								
Increasing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Probably Increasing	0	0.0%	0	0.0%	1	12.5%	1	8.3%
No Trend	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Stable	0	0.0%	1	25.0%	3	37.5%	4	33.3%
Probably Decreasing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Decreasing	0	0.0%	3	75.0%	4	50.0%	7	58.3%
Not Available	2	NA	5	NA	12	NA	19	NA
Total No. of Sampling Locations	43		47		57		147	
Total No. of Samples	1121		1024		2446		4591	

TABLE 7-2
SUMMARY OF MANN-KENDALL STATISTICAL ANALYSIS OF CHEMICAL TRENDS (2004-2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Summary of NDMA Concentration Trends (2004 - 2018)
Mann-Kendall Analysis of NDMA Concentrations

	Subarea 1		Subarea 2		Subarea 3		BPOU-Wide	
Concentration Trend	**Total**	**% of Total**	**Total**	**% of Total**	**Total**	**% of Total**	**Total**	**% of Total**
above -200 feet MSL								
Increasing	0	0.0%	1	7.7%	0	0.0%	1	3.7%
Probably Increasing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
No Trend	3	33.3%	1	7.7%	1	20.0%	5	18.5%
Stable	0	0.0%	1	7.7%	0	0.0%	1	3.7%
Probably Decreasing	0	0.0%	1	7.7%	0	0.0%	1	3.7%
Decreasing	6	66.7%	9	69.2%	4	80.0%	19	70.4%
Not Available	27	NA	13	NA	12	NA	52	NA
between -200 and -500 feet MSL								
Increasing	0	0.0%	1	33.3%	4	36.4%	5	35.7%
Probably Increasing	0	0.0%	0	0.0%	1	9.1%	1	7.1%
No Trend	0	0.0%	0	0.0%	1	9.1%	1	7.1%
Stable	0	0.0%	0	0.0%	1	9.1%	1	7.1%
Probably Decreasing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Decreasing	0	0.0%	2	66.7%	4	36.4%	6	42.9%
Not Available	5	NA	9	NA	9	NA	23	NA
below -500 feet MSL								
Increasing	0	0.0%	0	0.0%	2	40.0%	2	40.0%
Probably Increasing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
No Trend	0	0.0%	0	0.0%	2	40.0%	2	40.0%
Stable	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Probably Decreasing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Decreasing	0	0.0%	0	0.0%	1	20.0%	1	20.0%
Not Available	2	NA	9	NA	15	NA	26	NA
Total No. of Sampling Locations	43		47		57		147	
Total No. of Samples	1061		993		2494		4548	

Summary of Perchlorate Concentration Trends (2004 - 2018)
Mann-Kendall Analysis of Perchlorate Concentrations

	Subarea 1		Subarea 2		Subarea 3		BPOU-Wide	
Concentration Trend	**Total**	**% of Total**	**Total**	**% of Total**	**Total**	**% of Total**	**Total**	**% of Total**
above -200 feet MSL								
Increasing	0	0.0%	2	10.5%	1	7.1%	3	5.0%
Probably Increasing	1	3.7%	0	0.0%	0	0.0%	1	1.7%
No Trend	10	37.0%	3	15.8%	3	21.4%	16	26.7%
Stable	2	7.4%	3	15.8%	3	21.4%	8	13.3%
Probably Decreasing	2	7.4%	0	0.0%	1	7.1%	3	5.0%
Decreasing	12	44.4%	11	57.9%	6	42.9%	29	48.3%
Not Available	9	NA	7	NA	3	NA	19	NA
between -200 and -500 feet MSL								
Increasing	1	20.0%	3	37.5%	10	66.7%	14	50.0%
Probably Increasing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
No Trend	1	20.0%	1	12.5%	0	0.0%	2	7.1%
Stable	0	0.0%	1	12.5%	0	0.0%	1	3.6%
Probably Decreasing	1	20.0%	0	0.0%	0	0.0%	1	3.6%
Decreasing	2	40.0%	3	37.5%	5	33.3%	10	35.7%
Not Available	0	NA	4	NA	5	NA	9	NA
below -500 feet MSL								
Increasing	0	0.0%	2	100.0%	6	60.0%	8	66.7%
Probably Increasing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
No Trend	0	0.0%	0	0.0%	2	20.0%	2	16.7%
Stable	0	0.0%	0	0.0%	1	10.0%	1	8.3%
Probably Decreasing	0	0.0%	0	0.0%	1	10.0%	1	8.3%
Decreasing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Available	2	NA	7	NA	10	NA	19	NA
Total No. of Sampling Locations	43		47		57		147	
Total No. of Samples	994		933		2718		4645	

TABLE 7-2
SUMMARY OF MANN-KENDALL STATISTICAL ANALYSIS OF CHEMICAL TRENDS (2004-2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Summary of PCE Concentration Trends (2004 - 2018)
Mann-Kendall Analysis of PCE Concentrations

	Subarea 1		Subarea 2		Subarea 3		BPOU-Wide	
Concentration Trend	**Total**	**% of Total**	**Total**	**% of Total**	**Total**	**% of Total**	**Total**	**% of Total**
above -200 feet MSL								
Increasing	2	5.9%	0	0.0%	3	37.5%	5	8.9%
Probably Increasing	1	2.9%	1	7.1%	0	0.0%	2	3.6%
No Trend	4	11.8%	2	14.3%	2	25.0%	8	14.3%
Stable	3	8.8%	2	14.3%	1	12.5%	6	10.7%
Probably Decreasing	2	5.9%	1	7.1%	0	0.0%	3	5.4%
Decreasing	22	64.7%	8	57.1%	2	25.0%	32	57.1%
Not Available	2	NA	12	NA	9	NA	23	NA
between -200 and -500 feet MSL								
Increasing	1	25.0%	4	44.4%	8	61.5%	13	50.0%
Probably Increasing	0	0.0%	0	0.0%	1	7.7%	1	3.8%
No Trend	0	0.0%	2	22.2%	0	0.0%	2	7.7%
Stable	1	25.0%	0	0.0%	0	0.0%	1	3.8%
Probably Decreasing	0	0.0%	1	11.1%	0	0.0%	1	3.8%
Decreasing	2	50.0%	2	22.2%	4	30.8%	8	30.8%
Not Available	1	NA	3	NA	7	NA	11	NA
below -500 feet MSL								
Increasing	0	0.0%	0	0.0%	4	66.7%	4	66.7%
Probably Increasing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
No Trend	0	0.0%	0	0.0%	1	16.7%	1	16.7%
Stable	0	0.0%	0	0.0%	1	16.7%	1	16.7%
Probably Decreasing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Decreasing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Available	2	NA	9	NA	14	NA	25	NA
Total No. of Sampling Locations	43		47		57		147	
Total No. of Samples	1131		1031		2446		4601	

Summary of TCE Concentration Trends (2004 - 2018)
Mann-Kendall Analysis of TCE Concentrations

	Subarea 1		Subarea 2		Subarea 3		BPOU-Wide	
Concentration Trend	**Total**	**% of Total**	**Total**	**% of Total**	**Total**	**% of Total**	**Total**	**% of Total**
above -200 feet MSL								
Increasing	0	0.0%	1	5.3%	2	25.0%	3	5.3%
Probably Increasing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
No Trend	1	3.3%	1	5.3%	0	0.0%	2	3.5%
Stable	6	20.0%	2	10.5%	1	12.5%	9	15.8%
Probably Decreasing	4	13.3%	1	5.3%	0	0.0%	5	8.8%
Decreasing	19	63.3%	14	73.7%	5	62.5%	38	66.7%
Not Available	6	NA	7	NA	9	NA	22	NA
between -200 and -500 feet MSL								
Increasing	0	0.0%	3	30.0%	10	71.4%	13	50.0%
Probably Increasing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
No Trend	0	0.0%	1	10.0%	0	0.0%	1	3.8%
Stable	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Probably Decreasing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Decreasing	2	100.0%	6	60.0%	4	28.6%	12	46.2%
Not Available	3	NA	2	NA	6	NA	11	NA
below -500 feet MSL								
Increasing	1	100.0%	0	0.0%	6	75.0%	7	77.8%
Probably Increasing	0	0.0%	0	0.0%	1	12.5%	1	11.1%
No Trend	0	0.0%	0	0.0%	1	12.5%	1	11.1%
Stable	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Probably Decreasing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Decreasing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Available	1	NA	9	NA	12	NA	22	NA
Total No. of Sampling Locations	43		47		57		147	
Total No. of Samples	1130		1024		2446		4600	

TABLE 7-2
SUMMARY OF MANN-KENDALL STATISTICAL ANALYSIS OF CHEMICAL TRENDS (2004-2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Summary of COC Concentration Trends (2004 - 2018)
Mann-Kendall Analysis of 1,4-Dioxane, Carbon Tetrachloride, NDMA, Perchlorate, PCE, and TCE Concentrations

	Subarea 1		Subarea 2		Subarea 3		BPOU-Wide	
Concentration Trend	**Total**	**% of Total**	**Total**	**% of Total**	**Total**	**% of Total**	**Total**	**% of Total**
above -200 feet MSL								
Increasing	3	2.5%	7	8.2%	7	17.9%	17	7.0%
Probably Increasing	2	1.7%	1	1.2%	0	0.0%	3	1.2%
No Trend	25	20.8%	12	14.1%	6	15.4%	43	17.6%
Stable	16	13.3%	10	11.8%	5	12.8%	31	12.7%
Probably Decreasing	10	8.3%	4	4.7%	2	5.1%	16	6.6%
Decreasing	64	53.3%	51	60.0%	19	48.7%	134	54.9%
Not Available	96	NA	71	NA	63	NA	230	NA
between -200 and -500 feet MSL								
Increasing	2	18.2%	12	28.6%	38	51.4%	52	40.9%
Probably Increasing	0	0.0%	0	0.0%	2	2.7%	2	1.6%
No Trend	1	9.1%	4	9.5%	4	5.4%	9	7.1%
Stable	1	9.1%	3	7.1%	3	4.1%	7	5.5%
Probably Decreasing	1	9.1%	1	2.4%	0	0.0%	2	1.6%
Decreasing	6	54.5%	22	52.4%	27	36.5%	55	43.3%
Not Available	19	NA	30	NA	46	NA	95	NA
below -500 feet MSL								
Increasing	1	100.0%	3	37.5%	20	50.0%	24	49.0%
Probably Increasing	0	0.0%	0	0.0%	2	5.0%	2	4.1%
No Trend	0	0.0%	1	12.5%	7	17.5%	8	16.3%
Stable	0	0.0%	1	12.5%	5	12.5%	6	12.2%
Probably Decreasing	0	0.0%	0	0.0%	1	2.5%	1	2.0%
Decreasing	0	0.0%	3	37.5%	5	12.5%	8	16.3%
Not Available	11	NA	46	NA	80	NA	137	NA
Total No. of Sampling Locations	258		282		342		474	
Total No. of Samples	6367		5808		14258		26426	

TABLE 7-3
ESTIMATED TOTAL COC MASS IN GROUNDWATER (2004 - 2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Chemical	Mobile Dissolved Chemical Mass in Groundwater (Pounds) [a]															
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014-EV	2014-EVS	2015	2016	2017	2018
1,2-DCA	1,755	1,542	1,701	1,784	1,784	1,313	1,050	1,062	1,006	909	--	--	--	--	--	--
1,4-Dioxane	3,376	3,887	2,132	4,450	4,596	3,333	1,166	2,911	2,024	1,965	1,837	734	1,032	884	375	375
CTC	3,269	3,164	3,839	4,113	3,242	2,481	1,600	1,699	1,152	1,160	1,248	1,270	1,515	1,060	736	1,034
NDMA	114	87	61	92	64	55	44	33	30	27	28	30	54	24	30	29
Perchlorate	138,418	83,246	87,780	89,408	81,537	74,228	66,378	58,917	56,093	56,682	63,582	25,291	30,272	26,901	17,500	16,372
PCE	80,622	60,102	66,305	55,929	48,949	40,685	34,360	36,626	29,849	29,002	32,686	11,779	11,105	5,267	8,750	9,414
TCE	121,581	81,929	83,084	75,849	68,486	65,387	51,232	53,024	45,589	46,622	47,781	32,807	28,830	20,274	18,484	18,816
TOTAL	**349,135**	**233,957**	**244,903**	**231,625**	**208,656**	**187,482**	**155,830**	**154,272**	**135,744**	**136,366**	**147,162**	**71,911**	**72,806**	**54,410**	**45,875**	**46,039**

Notes:

a. The estimates of mobile dissolved COC mass remaining in 2004 to 2014 were performed using the EV method. The mass estimate for 2014 was also recalculated using the EVS method. The subsequent estimates of mobile dissolved COC mass remaining in 2015 to 2018 were performed using the EVS method. Refer to the text of the 2016 Annual PE Report for further details on the change in methods used to estimate remaining dissolved COC mass.

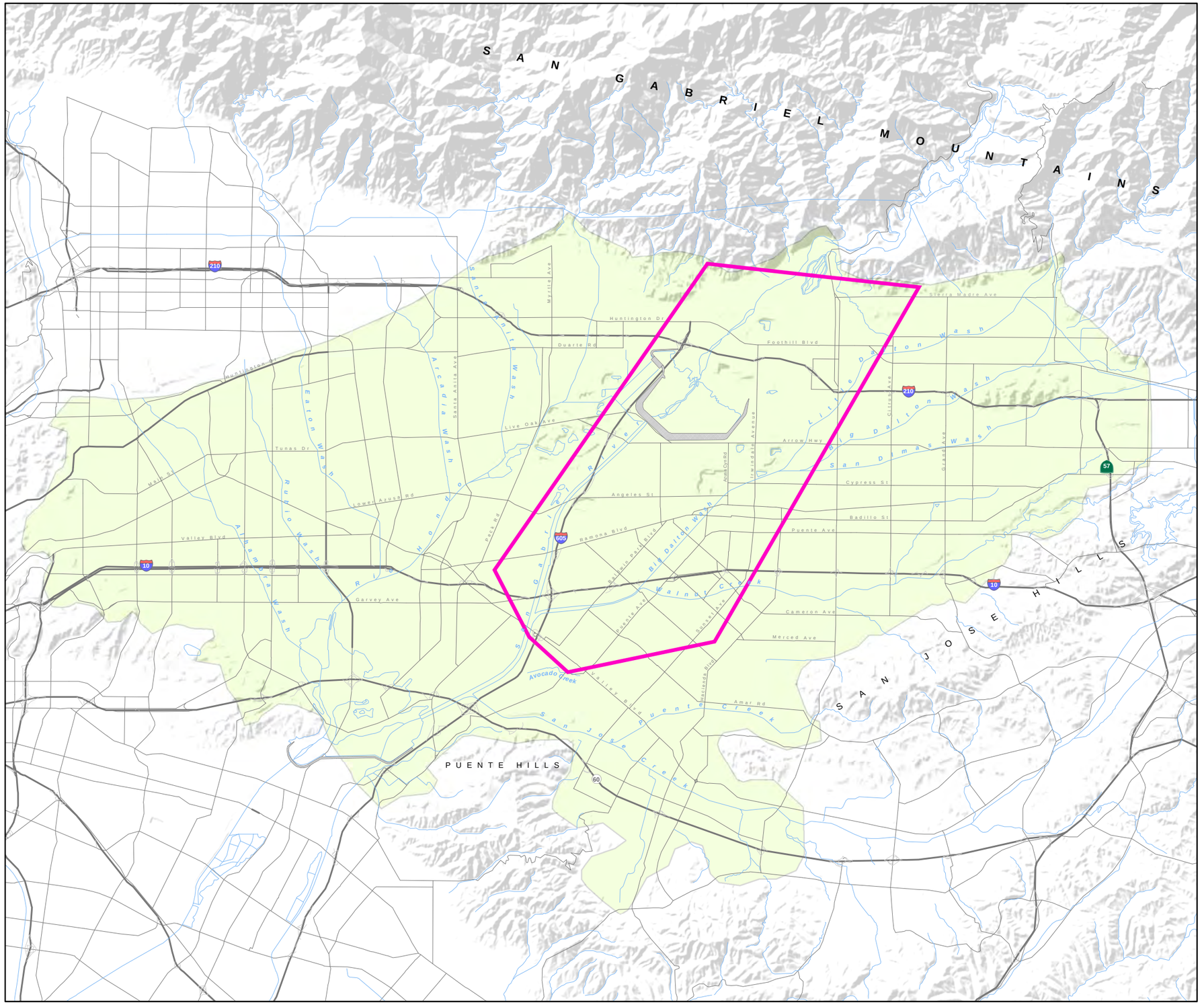
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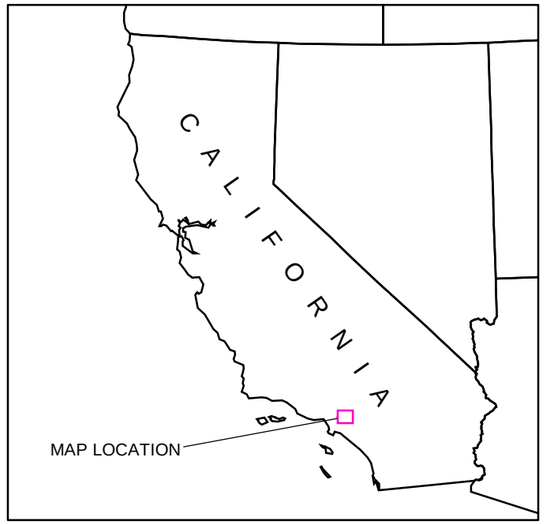
COC = chemical of concern

EV = EarthVision®

EVS = Earth Volumetric Studio®

FIGURES





EXPLANATION

- Approximate BPOU boundary
- Extent of BPOU groundwater model

10,000 0 10,000

SCALE IN FEET

N

BPOU LOCATION MAP

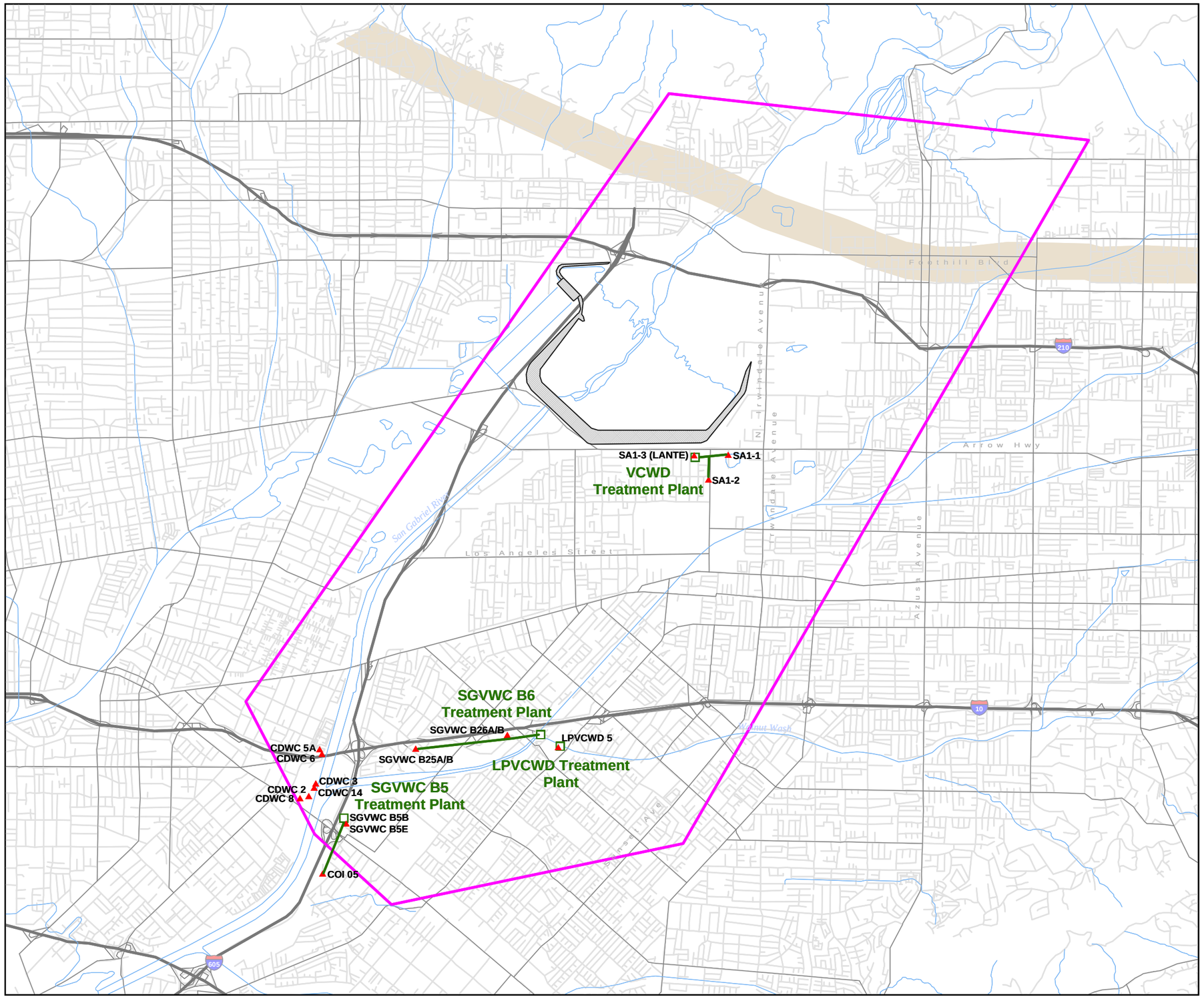
Baldwin Park Operable Unit
San Gabriel Valley, California

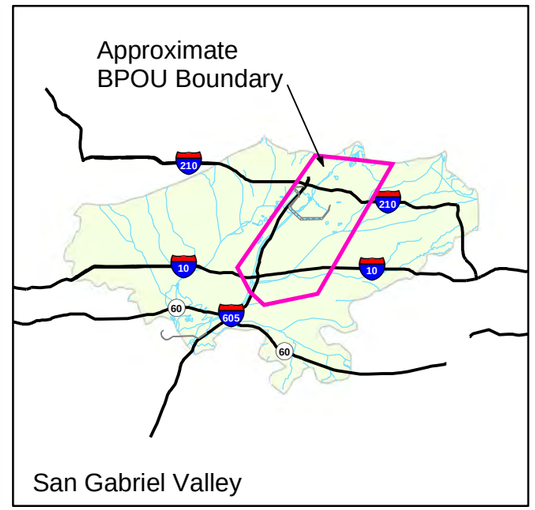
Geosyntec consultants

Project No.: SAC150

Figure **1-1**

Path: \\sacramento-01\data\GIS\SAC150_BPOU\project\201903_2018PER\Volume 1\1-01_BPOU_LocationMap.mxd





EXPLANATION

- Extraction well
- Treatment plant
- Raw water pipeline
- Approximate BPOU boundary
- Duarte Fault Zone

5,000 0 5,000

SCALE IN FEET

N

BPOU EXTRACTION WELL, RAW WATER PIPEPLINE, AND TREATMENT PLANT LOCATION MAP

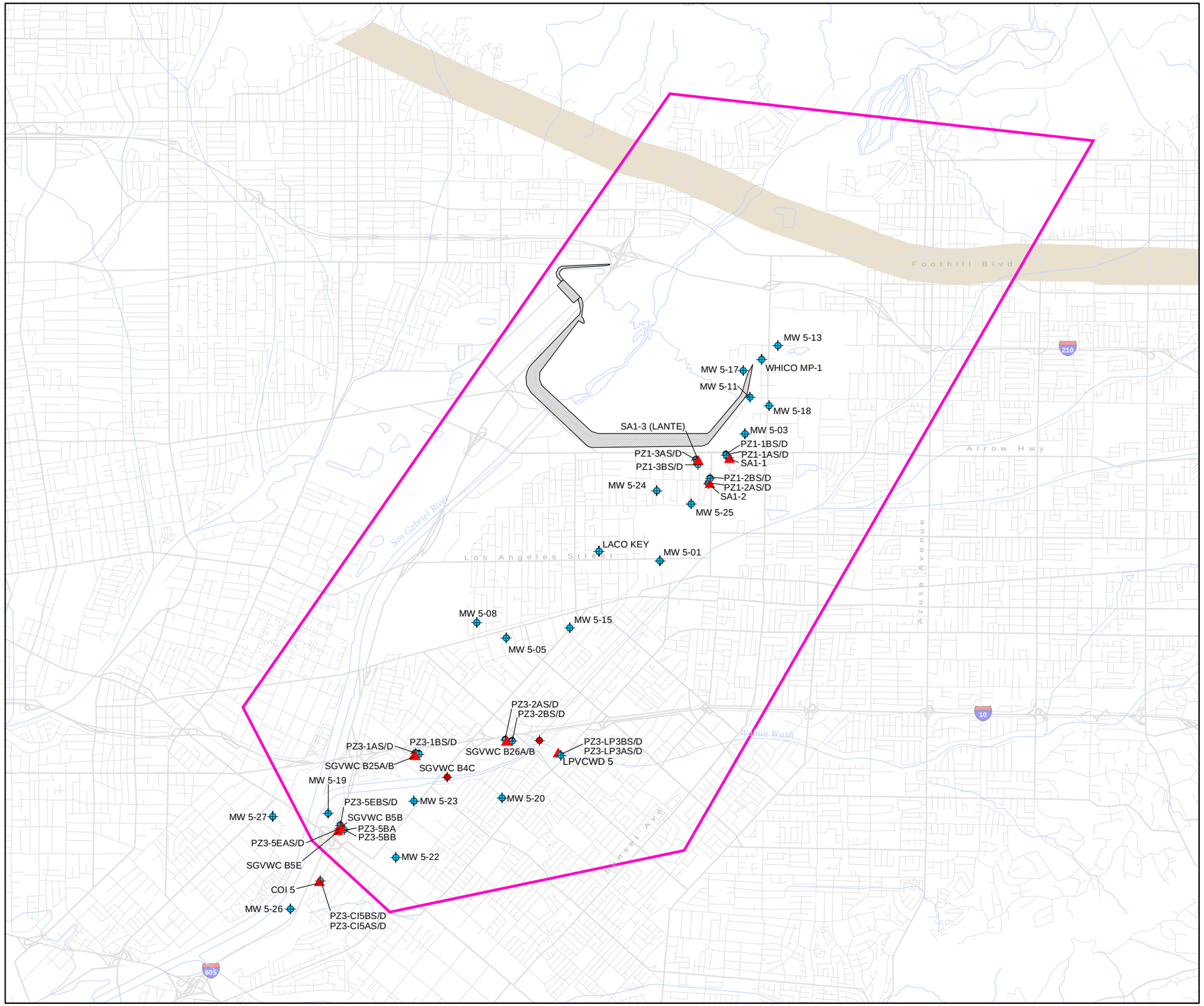
Baldwin Park Operable Unit
San Gabriel Valley, California

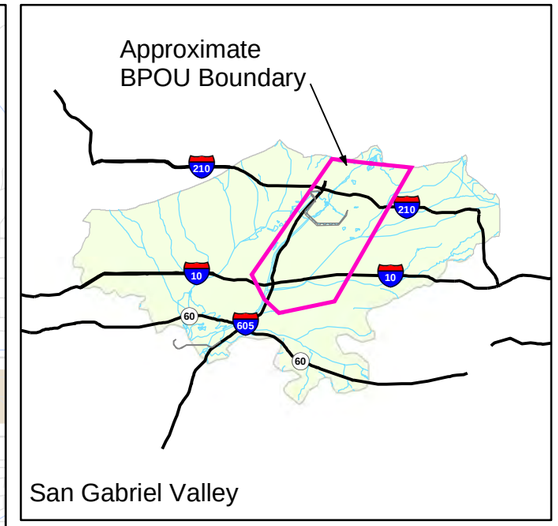
Geosyntec consultants

Project No.: SAC150

Figure **1-2**

Path: \\sacramento-01\data\GIS\SAC150_BPOU\project\201903_2018PER\Volume 1\1-02_BPOU_Infrastructure.mxd





EXPLANATION

- Multiport or monitoring well
- Extraction well
- Production well
- Approximate BPOU boundary
- Duarte Fault Zone

5,000 0 5,000

SCALE IN FEET

N

BPOU POTENTIOMETRIC MONITORING NETWORK

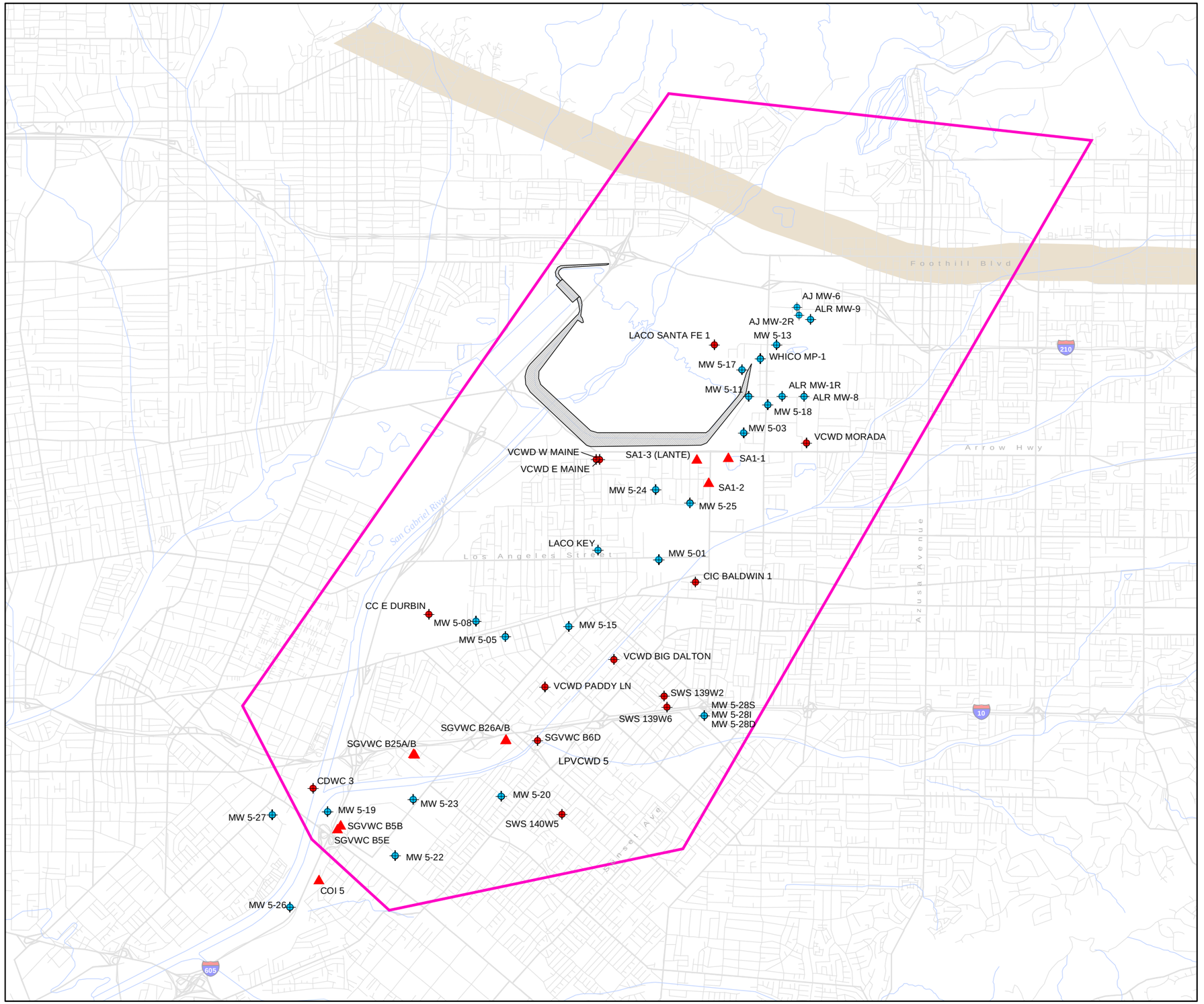
Baldwin Park Operable Unit
San Gabriel Valley, California

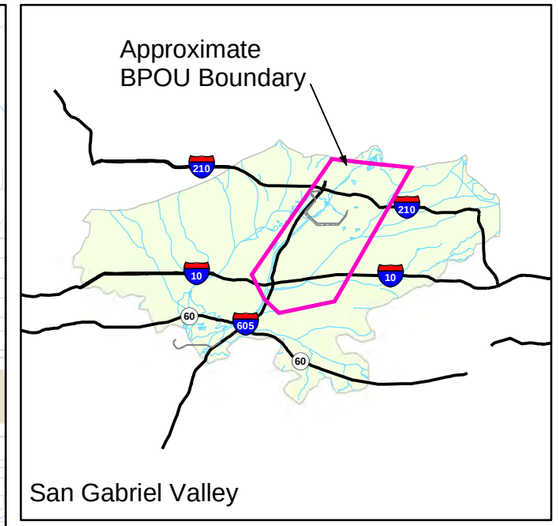
Geosyntec consultants

Project No.: SAC150

Figure **3-1**

Path: \\sacramento-01\data\GIS\SAC150_BPOU\project\201903_2018PERV\volume 1\3-01_Pot_network_map.mxd





EXPLANATION

- Multiport or monitoring well
- Extraction well
- Production well
- Approximate BPOU boundary
- Duarte Fault Zone

5,000 0 5,000

SCALE IN FEET

N

BPOU GROUNDWATER QUALITY MONITORING NETWORK

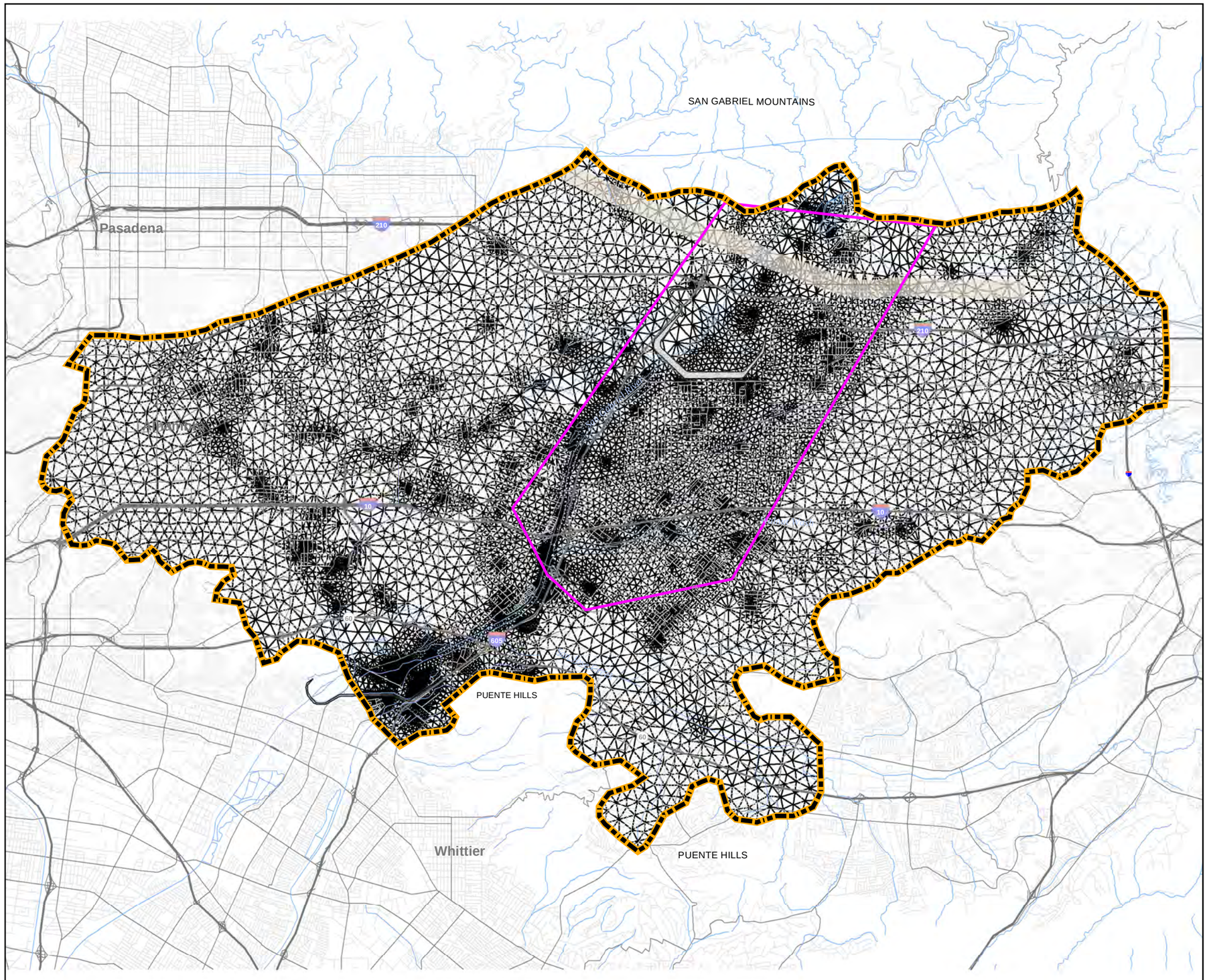
Baldwin Park Operable Unit
San Gabriel Valley, California

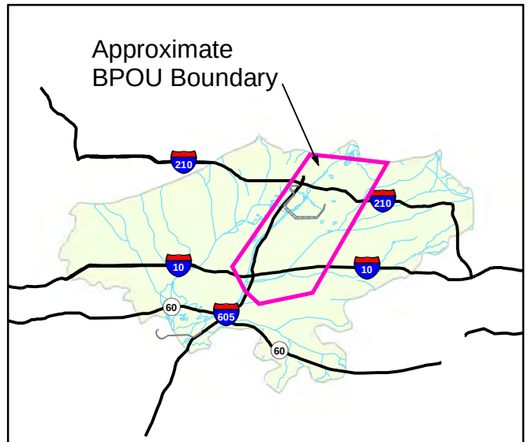
Geosyntec consultants

Project No.: SAC150

Figure **3-2**

\\den-fs1\GIS\Projects\Aerojet_7190\GIS_maps\Annual_Report-Maps\2012\3-02_Qual_network_map.mxd





EXPLANATION

- FEFLOW Numerical Grid
- Approximate BPOU FEFLOW Model Domain
- Approximate BPOU boundary
- Duarte Fault Zone

10,000 0 10,000

SCALE IN FEET

N

BPOU MODEL DOMAIN AND NUMERICAL GRID

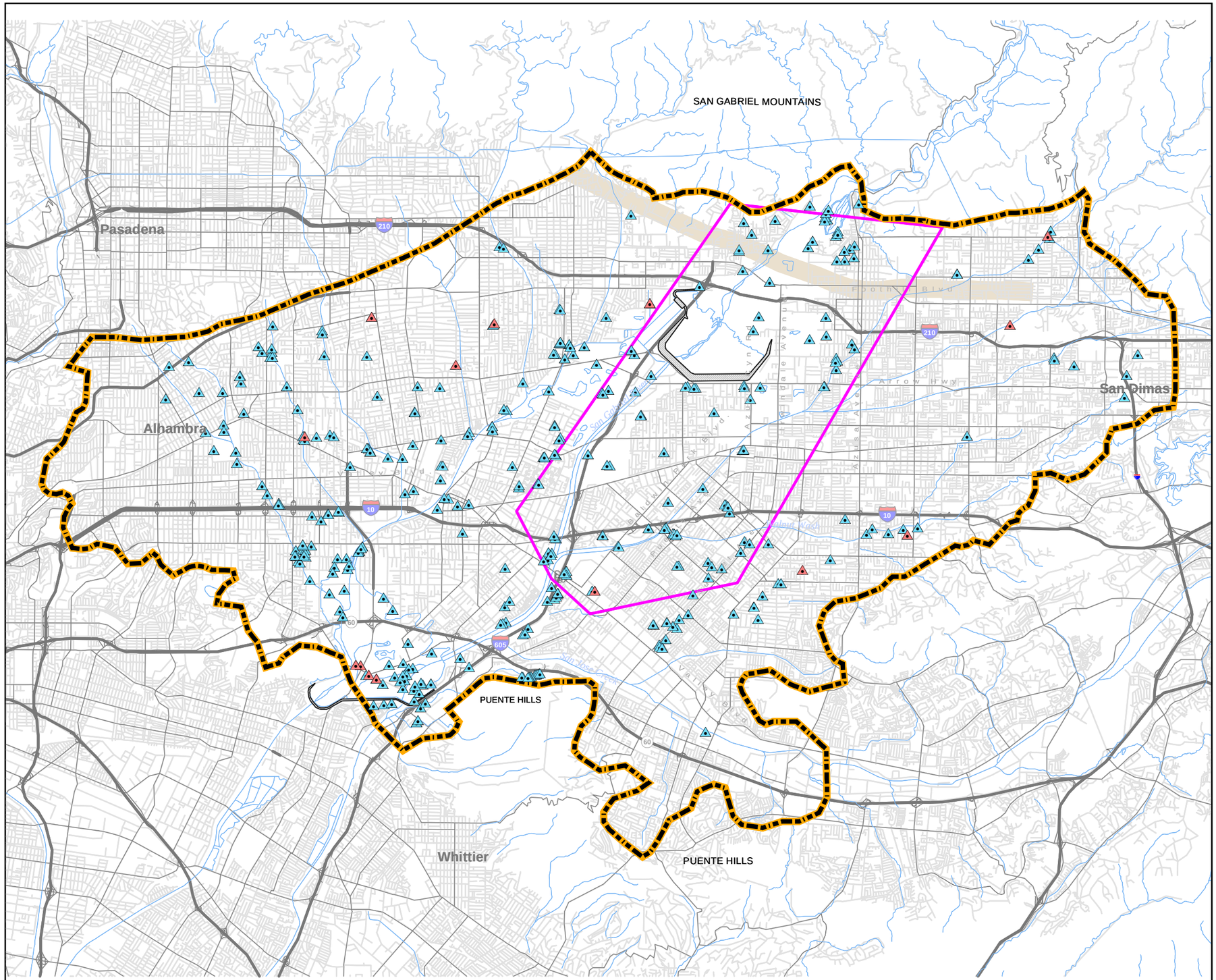
Baldwin Park Operable Unit
San Gabriel Valley, California

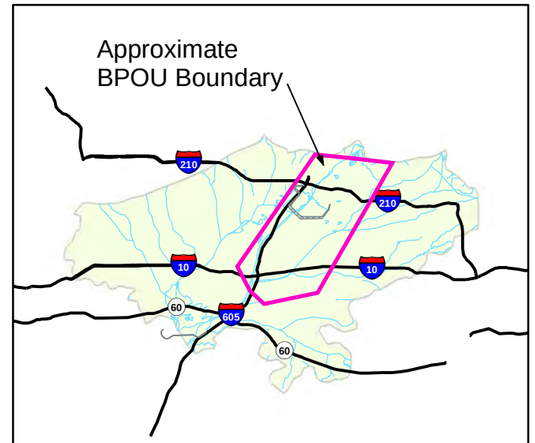
Geosyntec consultants

Project No.: SAC150

Figure **3-3**

Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\2019\03_2019PERV\volume 1\3-03_BPOU_ModelDomain.mxd





EXPLANATION

- Pumping Well added to model in 2015 update
- Pumping Well included in model previously
- Approximate BPOU FEFLOW Model Domain
- Approximate BPOU boundary
- Duarte Fault Zone

10,000 0 10,000

SCALE IN FEET

N

PUMPING WELLS IN BPOU GROUNDWATER MODEL

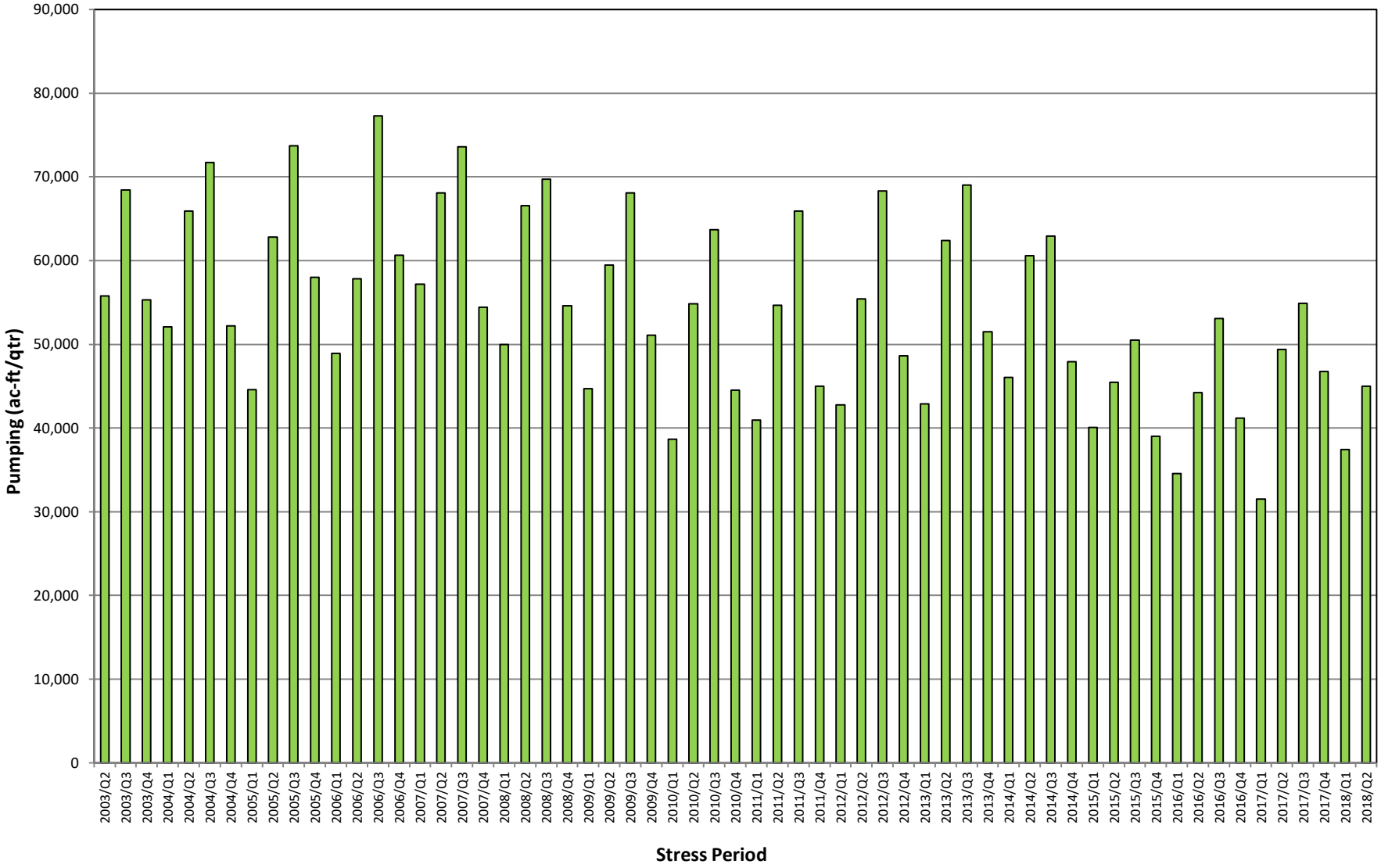
Baldwin Park Operable Unit
San Gabriel Valley, California

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Project No.: SAC150

Figure **3-4**

Path: \\sacramento-01\data\GIS\SAC150_BPOU\project\201903_2018PER\Volume 1\3-04_BPOU_PumpingWells.mxd

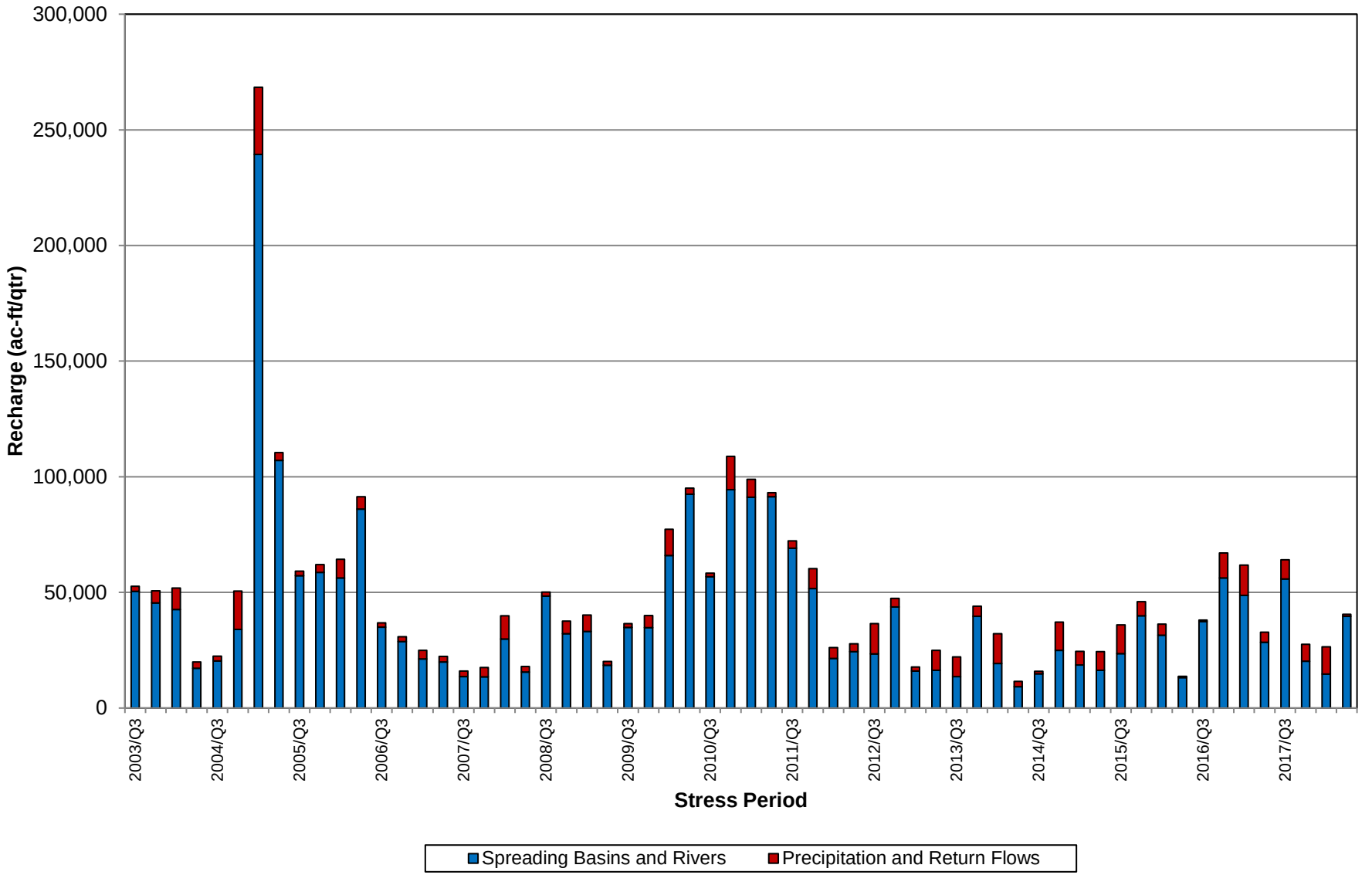


Geosyntec consultants

SIMULATED QUARTERLY PUMPING RATES
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No. SAC150

Figure **3-5**

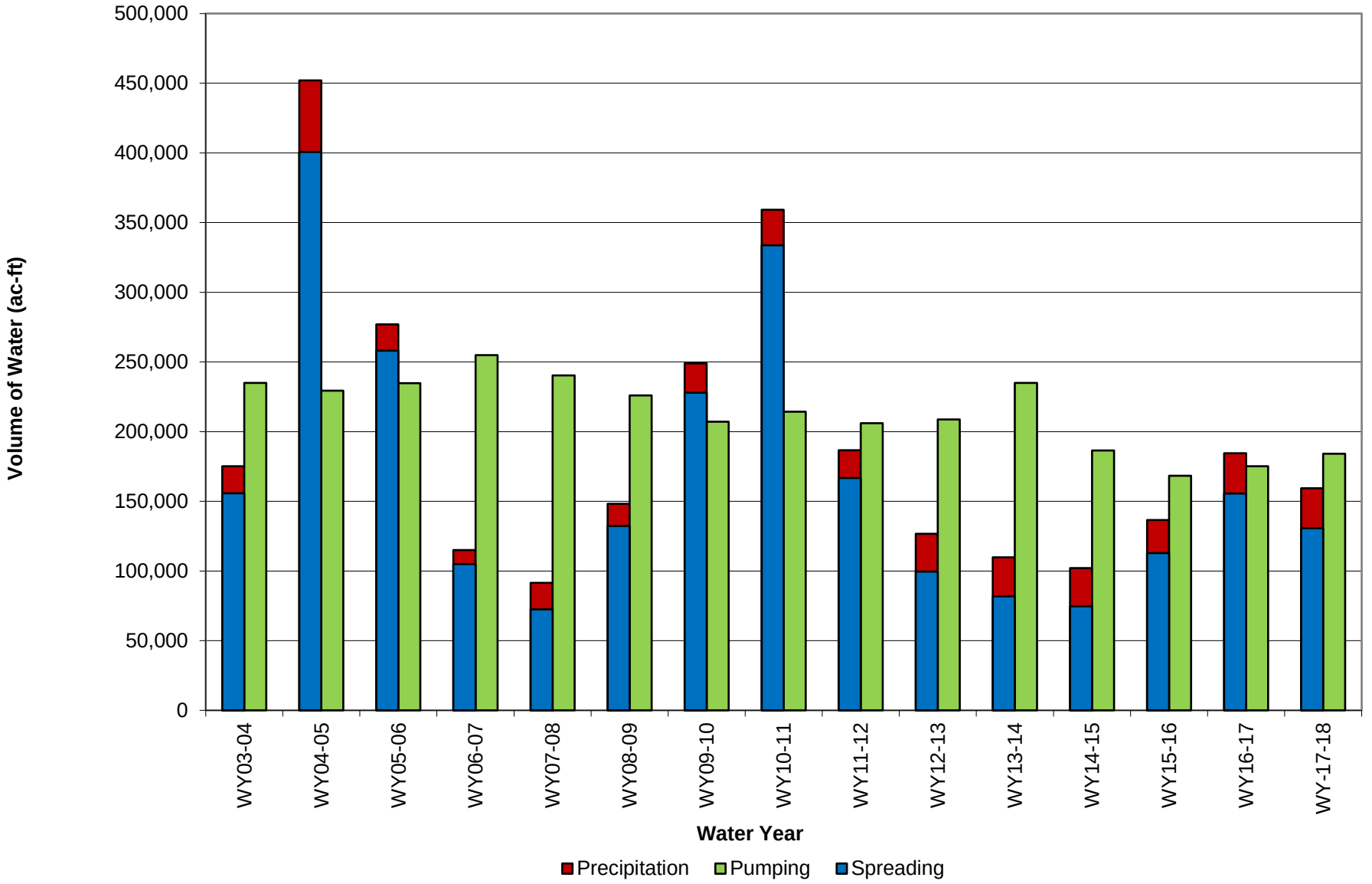


Geosyntec consultants

SIMULATED QUARTERLY RECHARGE RATES
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No. SAC150

Figure **3-6**

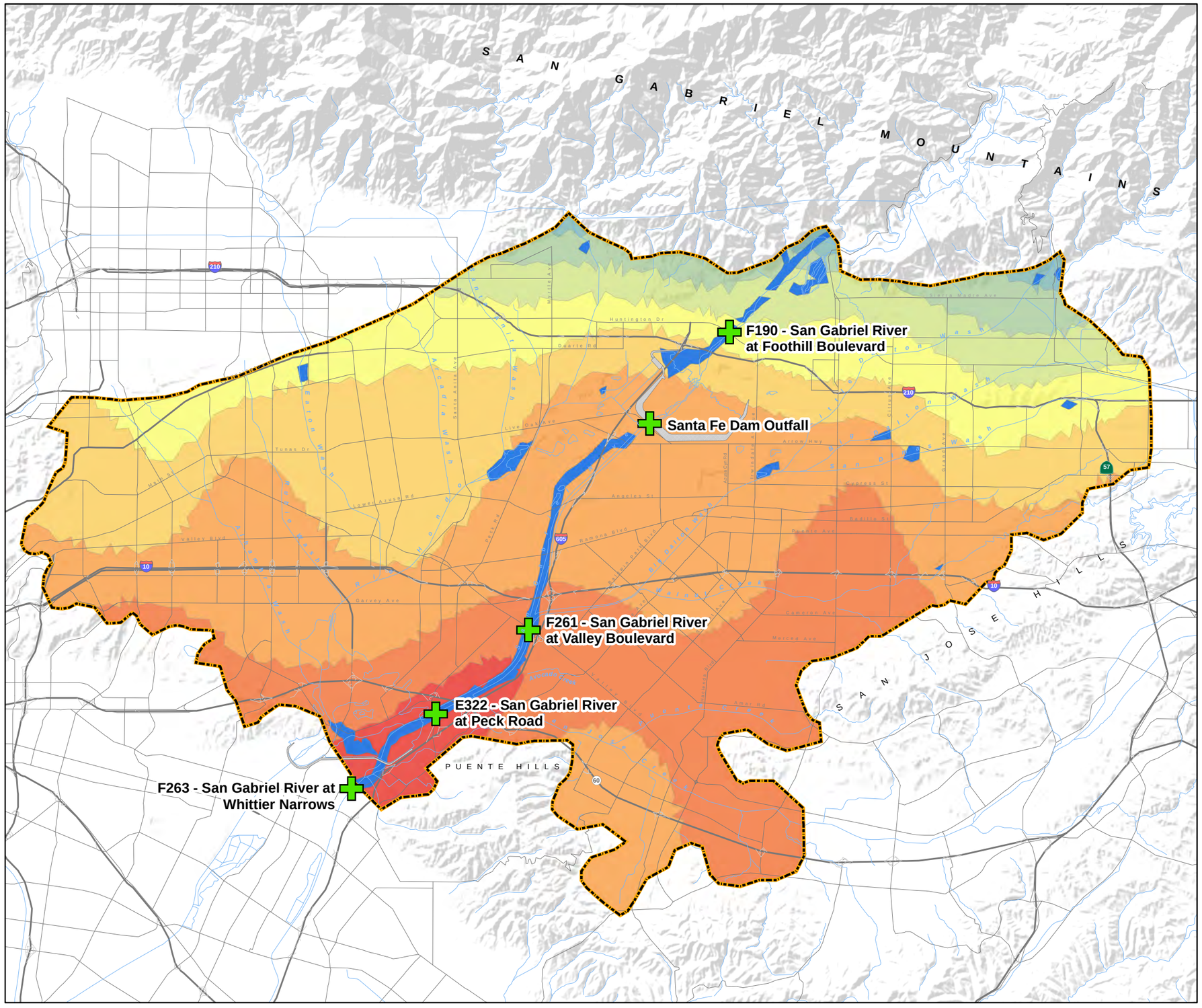


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SIMULATED ANNUAL RECHARGE AND PUMPING RATES
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No. SAC150

Figure **3-7**



EXPLANATION

- Approximate BPOU FEFLOW model domain
- San Gabriel River Gauging Station

Model Recharge Zones

- 16 in/yr average precipitation
- 16.5 in/yr average precipitation
- 17.5 in/yr average precipitation
- 18.5 in/yr average precipitation
- 19.5 in/yr average precipitation
- 20.5 in/yr average precipitation
- 21.5 in/yr average precipitation
- 22.5 in/yr average precipitation
- 23.5 in/yr average precipitation
- Spreading basins and river reaches

Note: Recharge zones represent precipitation areas presented in California Department of Water Resources (DWR) Bulletin No. 104-2, Appendix A: Geohydrology, 1966. Precipitation zones were characterized by DWR as the average seasonal precipitation measured from 1933-34 through 1959-60.

10,000 0 10,000

SCALE IN FEET

N

MODEL RECHARGE ZONATION

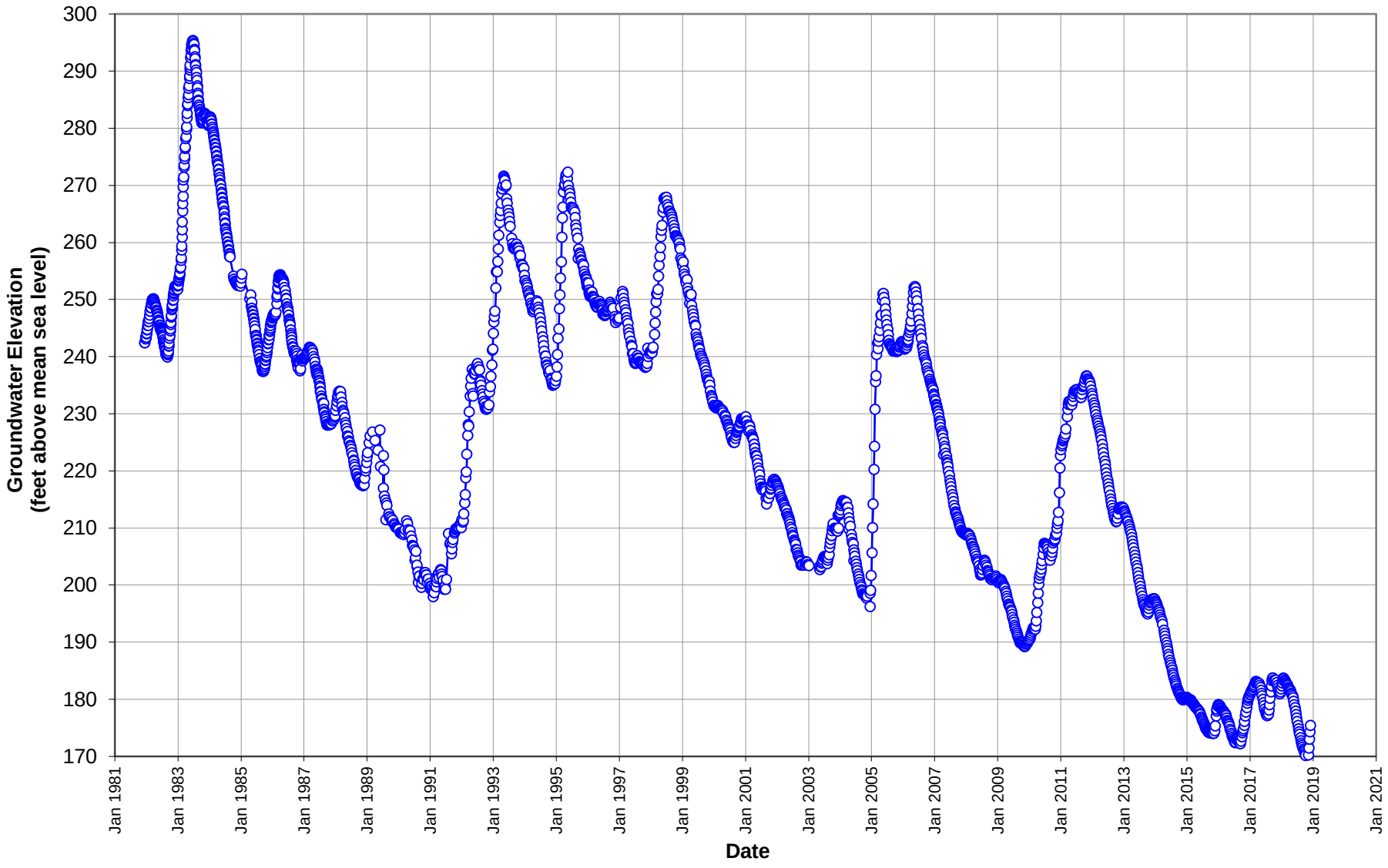
Baldwin Park Operable Unit
San Gabriel Valley, California

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Project No.: SAC150

Figure **3-8**

Path: \\sacramento-01\data\GIS\SAC150_BPOU\project\201803_2017PER\Volume 1\3-08_RechargeZonation.mxd

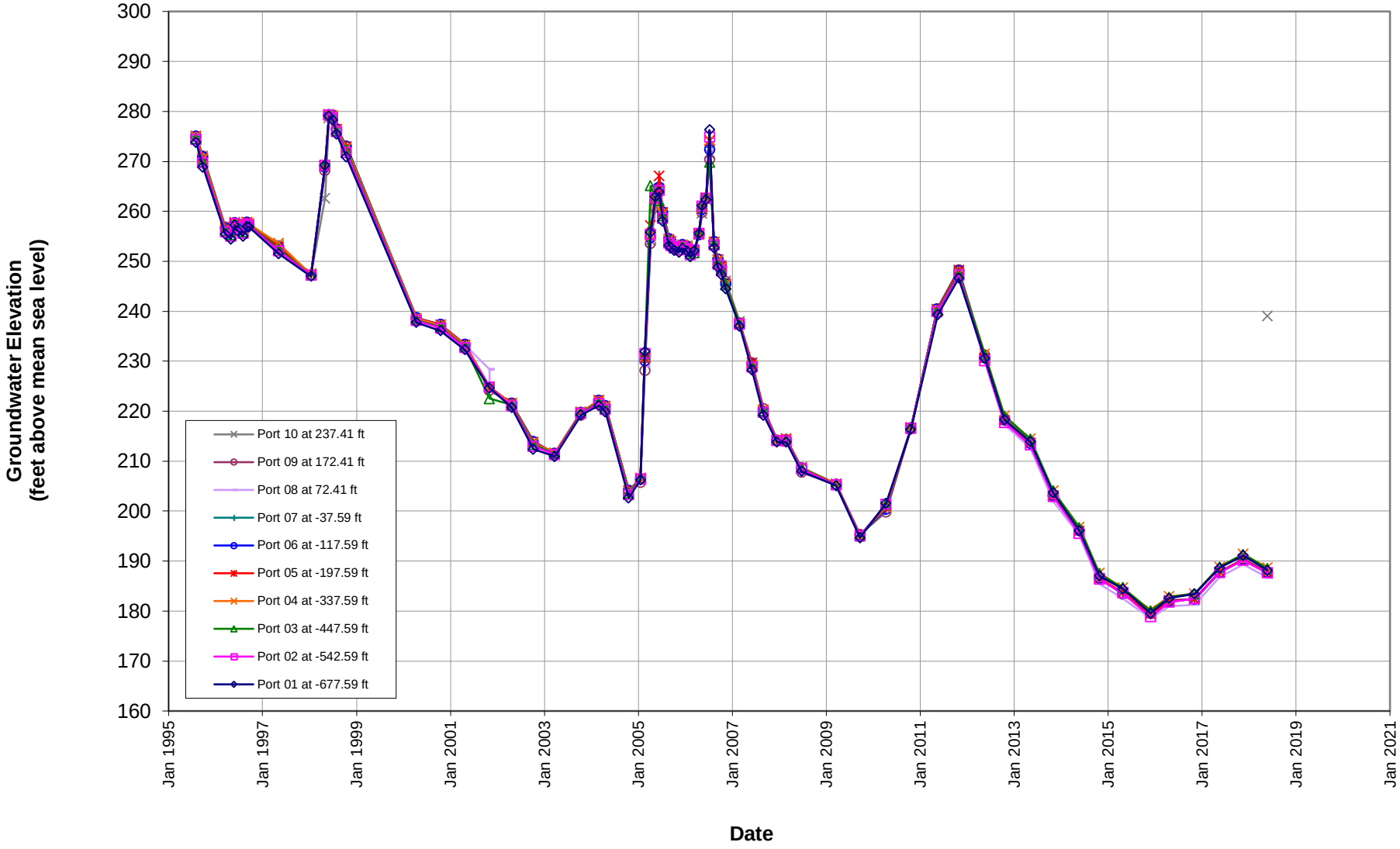


Geosyntec consultants

LACO KEY WELL HYDROGRAPH
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No. SAC150

Figure **5-1**

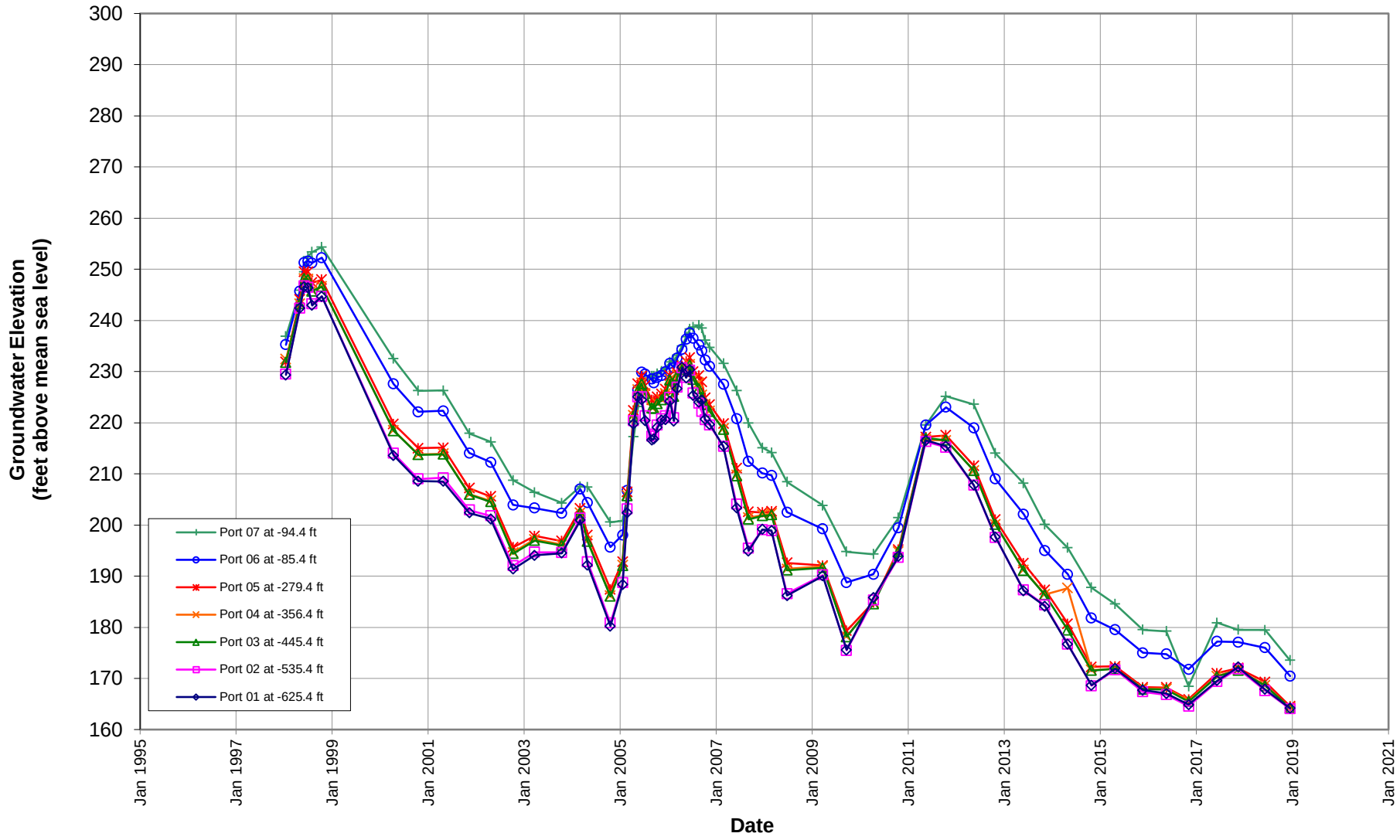


Geosyntec consultants

MW 5-03 WELL HYDROGRAPH
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No. SAC150

Figure **5-2**

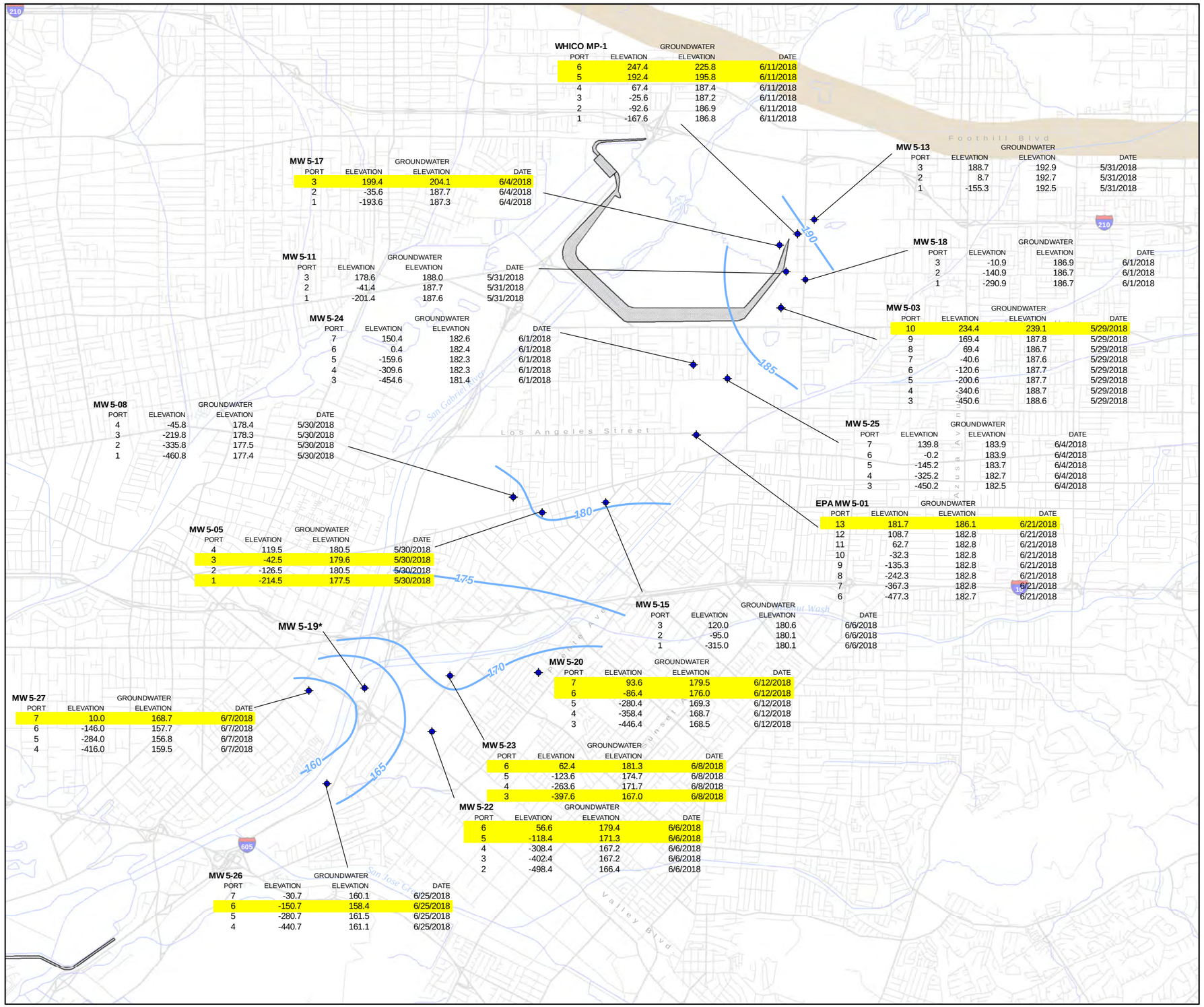


Geosyntec consultants

MW 5-20 WELL HYDROGRAPH
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No. SAC150

Figure **5-3**



WHICO MP-1

PORT	ELEVATION	GROUNDWATER ELEVATION	DATE
6	247.4	225.8	6/11/2018
5	192.4	195.8	6/11/2018
4	67.4	187.4	6/11/2018
3	-25.6	187.2	6/11/2018
2	-92.6	186.9	6/11/2018
1	-167.6	186.8	6/11/2018

MW 5-17

PORT	ELEVATION	GROUNDWATER ELEVATION	DATE
3	199.4	204.1	6/4/2018
2	-35.6	187.7	6/4/2018
1	-193.6	187.3	6/4/2018

MW 5-11

PORT	ELEVATION	GROUNDWATER ELEVATION	DATE
3	178.6	188.0	5/31/2018
2	-41.4	187.7	5/31/2018
1	-201.4	187.6	5/31/2018

MW 5-24

PORT	ELEVATION	GROUNDWATER ELEVATION	DATE
7	150.4	182.6	6/1/2018
6	0.4	182.4	6/1/2018
5	-159.6	182.3	6/1/2018
4	-309.6	182.3	6/1/2018
3	-454.6	181.4	6/1/2018

MW 5-08

PORT	ELEVATION	GROUNDWATER ELEVATION	DATE
4	-45.8	178.4	5/30/2018
3	-219.8	178.3	5/30/2018
2	-335.8	177.5	5/30/2018
1	-460.8	177.4	5/30/2018

MW 5-05

PORT	ELEVATION	GROUNDWATER ELEVATION	DATE
4	119.5	180.5	5/30/2018
3	-42.5	179.6	5/30/2018
2	-126.5	180.5	5/30/2018
1	-214.5	177.5	5/30/2018

MW 5-19*

MW 5-27

PORT	ELEVATION	GROUNDWATER ELEVATION	DATE
7	10.0	168.7	6/7/2018
6	-146.0	157.7	6/7/2018
5	-284.0	156.8	6/7/2018
4	-416.0	159.5	6/7/2018

MW 5-26

PORT	ELEVATION	GROUNDWATER ELEVATION	DATE
7	-30.7	160.1	6/25/2018
6	-150.7	158.4	6/25/2018
5	-280.7	161.5	6/25/2018
4	-440.7	161.1	6/25/2018

MW 5-15

PORT	ELEVATION	GROUNDWATER ELEVATION	DATE
3	120.0	180.6	6/6/2018
2	-95.0	180.1	6/6/2018
1	-315.0	180.1	6/6/2018

MW 5-20

PORT	ELEVATION	GROUNDWATER ELEVATION	DATE
7	93.6	179.5	6/12/2018
6	-86.4	176.0	6/12/2018
5	-280.4	169.3	6/12/2018
4	-358.4	168.7	6/12/2018
3	-446.4	168.5	6/12/2018

MW 5-23

PORT	ELEVATION	GROUNDWATER ELEVATION	DATE
6	62.4	181.3	6/8/2018
5	-123.6	174.7	6/8/2018
4	-263.6	171.7	6/8/2018
3	-397.6	167.0	6/8/2018

MW 5-22

PORT	ELEVATION	GROUNDWATER ELEVATION	DATE
6	56.6	179.4	6/6/2018
5	-118.4	171.3	6/6/2018
4	-308.4	167.2	6/6/2018
3	-402.4	167.2	6/6/2018
2	-498.4	166.4	6/6/2018

MW 5-13

PORT	ELEVATION	GROUNDWATER ELEVATION	DATE
3	188.7	192.9	5/31/2018
2	8.7	192.7	5/31/2018
1	-155.3	192.5	5/31/2018

MW 5-18

PORT	ELEVATION	GROUNDWATER ELEVATION	DATE
3	-10.9	186.9	6/1/2018
2	-140.9	186.7	6/1/2018
1	-290.9	186.7	6/1/2018

MW 5-03

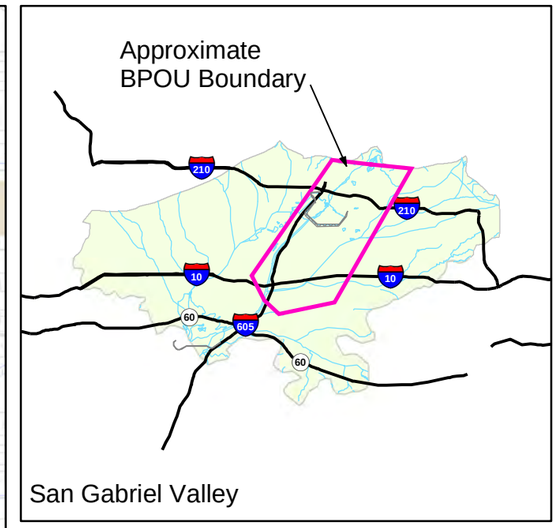
PORT	ELEVATION	GROUNDWATER ELEVATION	DATE
10	234.4	239.1	5/29/2018
9	169.4	187.8	5/29/2018
8	69.4	186.7	5/29/2018
7	-40.6	187.6	5/29/2018
6	-120.6	187.7	5/29/2018
5	-200.6	187.7	5/29/2018
4	-340.6	188.7	5/29/2018
3	-450.6	188.6	5/29/2018

MW 5-25

PORT	ELEVATION	GROUNDWATER ELEVATION	DATE
7	139.8	183.9	6/4/2018
6	-0.2	183.9	6/4/2018
5	-145.2	183.7	6/4/2018
4	-325.2	182.7	6/4/2018
3	-450.2	182.5	6/4/2018

EPA MW 5-01

PORT	ELEVATION	GROUNDWATER ELEVATION	DATE
13	181.7	186.1	6/21/2018
12	108.7	182.8	6/21/2018
11	62.7	182.8	6/21/2018
10	-32.3	182.8	6/21/2018
9	-135.3	182.8	6/21/2018
8	-242.3	182.8	6/21/2018
7	-367.3	182.8	6/21/2018
6	-477.3	182.7	6/21/2018



EXPLANATION

- Multiport well used in contouring
- −190− Potentiometric surface contour (elevation in feet above mean sea level) Contour interval 5 feet
- Duarte Fault Zone

NOTES:

1. The potentiometric contours shown represent interpreted groundwater elevations based on water levels measured in the wells during Spring 2018 as part of the Performance Standards Evaluation Plan. The interpreted contours should not be assumed to represent the precise groundwater elevation at any point along the contour line.

2. Highlighted groundwater elevations were not considered in contouring due to significant vertical differences in groundwater elevations measured in adjacent ports. In these situations, groundwater elevations measured in intermediate depth ports were more heavily weighted in contouring.

* Indicates well was not sampled during Spring 2017

5,000 0 5,000

SCALE IN FEET

N

GENERALIZED SPRING 2018 POTENTIOMETRIC SURFACE ABOVE -500 FEET MSL

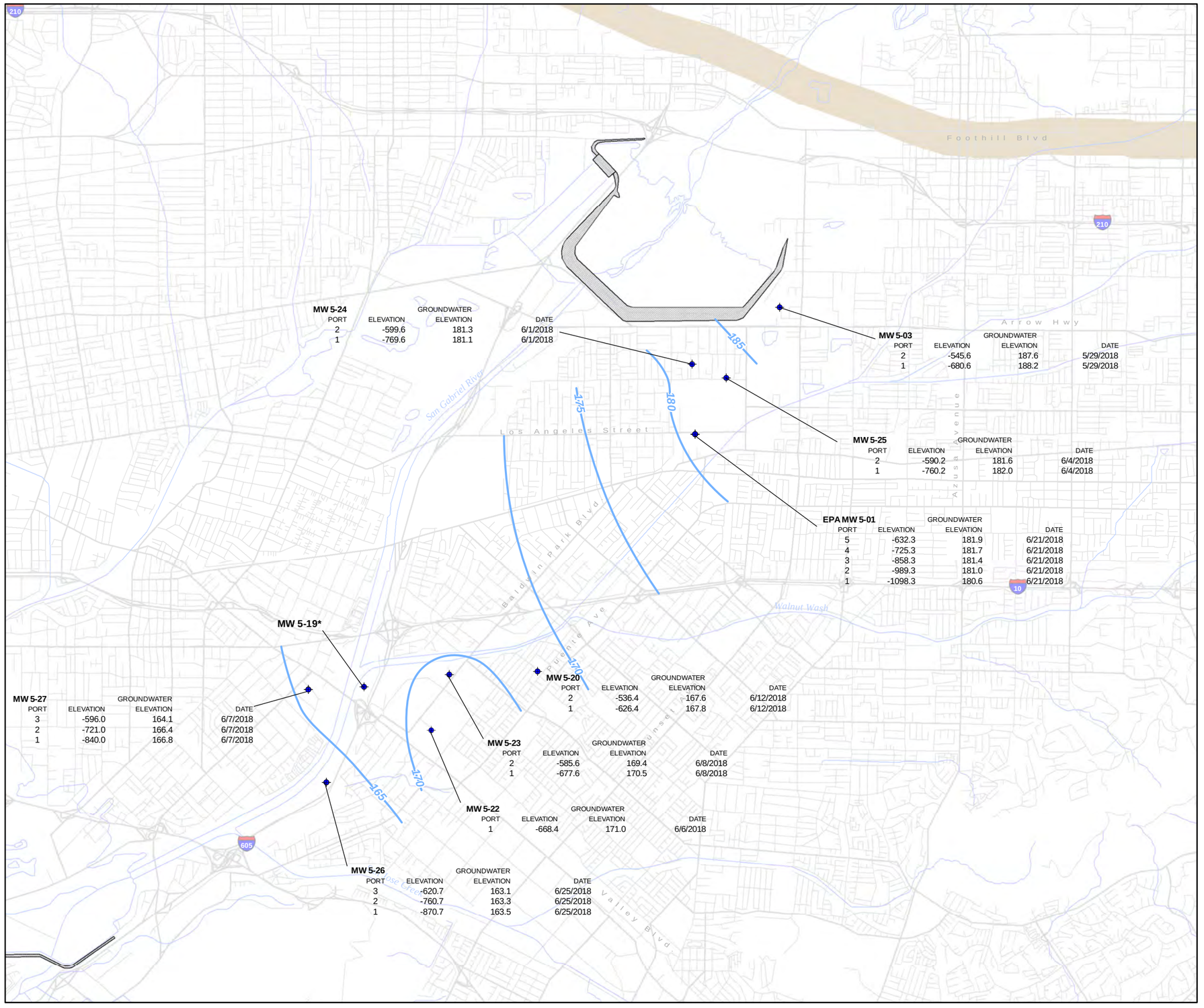
Baldwin Park Operable Unit
San Gabriel Valley, California

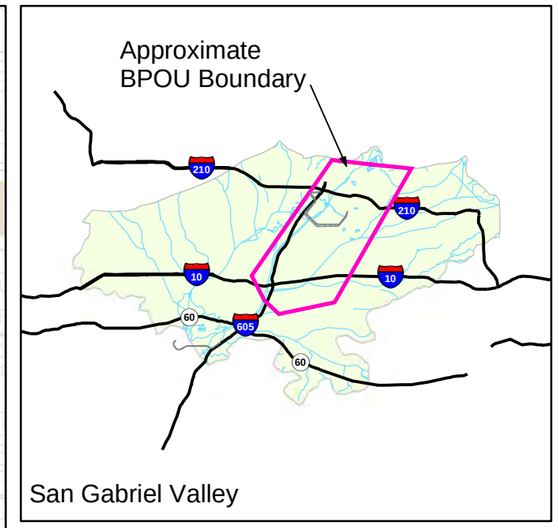
Geosyntec consultants

Project No.: SAC150

Figure **5-4**

Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\20190 3_2018PER\Volume 1\5-04_SPRING_GW_Elevations_above_-500MSL.mxd





EXPLANATION

- Multiport well used in contouring
- –185– Potentiometric surface contour (elevation in feet above mean sea level) Contour interval 5 feet
- Duarte Fault Zone

NOTES:

1. The potentiometric contours shown represent interpreted groundwater elevations based on water levels measured in the wells during Spring 2018 as part of the Performance Standards Evaluation Plan. The interpreted contours should not be assumed to represent the precise groundwater elevation at any point along the contour line.

5,000 0 5,000

SCALE IN FEET

N

GENERALIZED SPRING 2018 POTENTIOMETRIC SURFACE BELOW -500 FEET MSL

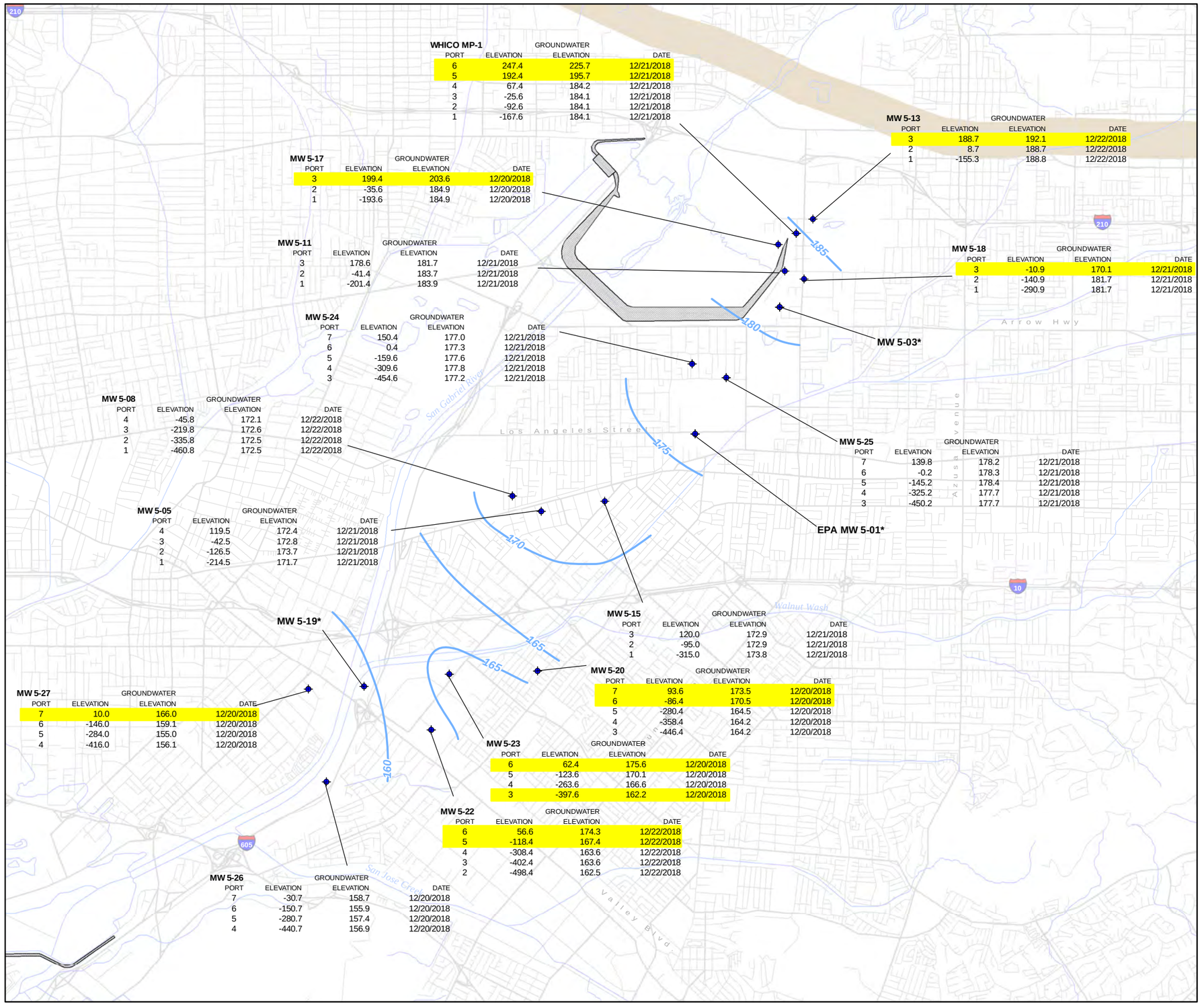
Baldwin Park Operable Unit
San Gabriel Valley, California

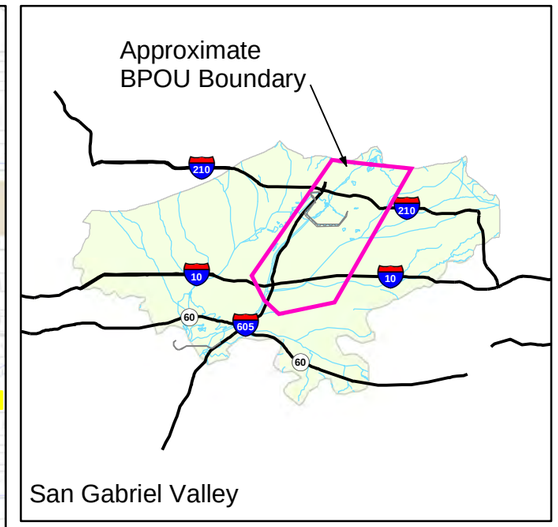
Geosyntec consultants

Project No.: SAC150

Figure **5-5**

Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PERV\olume 115-05_SPRING_GW_Elevations_below_-500MSL.mxd





EXPLANATION

- Multiport well used in contouring
- –185– Potentiometric surface contour (elevation in feet above mean sea level) Contour interval 5 feet
- Duarte Fault Zone

NOTES:

1. The potentiometric contours shown represent interpreted groundwater elevations based on water levels measured in the wells during Fall 2018 as part of the Performance Standards Evaluation Plan. The interpreted contours should not be assumed to represent the precise groundwater elevation at any point along the contour line.

2. Highlighted groundwater elevations were not considered in contouring due to significant vertical differences in groundwater elevations measured in adjacent ports. In these situations, groundwater elevations measured in intermediate depth ports were more heavily weighted in contouring.

* Indicates well was not sampled during Fall 2018

5,000 0 5,000

SCALE IN FEET

N

GENERALIZED FALL 2018 POTENTIOMETRIC SURFACE ABOVE -500 FEET MSL

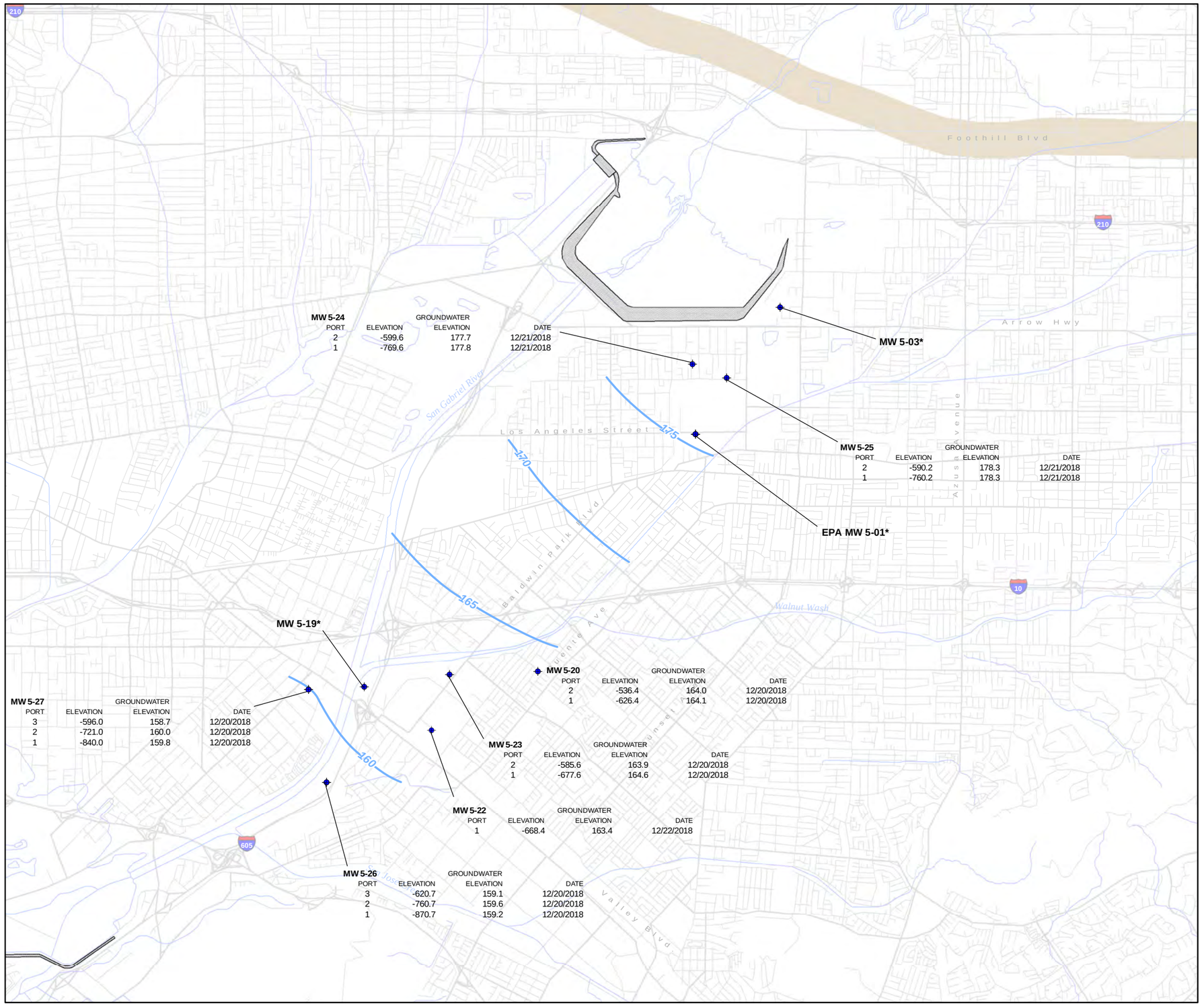
Baldwin Park Operable Unit
San Gabriel Valley, California

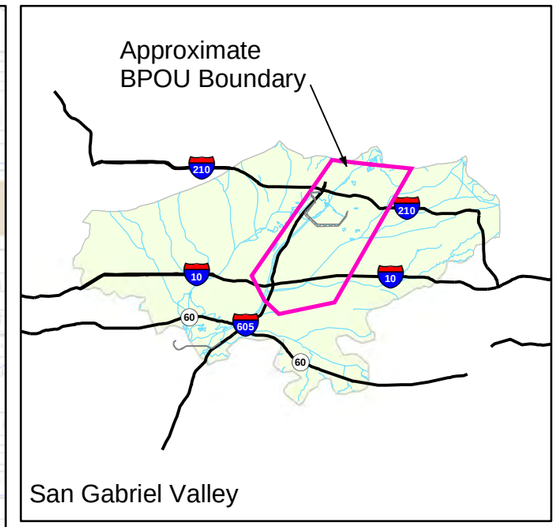
Geosyntec consultants

Project No.: SAC150

Figure **5-6**

Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PERI\Volume 1\5-06_FALL_GW_Elevations_above_-500MSL.mxd





EXPLANATION

- Multiport well used in contouring
- –175– Potentiometric surface contour (elevation in feet above mean sea level) Contour interval 5 feet
- Duarte Fault Zone

NOTES:

1. The potentiometric contours shown represent interpreted groundwater elevations based on water levels measured in the wells during Fall 2018 as part of the Performance Standards Evaluation Plan. The interpreted contours should not be assumed to represent the precise groundwater elevation at any point along the contour line.

2. Highlighted groundwater elevations were not considered in contouring due to significant vertical differences in groundwater elevations measured in adjacent ports. In these situations, groundwater elevations measured in intermediate depth ports were more heavily weighted in contouring.

* Indicates well was not sampled during Fall 2018.

5,000 0 5,000

SCALE IN FEET

N

GENERALIZED FALL 2018 POTENTIOMETRIC SURFACE BELOW -500 FEET MSL

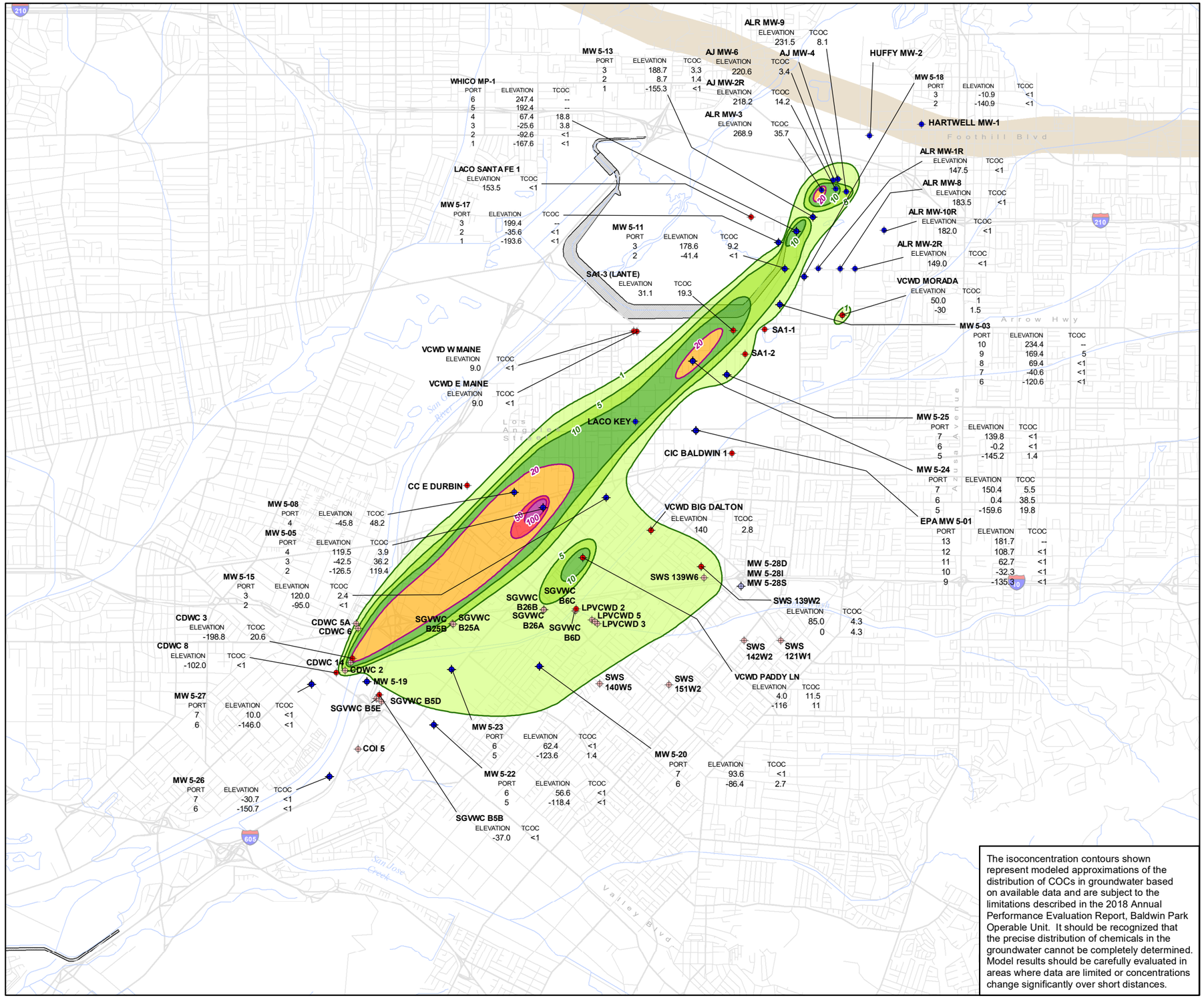
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San Gabriel Valley, California

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Project No.: SAC150

Figure **5-7**

Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PERI\Volume 1\5-07_FALL_GW_Elevations_below_-500MSL.mxd



EXPLANATION

- Production or extraction well
- Production or extraction well (no data within elevation range, refer to Note 3)
- Monitoring and multiport well
- Monitoring and multiport well (no data within elevation range, refer to Note 3)
- -- Not sampled - port was dry
- Total normalized COC concentration > 1x MCL
- Total normalized COC concentration > 5x MCL
- Total normalized COC concentration > 10x MCL
- Total normalized COC concentration > 20x MCL
- Total normalized COC concentration > 50x MCL
- Total normalized COC concentration > 100x MCL
- Duarte Fault Zone

NOTES:

1. Total Normalized COC Concentrations were calculated using the following formula:

$$C_{TCOC} = \Sigma\,(C_{PCE}/MCL)>1 + (C_{TCE}/MCL)>1 + (C_{CTC}/MCL)>1 + (C_{1,4\text{-diox}}/NL)>1 + (C_{CLO4}/MCL)>1 + (C_{NDMA}/NL)>1$$

   In instances where the ratio of the measured concentration of a given COC is less than the MCL or NL, the term for this COC is assigned a zero in calculation.

2. Data from the period modeled were used to create a three-dimensional isoconcentration shell of the contaminant. The solid lines represent the maximum extent of discrete contours of equal concentration for the specified elevation interval, created by slicing the isoconcentration shell at the specified elevation.
3. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, Earth Volumetric Studio® (EVS).
4. Posted data represent chemical results for the specified elevation range.
5. Data posted as <1 indicate no analytes were detected above the COC-specific MCL or NL.

5,000 0 5,000

SCALE IN FEET

N

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2018 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

DISTRIBUTION OF TOTAL COC CONCENTRATION EXCEEDING MCLS ABOVE -200 FEET MSL, 2018

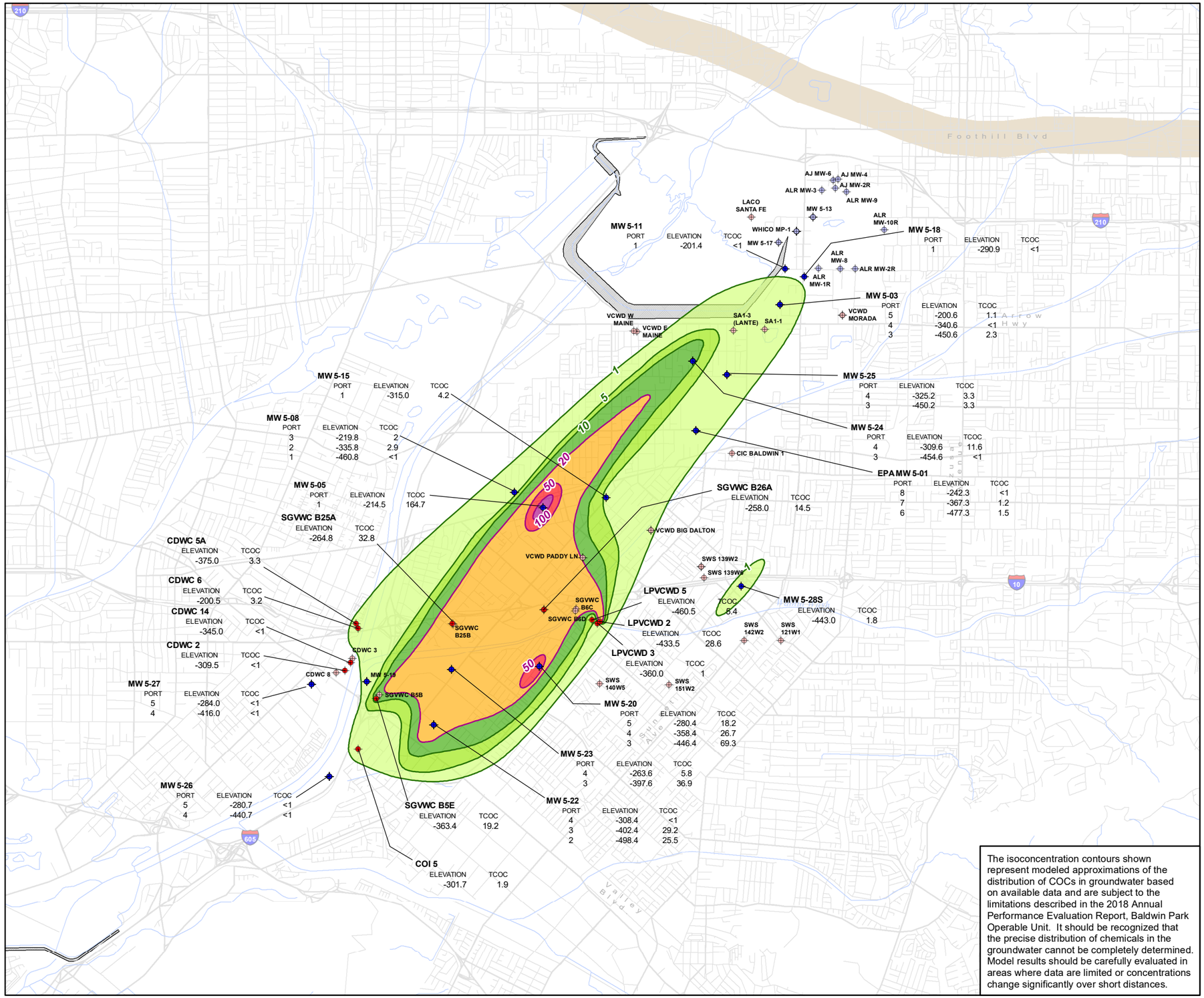
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San Gabriel Valley, California

Geosyntec consultants

Project No.: SAC150

Figure **5-08**

Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PER\Volume 1\5-08_PlumeMap_TCOC_sh.mxd



Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PER\Volume 1\5-09_PlumeMap_TCOC_int.mxd

EXPLANATION

- Production or extraction well
- Production or extraction well (no data within elevation range, refer to Note 3)
- Monitoring and multiport well
- Monitoring and multiport well (no data within elevation range, refer to Note 3)
- Total normalized COC concentration > 1x MCL
- Total normalized COC concentration > 5x MCL
- Total normalized COC concentration > 10x MCL
- Total normalized COC concentration > 20x MCL
- Total normalized COC concentration > 50x MCL
- Total normalized COC concentration > 100x MCL
- Duarte Fault Zone

NOTES:

1. Total Normalized COC Concentrations were calculated using the following formula:

   $C_{TCOC} = \Sigma\ (C_{PCE}/MCL)>1 + (C_{TCE}/MCL)>1 + (C_{CTC}/MCL)>1 + (C_{1,4\text{-diox}}/NL)>1 + (C_{CLO4}/MCL)>1 + (C_{NDMA}/NL)>1$

   In instances where the ratio of the measured concentration of a given COC is less than the MCL or NL, the term for this COC is assigned a zero in calculation.

2. Data from the period modeled were used to create a three-dimensional isoconcentration shell of the contaminant. The solid lines represent the maximum extent of discrete contours of equal concentration for the specified elevation interval, created by slicing the isoconcentration shell at the specified elevation.
3. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, Earth Volumetric Studio® (EVS).
4. Posted data represent chemical results for the specified elevation range.
5. Data posted as <1 indicate no analytes were detected above the COC-specific MCL or NL.

5,000 0 5,000

SCALE IN FEET

N

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2018 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

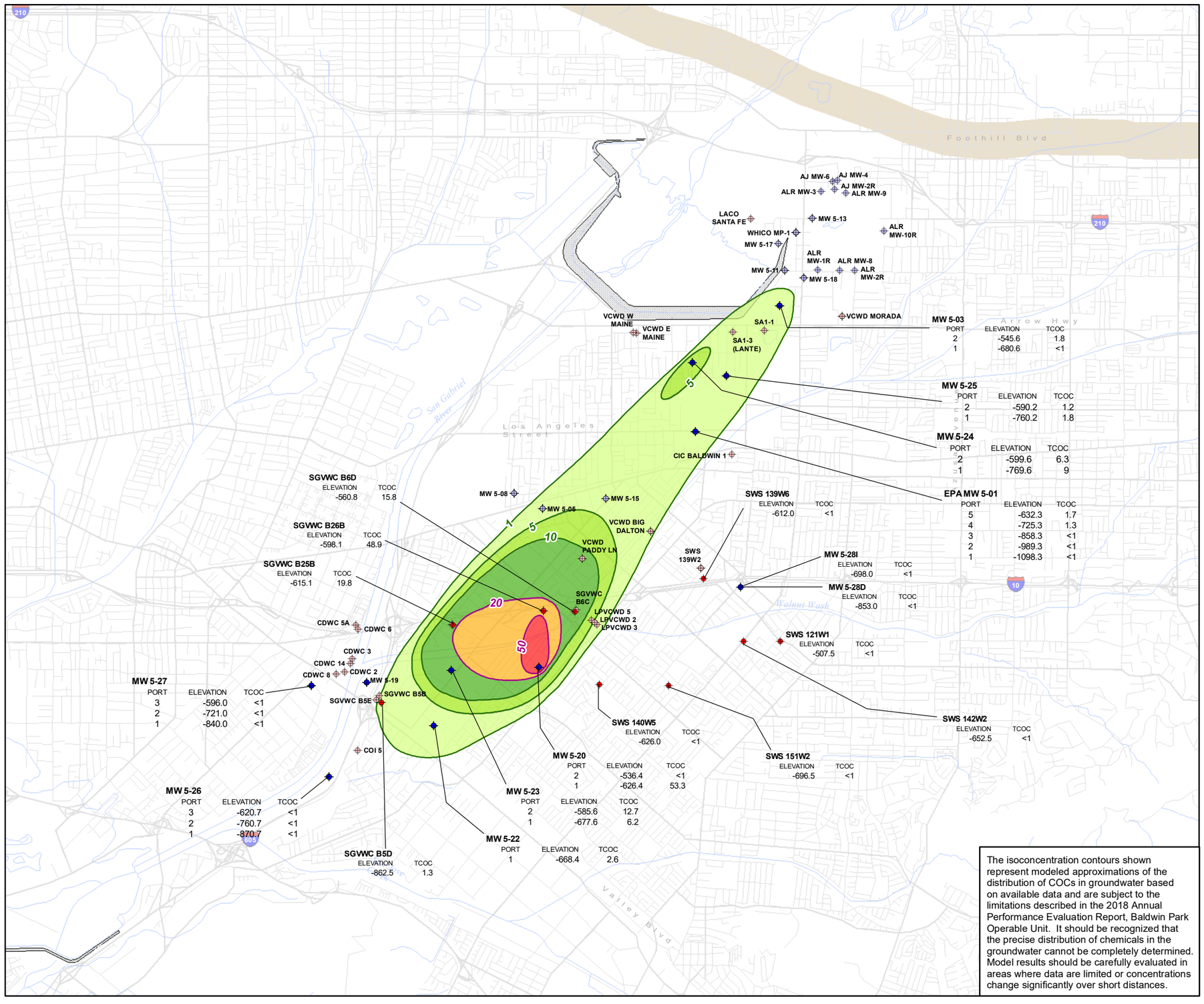
DISTRIBUTION OF TOTAL COC CONCENTRATION EXCEEDING MCLS BETWEEN -200 AND -500 FEET MSL, 2018

Baldwin Park Operable Unit
San Gabriel Valley, California

Geosyntec consultants

Project No.: SAC150

Figure **5-9**



EXPLANATION

- Production or extraction well
- Production or extraction well (no data within elevation range, refer to Note 3)
- Monitoring and multiport well
- Monitoring and multiport well (no data within elevation range, refer to Note 3)
- Total normalized COC concentration > 1x MCL
- Total normalized COC concentration > 5x MCL
- Total normalized COC concentration > 10x MCL
- Total normalized COC concentration > 20x MCL
- Total normalized COC concentration > 50x MCL
- Duarte Fault Zone

NOTES:

1. Total Normalized COC Concentrations were calculated using the following formula:

   $C_{TCOC} = \Sigma\ (C_{PCE}/MCL)>1 + (C_{TCE}/MCL)>1 + (C_{CTC}/MCL)>1 + (C_{1,4\text{-diox}}/NL)>1 + (C_{CLO4}/MCL)>1 + (C_{NDMA}/NL)>1$

   In instances where the ratio of the measured concentration of a given COC is less than the MCL or NL, the term for this COC is assigned a zero in calculation.

2. Data from the period modeled were used to create a three-dimensional isoconcentration shell of the contaminant. The solid lines represent the maximum extent of discrete contours of equal concentration for the specified elevation interval, created by slicing the isoconcentration shell at the specified elevation.

3. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, Earth Volumetric Studio® (EVS).

4. Posted data represent chemical results for the specified elevation range.

5. Data posted as <1 indicate no analytes were detected above the COC-specific MCL or NL.

5,000 0 5,000

SCALE IN FEET

N

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2018 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

DISTRIBUTION OF TOTAL COC CONCENTRATION EXCEEDING MCLS BELOW -500 FEET MSL, 2018

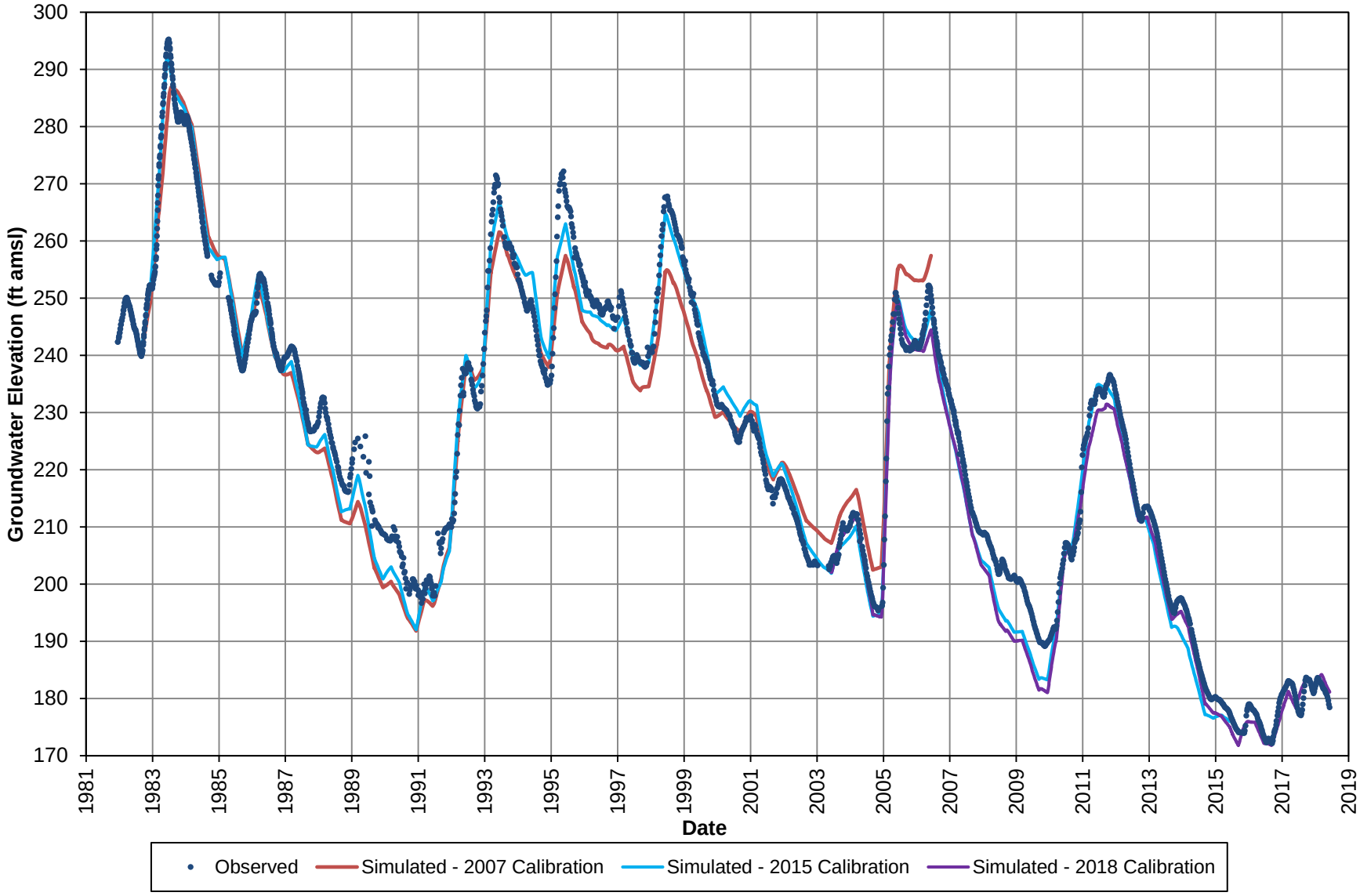
Baldwin Park Operable Unit
San Gabriel Valley, California

Geosyntec consultants

Project No.: SAC150

Figure **5-10**

Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\20190103_2018PER\Volume 1\5-10_PlumeMap_TCOC_dp.mxd

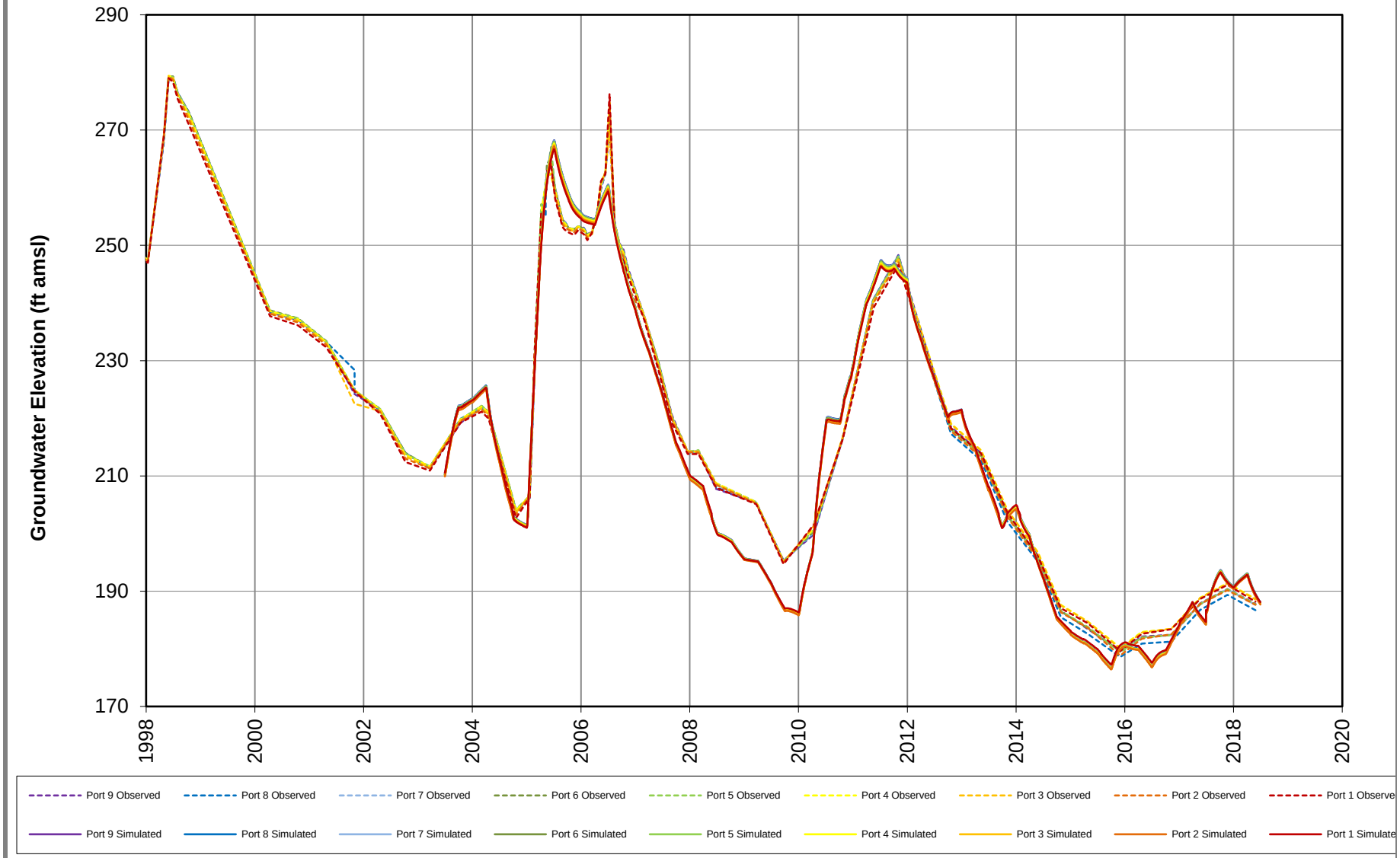


Geosyntec consultants

LACO KEY WELL CALIBRATION HYDROGRAPH
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No. SAC150

Figure **5-11**

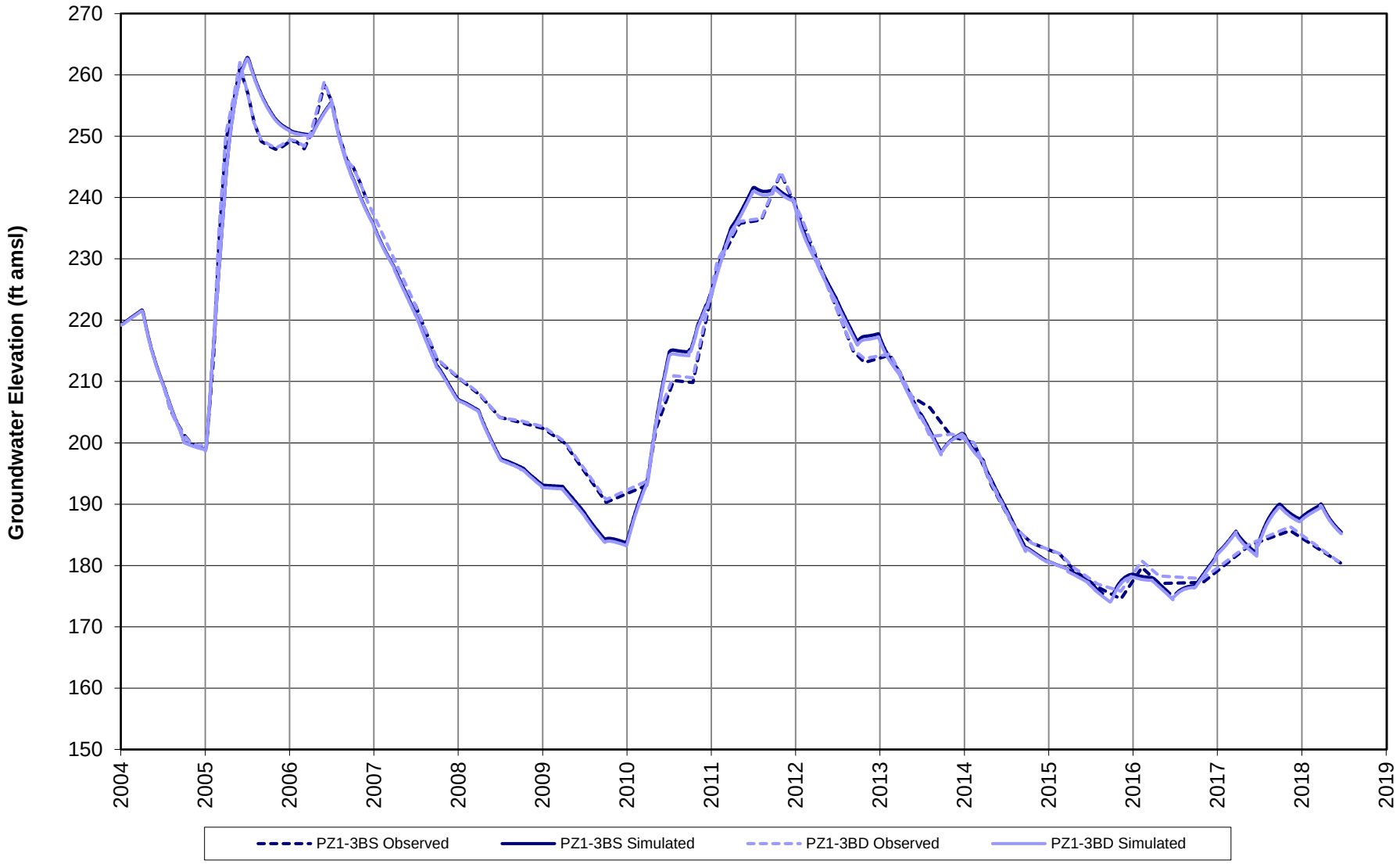


Geosyntec consultants

SUBAREA 1 MULTIPORT WELL CALIBRATION HYDROGRAPH FOR MW 5-03
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No. SAC150

Figure **5-12**

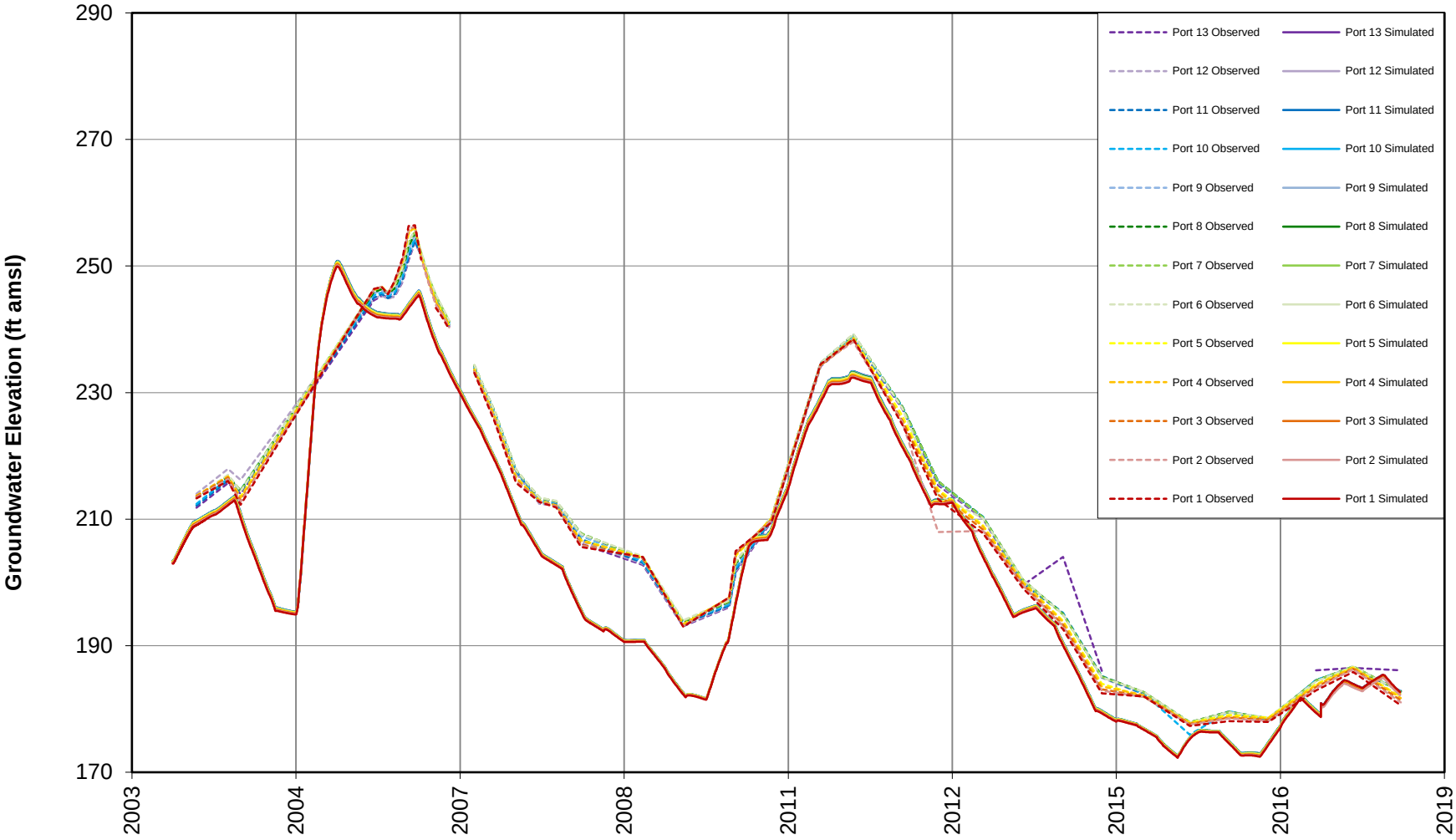


Geosyntec consultants

SUBAREA 1 PIEZOMETER CALIBRATION HYDROGRAPH FOR PZ1-3B D/S
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No. SAC150

Figure **5-13**

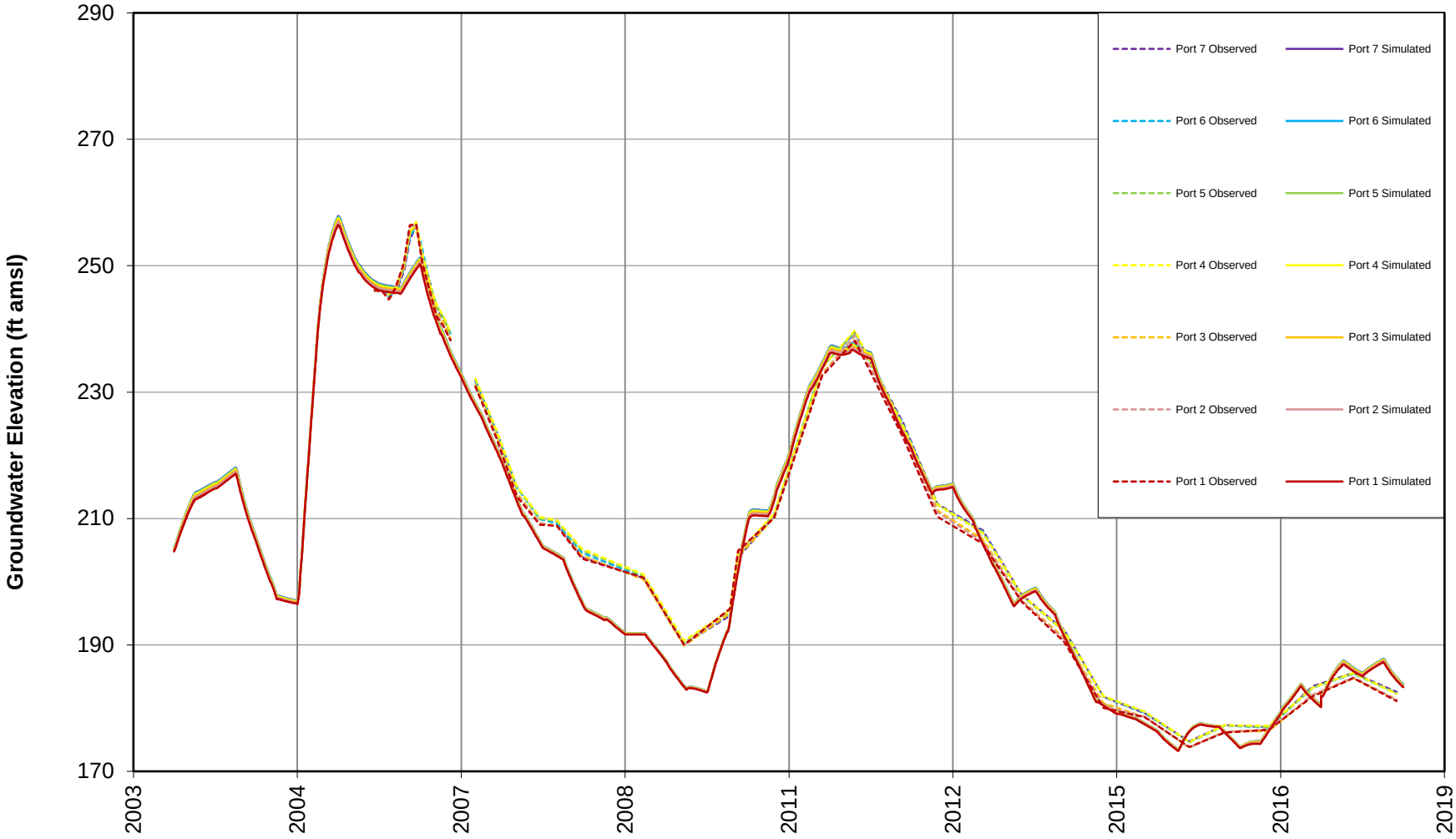


Geosyntec consultants

SUBAREA 2 MULTIPORT WELL CALIBRATION HYDROGRAPH FOR MW 5-01
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No. SAC150

Figure **5-14**

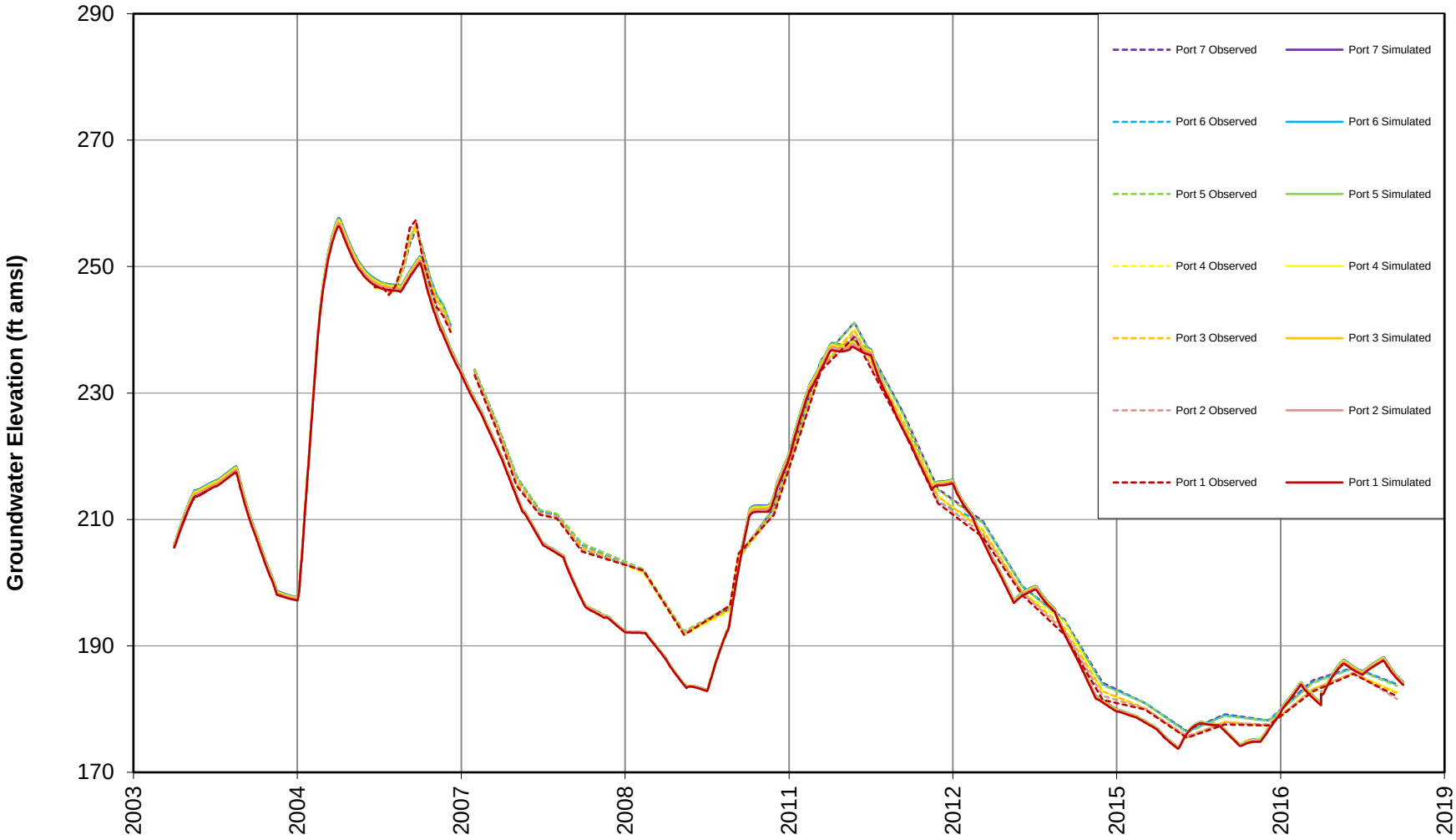


Geosyntec consultants

SUBAREA 2 MULTIPORT WELL CALIBRATION HYDROGRAPH FOR MW 5-24
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No. SAC150

Figure **5-15**

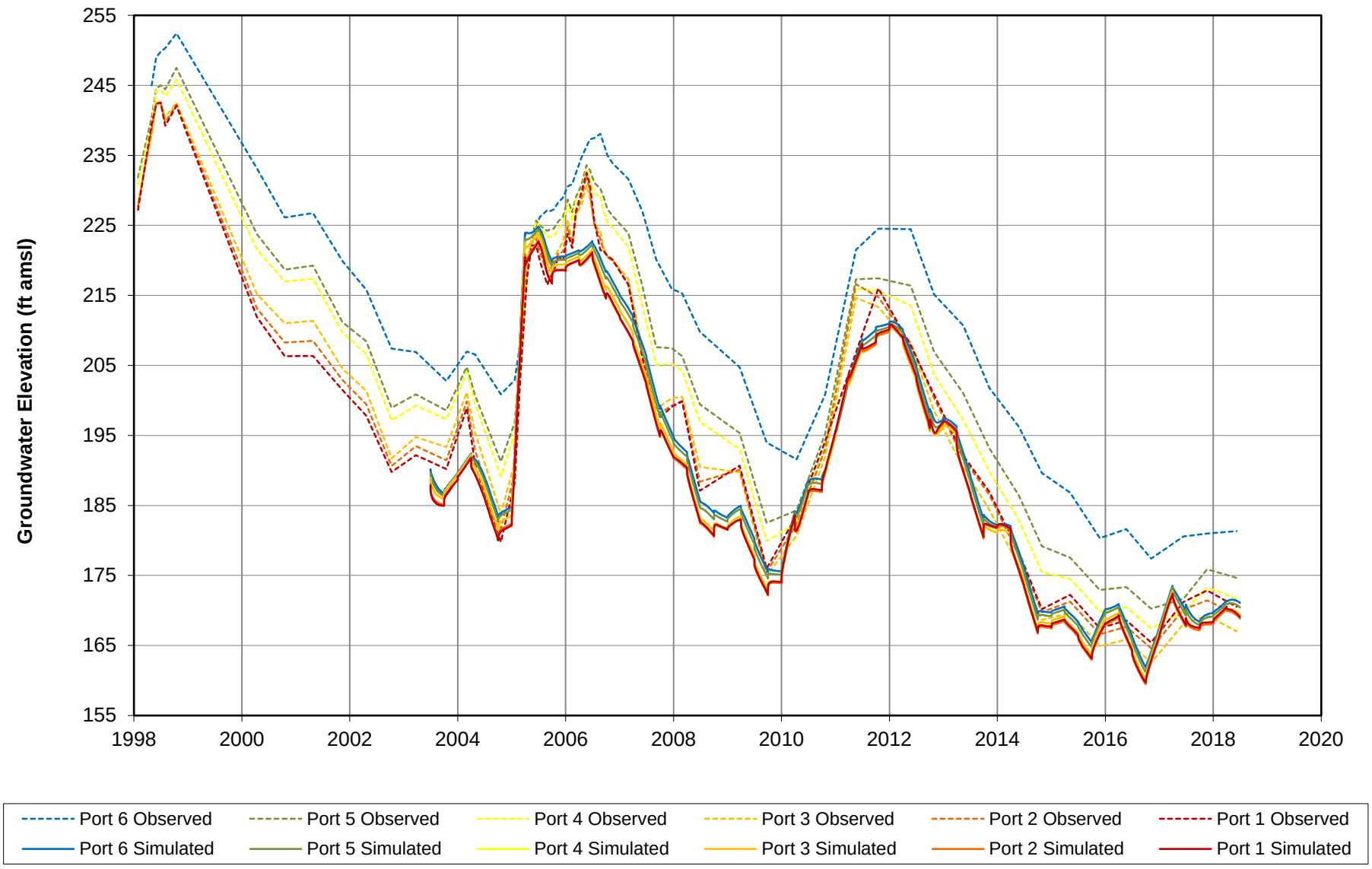


Geosyntec consultants

SUBAREA 2 MULTIPORT WELL CALIBRATION HYDROGRAPH FOR MW 5-25
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No. SAC150

Figure **5-16**

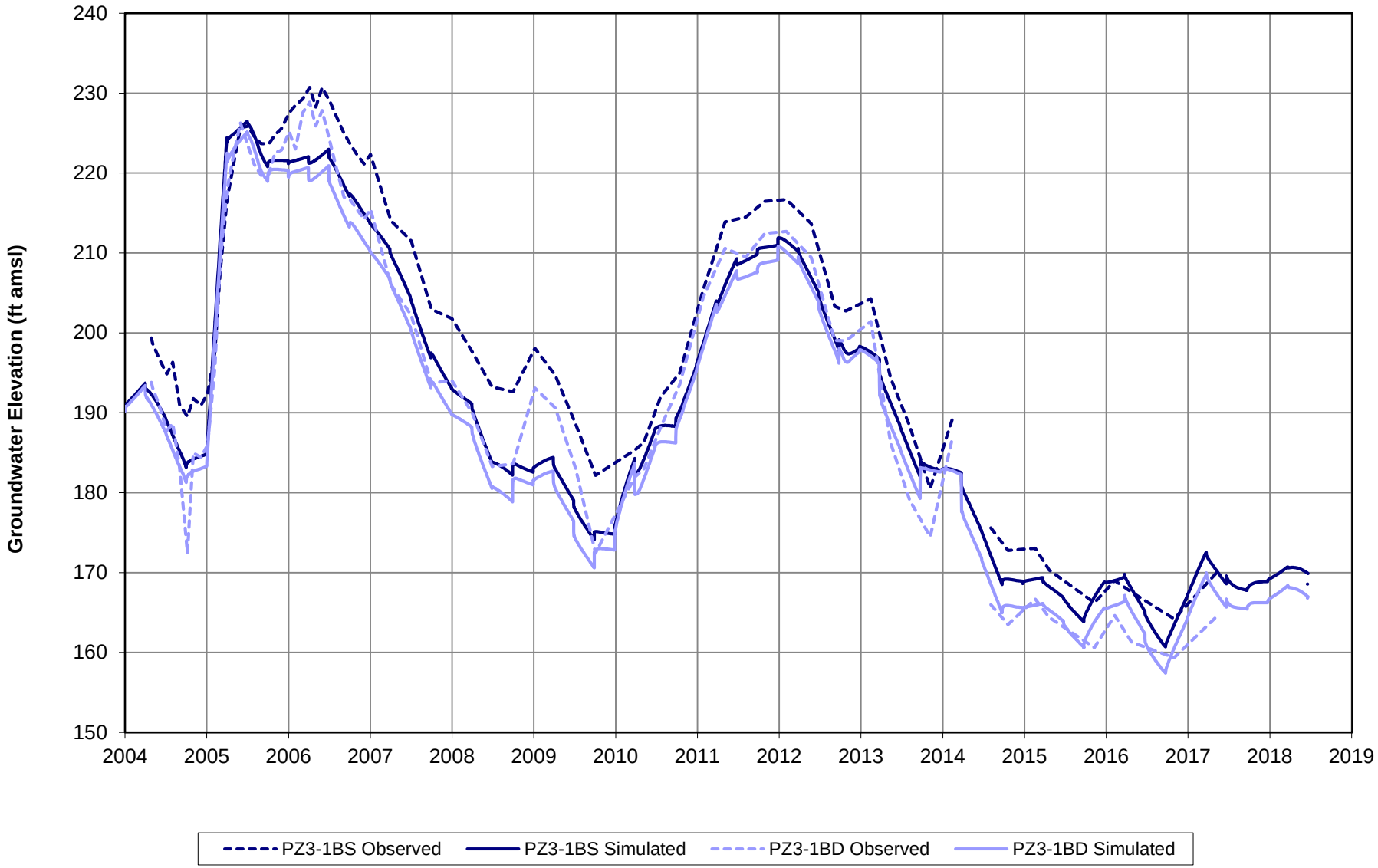


Geosyntec consultants

SUBAREA 3 MULTIPORT WELL CALIBRATION HYDROGRAPH FOR MW 5-23
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No. SAC150

Figure **5-17**



Geosyntec consultants

SUBAREA 3 PIEZOMETER CALIBRATION HYDROGRAPH FOR PZ3-1B D/S
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No. SAC150

Figure **5-18**

MW 5-18

PORT	ELEVATION	GROUNDWATER ELEVATION	DATE
3	-10.9	189.98	11/22/2017
2	-140.9	189.93	11/22/2017
1	-290.9	189.84	11/22/2017

MW 5-03

PORT	ELEVATION	GROUNDWATER ELEVATION	DATE
10	234.4	238.7	11/22/2017
9	169.4	190.4	11/22/2017
8	69.4	189.4	11/22/2017
7	-40.6	190.3	11/22/2017
6	-120.6	190.4	11/22/2017
5	-200.6	190.3	11/22/2017
4	-340.6	191.4	11/22/2017
3	-450.6	191.3	11/22/2017
2	-545.6	190.2	11/22/2017
1	-680.6	191.1	11/22/2017

PZ1-1BS

ELEVATION	GROUNDWATER ELEVATION	DATE
195.0	193.9	11/22/2017

PZ1-1BD

ELEVATION	GROUNDWATER ELEVATION	DATE
-155.1	193.9	11/22/2017

PZ1-1AS

ELEVATION	GROUNDWATER ELEVATION	DATE
191.3	190.2	11/22/2017

PZ1-1AD

ELEVATION	GROUNDWATER ELEVATION	DATE
-158.5	190.5	11/22/2017

PZ1-3AS

ELEVATION	GROUNDWATER ELEVATION	DATE
178.3	183.4	11/22/2017

PZ1-3AD

ELEVATION	GROUNDWATER ELEVATION	DATE
-96.7	185.5	11/22/2017

PZ1-3BS

ELEVATION	GROUNDWATER ELEVATION	DATE
175.4	185.7	11/22/2017

PZ1-3BD

ELEVATION	GROUNDWATER ELEVATION	DATE
-99.6	186.3	11/22/2017

PZ1-2BS

ELEVATION	GROUNDWATER ELEVATION	DATE
171.6	187.1	11/22/2017

PZ1-2BD

ELEVATION	GROUNDWATER ELEVATION	DATE
-178.4	187.5	11/22/2017

PZ1-2AS

ELEVATION	GROUNDWATER ELEVATION	DATE
170.9	186.8	11/22/2017

PZ1-2AD

ELEVATION	GROUNDWATER ELEVATION	DATE
-179.1	187.0	11/22/2017

MW 5-24

PORT	ELEVATION	GROUNDWATER ELEVATION	DATE
7	150.4	185.5	11/21/2017
6	0.4	185.5	11/21/2017
5	-159.6	185.5	11/21/2017
4	-309.6	185.6	11/21/2017
3	-454.6	184.8	11/21/2017
2	-599.6	184.9	11/21/2017
1	-769.6	184.8	11/21/2017

MW 5-25

PORT	ELEVATION	GROUNDWATER ELEVATION	DATE
7	139.8	186.6	11/21/2017
6	-0.2	186.6	11/21/2017
5	-145.2	186.4	11/21/2017
4	-325.2	185.6	11/21/2017
3	-450.2	185.7	11/21/2017
2	-590.2	185.8	11/21/2017
1	-760.2	185.6	11/21/2017

VCWD ARROW

SA1-3 (LANTE)

SA1-1

SA1-2

POLOPOLUS 01

Irwindale Avenue

196

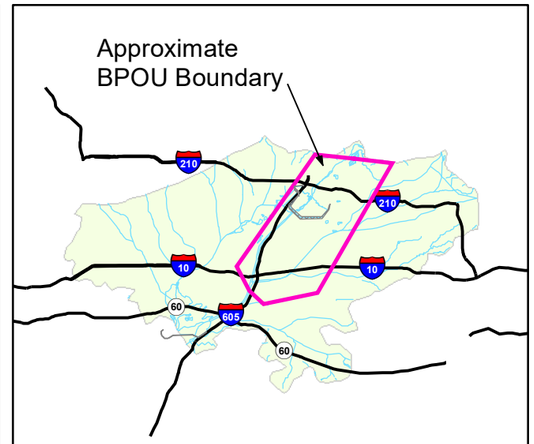
194

192

190

188

186



EXPLANATION

- Monitoring or Multiport Well
- Extraction or Pumping Well
- Location of production well that was generally inactive from WY2012-13 through WY2017-18
- Potentiometric Surface Elevation Contour Interval - 2 ft (elevation in feet above mean sea level)

Note: Simulated head contours from model slice 3 - November 30, 2017.

700 0 700

SCALE IN FEET

N

SUBAREA 1 SIMULATED FALL 2017 POTENTIOMETRIC SURFACE

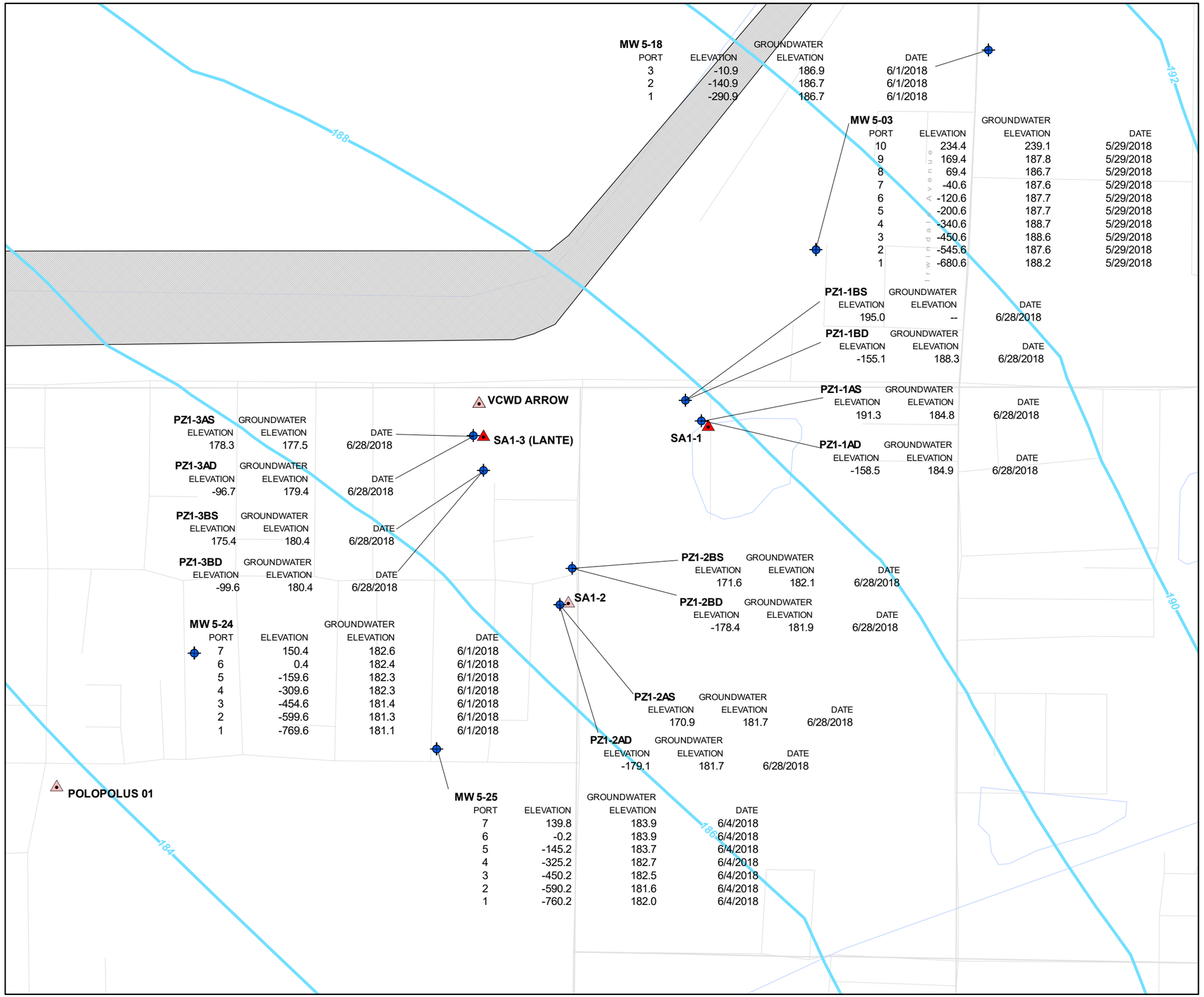
Baldwin Park Operable Unit
San Gabriel Valley, California

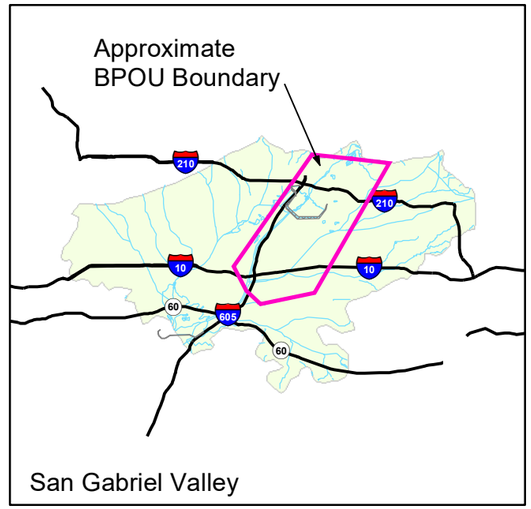
Geosyntec consultants

Project No.: SAC150

Figure **5-19**

Document Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PERVolume 115-19_Subarea 1 Simulated Fall 2017 Potentiometric Surface.mxd





EXPLANATION

- Monitoring or Multiport Well
- Extraction or Pumping Well
- Location of production well that was generally inactive from WY2012-13 through WY2017-18
- Potentiometric Surface Elevation Contour Interval - 2 ft (elevation in feet above mean sea level)

Note: Simulated head contours from model slice 3 - June 2, 2018.

700 0 700
SCALE IN FEET

N

SUBAREA 1 SIMULATED SPRING 2018 POTENTIOMETRIC SURFACE

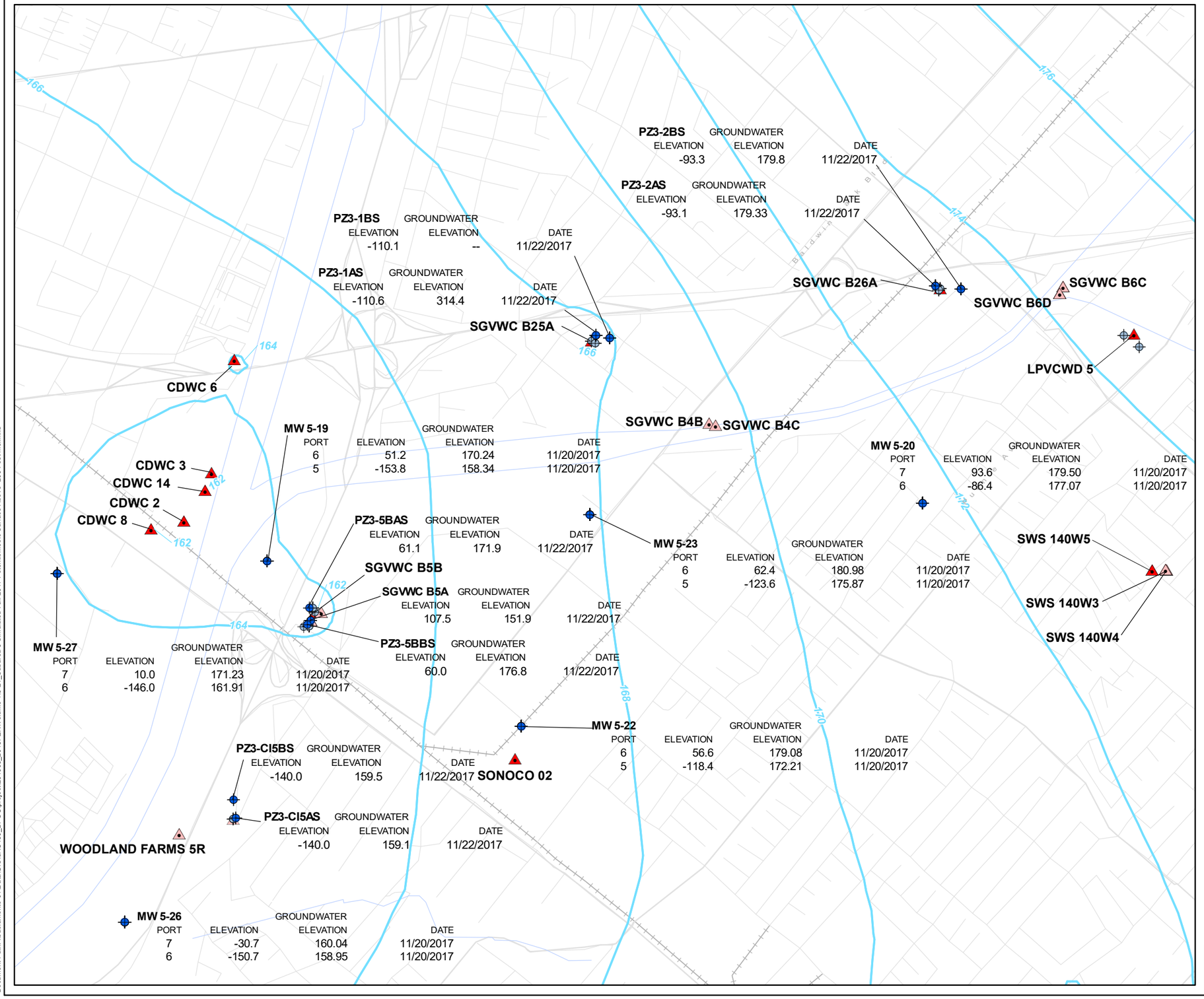
Baldwin Park Operable Unit
San Gabriel Valley, California

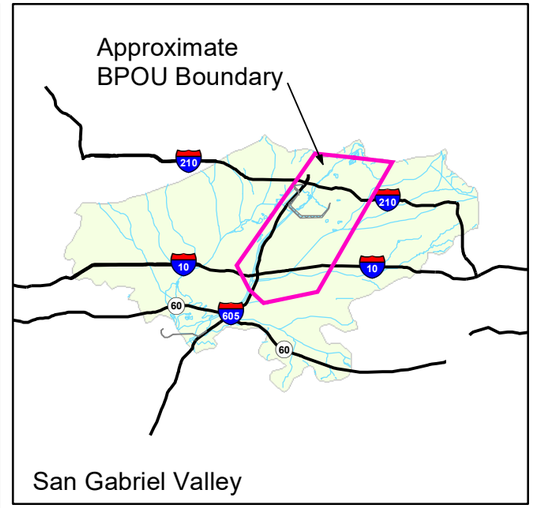
Geosyntec consultants

Project No.: SAC150

Figure **5-20**

Document Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PERI\Volume 1\5-20_Subarea 1 Simulated Spring 2018 Potentiometric Surface.mxd





EXPLANATION

- Monitoring or multiport well
- Monitoring or multiport well (well midscreen not above -200 feet above mean sea level or groundwater elevation data not available)
- Extraction or pumping well
- Location of production well that was generally inactive from WY2012-13 through WY2017-18
- Potentiometric Surface Elevation Contour interval - 2 ft (elevation in feet above mean sea level)

Note: Simulated head contours from model slice 3 - November 30, 2017.
-- Not measured. Well inaccessible.

1,300 0 1,300
SCALE IN FEET

N

SUBAREA 3 SIMULATED FALL 2017 POTENTIOMETRIC SURFACE ABOVE -200 FEET MSL

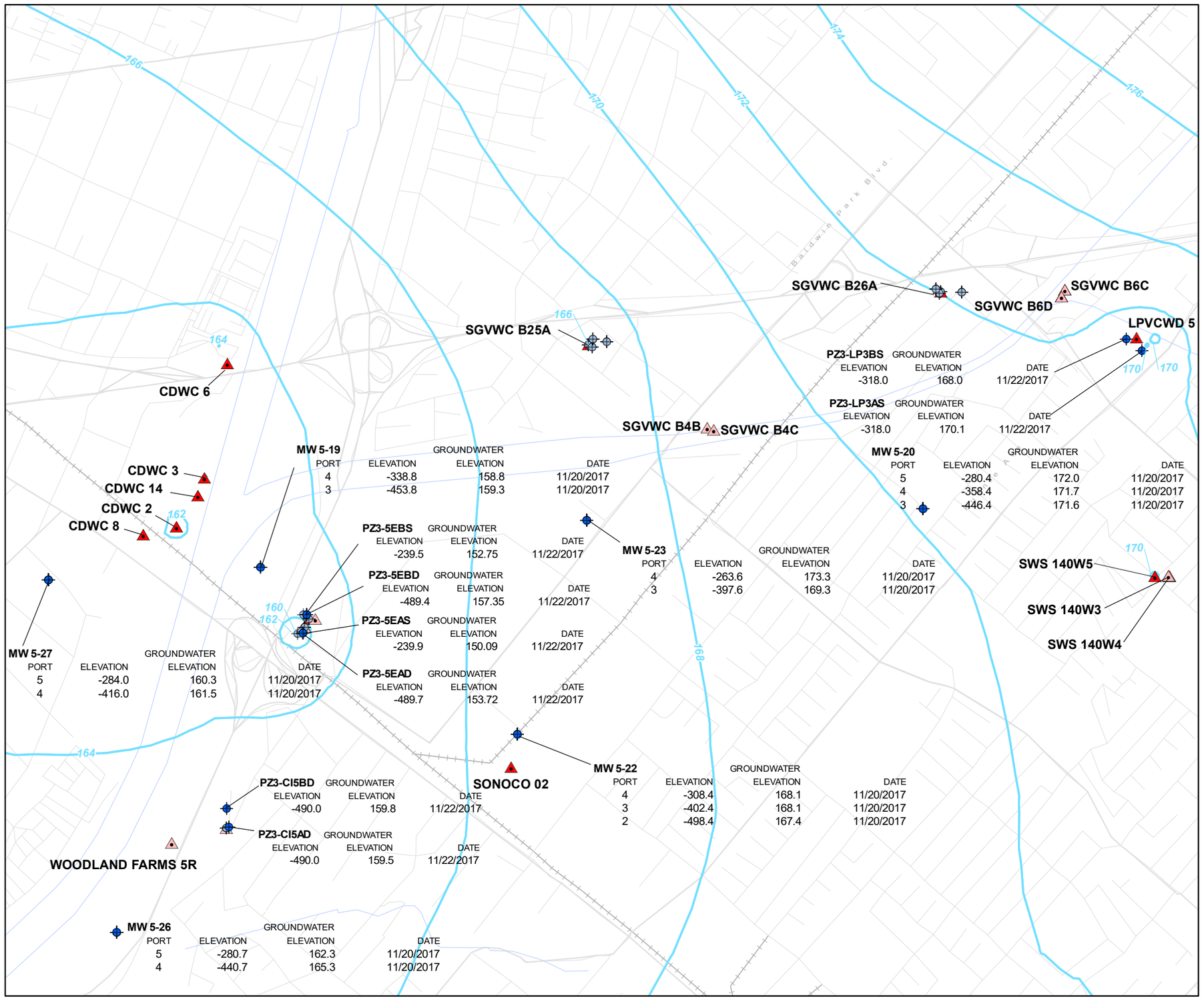
Baldwin Park Operable Unit
San Gabriel Valley, California

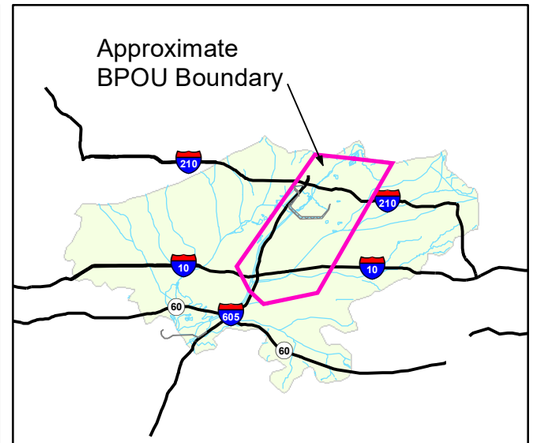
Geosyntec consultants

Project No.: SAC150

Figure **5-21**

Document Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PER\Volume 1\5-21_Subarea 3 Simulated Fall 2017 Potentiometric Surface Above -200 Feet msl.mxd





EXPLANATION

- Monitoring or multiport well
- Monitoring or multiport well (well midscreen not between -200 and -500 feet above mean sea level or groundwater elevation data not available)
- Extraction or pumping well
- Location of production well that was generally inactive from WY2012-13 through WY2017-18
- Potentiometric Surface Elevation Contour interval - 2 ft (elevation in feet above mean sea level)

Note: Simulated head contours from model slice 6 - November 30, 2017.

1,300 0 1,300
SCALE IN FEET

N

SUBAREA 3 SIMULATED FALL 2017 POTENTIOMETRIC SURFACE BETWEEN -200 FEET MSL AND -500 FEET MSL

Baldwin Park Operable Unit
San Gabriel Valley, California

Geosyntec consultants

Project No.: SAC150

Figure **5-22**

Document Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\20190103_2018PER\Volume 1\5-22_Subarea 3 Simulated Fall 2017 Potentiometric Surface Between -200 and -500 Feet msl.mxd

PZ3-2BD
ELEVATION -518.3
GROUNDWATER ELEVATION 174.4
DATE 11/22/2017

PZ3-2AD
ELEVATION -518.1
GROUNDWATER ELEVATION 171.4
DATE 11/22/2017

PZ3-1BD
ELEVATION -535.2
GROUNDWATER ELEVATION --
DATE 11/22/2017

PZ3-1AD
ELEVATION -535.7
GROUNDWATER ELEVATION 314.4
DATE 11/22/2017

SGVWC B26B
SGVWC B6C
SGVWC B6D
LPVCWD 5
CDWC 5A
SGVWC B25B

PZ3-LP3BD
ELEVATION -573.0
GROUNDWATER ELEVATION 173.9
DATE 11/22/2017

PZ3-LP3AD
ELEVATION -573.0
GROUNDWATER ELEVATION 174.1
DATE 11/22/2017

MW 5-19

PORT	ELEVATION	GROUNDWATER ELEVATION	DATE
2	-597.8	166.2	11/20/2017
1	-709.8	167.9	11/20/2017

SGVWC B4B
SGVWC B4C

MW 5-20

PORT	ELEVATION	GROUNDWATER ELEVATION	DATE
2	-536.4	171.9	11/20/2017
1	-626.4	172.2	11/20/2017

CDWC 14

MW 5-23

PORT	ELEVATION	GROUNDWATER ELEVATION	DATE
2	-585.6	171.4	11/20/2017
1	-677.6	172.9	11/20/2017

SWS 140W5
SWS 140W3
SWS 140W4

MW 5-27

PORT	ELEVATION	GROUNDWATER ELEVATION	DATE
3	-596.0	165.4	11/20/2017
2	-721.0	168.1	11/20/2017
1	-840.0	168.5	11/20/2017

SGVWC B5C
SGVWC B5D

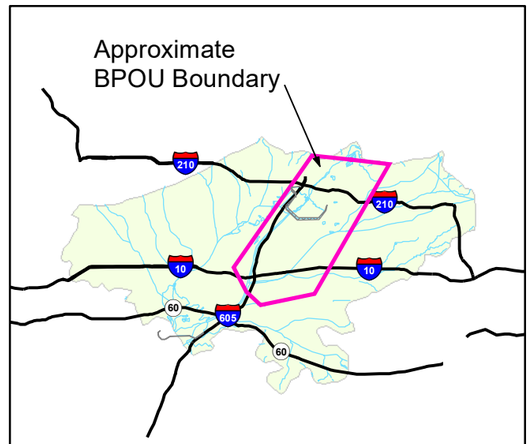
MW 5-22

PORT	ELEVATION	GROUNDWATER ELEVATION	DATE
1	-668.4	172.6	11/20/2017

WOODLAND FARMS 5R

MW 5-26

PORT	ELEVATION	GROUNDWATER ELEVATION	DATE
3	-620.7	168.3	11/20/2017
2	-760.7	168.3	11/20/2017
1	-870.7	168.1	11/20/2017



EXPLANATION

- Monitoring or multiport well
- Monitoring or multiport well (well midscreen not below -500 feet above mean sea level or groundwater elevation data not available)
- Extraction or pumping well
- Location of production well that was generally inactive from WY2012-13 through WY2017-18
- Potentiometric Surface Elevation Contour interval - 2 ft (elevation in feet above mean sea level)

Note: Simulated head contours from model slice 9 - November 30, 2017.
-- Not measured. Well inaccessible.

1,300 0 1,300
SCALE IN FEET

N

SUBAREA 3 SIMULATED FALL 2017 POTENTIOMETRIC SURFACE BELOW -500 FEET MSL

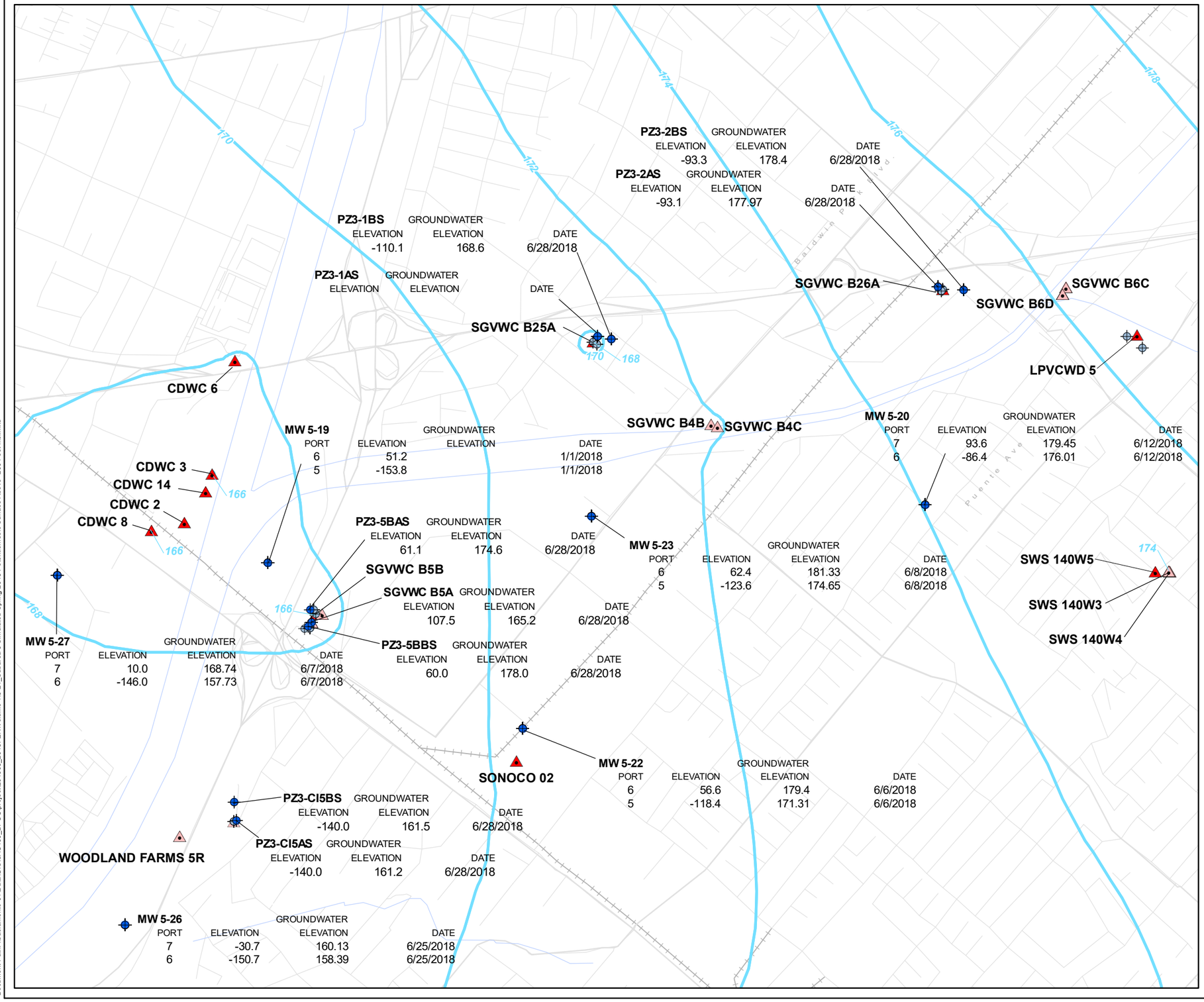
Baldwin Park Operable Unit
San Gabriel Valley, California

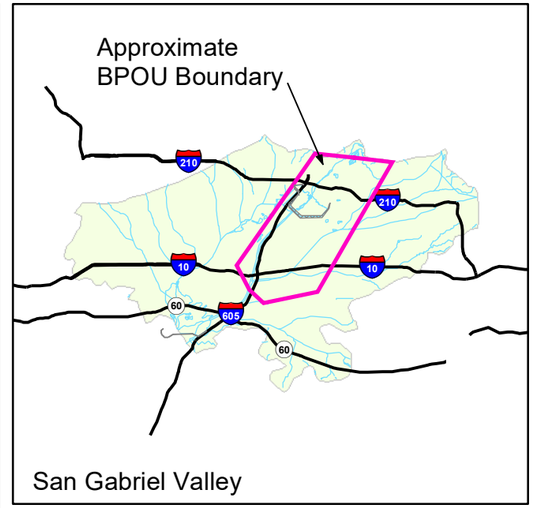
Geosyntec consultants

Project No.: SAC150

Figure **5-23**

Document Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PER\Volume 1\5-23_Subarea 3 Simulated Fall 2017 Potentiometric Surface Below -500 Feet msl.mxd





EXPLANATION

- Monitoring or multiport well
- Monitoring or multiport well (well midscreen not above -200 feet above mean sea level or groundwater elevation data not available)
- Extraction or pumping well
- Location of production well that was generally inactive from WY2012-13 through WY2017-18
- Potentiometric Surface Elevation Contour interval - 2 ft (elevation in feet above mean sea level)

Note: Simulated head contours from model slice 3 - June 2, 2018.
-- Not measured. Well inaccessible.

1,300 0 1,300
SCALE IN FEET

N

SUBAREA 3 SIMULATED SPRING 2018 POTENTIOMETRIC SURFACE ABOVE -200 FEET MSL

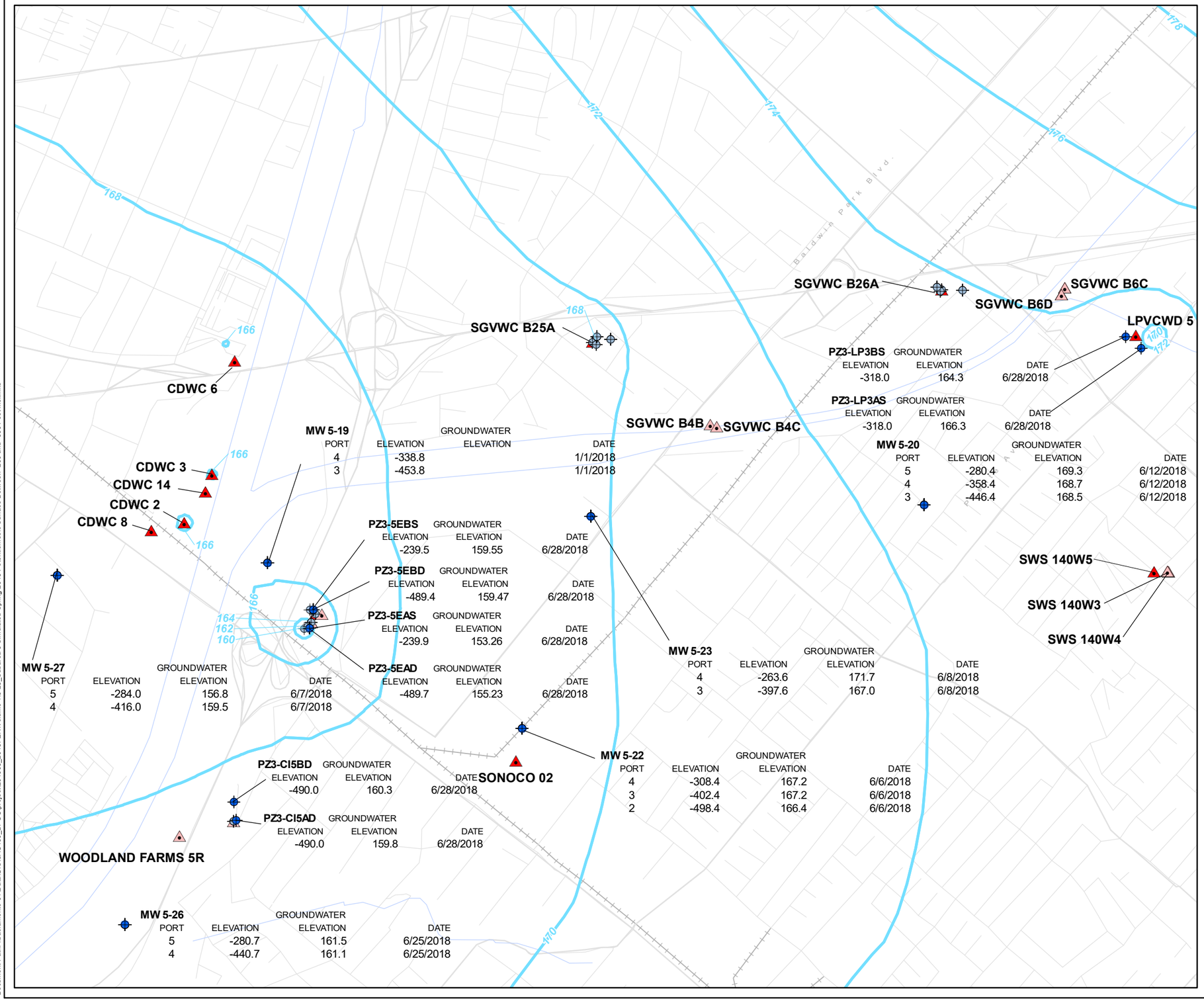
Baldwin Park Operable Unit
San Gabriel Valley, California

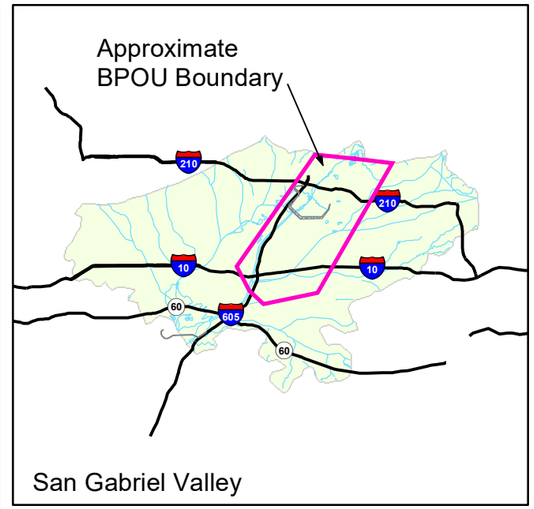
Geosyntec consultants

Project No.: SAC150

Figure **5-24**

Document Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PER\Volume 115-24_Subarea 3 Simulated Spring 2018 Potentiometric Surface Above -200 Feet msl.mxd





EXPLANATION

- Monitoring or multiport well
- Monitoring or multiport well (well midscreen not between -200 and -500 feet above mean sea level or groundwater elevation data not available)
- Extraction or pumping well
- Location of production well that was generally inactive from WY2012-13 through WY2017-18
- Potentiometric Surface Elevation Contour interval - 2 ft (elevation in feet above mean sea level)

Note: Simulated head contours from model slice 6 - June 2, 2018.

1,300 0 1,300
SCALE IN FEET

N

SUBAREA 3 SIMULATED SPRING 2018 POTENTIOMETRIC SURFACE BETWEEN -200 FEET MSL AND -500 FEET MSL

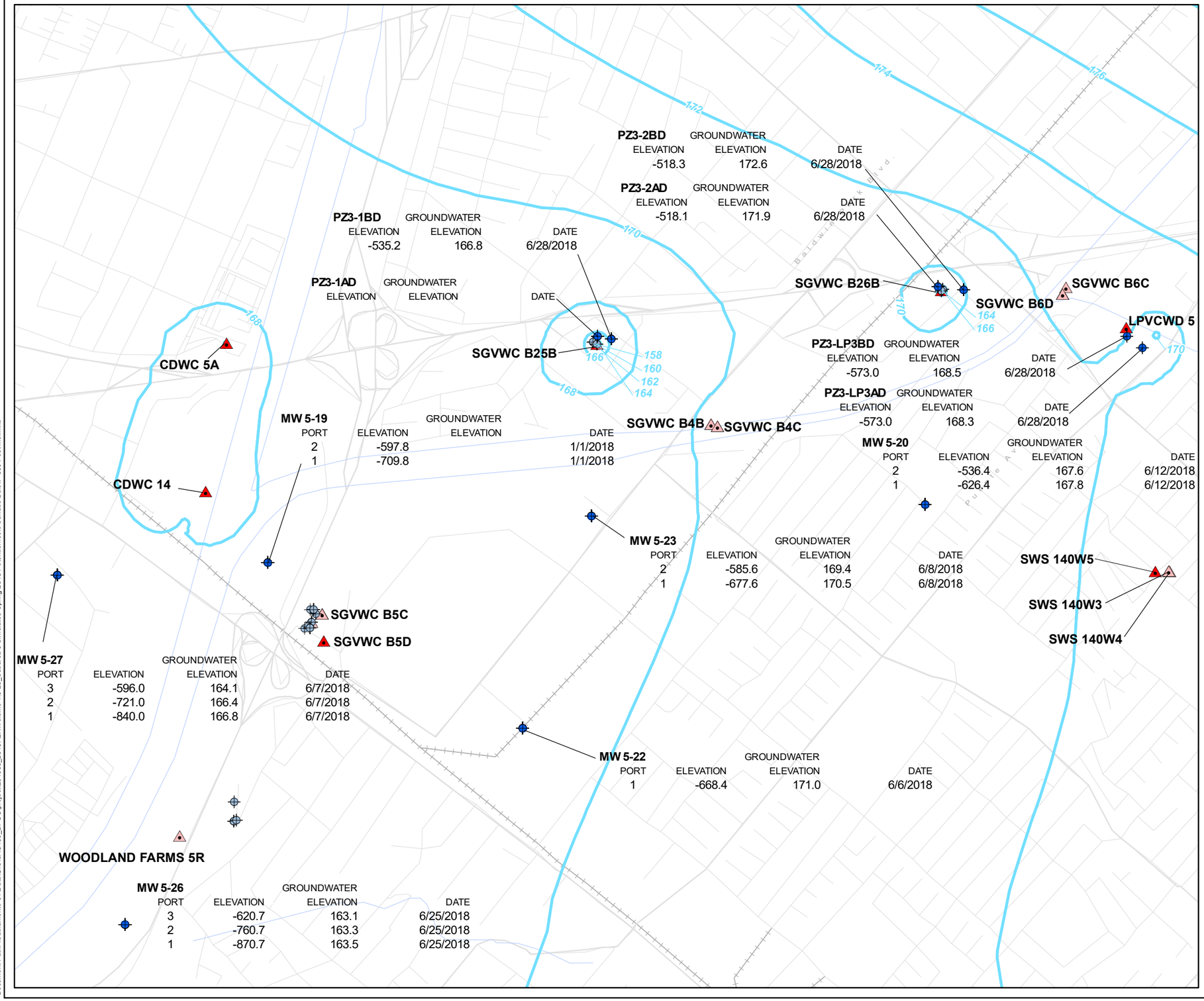
Baldwin Park Operable Unit
San Gabriel Valley, California

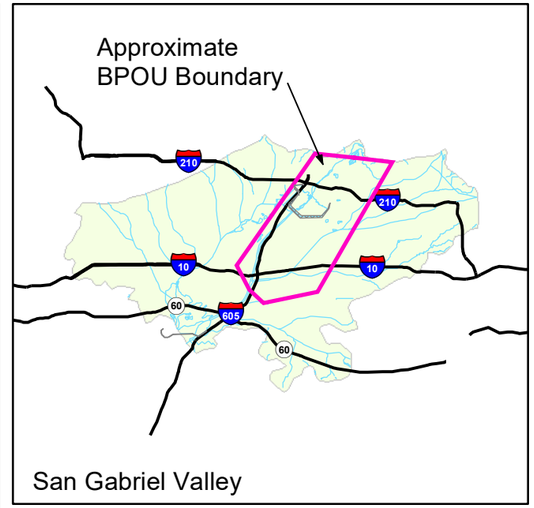
Geosyntec consultants

Project No.: SAC150

Figure **5-25**

Document Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PER\Volume 1\5-25_Subarea 3 Simulated Spring 2018 Potentiometric Surface Between -200 and -500 Feet msl.mxd





EXPLANATION

- Monitoring or multiport well
- Monitoring or multiport well (well midscreen not below -500 feet above mean sea level or groundwater elevation data not available)
- Extraction or pumping well
- Location of production well that was generally inactive from WY2012-13 through WY2017-18
- Potentiometric Surface Elevation Contour interval - 2 ft (elevation in feet above mean sea level)

Note: Simulated head contours from model slice 9 - June 2, 2018.
-- Not measured. Well inaccessible.

1,300 0 1,300
SCALE IN FEET

N

SUBAREA 3 SIMULATED SPRING 2018 POTENTIOMETRIC SURFACE BELOW -500 FEET MSL

Baldwin Park Operable Unit
San Gabriel Valley, California

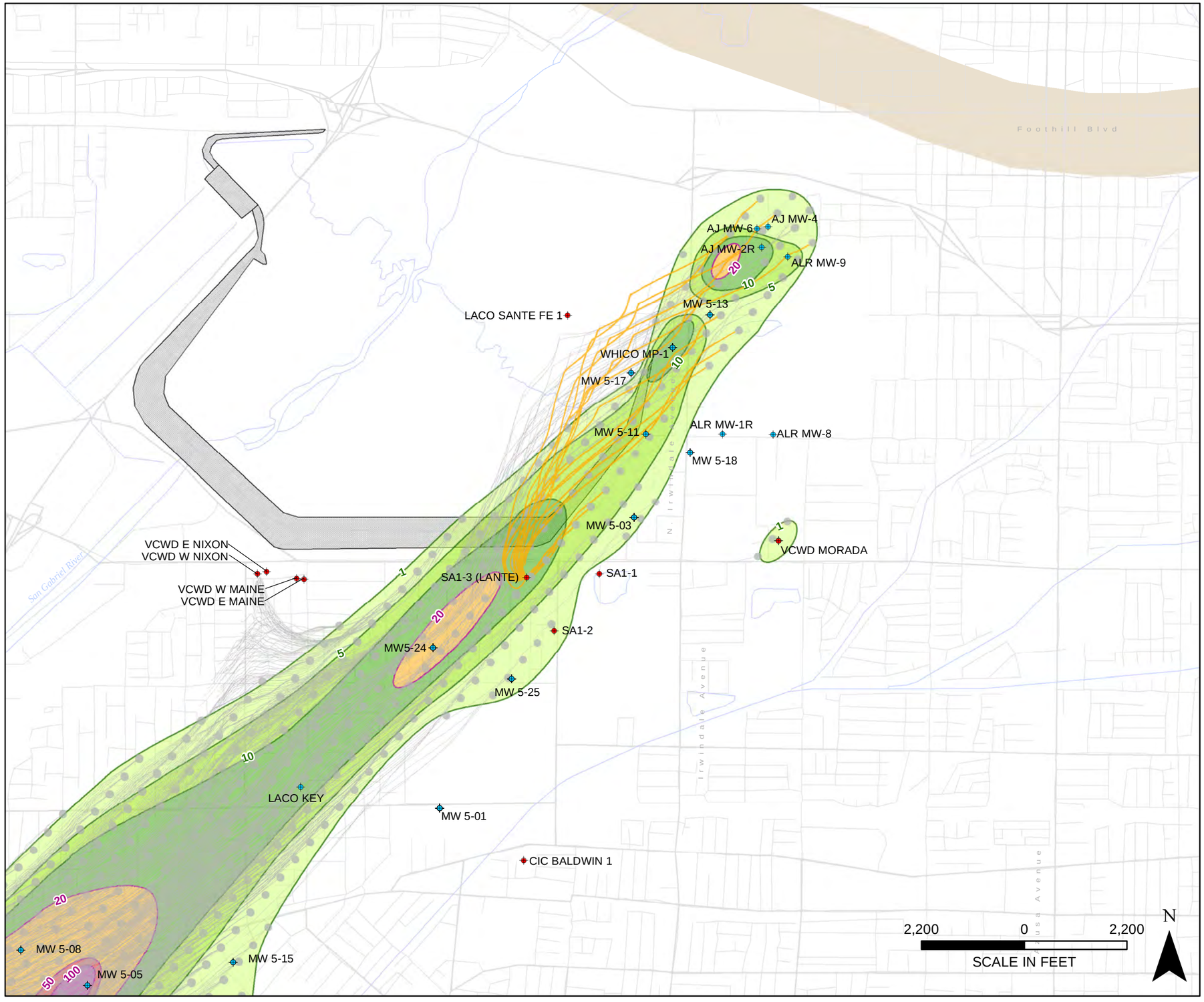
Geosyntec consultants

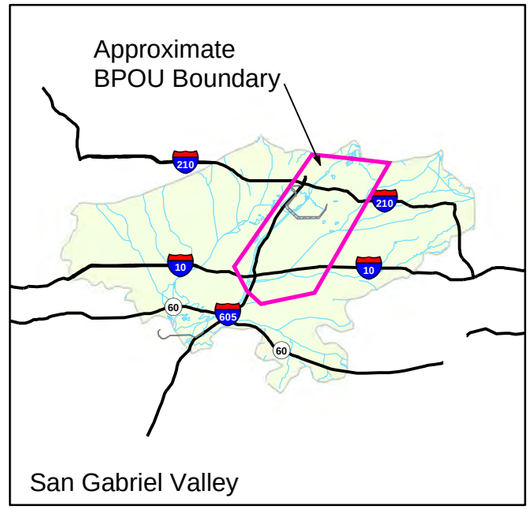
Project No.: SAC150

Figure **5-26**

Document Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PER\Volume 1\5-26_Subarea 3 Simulated Spring 2018 Potentiometric Surface Below -500 Feet msl.mxd

Document Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PER\Volume 115-27_Forward Particle Tracks_Subarea 1_Above -200 Feet msl_Ending June 30 2018.mxd





EXPLANATION

- Production well
- Monitoring or multiport well
- Duarte fault zone
- Total normalized COC concentration > 1x MCL
- Total normalized COC concentration > 5x MCL
- Total normalized COC concentration > 10x MCL
- Total normalized COC concentration > 20x MCL
- Total normalized COC concentration > 50x MCL
- Total normalized COC concentration > 100x MCL

FIVE-YEAR FORWARD PARTICLE TRACKS

- Track of particle
- Track of particle removed by Subarea 1 extraction well
- Initial particle location

The forward particle tracking is not intended to display actual contaminant sources nor the actual locations where "initial particles" of contamination were originally released into groundwater. The particles do not represent contaminant mass; rather, they solely represent advective groundwater movement and do not take into account dispersion, sorption, or degradation to depict the likely zones of capture as the particles move downgradient through the groundwater. The modeling results in this figure cannot be utilized to infer, suggest, or demonstrate the source of any contamination with any degree of precision.

NOTES:

1. Five-year particle tracks are based on simulated transient flow field for WY2012-13 through WY2017-18.
2. The extent of the normalized total COC plume was developed using the three-dimensional geospatial modeling software, Earth Volumetric Studio®. See Figures 5-8 through 5-10 and Appendix A for additional details.
3. Particle tracks originating from particles released within the composite plume in the shallow elevation interval only. For clarity, particles originating in the intermediate and deep elevation intervals that are captured by multilayer wells are superimposed onto the pathlines of particles released in the shallow elevation interval.
4. Particle tracks originate from particles released within the interpreted extent of the normalized total COC plume, with the exception of the area surrounding MW5-24 where particles are introduced to a maximum depth of -500 feet msl.

FORWARD PARTICLE TRACKS, SUBAREA 1, ABOVE -200 FT MSL, ENDING JUNE 30, 2018

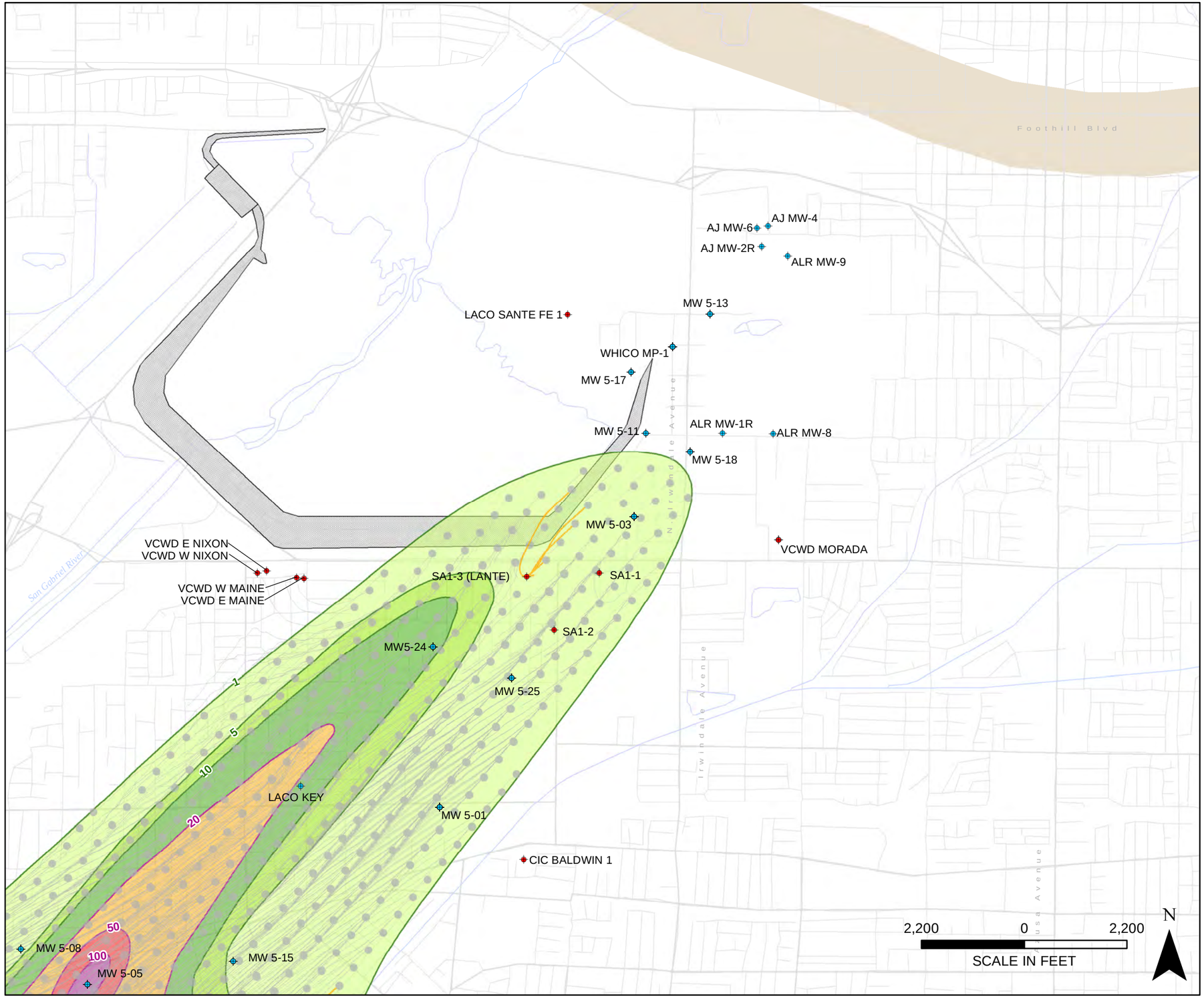
Baldwin Park Operable Unit
San Gabriel Valley, California

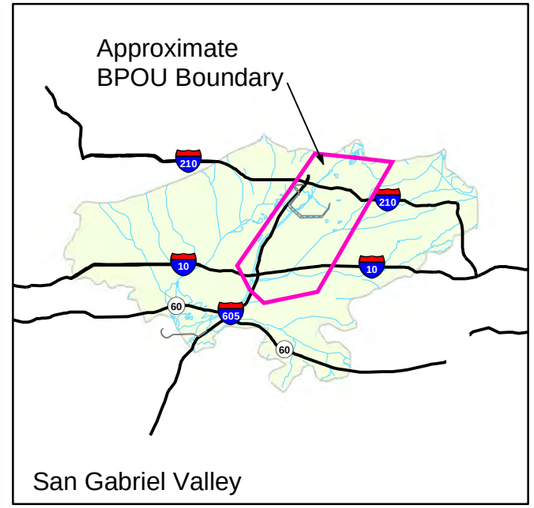
Geosyntec consultants

Project No.: SAC150

Figure **5-27**

Document Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PERVolume 115-28_Forward Particle Tracks_Subarea 1_Below -200 Feet msl_Ending June 30 2018.mxd





EXPLANATION

- Production well
- Monitoring or multiport well
- Duarte fault zone
- Total normalized COC concentration > 1x MCL
- Total normalized COC concentration > 5x MCL
- Total normalized COC concentration > 10x MCL
- Total normalized COC concentration > 20x MCL
- Total normalized COC concentration > 50x MCL
- Total normalized COC concentration > 100x MCL

FIVE-YEAR FORWARD PARTICLE TRACKS

- Track of particle
- Track of particle removed by Subarea 1 extraction well
- Initial particle location

The forward particle tracking is not intended to display actual contaminant sources nor the actual locations where "initial particles" of contamination were originally released into groundwater. The particles do not represent contaminant mass; rather, they solely represent advective groundwater movement and do not take into account dispersion, sorption, or degradation to depict the likely zones of capture as the particles move downgradient through the groundwater. The modeling results in this figure cannot be utilized to infer, suggest, or demonstrate the source of any contamination with any degree of precision.

NOTES:

1. Five-year particle tracks are based on simulated transient flow field for WY2012-13 through WY2017-18.
2. The extent of the normalized total COC plume was developed using the three-dimensional geospatial modeling software, Earth Volumetric Studio®. See Figures 5-8 through 5-10 and Appendix A for additional details.
3. Particle tracks originating from particles released within the composite plume in the shallow elevation interval only. For clarity, particles originating in the intermediate and deep elevation intervals that are captured by multilayer wells are superimposed onto the pathlines of particles released in the shallow elevation interval.
4. Particle tracks originate from particles released within the interpreted extent of the normalized total COC plume, with the exception of the area surrounding MW5-24 where particles are introduced to a maximum depth of -500 feet msl.

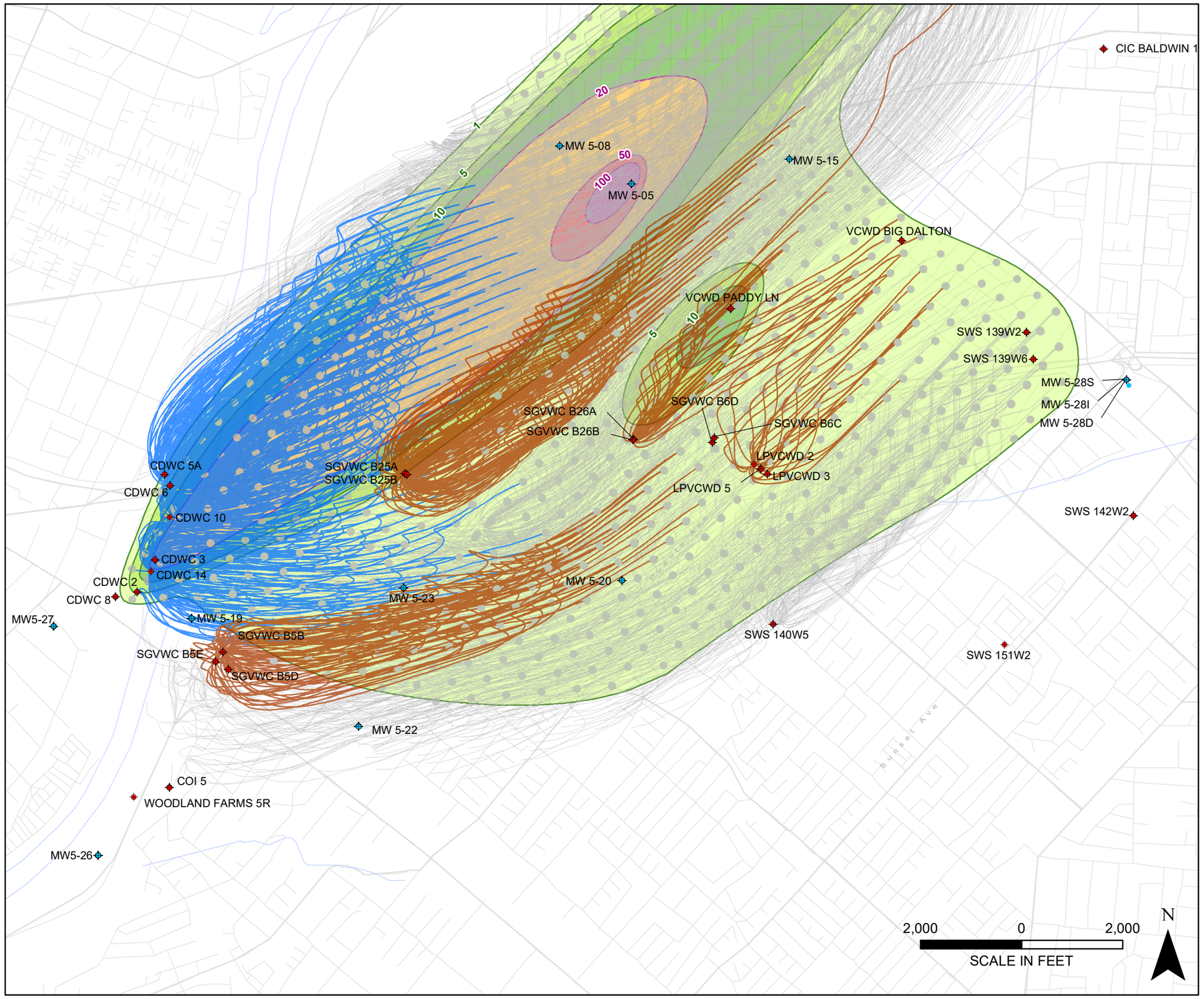
FORWARD PARTICLE TRACKS, SUBAREA 1, BELOW -200 FT MSL, ENDING JUNE 30, 2018

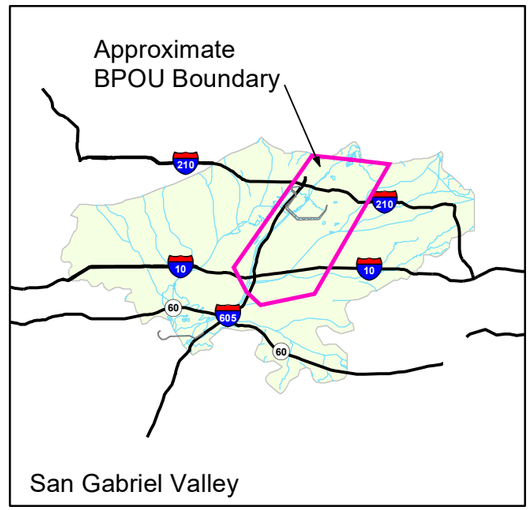
Baldwin Park Operable Unit
San Gabriel Valley, California

Geosyntec consultants

Project No.: SAC150

Figure **5-28**





EXPLANATION

- Production well
- Monitoring or multiport well
- Total normalized COC concentration > 1x MCL
- Total normalized COC concentration > 5x MCL
- Total normalized COC concentration > 10x MCL
- Total normalized COC concentration > 20x MCL
- Total normalized COC concentration > 50x MCL
- Total normalized COC concentration > 100x MCL

FIVE-YEAR FORWARD PARTICLE TRACKS

- Track of particle
- Track of particle removed by Subarea 3 extraction well
- Track of particle removed by CDWC production well
- Initial particle location

The forward particle tracking is not intended to display actual contaminant sources nor the actual locations where "initial particles" of contamination were originally released into groundwater. The particles do not represent contaminant mass; rather, they solely represent advective groundwater movement and do not take into account dispersion, sorption, or degradation to depict the likely zones of capture as the particles move downgradient through the groundwater. The modeling results in this figure cannot be utilized to infer, suggest, or demonstrate the source of any contamination with any degree of precision.

NOTES:

1. Five-year particle tracks are based on simulated transient flow field for WY2012-13 through WY2017-18.
2. The extent of the normalized total COC plume was developed using the three-dimensional geospatial modeling software, Earth Volumetric Studio®. See Figures 5-8 through 5-10 and Appendix A for additional details.
3. Particle tracks originating from particles released within the composite plume in the shallow elevation interval only. For clarity, particles originating in the intermediate and deep elevation intervals that are captured by multilayer wells are superimposed onto the pathlines of particles released in the shallow elevation interval.
4. Particle tracks originate from particles released within the interpreted extent of the normalized total COC plume, with the exception of the area surrounding MW5-24 where particles are introduced to a maximum depth of -500 feet msl.

FORWARD PARTICLE TRACKS, SUBAREA 3 ABOVE -200 FT MSL, ENDING JUNE 30, 2018

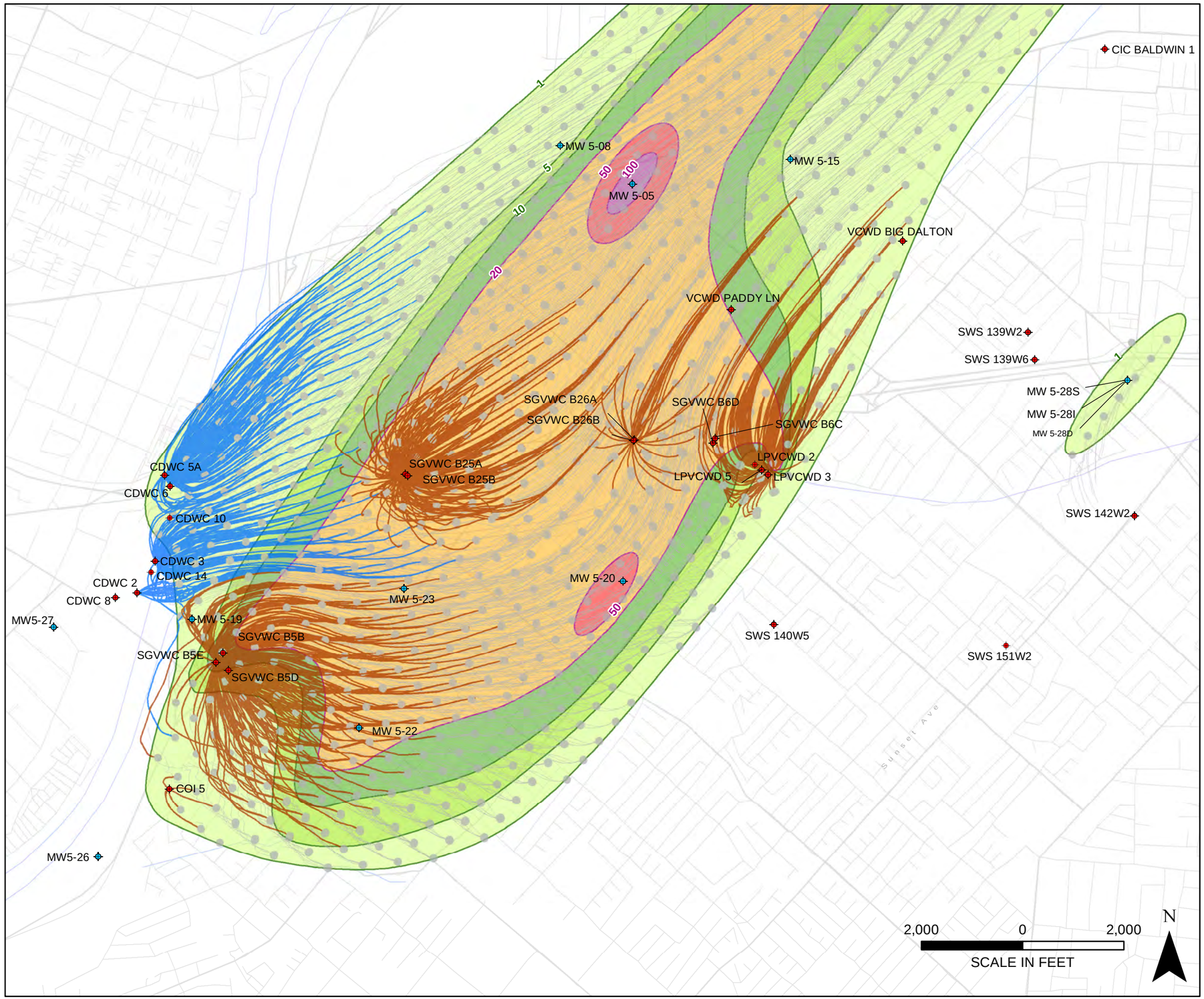
Baldwin Park Operable Unit
San Gabriel Valley, California

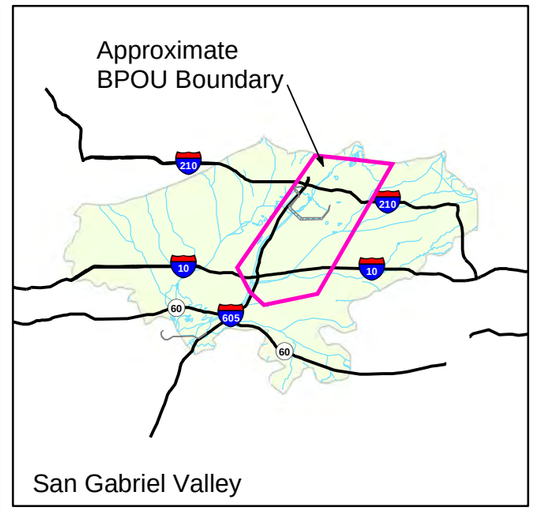
Geosyntec consultants

Project No.: SAC150

Figure **5-29**

Document Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PERVolume 115-29_Forward Particle Tracks_Subarea 3_Above -200 Feet msl_Ending June 30 2018.mxd





EXPLANATION

- Production well
- Monitoring or multiport well
- Total normalized COC concentration > 1x MCL
- Total normalized COC concentration > 5x MCL
- Total normalized COC concentration > 10x MCL
- Total normalized COC concentration > 20x MCL
- Total normalized COC concentration > 50x MCL
- Total normalized COC concentration > 100x MCL

FIVE-YEAR FORWARD PARTICLE TRACKS

- Track of particle
- Track of particle removed by Subarea 3 extraction well
- Track of particle removed by CDWC production well
- Initial particle location

The forward particle tracking is not intended to display actual contaminant sources nor the actual locations where "initial particles" of contamination were originally released into groundwater. The particles do not represent contaminant mass; rather, they solely represent advective groundwater movement and do not take into account dispersion, sorption, or degradation to depict the likely zones of capture as the particles move downgradient through the groundwater. The modeling results in this figure cannot be utilized to infer, suggest, or demonstrate the source of any contamination with any degree of precision.

NOTES:

1. Five-year particle tracks are based on simulated transient flow field for WY2012-13 through WY2017-18.
2. The extent of the normalized total COC plume was developed using the three-dimensional geospatial modeling software, Earth Volumetric Studio®. See Figures 5-8 through 5-10 and Appendix A for additional details.
3. Particle tracks originating from particles released within the composite plume in the shallow elevation interval only. For clarity, particles originating in the intermediate and deep elevation intervals that are captured by multilayer wells are superimposed onto the pathlines of particles released in the shallow elevation interval.
4. Particle tracks originate from particles released within the interpreted extent of the normalized total COC plume, with the exception of the area surrounding MW5-24 where particles are introduced to a maximum depth of -500 feet msl.

FORWARD PARTICLE TRACKS, SUBAREA 3 BETWEEN -200 AND -500 FT MSL, ENDING JUNE 30, 2018

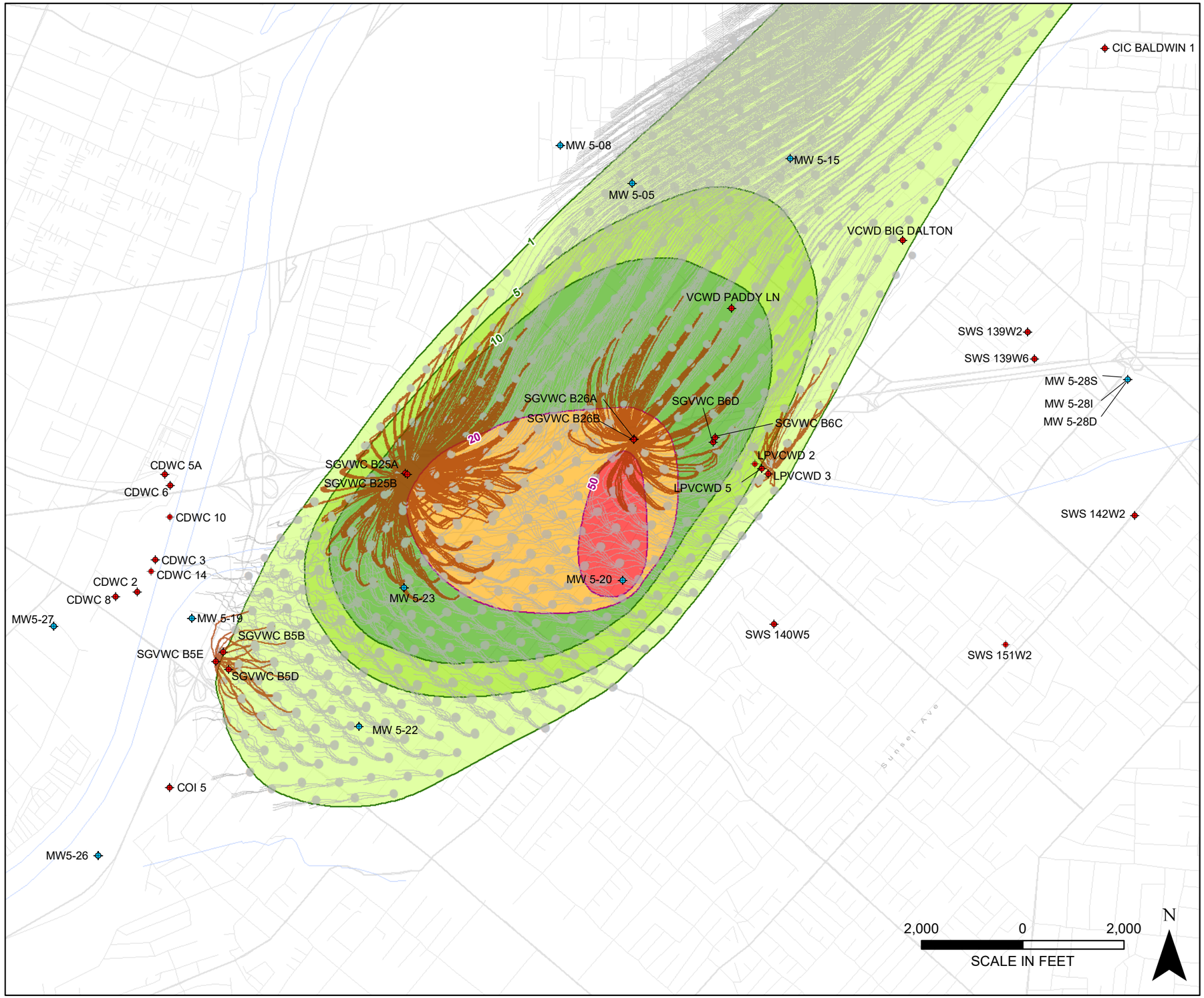
Baldwin Park Operable Unit
San Gabriel Valley, California

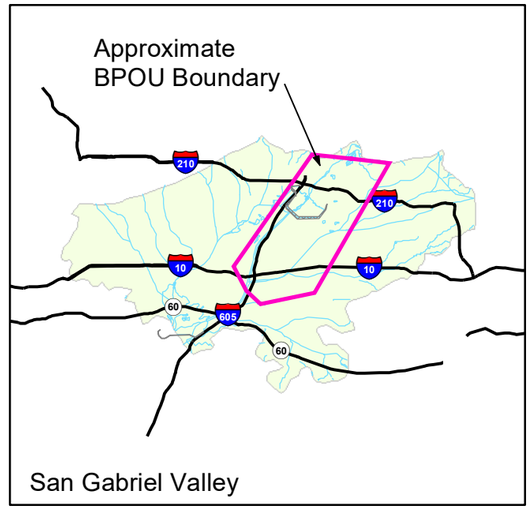
Geosyntec consultants

Project No.: SAC150

Figure **5-30**

Document Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PERVolume 115-30_Forward Particle Tracks_Subarea 3_Between -200 and -500 Feet msl_Ending June 30 2018.mxd





EXPLANATION

- Production well
- Monitoring or multiport well
- Total normalized COC concentration > 1x MCL
- Total normalized COC concentration > 5x MCL
- Total normalized COC concentration > 10x MCL
- Total normalized COC concentration > 20x MCL
- Total normalized COC concentration > 50x MCL
- Total normalized COC concentration > 100x MCL

FIVE-YEAR FORWARD PARTICLE TRACKS

- Track of particle
- Track of particle removed by Subarea 3 extraction well
- Initial particle location

The forward particle tracking is not intended to display actual contaminant sources nor the actual locations where "initial particles" of contamination were originally released into groundwater. The particles do not represent contaminant mass; rather, they solely represent advective groundwater movement and do not take into account dispersion, sorption, or degradation to depict the likely zones of capture as the particles move downgradient through the groundwater. The modeling results in this figure cannot be utilized to infer, suggest, or demonstrate the source of any contamination with any degree of precision.

NOTES:

1. Five-year particle tracks are based on simulated transient flow field for WY2012-13 through WY2017-18.
2. The extent of the normalized total COC plume was developed using the three-dimensional geospatial modeling software, Earth Volumetric Studio®. See Figures 5-8 through 5-10 and Appendix A for additional details.
3. Particle tracks originating from particles released within the composite plume in the shallow elevation interval only. For clarity, particles originating in the intermediate and deep elevation intervals that are captured by multilayer wells are superimposed onto the pathlines of particles released in the shallow elevation interval.
4. Particle tracks originate from particles released within the interpreted extent of the normalized total COC plume, with the exception of the area surrounding MW5-24 where particles are introduced to a maximum depth of -500 feet msl.

FORWARD PARTICLE TRACKS, SUBAREA 3 BELOW -500 FT MSL, ENDING JUNE 30, 2018

Baldwin Park Operable Unit
San Gabriel Valley, California

Geosyntec consultants

Project No.: SAC150

Figure **5-31**

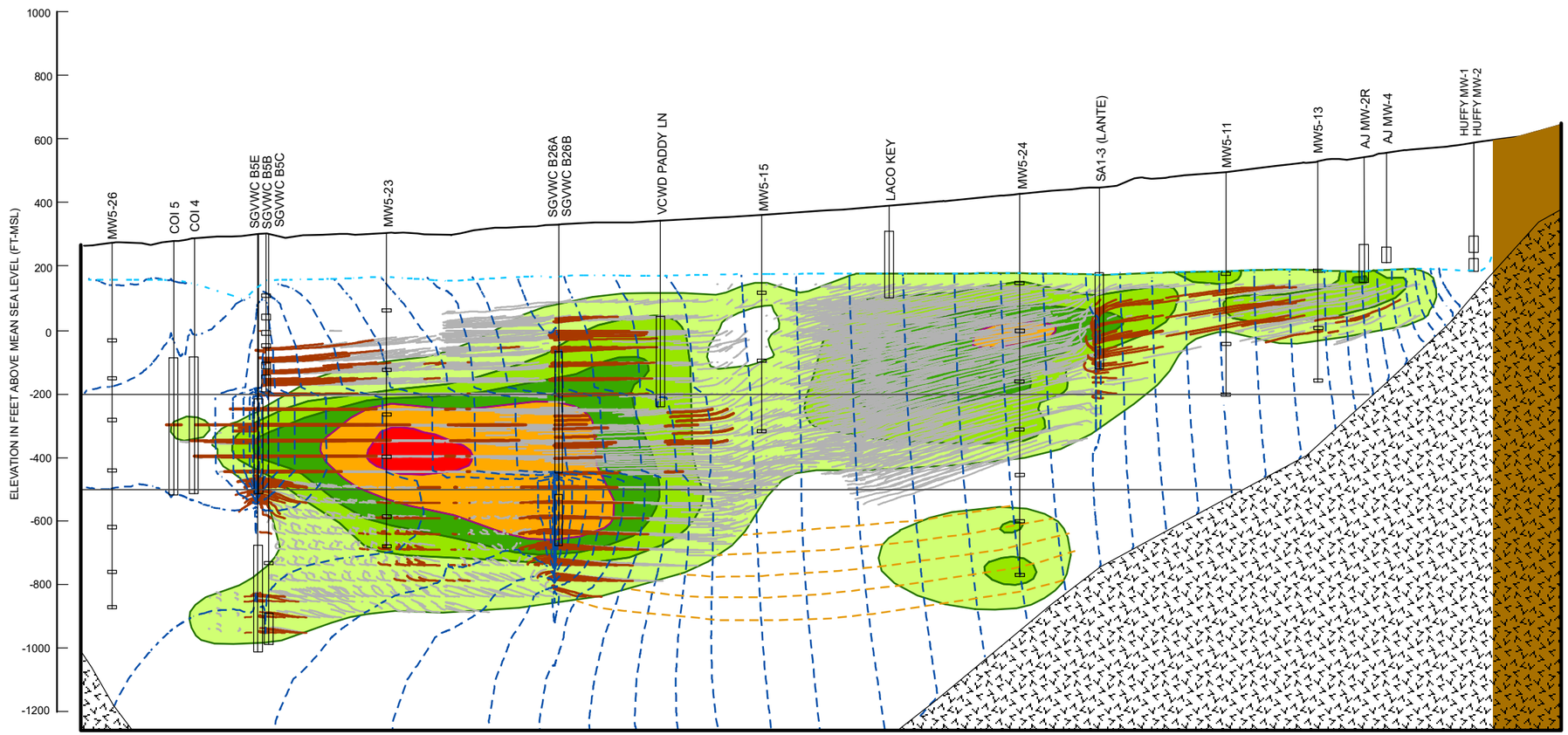
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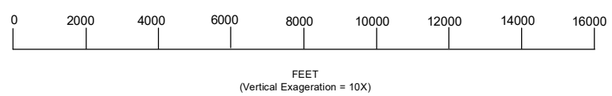
South

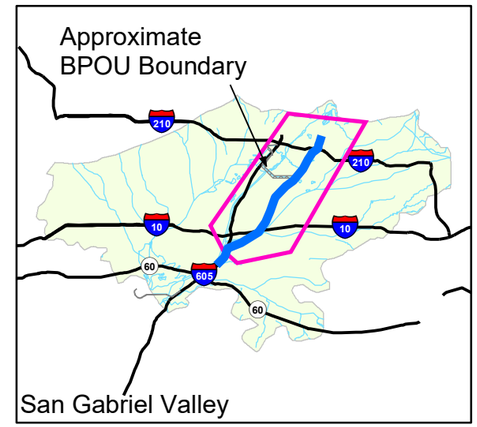
A

North

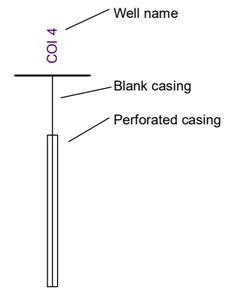
A'







EXPLANATION



- 2018 generalized potentiometric surface
- Bedrock surface used in BPOU groundwater model based on California DWR Bulletin 104-2, Plate 11, and updated with drilling information from various sources
- Duarte fault zone
- Total normalized COC concentration > 1x MCL
- Total normalized COC concentration > 5x MCL
- Total normalized COC concentration > 10x MCL
- Total normalized COC concentration > 20x MCL
- Total normalized COC concentration > 50x MCL
- Simulated groundwater contours (1-foot interval) - June 30, 2018
- Conceptual groundwater flow paths to project extraction wells based on simulated groundwater equipotential contours

Five-year forward particle tracks

- Track of particle
- Track of particle removed by project extraction well

The forward particle tracking is not intended to display actual contaminant sources nor the actual locations where "initial particles" of contamination were originally released into groundwater. The particles do not represent contaminant mass; rather, they solely represent advective groundwater movement and do not take into account dispersion, sorption, or degradation to depict the likely zones of capture as the particles move downgradient through the groundwater. The modeling results in this figure cannot be utilized to infer, suggest, or demonstrate the source of any contamination with any degree of precision.

Note:

1. Five-year particle tracks based on transient flow field.

SIMULATED GROUNDWATER CONTOURS CROSS-SECTION A-A', ENDING JUNE 30, 2018

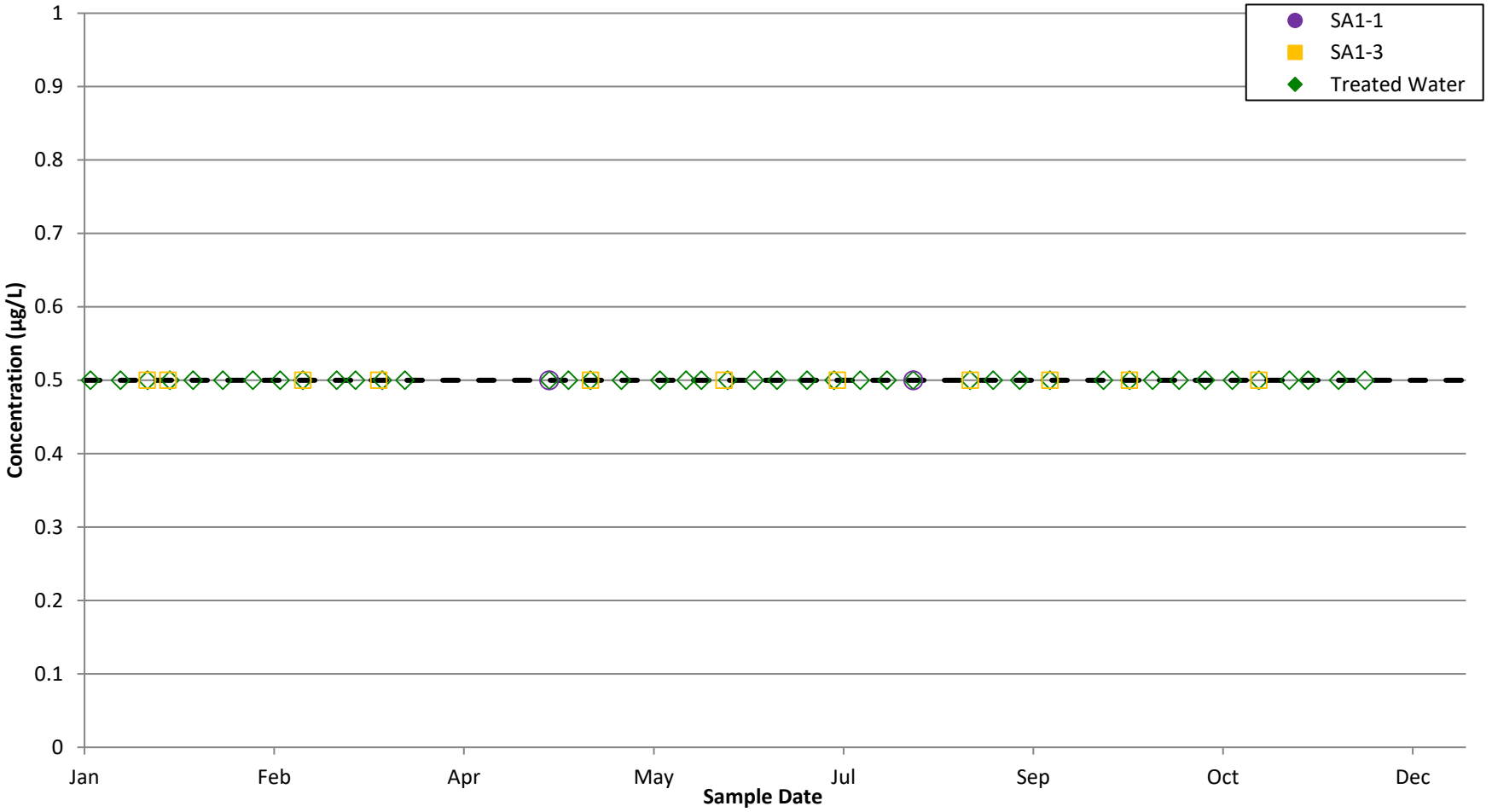
Baldwin Park Operable Unit
San Gabriel Valley, California

Geosyntec consultants

Project No.: SAC150

Figure **5-32**

Document Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PERI\Volume 1\5-32_Simulated Groundwater on Cross Section A-A'_June 30 2018.mxd



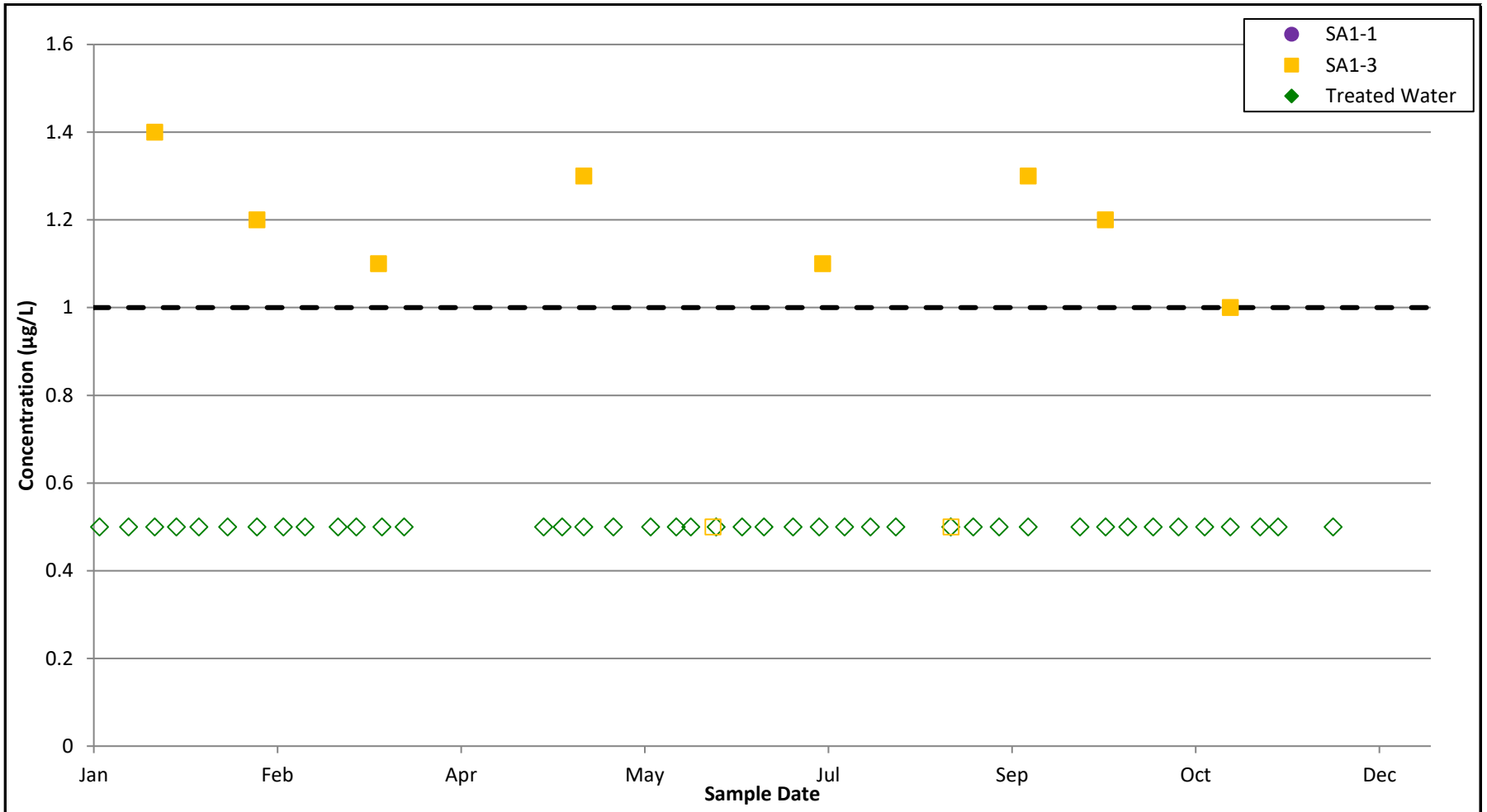
Note: Open symbols signify non-detects.

ERM

1,2-DICHLOROETHANE CONCENTRATIONS, RAW AND TREATED WATER FOR VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-1



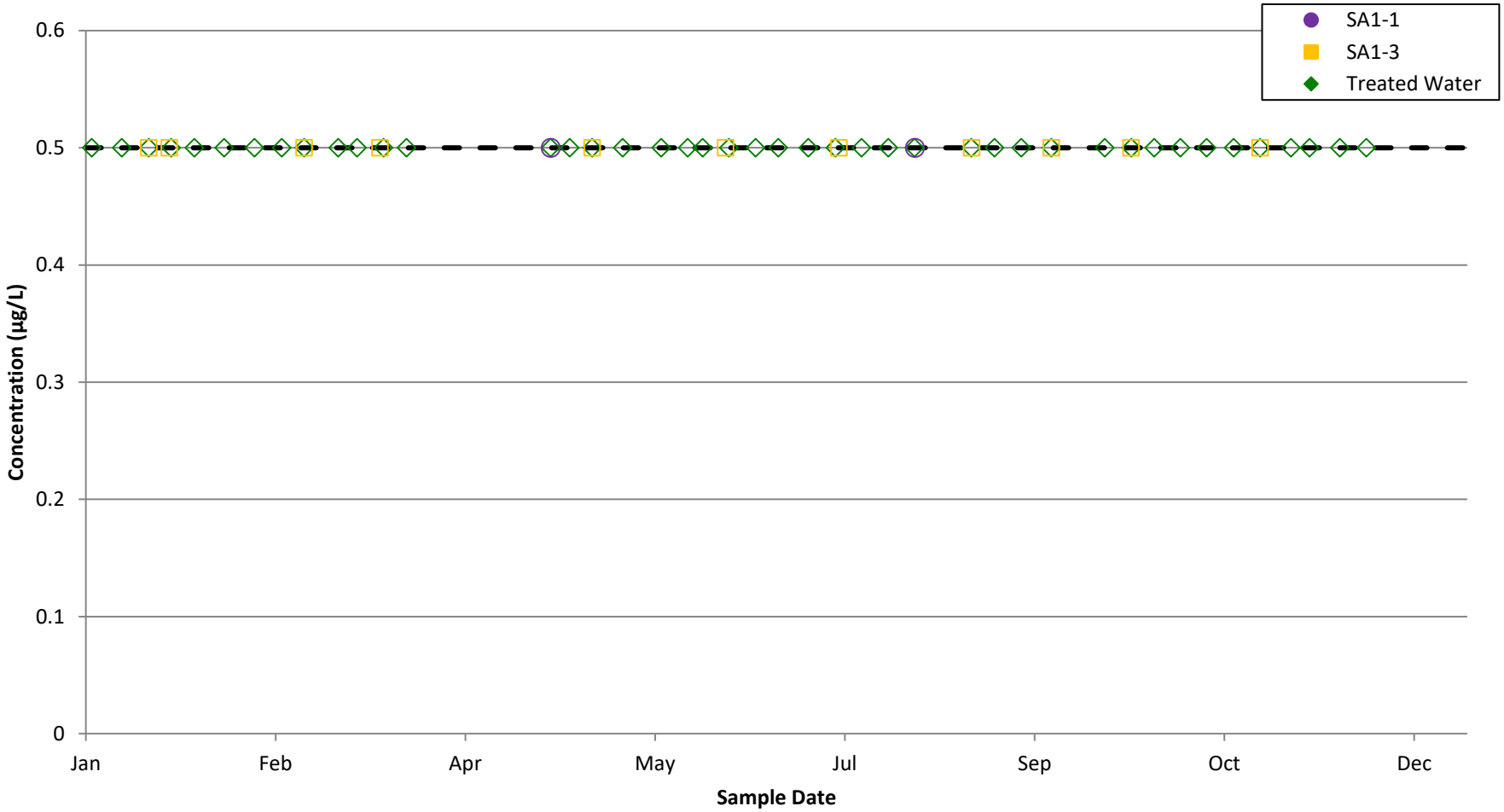
Note: Open symbols signify non-detects.

ERM

1,4-DIOXANE RAW AND TREATED WATER FOR
VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-2



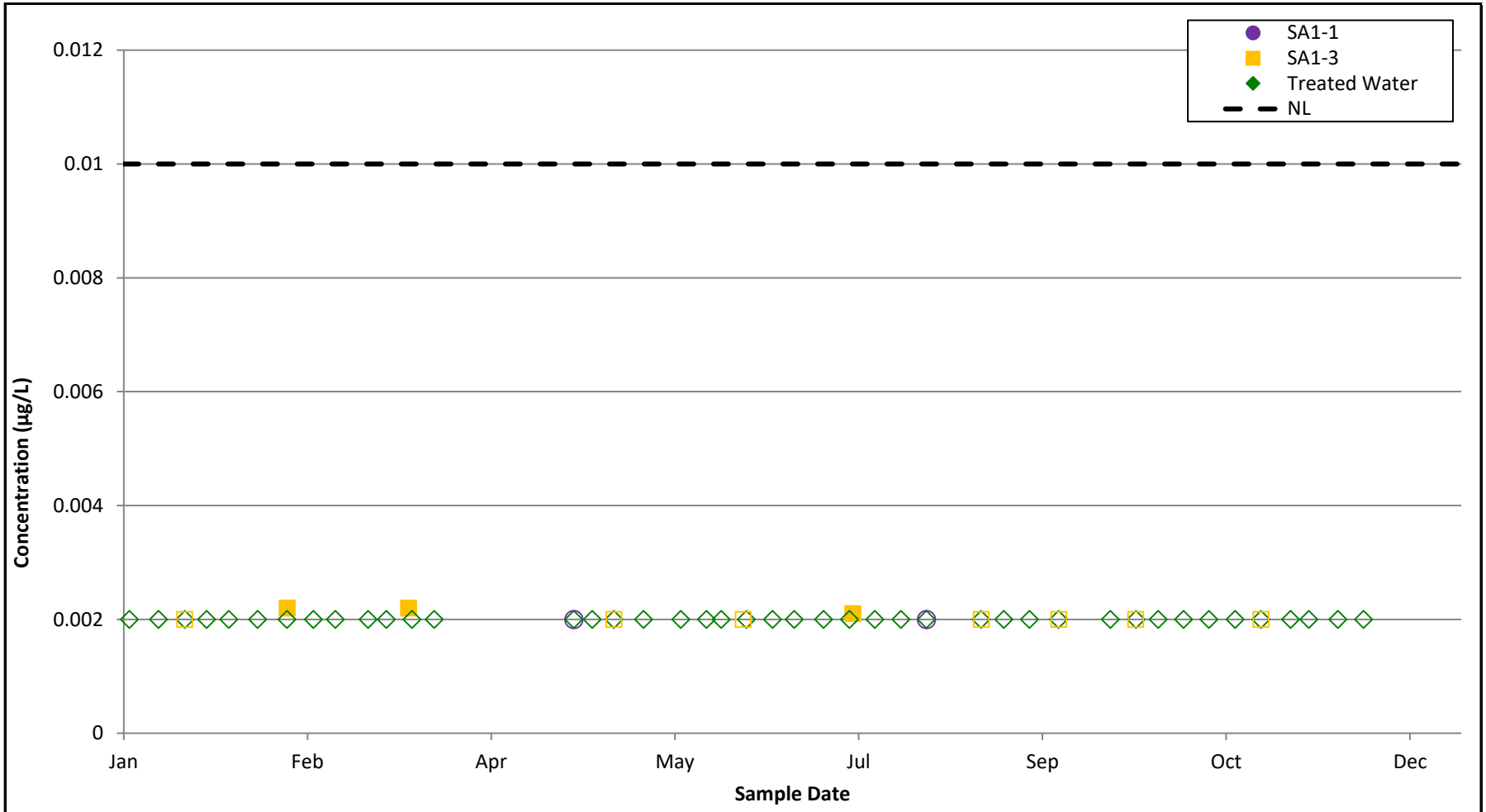
Note: Open symbols signify non-detects.

ERM

CARBON TETRACHLORIDE CONCENTRATIONS, RAW AND TREATED WATER FOR VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-3



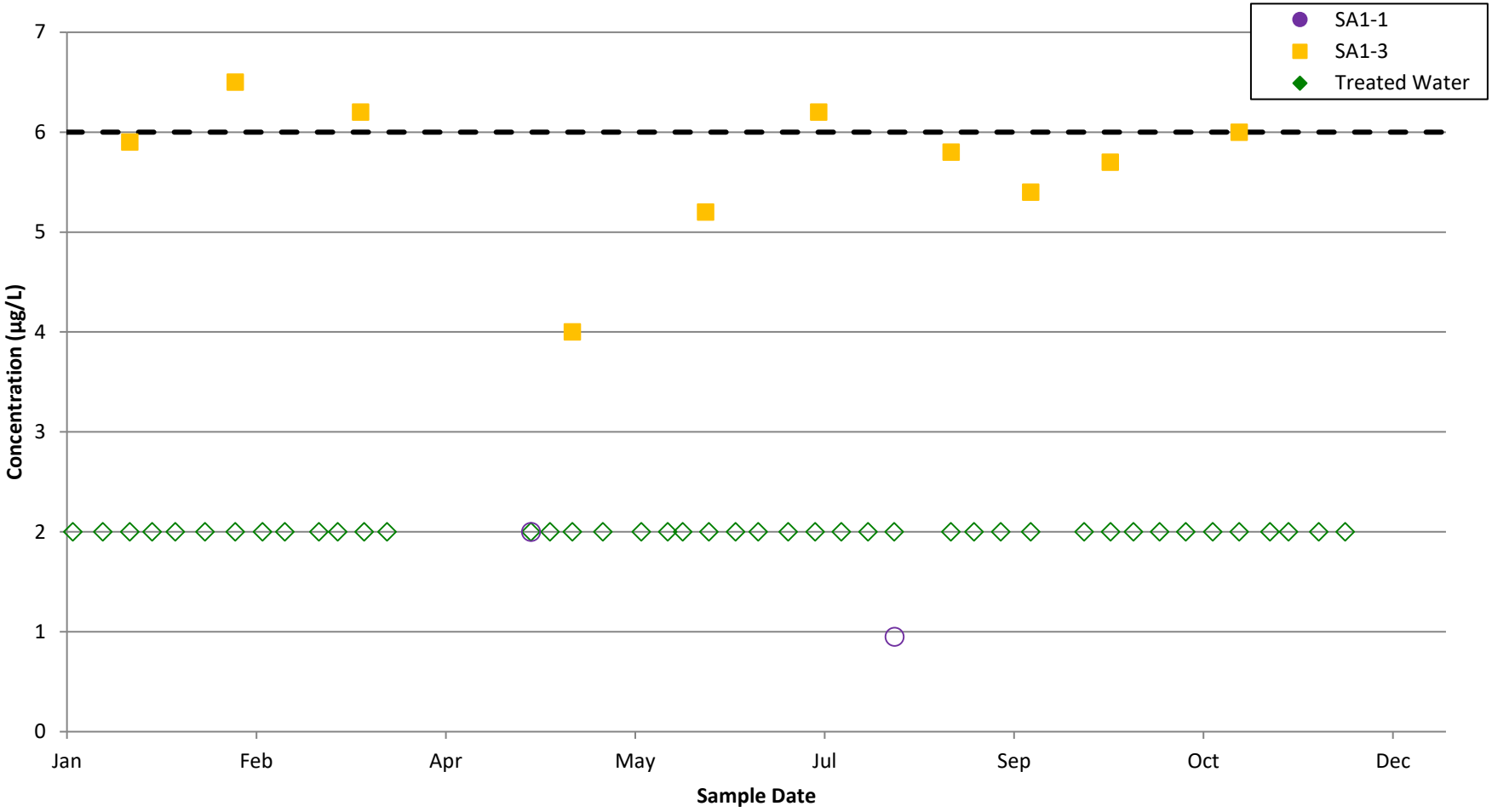
Note: Open symbols signify non-detects.

ERM

N-NITROSODIMETHYLAMINE CONCENTRATIONS, RAW AND TREATED WATER FOR VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-4



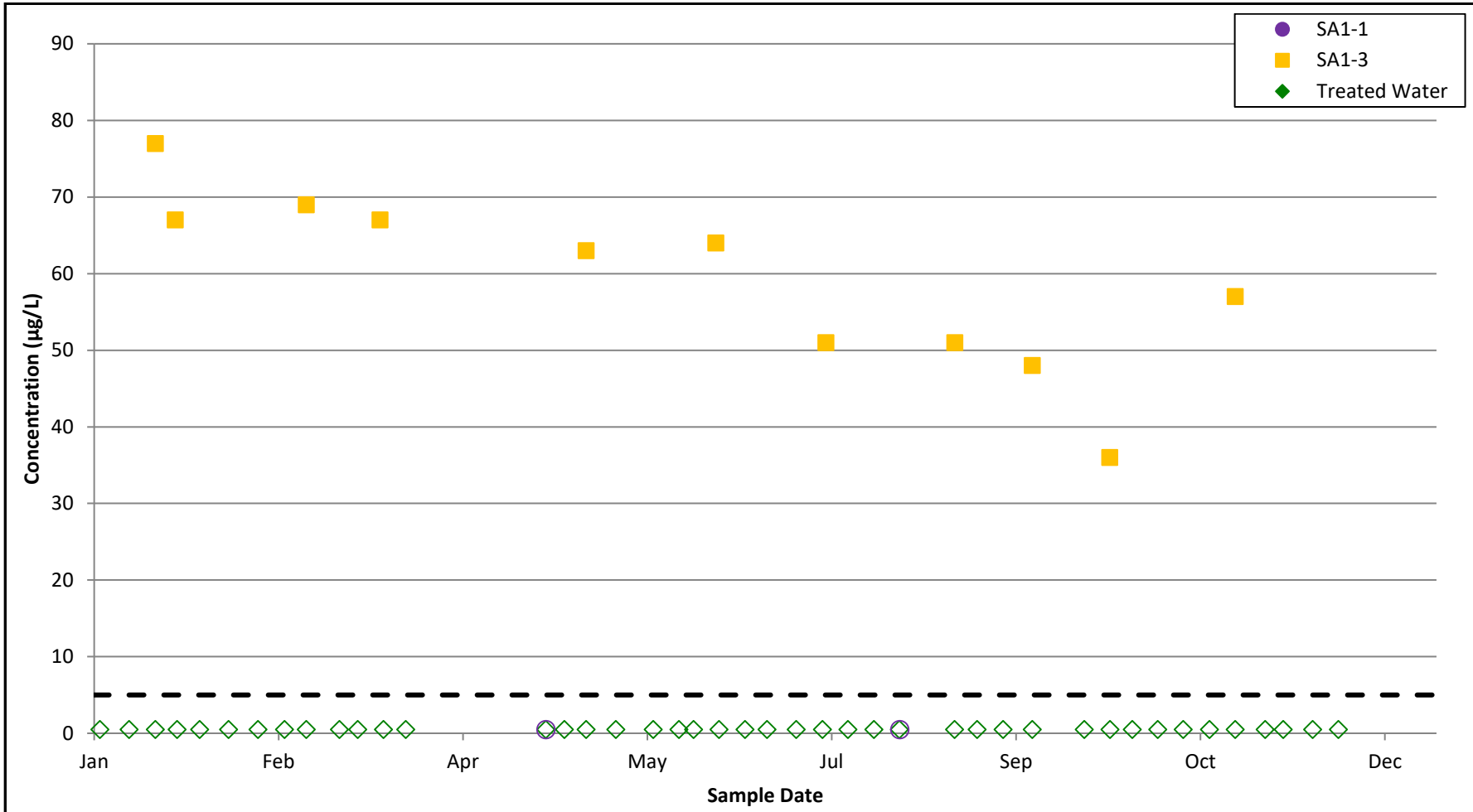
Note: Open symbols signify non-detects.

ERM

PERCHLORATE CONCENTRATIONS, RAW AND TREATED WATER FOR VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-5



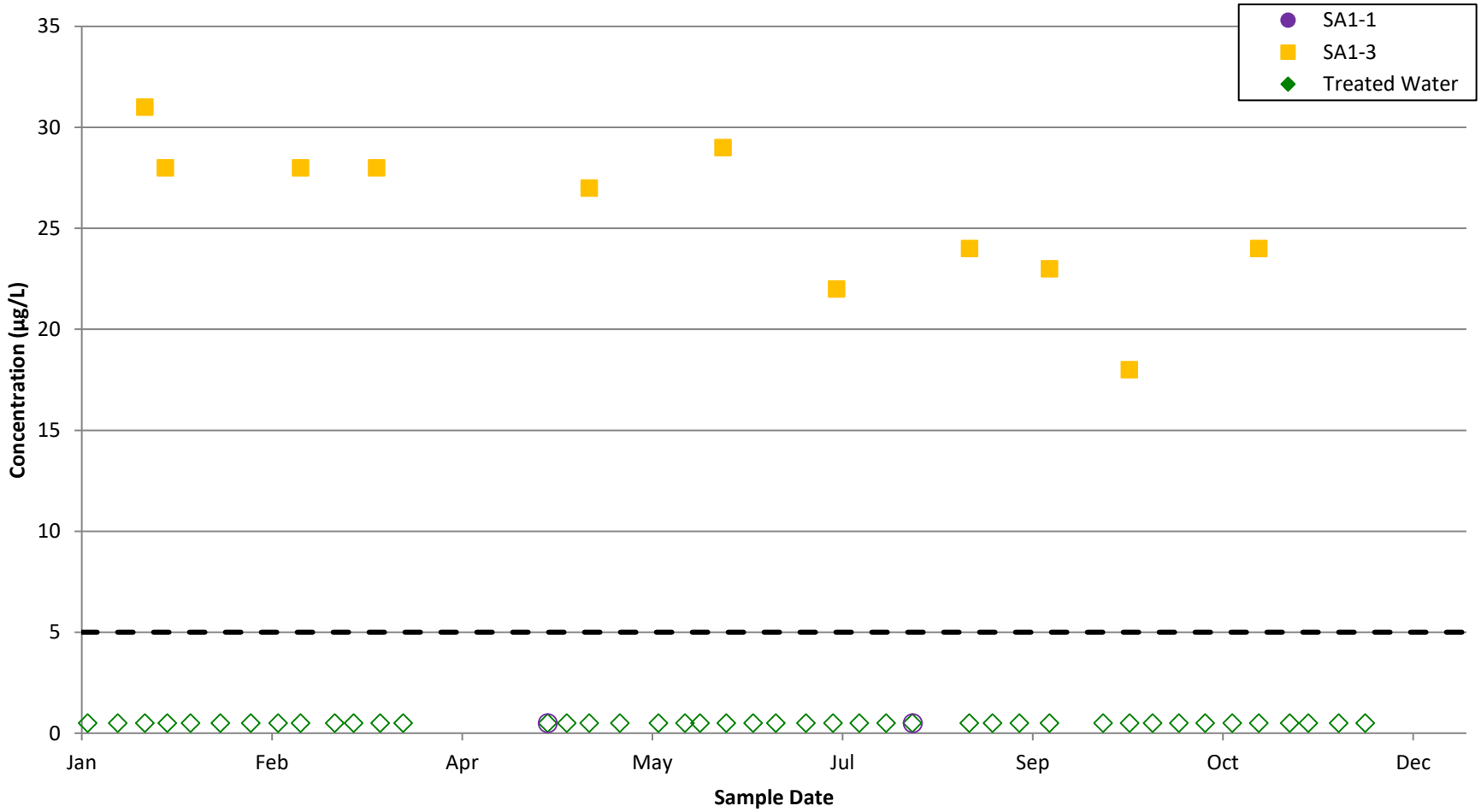
Note: Open symbols signify non-detects.

ERM

TETRACHLOROETHENE CONCENTRATIONS, RAW AND TREATED WATER FOR VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-6



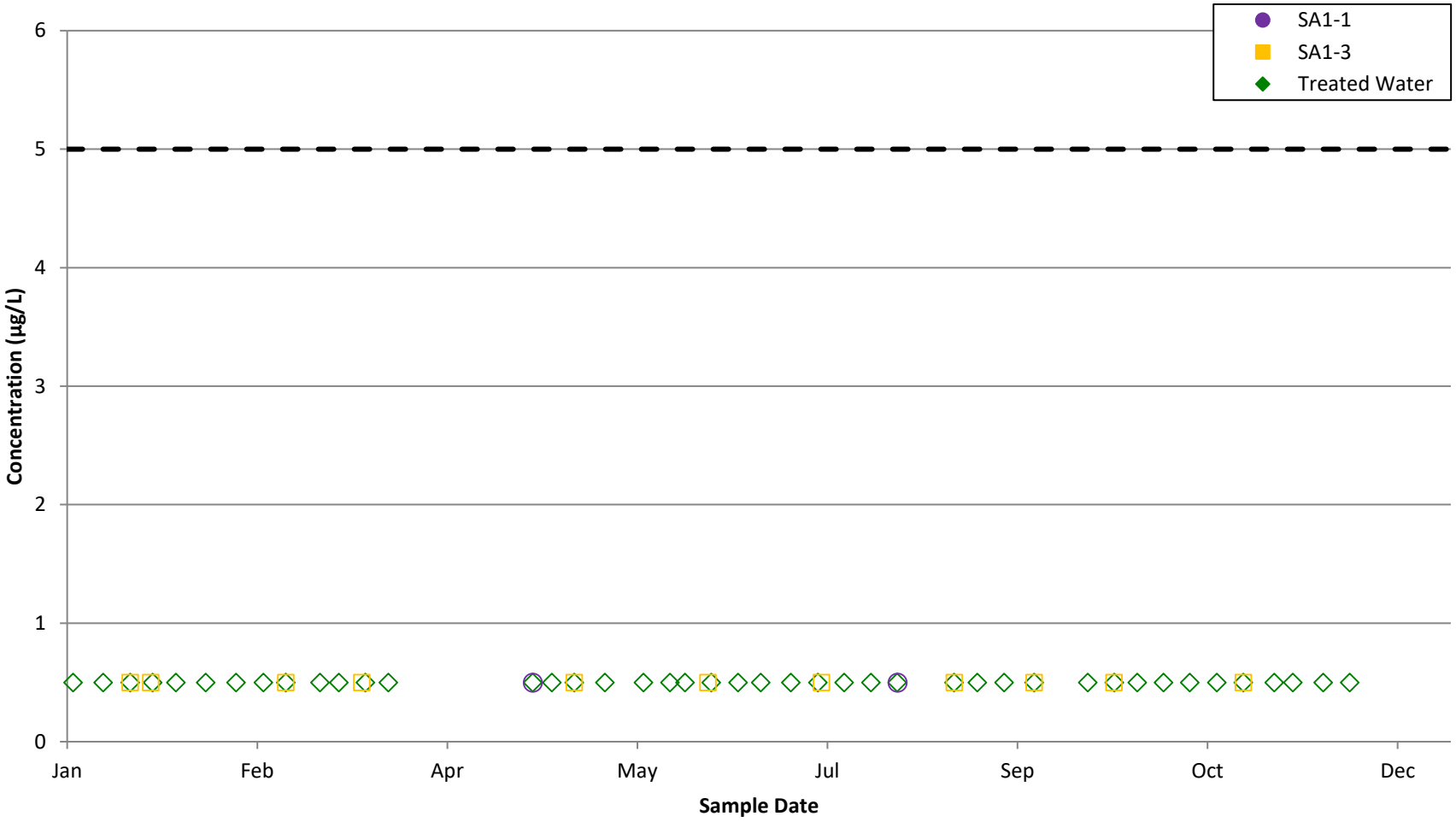
Note: Open symbols signify non-detects.

ERM

TRICHLOROETHENE CONCENTRATIONS, RAW AND TREATED WATER FOR VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-7



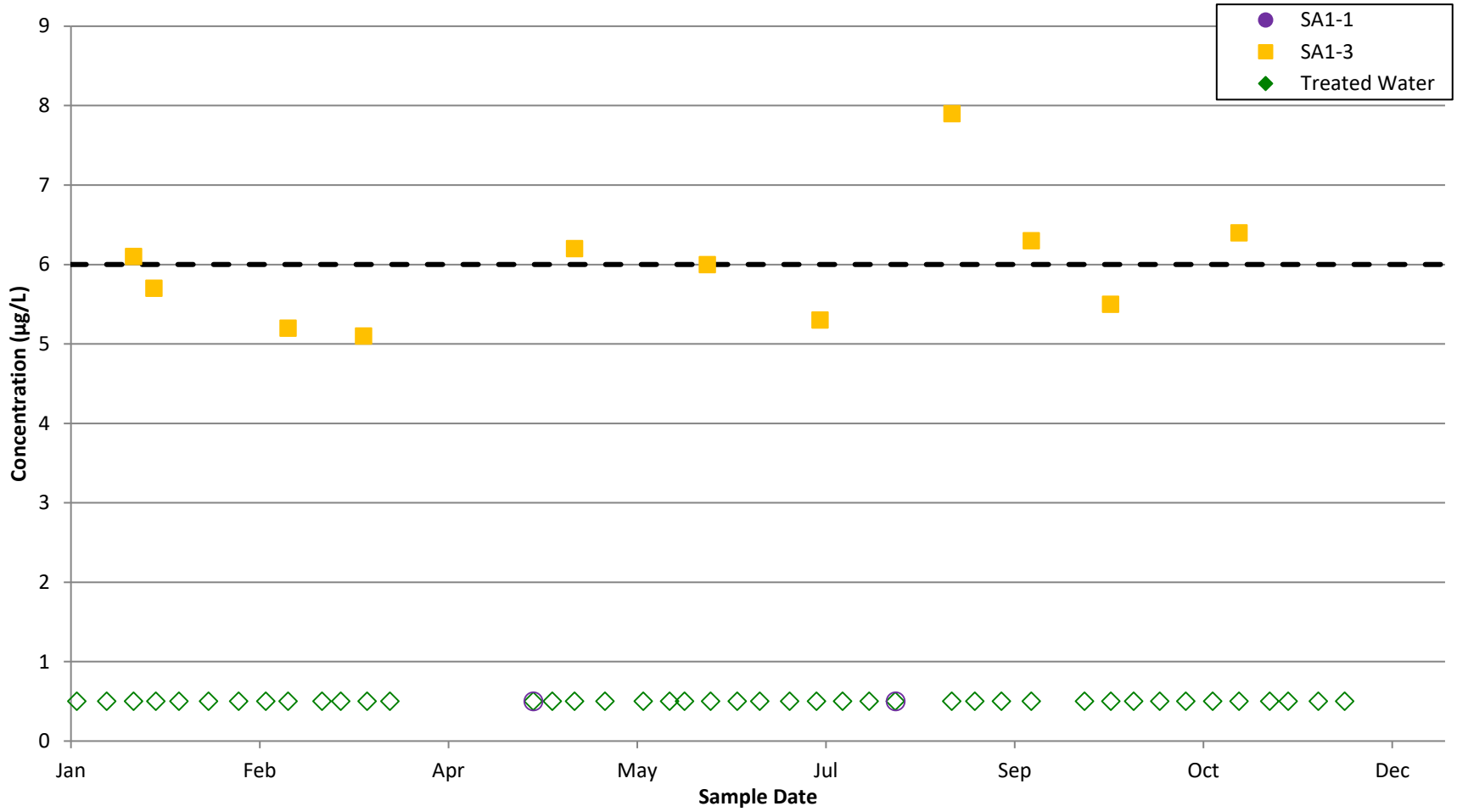
Note: Open symbols signify non-detects.

ERM

1,1-DICHLOROETHANE CONCENTRATIONS, RAW AND TREATED WATER FOR VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-8



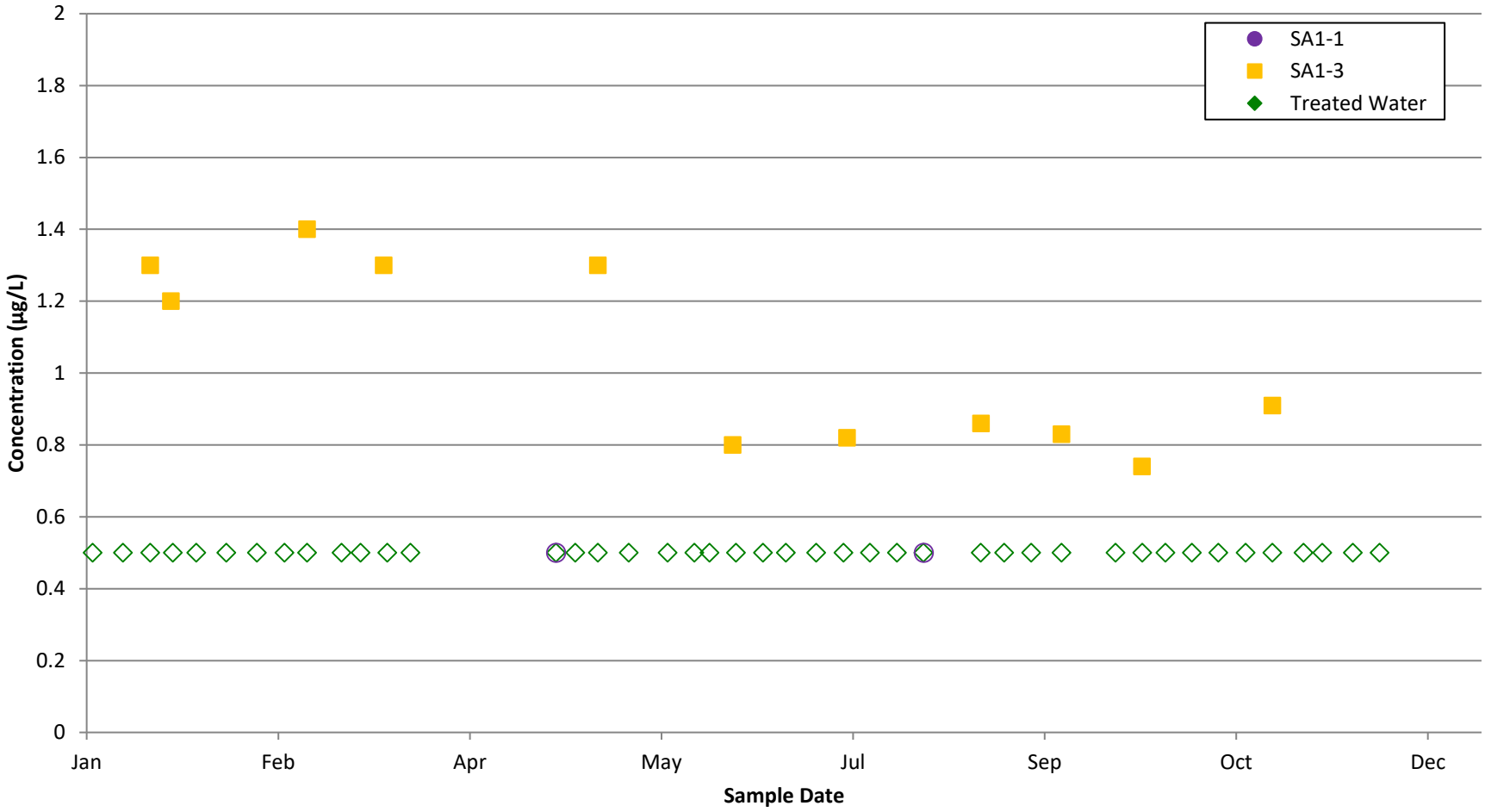
Note: Open symbols signify non-detects.

ERM

1,1-DICHLOROETHENE CONCENTRATIONS, RAW AND TREATED WATER FOR VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-9



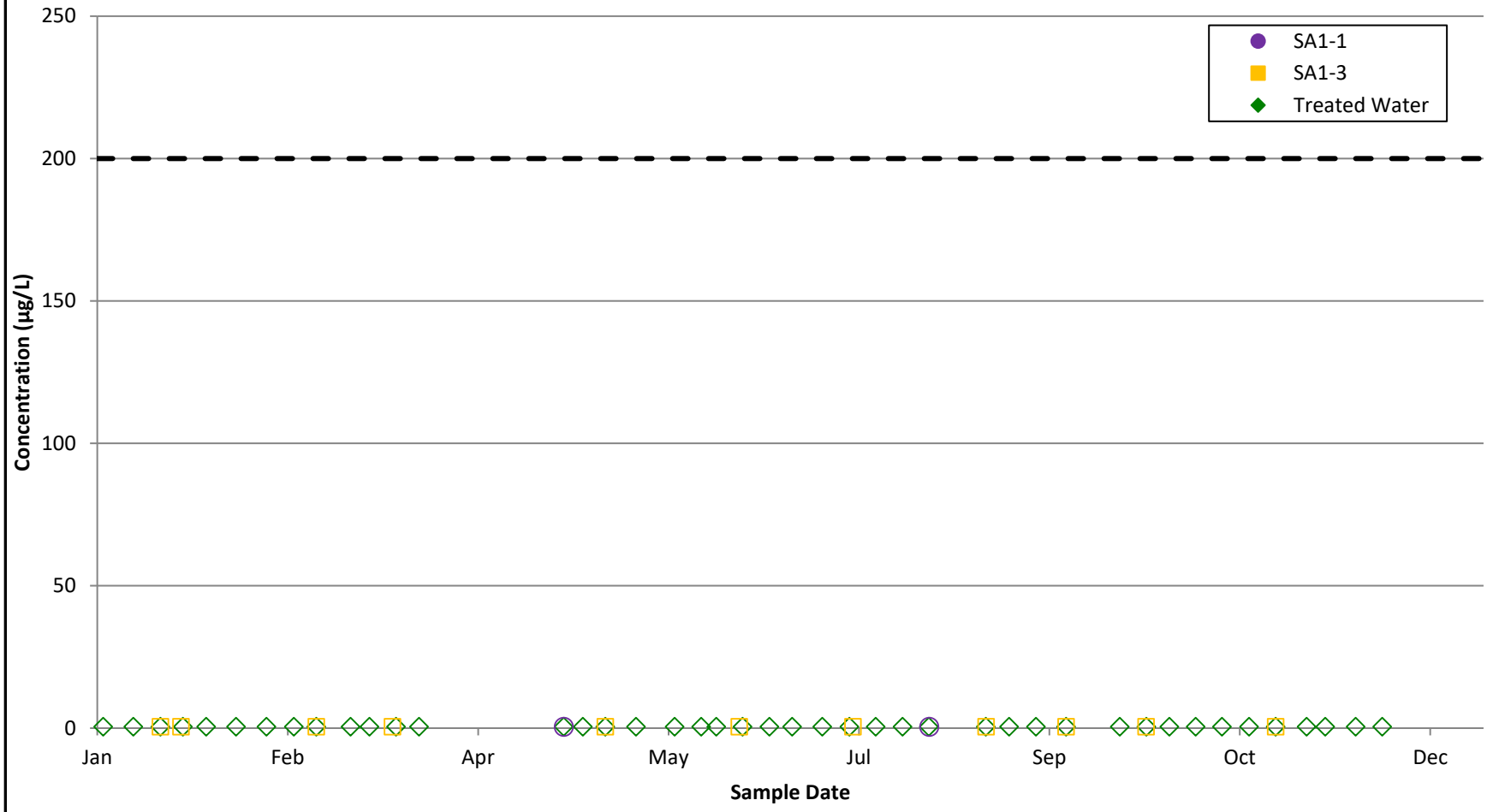
Note: Open symbols signify non-detects.

ERM

CIS-1,2-DICHLOROETHENE CONCENTRATIONS, RAW AND TREATED WATER FOR VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-10



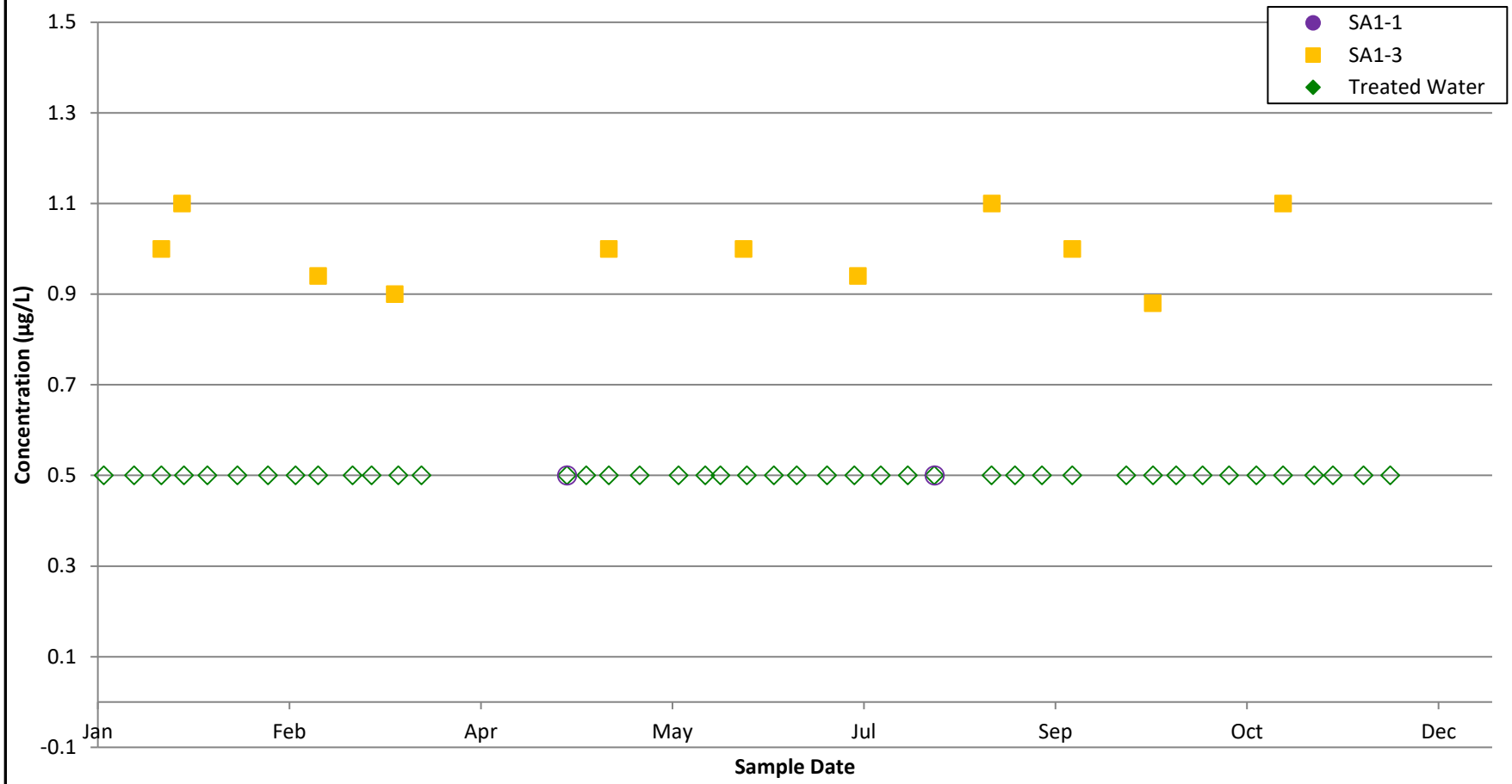
Note: Open symbols signify non-detects.

ERM

1,1,1-TRICHLOROETHANE CONCENTRATIONS, RAW AND TREATED WATER FOR VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-11



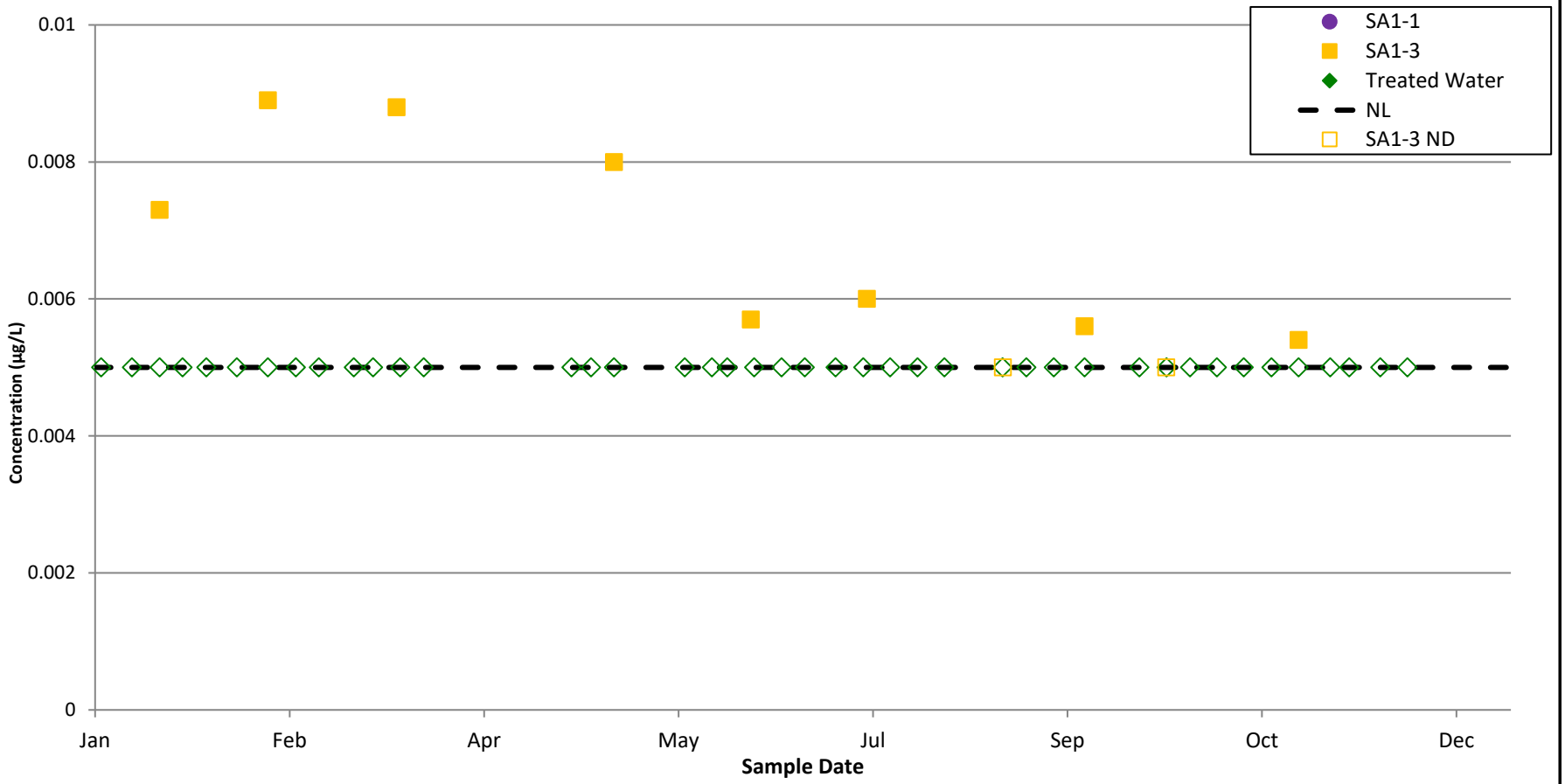
Note: Open symbols signify non-detects.

ERM

CHLOROFORM CONCENTRATIONS, RAW AND TREATED WATER FOR
VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-12



Note: Open symbols signify non-detects.

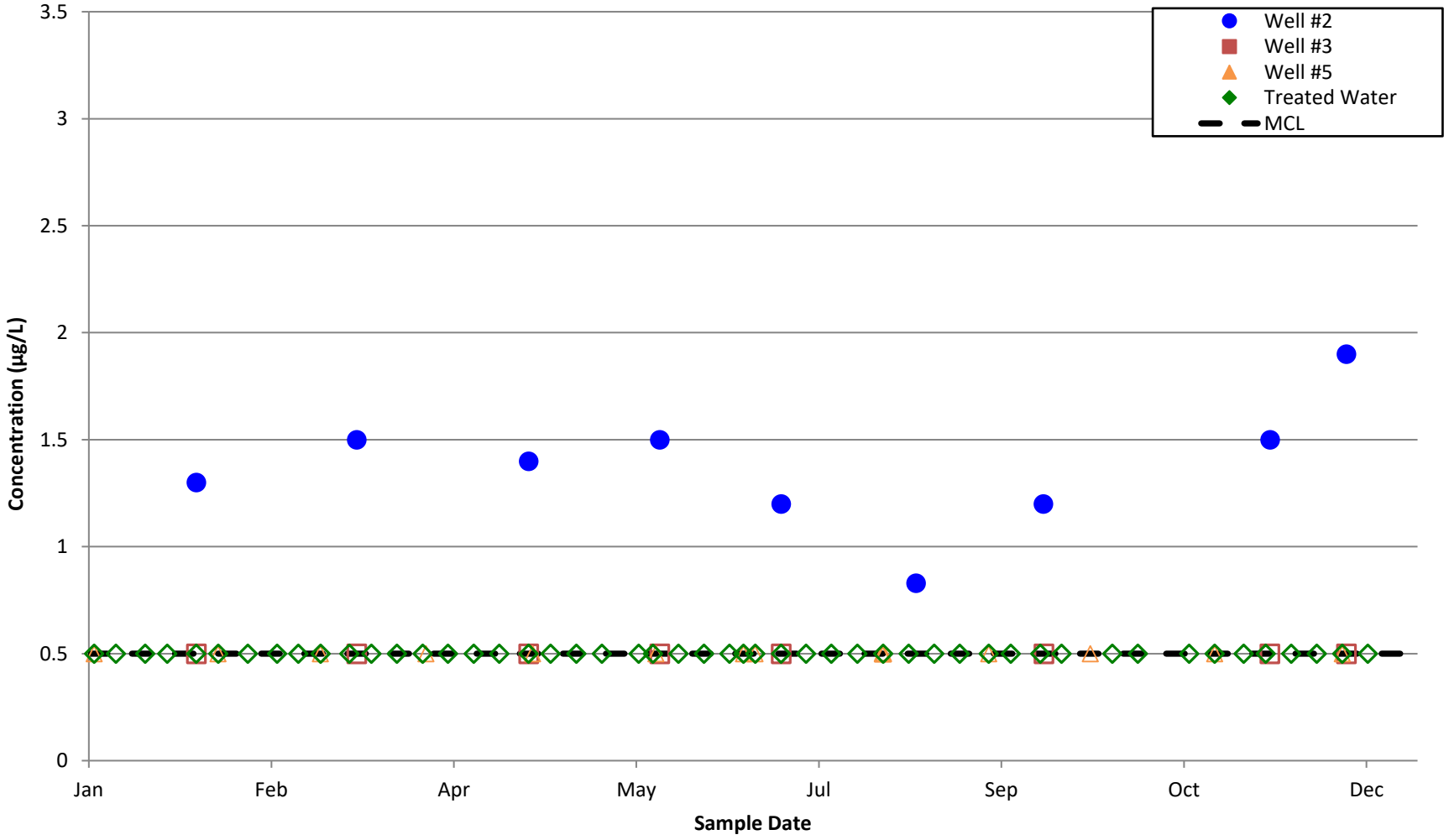
Non-detects by EPA Method 524.2 (Reporting limit = 0.5 ug/L) not shown.

ERM

1,2,3-TRICHLOROPROPANE CONCENTRATIONS, RAW AND TREATED WATER FOR VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-13



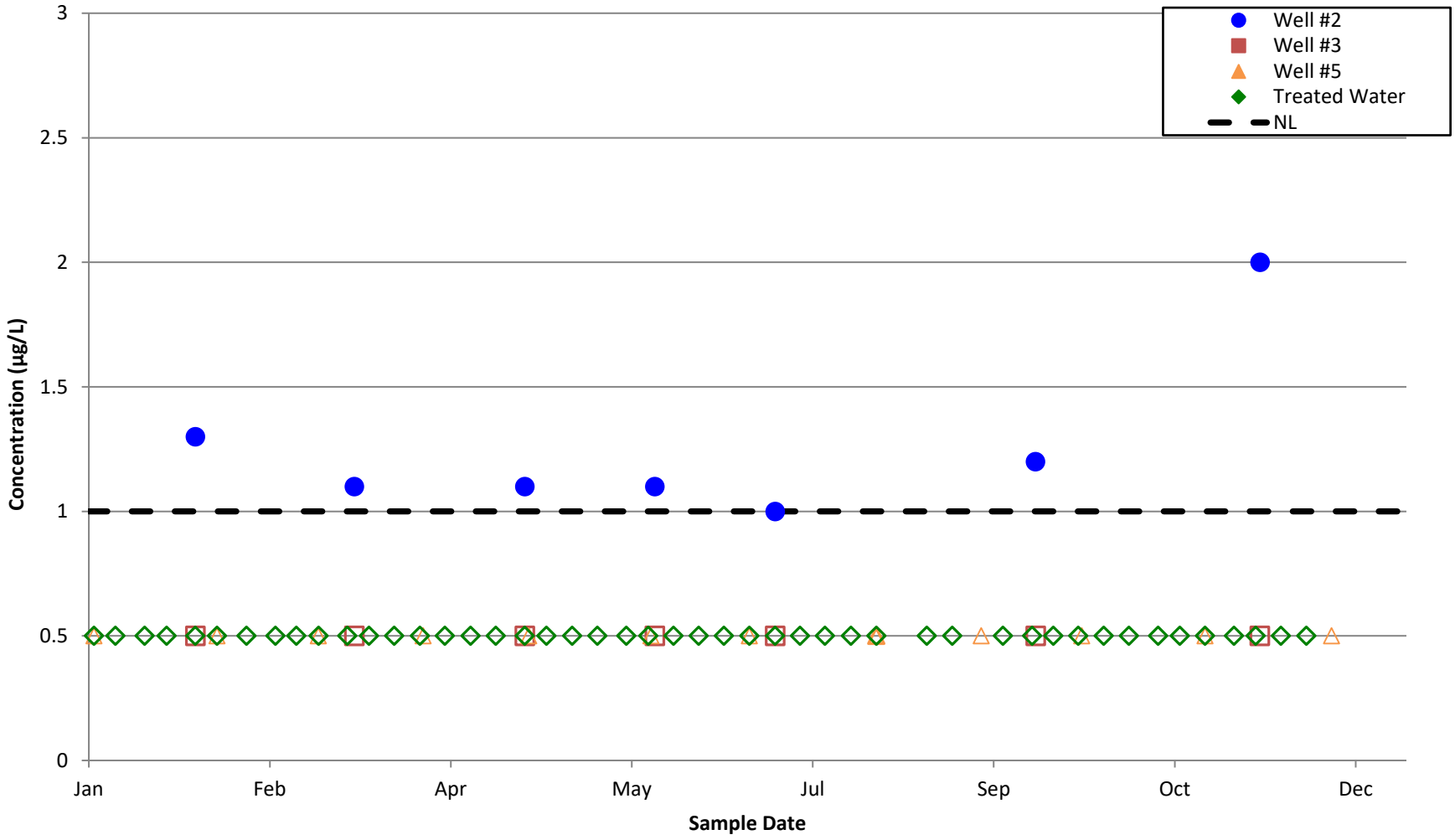
Note: Open symbols signify non-detects.

ERM

1,2-DICHLOROETHANE CONCENTRATIONS, RAW AND TREATED WATER FOR
LA PUENTE VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

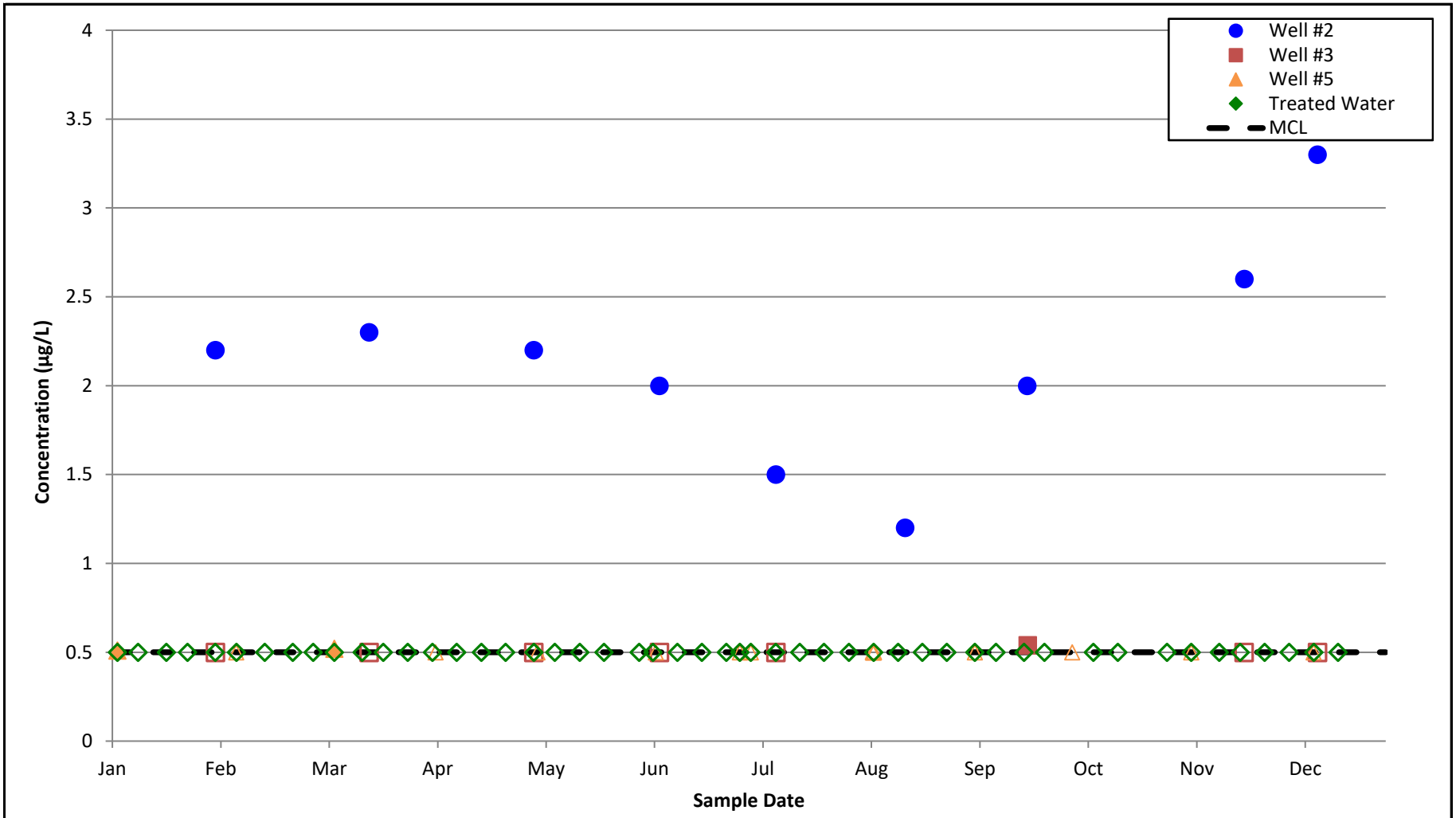
Project No.
32710118

Figure
6-14



Note: Open symbols signify non-detects.

ERM	1,4-DIOXANE CONCENTRATIONS, RAW AND TREATED WATER FOR LA PUENTE VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT (2018) Baldwin Park Operable Unit San Gabriel Valley, California	Project No. 32710118 Figure **6-15**



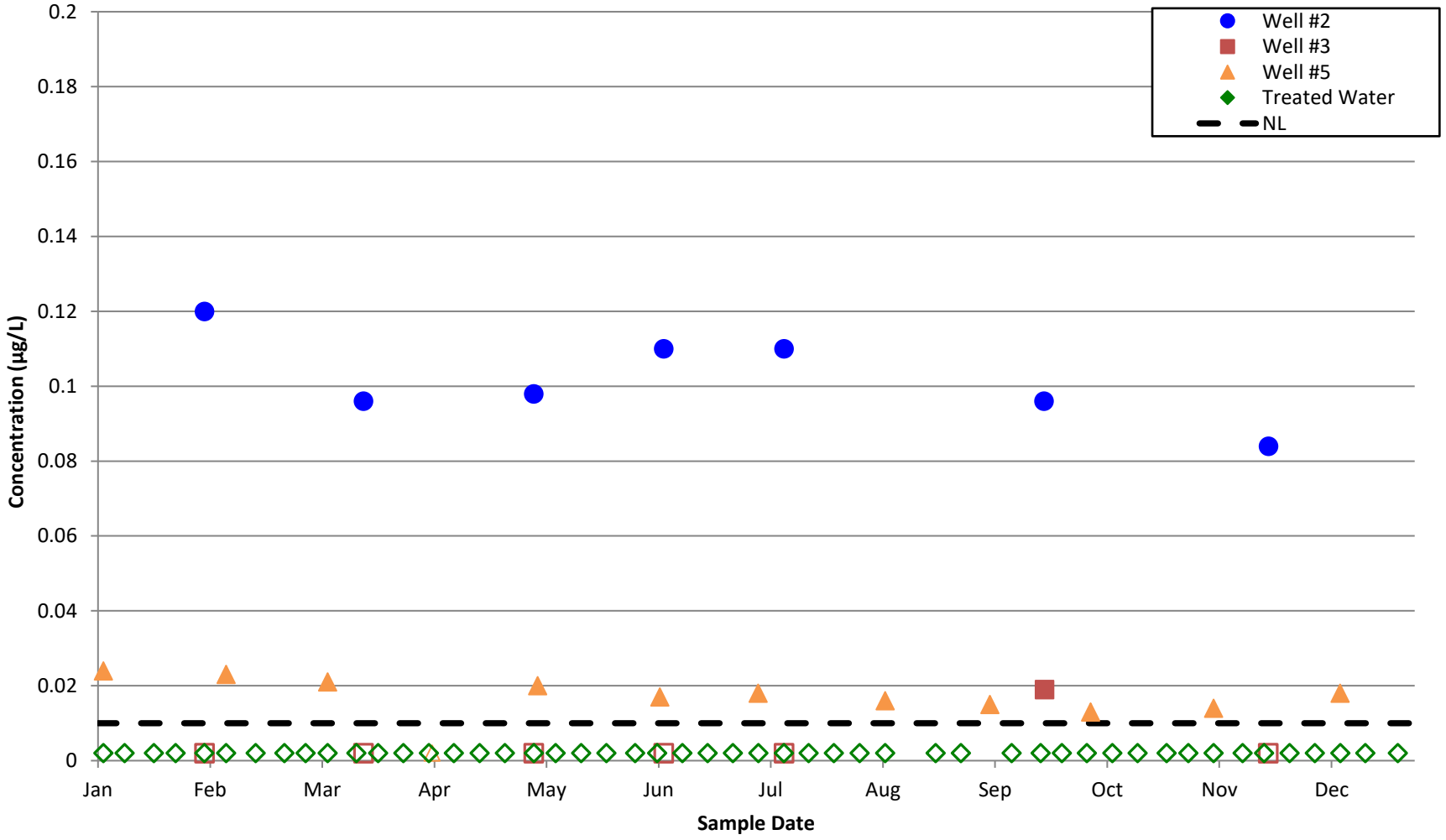
Note: Open symbols signify non-detects.

ERM

CARBON TETRACHLORIDE CONCENTRATIONS, RAW AND TREATED WATER FOR
LA PUENTE VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-16



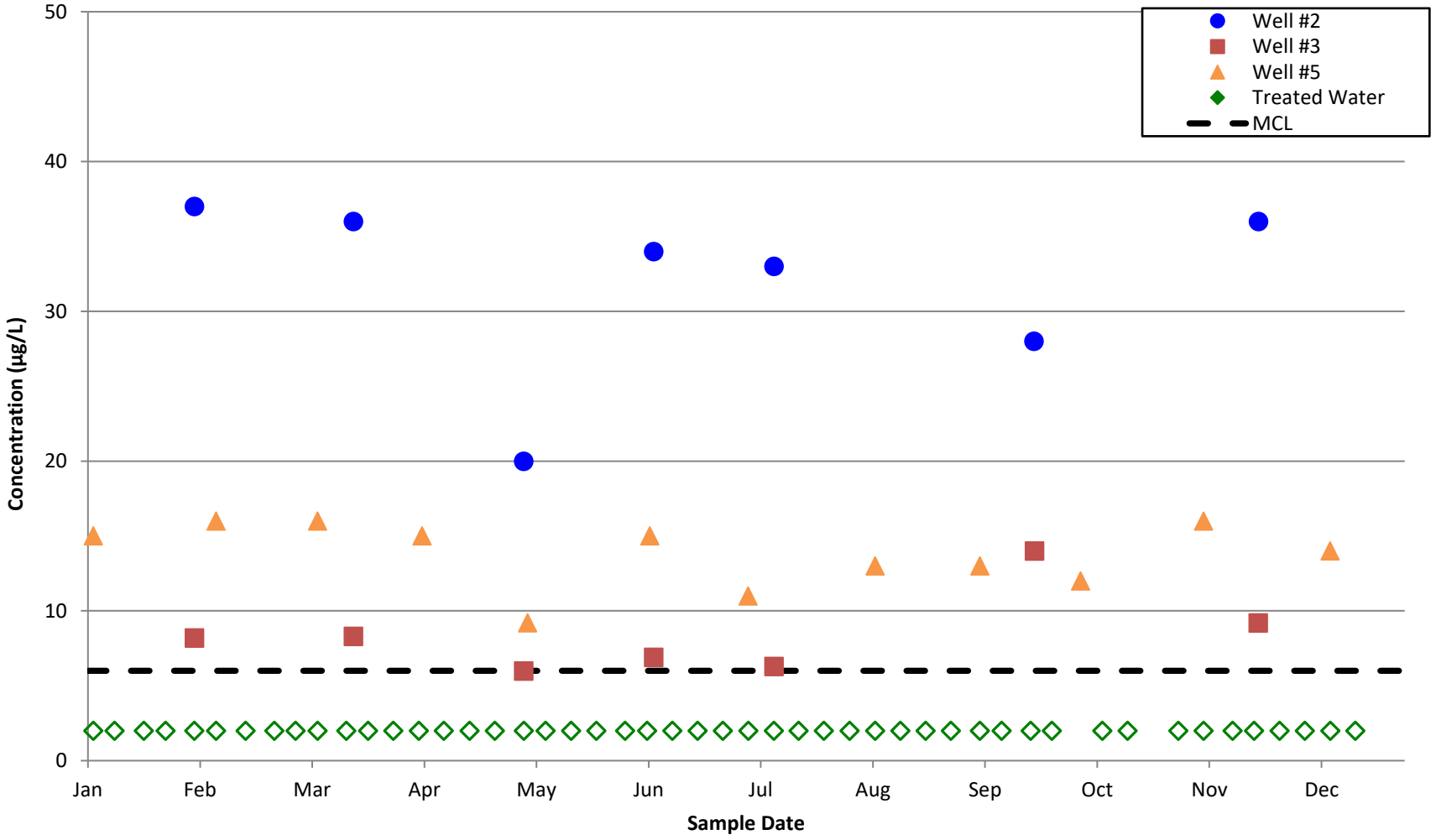
Note: Open symbols signify non-detects.

ERM

N-NITROSODIMETHYLAMINE CONCENTRATIONS, RAW AND TREATED WATER FOR LA PUENTE VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-17



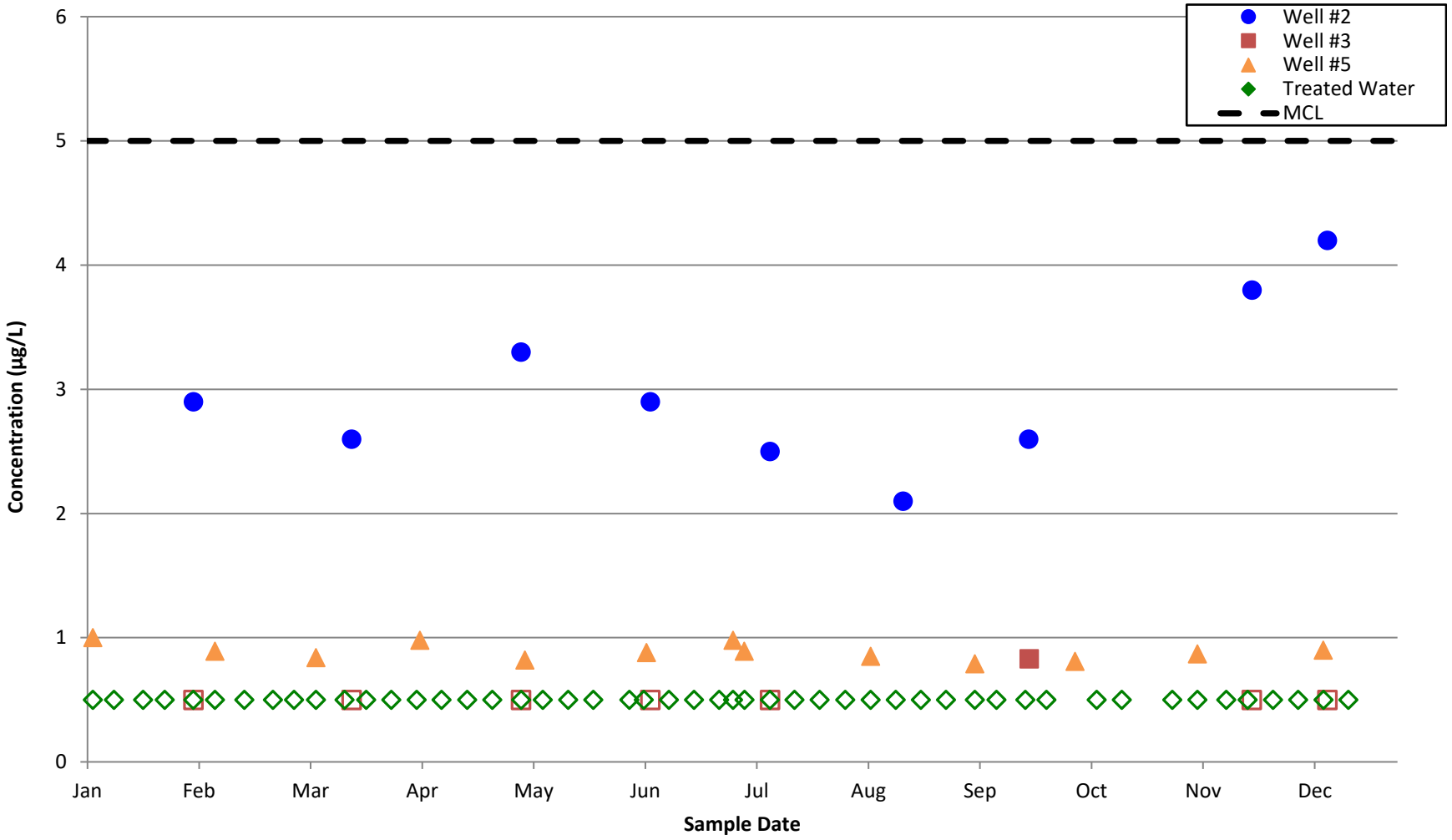
Note: Open symbols signify non-detects.

ERM

PERCHLORATE CONCENTRATIONS, RAW AND TREATED WATER FOR
LA PUENTE VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-18



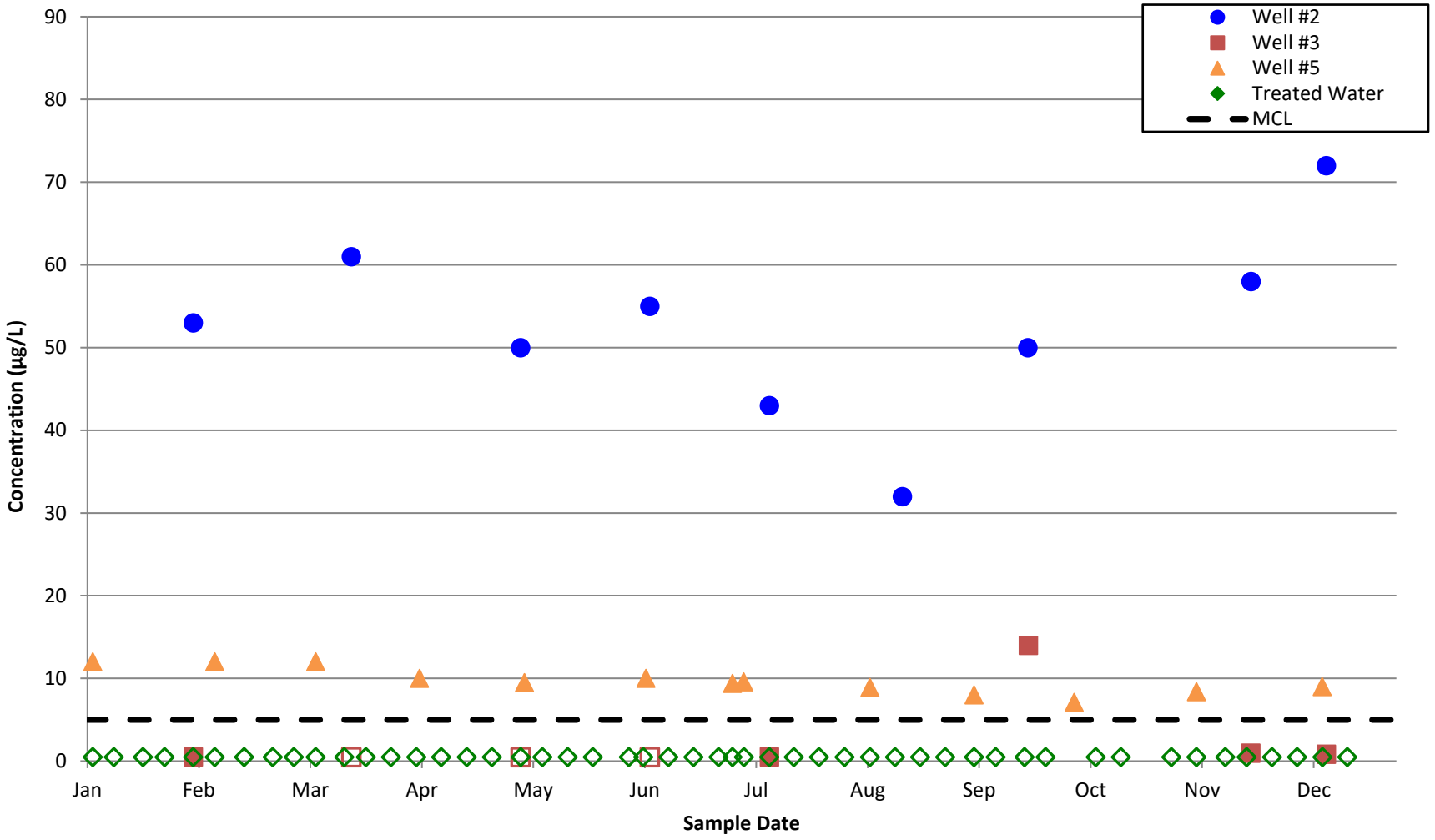
Note: Open symbols signify non-detects.

ERM

TETRACHLOROETHENE CONCENTRATIONS, RAW AND TREATED WATER FOR
LA PUENTE VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-19



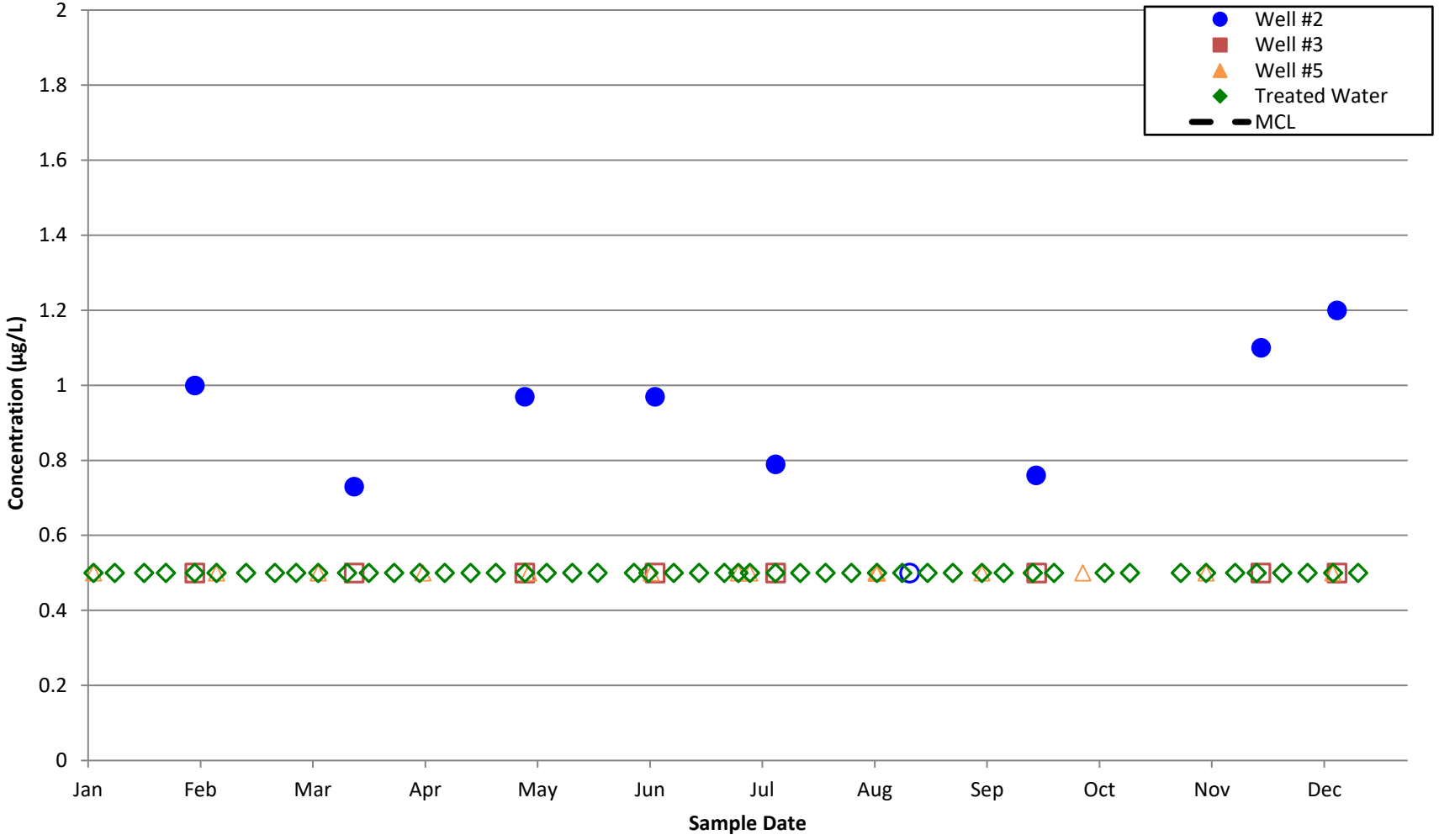
Note: Open symbols signify non-detects.

ERM

TRICHLOROETHENE CONCENTRATIONS, RAW AND TREATED WATER FOR
LA PUENTE VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-20



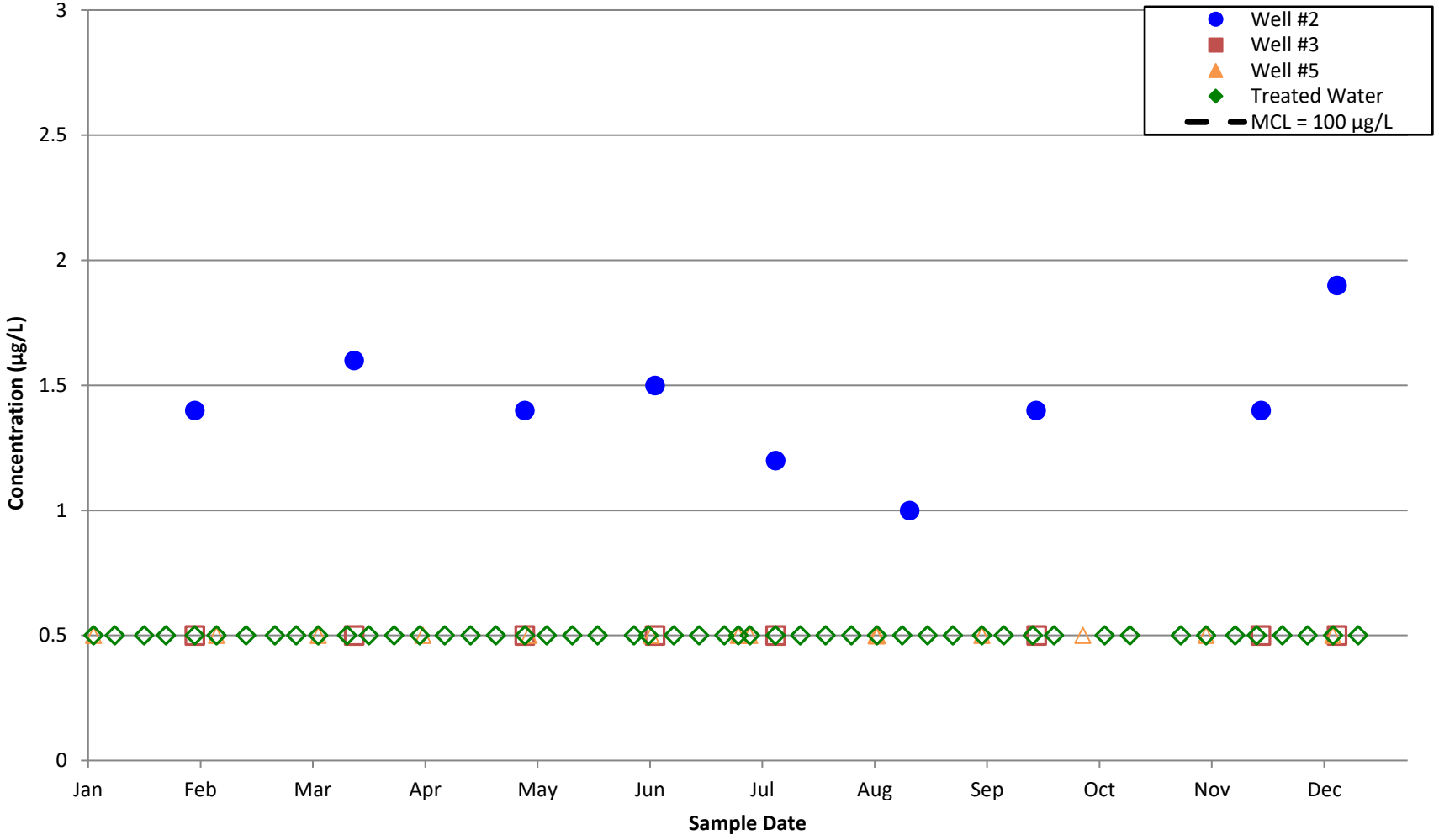
Note: Open symbols signify non-detects.

ERM

CIS-1,2-DICHLOROETHENE CONCENTRATIONS, RAW AND TREATED WATER FOR
LA PUENTE VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-21



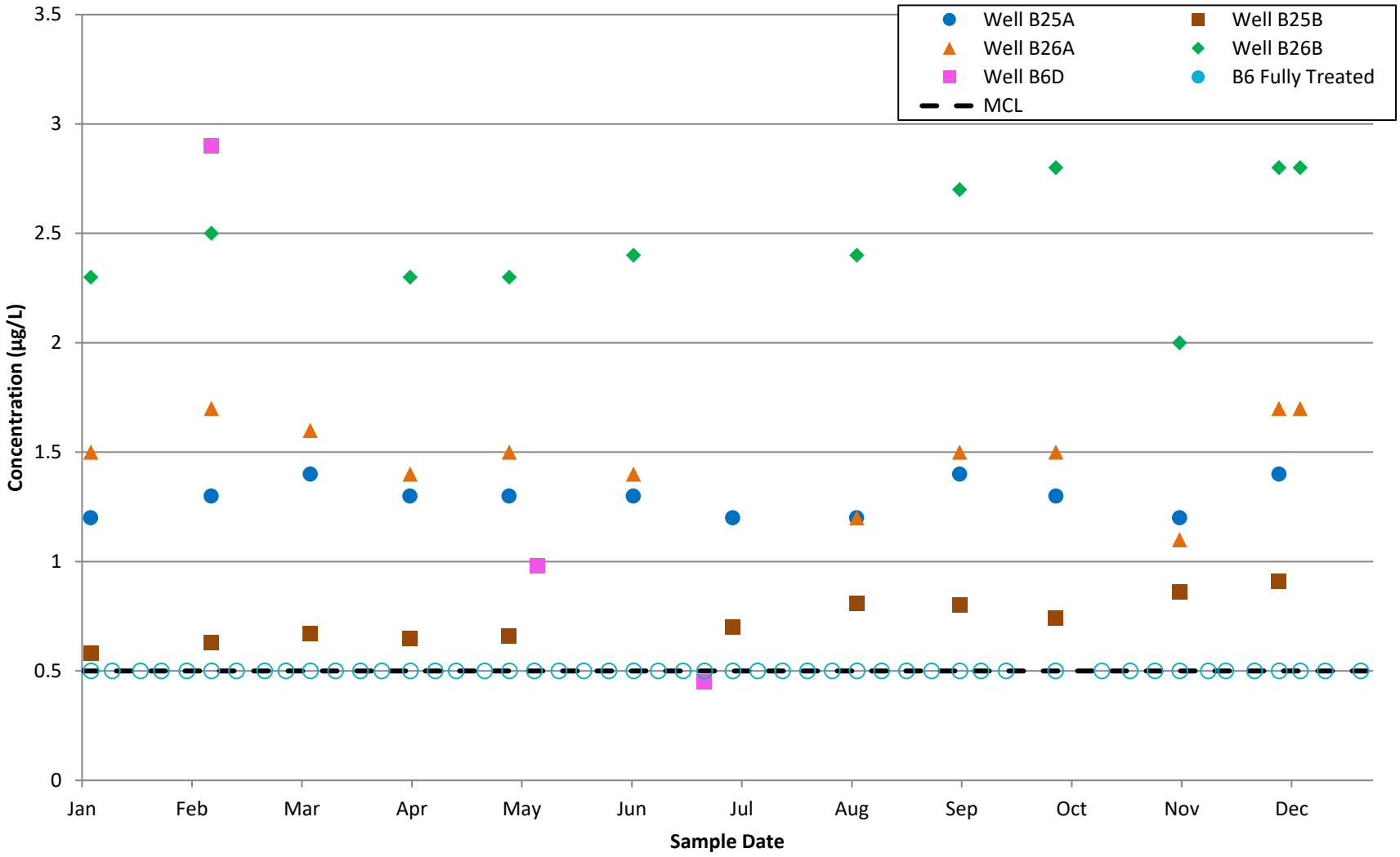
Note: Open symbols signify non-detects.

ERM

CHLOROFORM ECONCENTRATIONS, RAW AND TREATED WATER FOR
LA PUENTE VALLEY COUNTY WATER DISTRICT LANTE TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-22



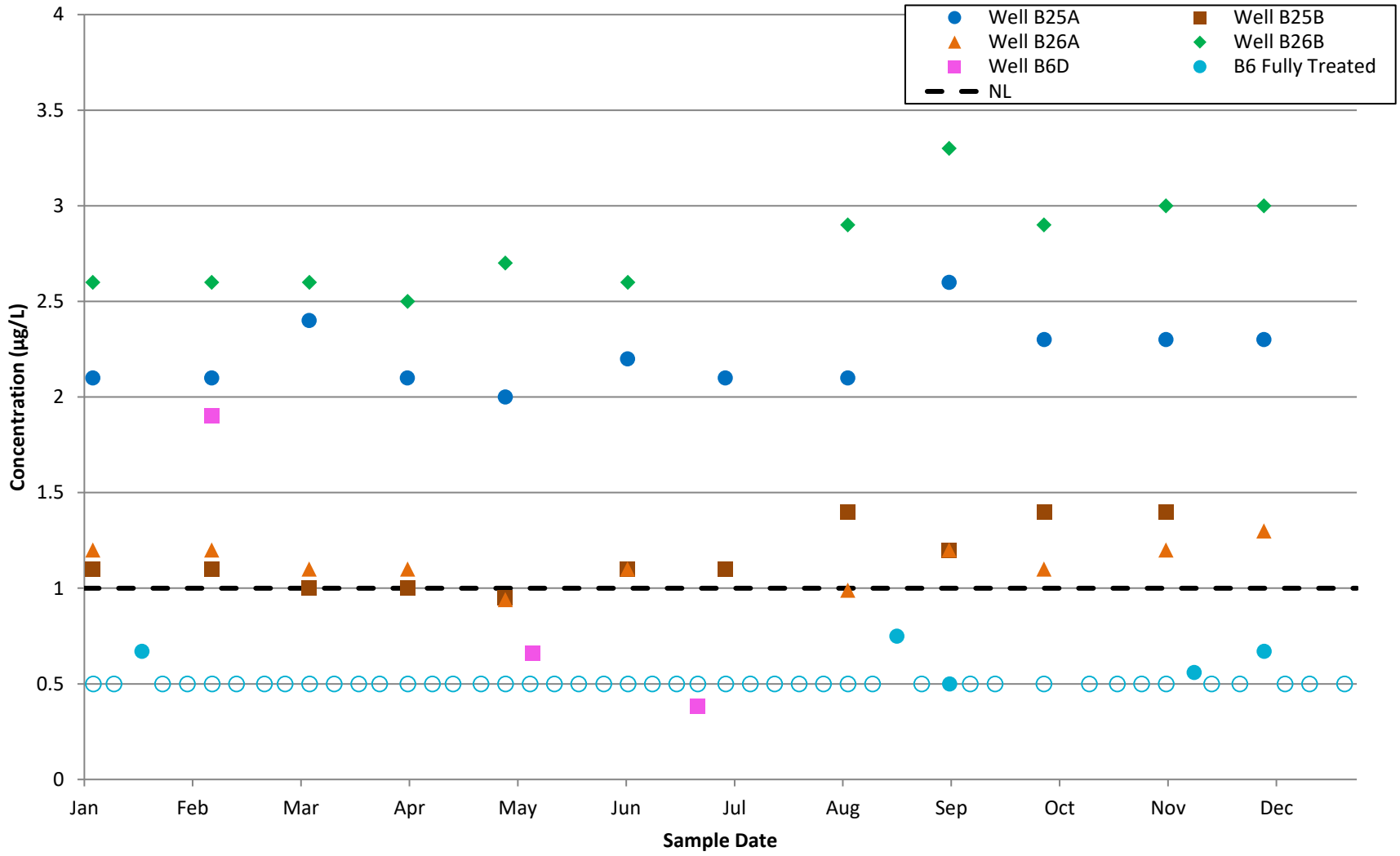
Note: Open symbols signify non-detects.

ERM

1,2-DICHLOROETHANE CONCENTRATIONS, RAW AND TREATED WATER FOR
SAN GABRIEL VALLEY WATER COMPANY B6 TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-23



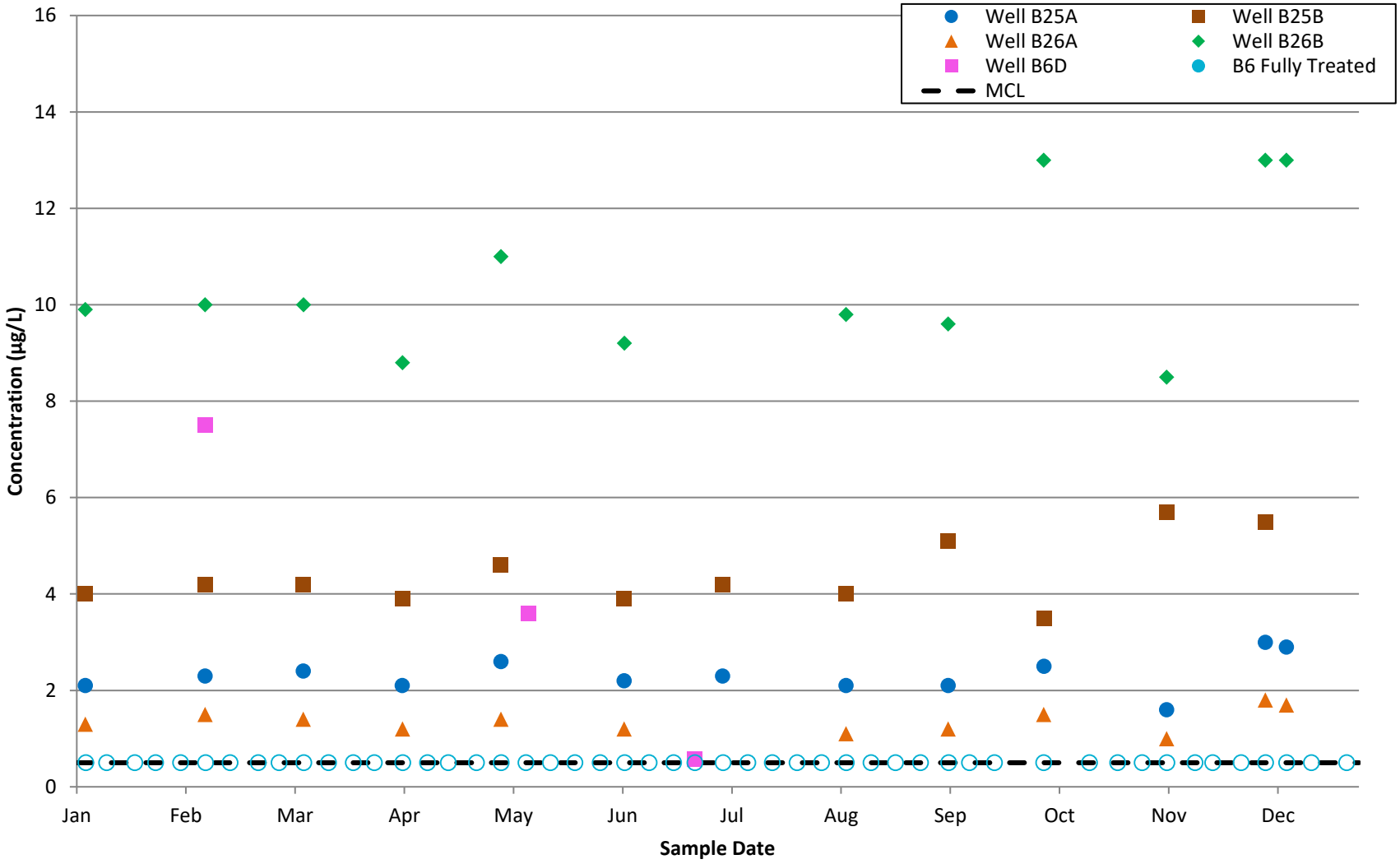
Note: Open symbols signify non-detects.

ERM

1,4-DIOXANE CONCENTRATIONS, RAW AND TREATED WATER FOR
SAN GABRIEL VALLEY WATER COMPANY B6 TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-24



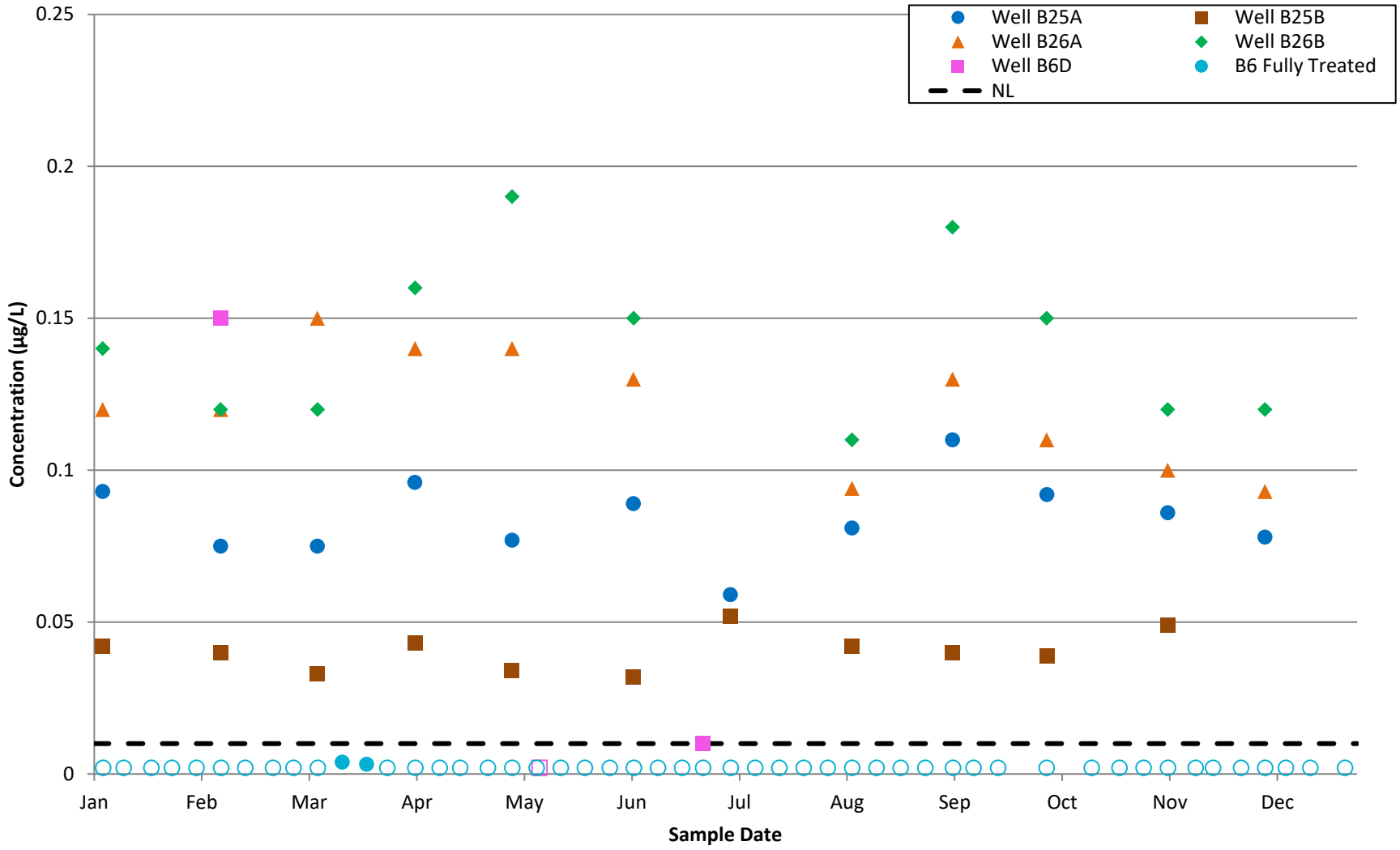
Note: Open symbols signify non-detects.

ERM

CARBON TETRACHLORIDE CONCENTRATIONS, RAW AND TREATED WATER FOR SAN GABRIEL VALLEY WATER COMPANY B6 TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-25



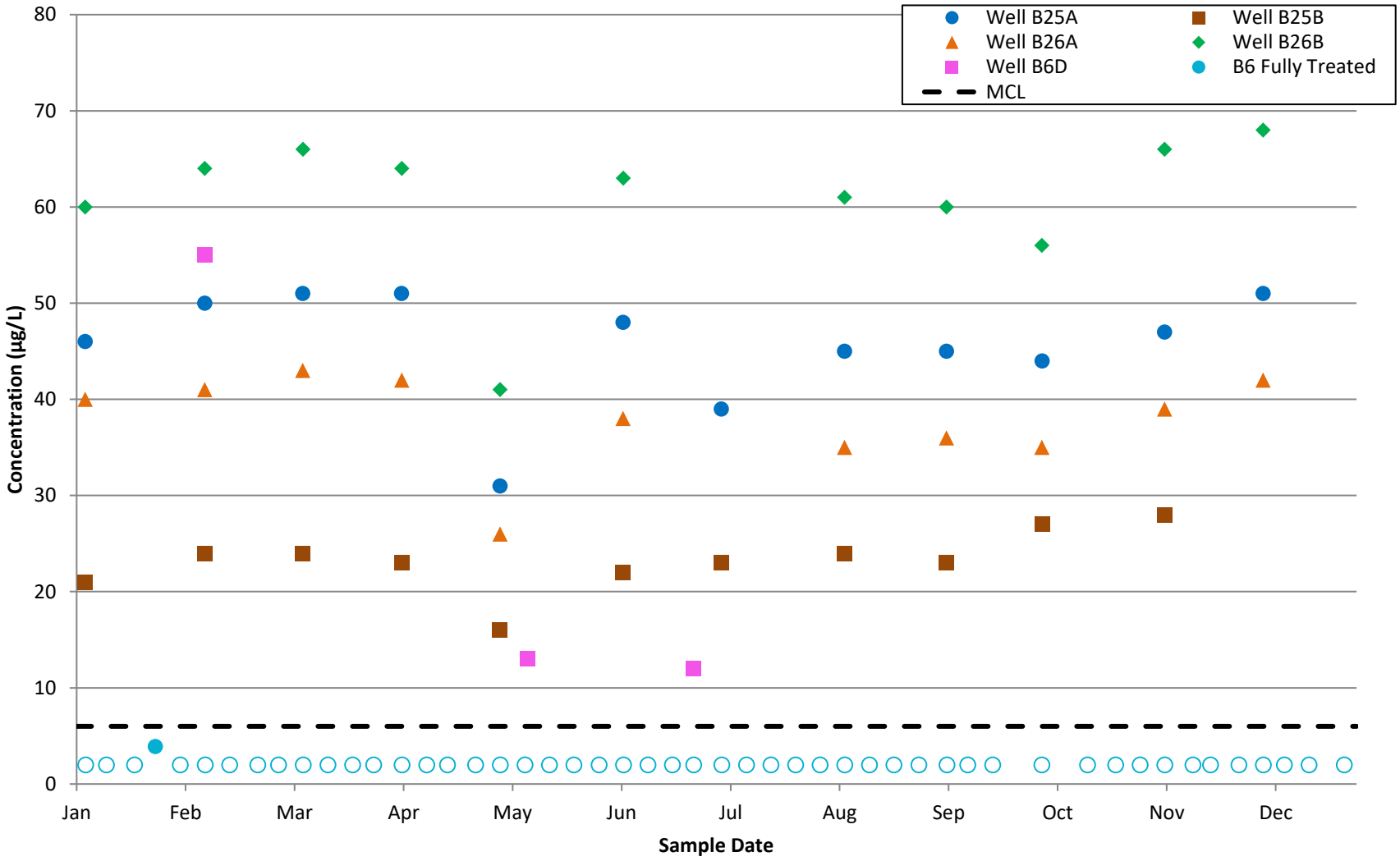
Note: Open symbols signify non-detects.

ERM

N-NITROSODIMETHYLAMINE CONCENTRATIONS, RAW AND TREATED WATER FOR SAN GABRIEL VALLEY WATER COMPANY B6 TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-26



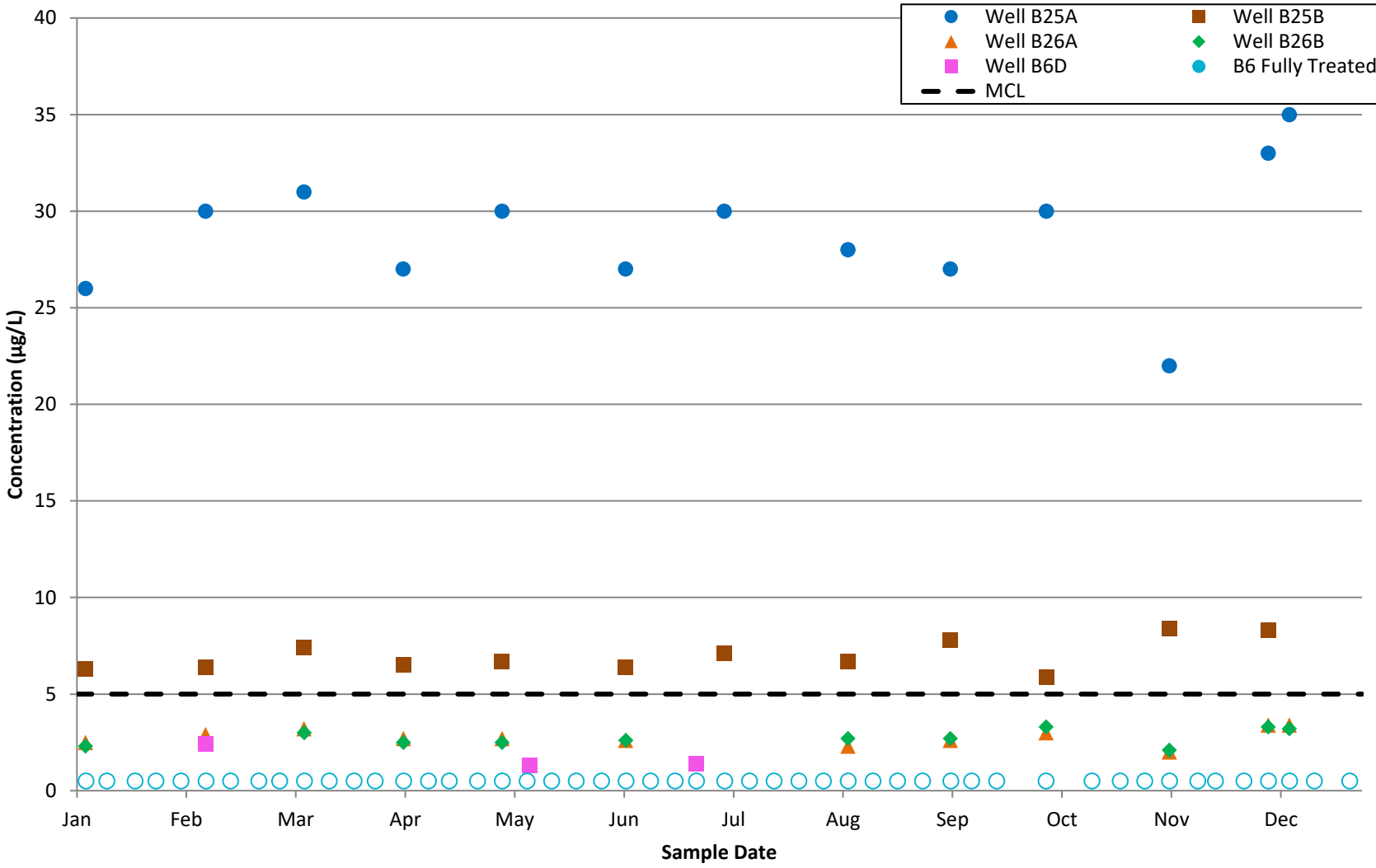
Note: Open symbols signify non-detects.

ERM

PERCHLORATE CONCENTRATIONS, RAW AND TREATED WATER FOR
SAN GABRIEL VALLEY WATER COMPANY B6 TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-27



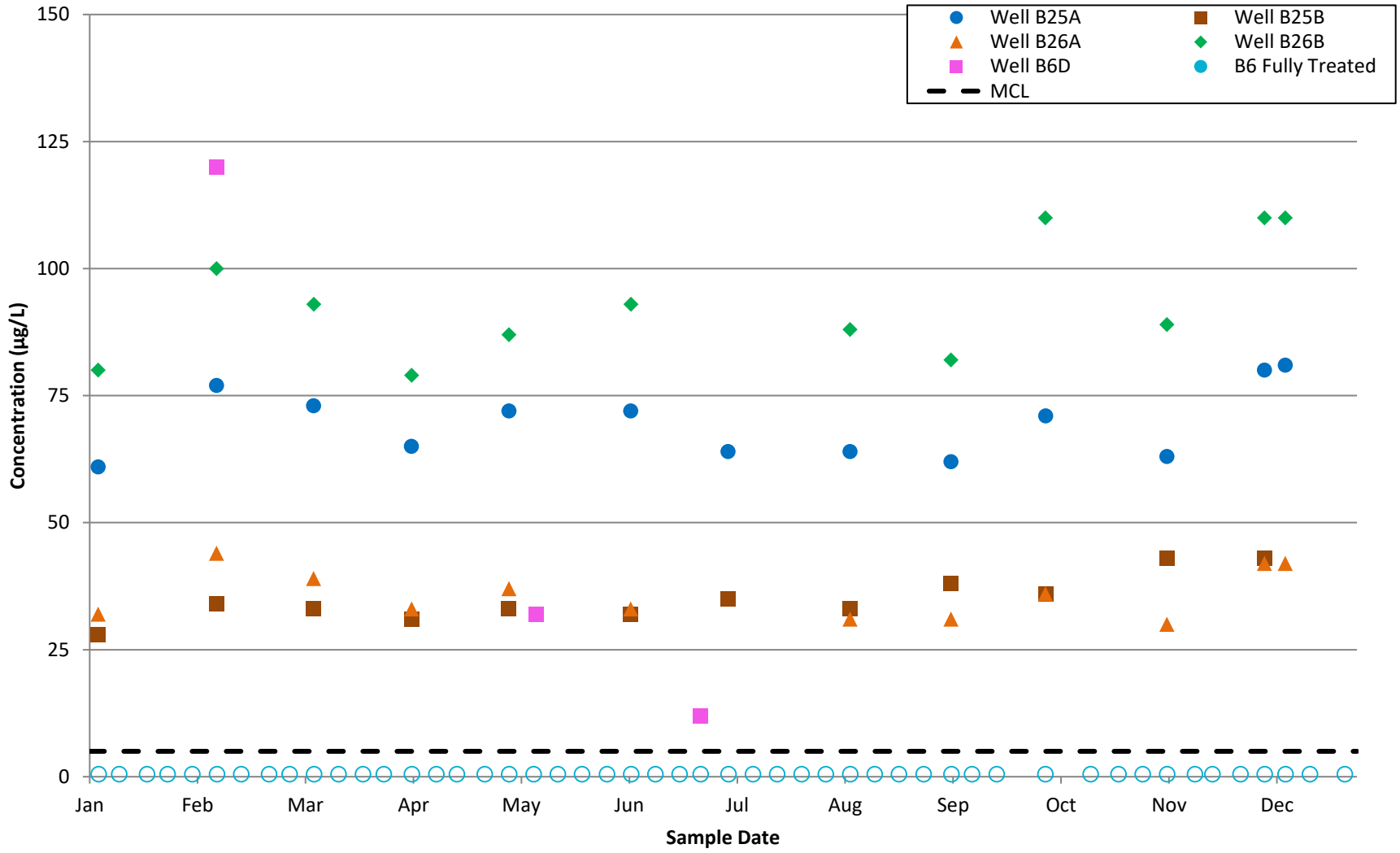
Note: Open symbols signify non-detects.

ERM

TETRACHLOROETHENE CONCENTRATIONS, RAW AND TREATED WATER FOR
SAN GABRIEL VALLEY WATER COMPANY B6 TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-28



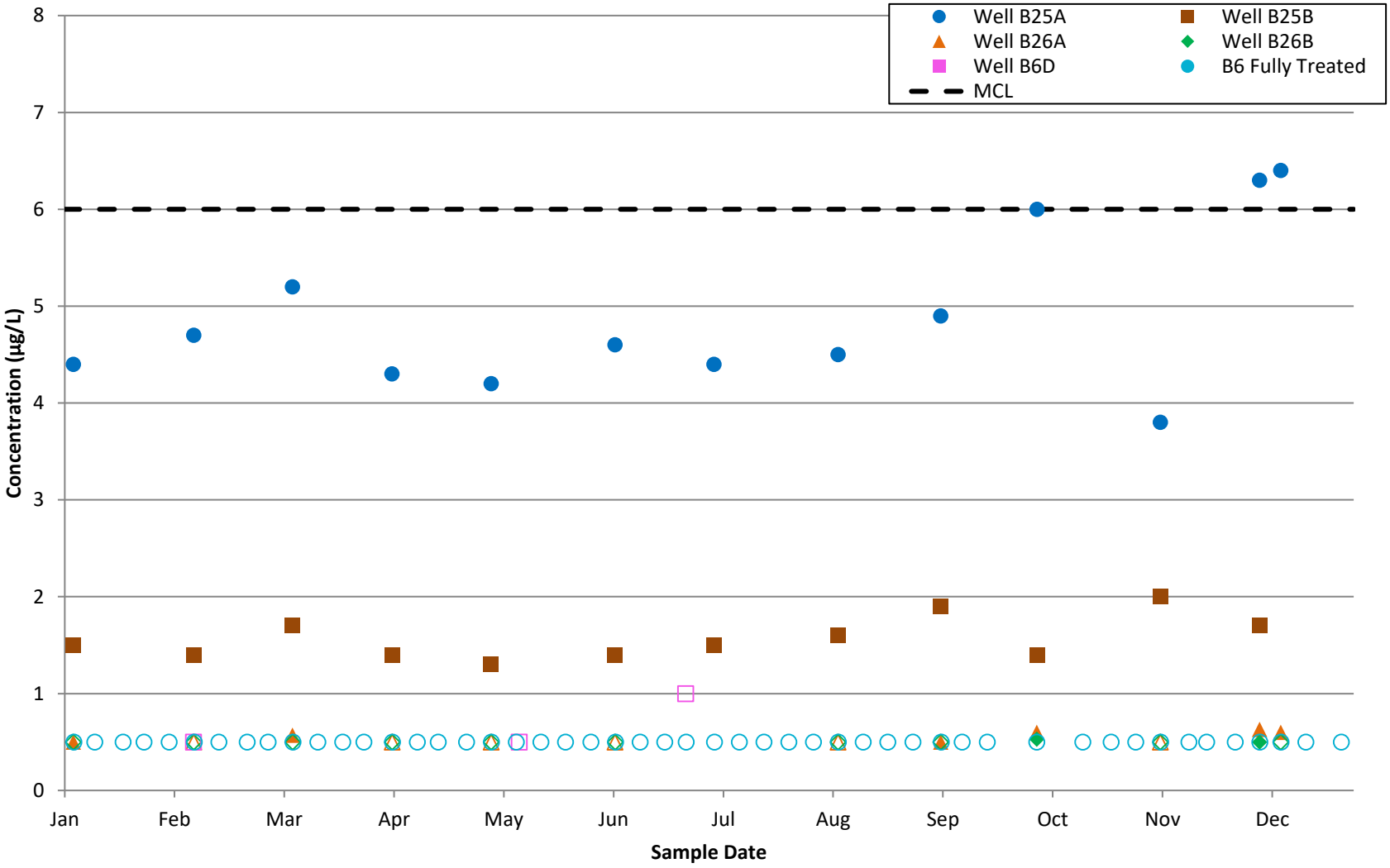
Note: Open symbols signify non-detects.

ERM

TRICHLOROETHENE CONCENTRATIONS, RAW AND TREATED WATER FOR
SAN GABRIEL VALLEY WATER COMPANY B6 TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-29



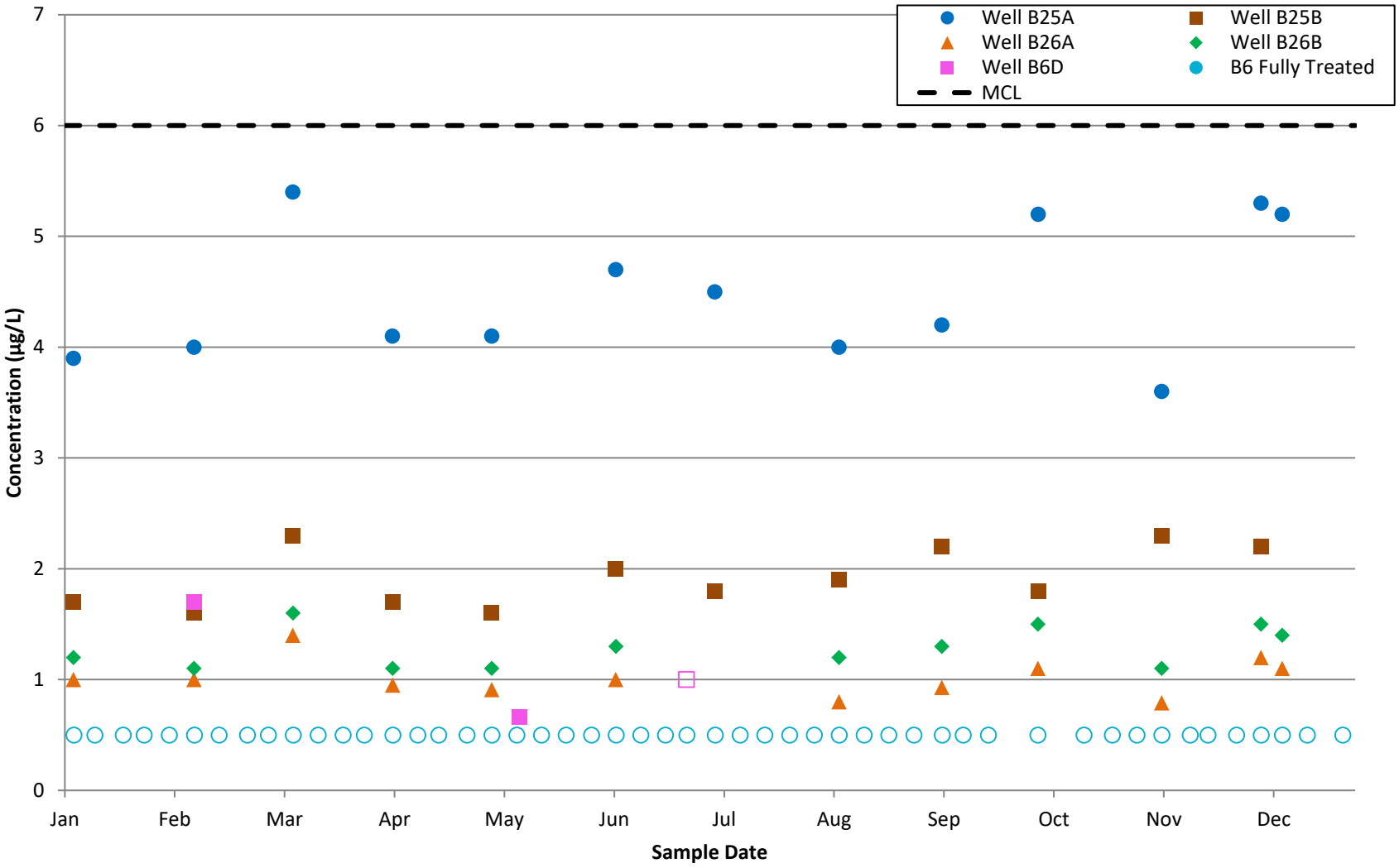
Note: Open symbols signify non-detects.

ERM

1,1-DICHLOROETHENE CONCENTRATIONS, RAW AND TREATED WATER FOR SAN GABRIEL VALLEY WATER COMPANY B6 TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-30



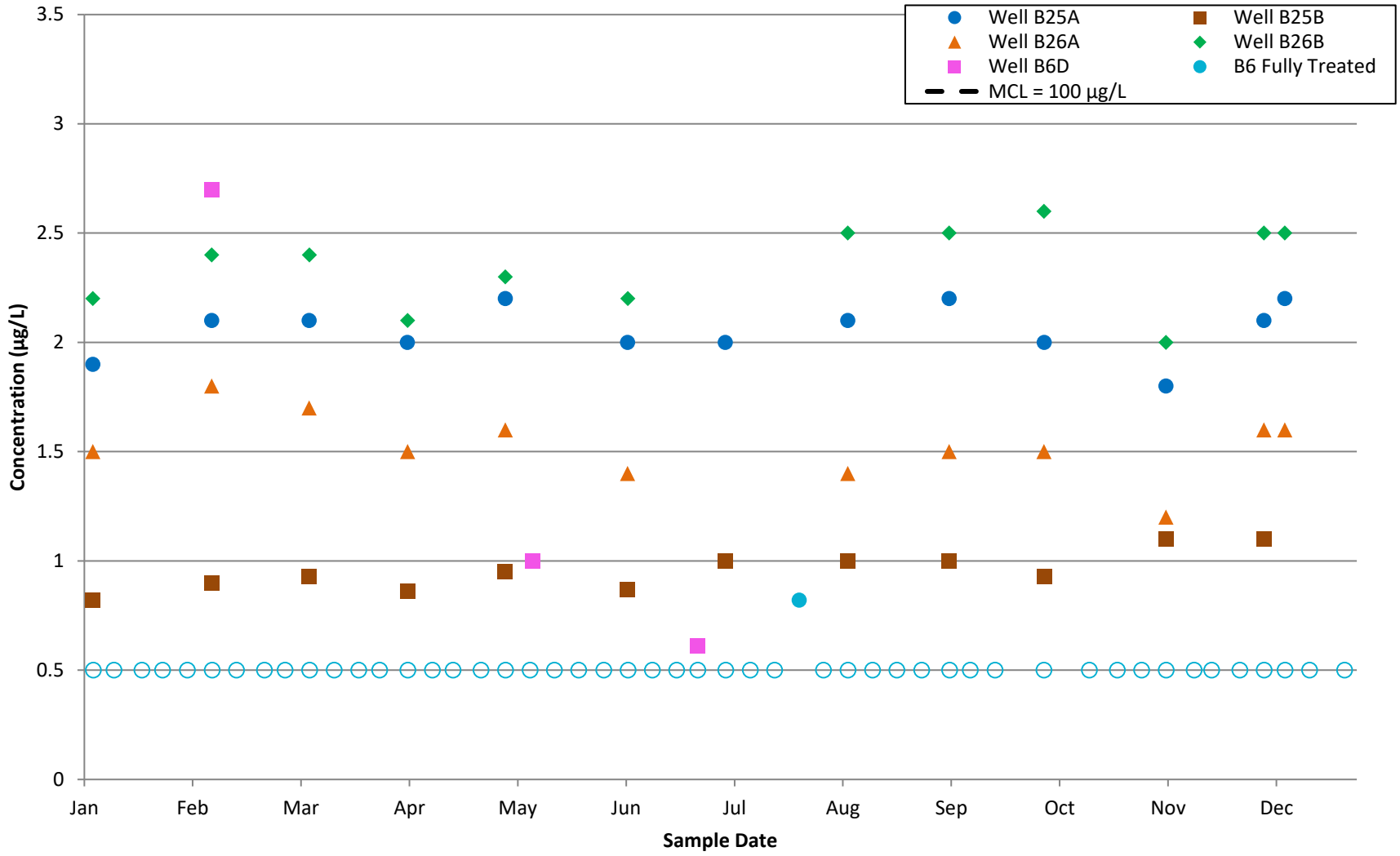
Note: Open symbols signify non-detects.

ERM

CIS-1,2-DICHLOROETHENE CONCENTRATIONS, RAW AND TREATED WATER FOR SAN GABRIEL VALLEY WATER COMPANY B6 TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-31



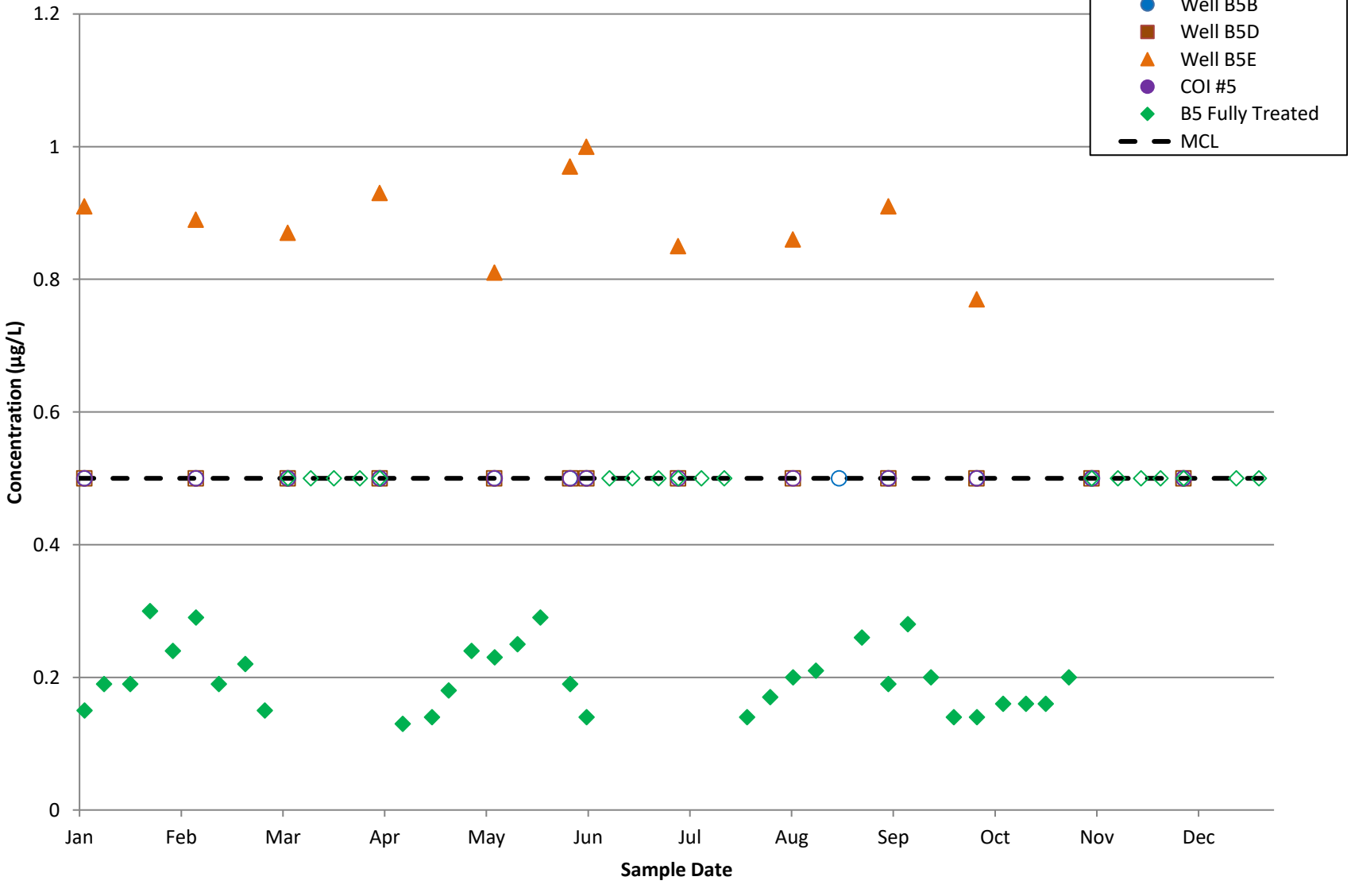
Note: Open symbols signify non-detects.

ERM

CHLOROFORM CONCENTRATIONS, RAW AND TREATED WATER FOR
SAN GABRIEL VALLEY WATER COMPANY B6 TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-32



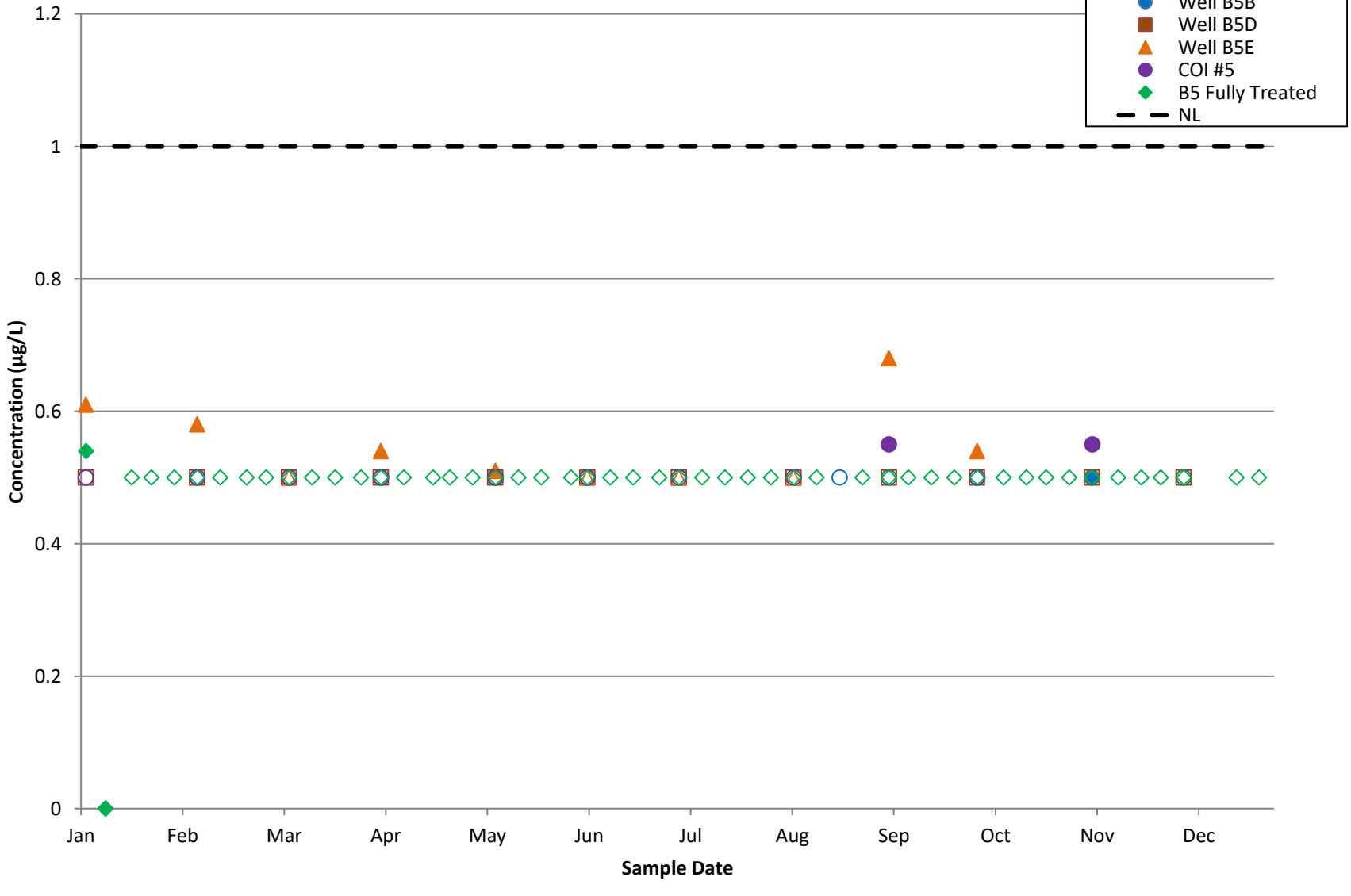
Note: Open symbols signify non-detects.

ERM

1,2-DICHLOROETHANE CONCENTRATIONS, RAW AND TREATED WATER FOR SAN GABRIEL VALLEY WATER COMPANY B5 TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-33



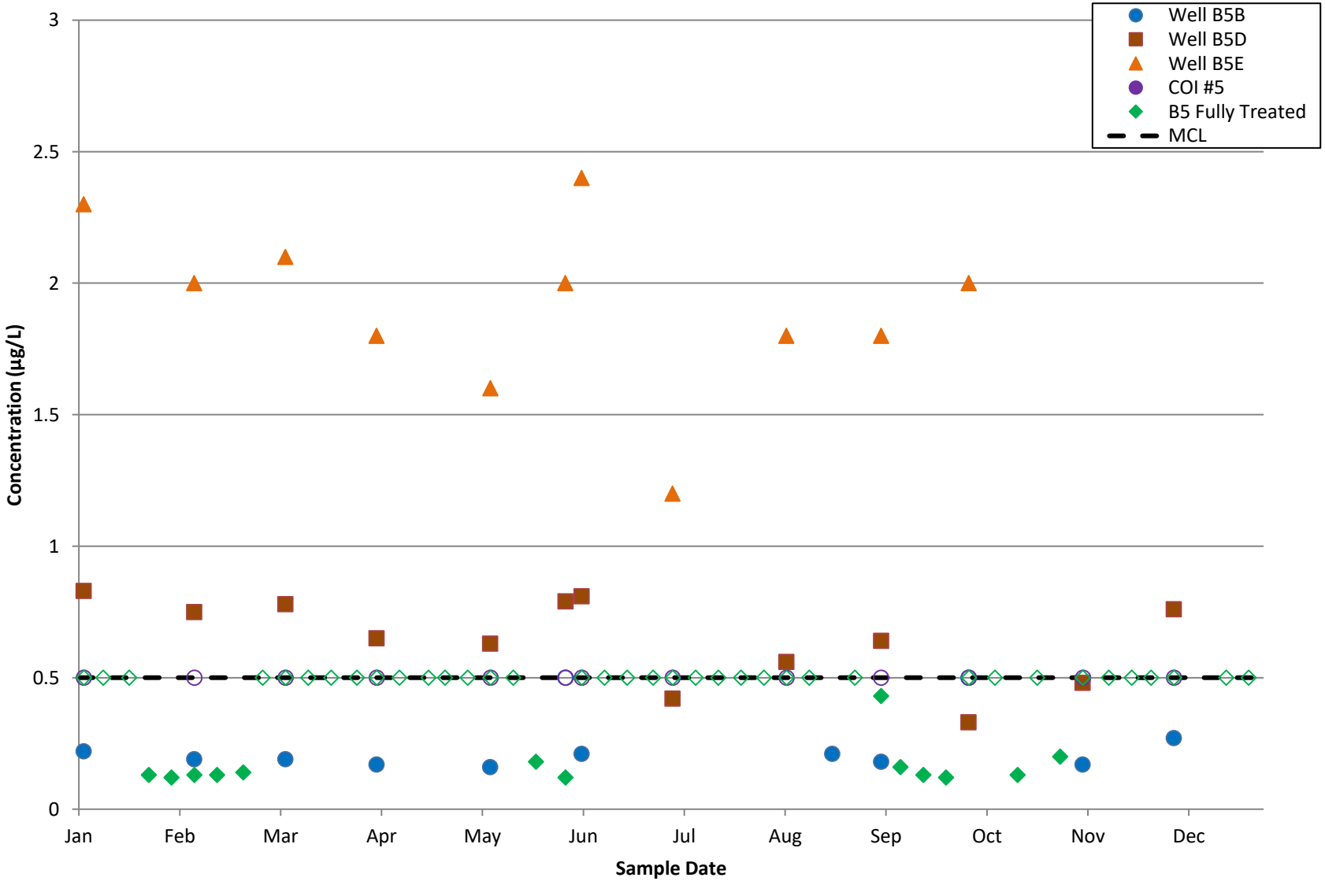
Note: Open symbols signify non-detects.

ERM

1,4-DIOXANE CONCENTRATIONS, RAW AND TREATED WATER FOR
SAN GABRIEL VALLEY WATER COMPANY B5 TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-34



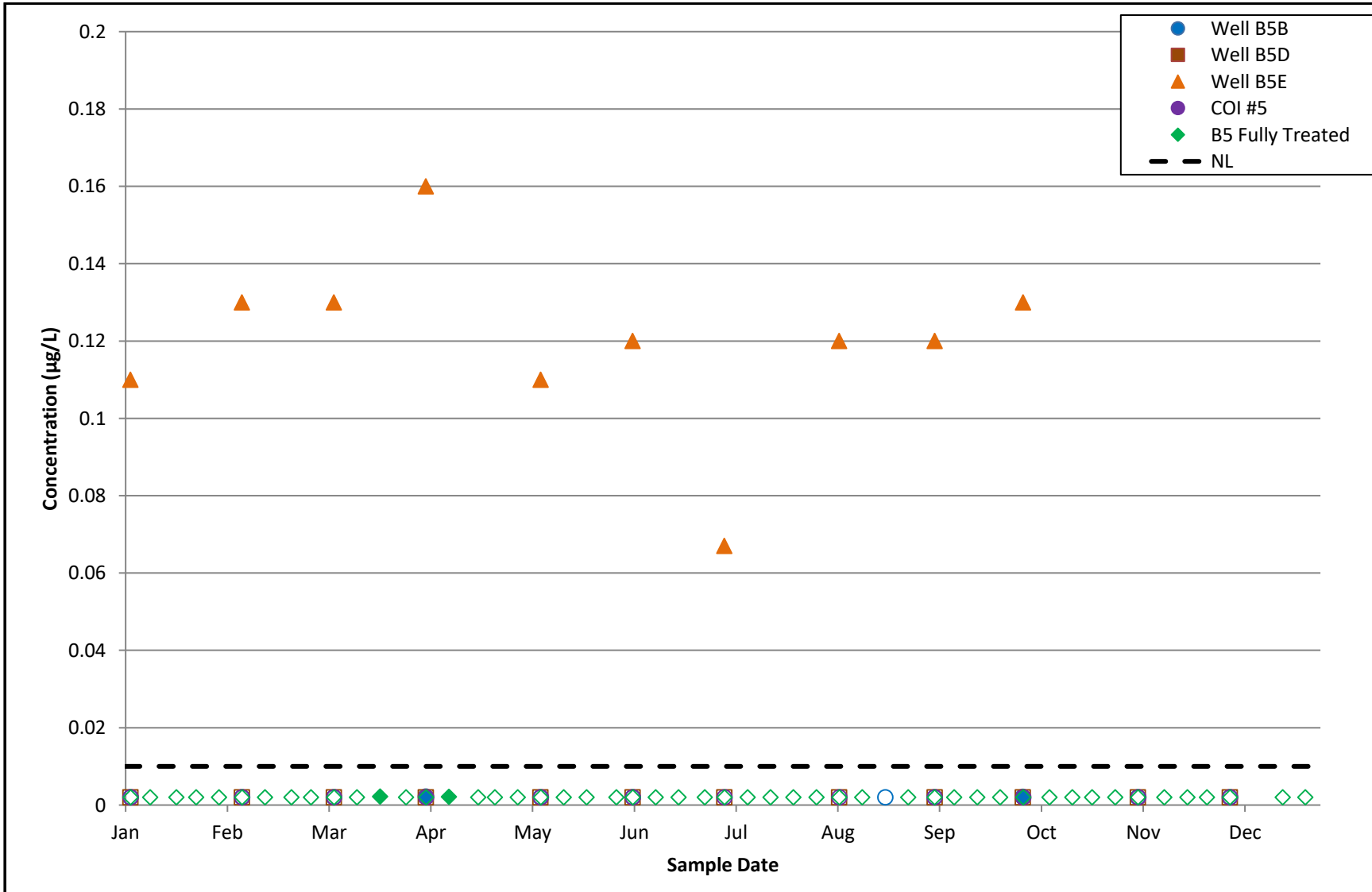
Note: Open symbols signify non-detects.

ERM

CARBON TETRACHLORIDE CONCENTRATIONS, RAW AND TREATED WATER FOR SAN GABRIEL VALLEY WATER COMPANY B5 TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

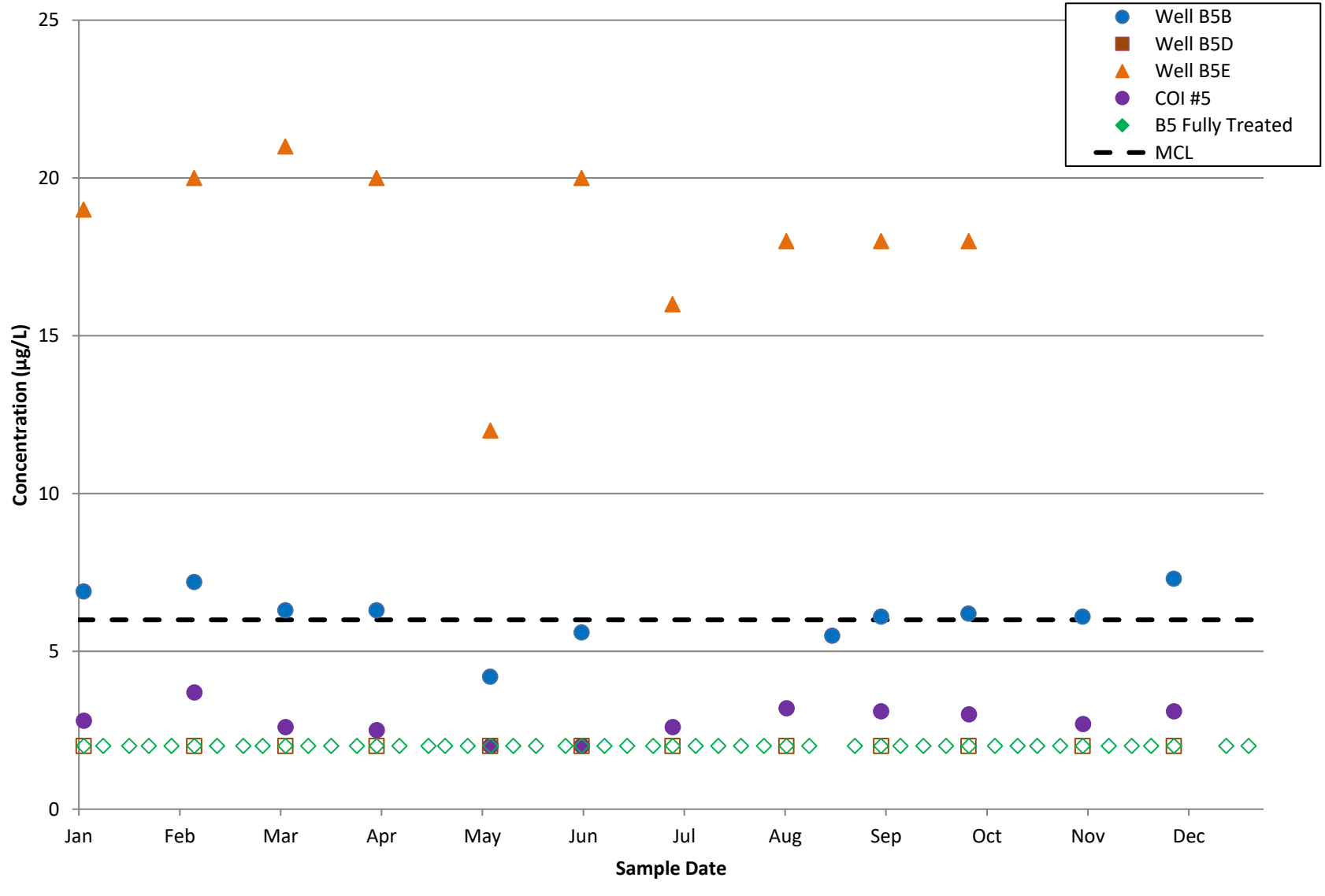
Project No.
32710118

Figure
6-35



Note: Open symbols signify non-detects.

ERM	N-NITROSODIMETHYLAMINE CONCENTRATIONS, RAW AND TREATED WATER FOR SAN GABRIEL VALLEY WATER COMPANY B5 TREATMENT PLANT (2018) Baldwin Park Operable Unit San Gabriel Valley, California	Project No. 32710118 Figure **6-36**



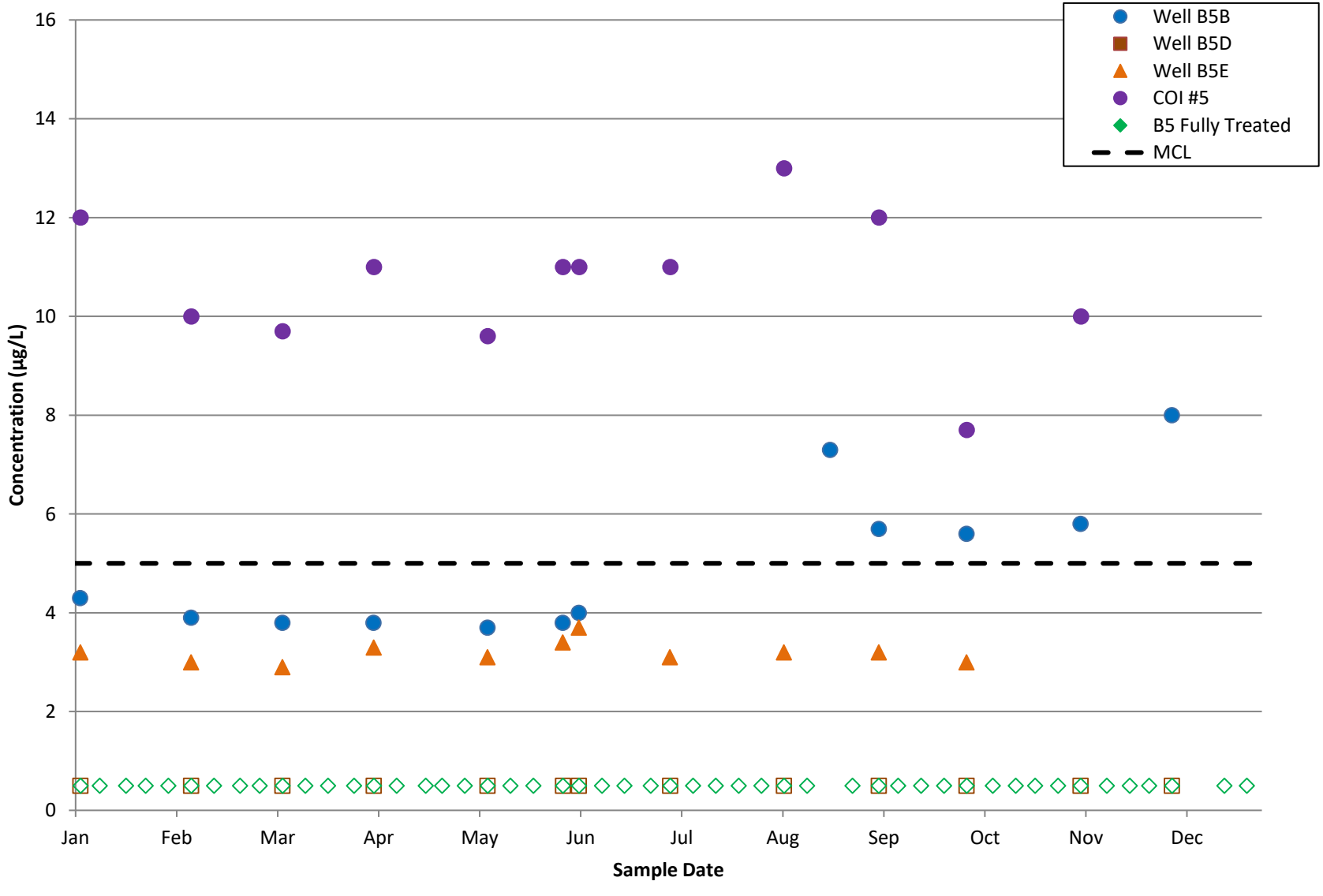
Note: Open symbols signify non-detects.

ERM

PERCHLORATE CONCENTRATIONS, RAW AND TREATED WATER FOR
SAN GABRIEL VALLEY WATER COMPANY B5 TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-37



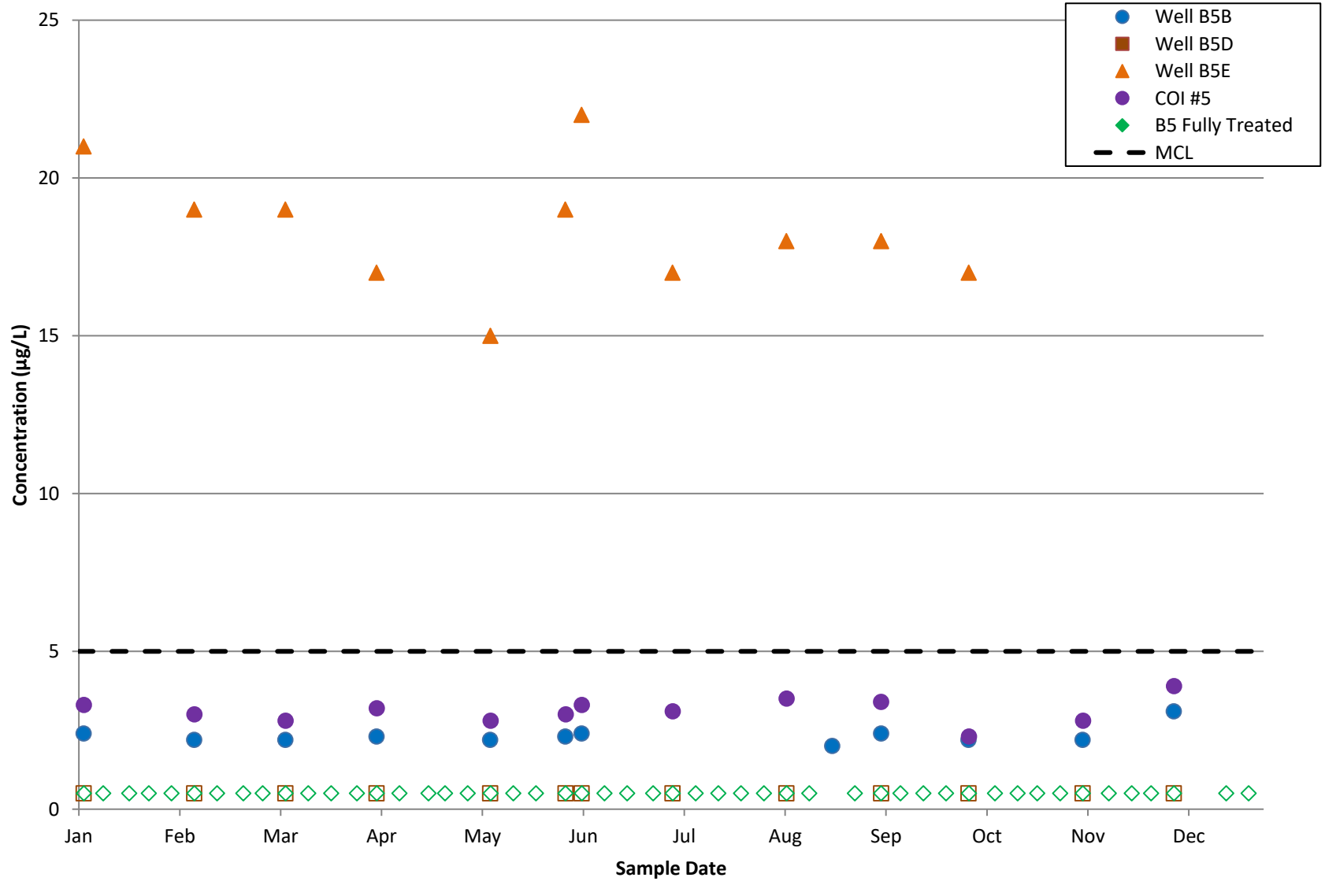
Note: Open symbols signify non-detects.

ERM

TETRACHLOROETHENE CONCENTRATIONS, RAW AND TREATED WATER FOR
SAN GABRIEL VALLEY WATER COMPANY B5 TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-38



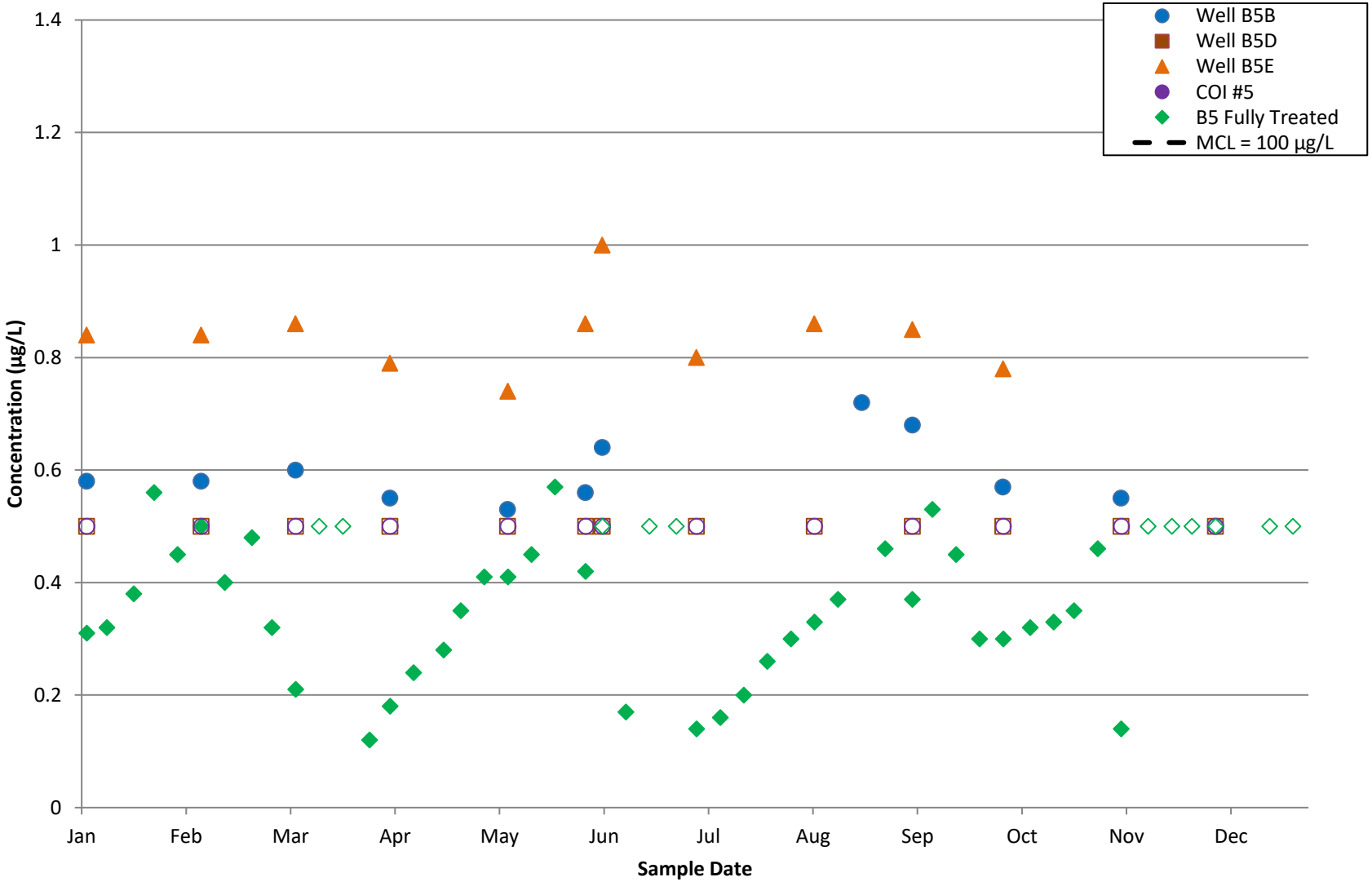
Note: Open symbols signify non-detects.

ERM

TRICHLOROETHENE CONCENTRATIONS, RAW AND TREATED WATER FOR
SAN GABRIEL VALLEY WATER COMPANY B5 TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-39



Note: Open symbols signify non-detects.

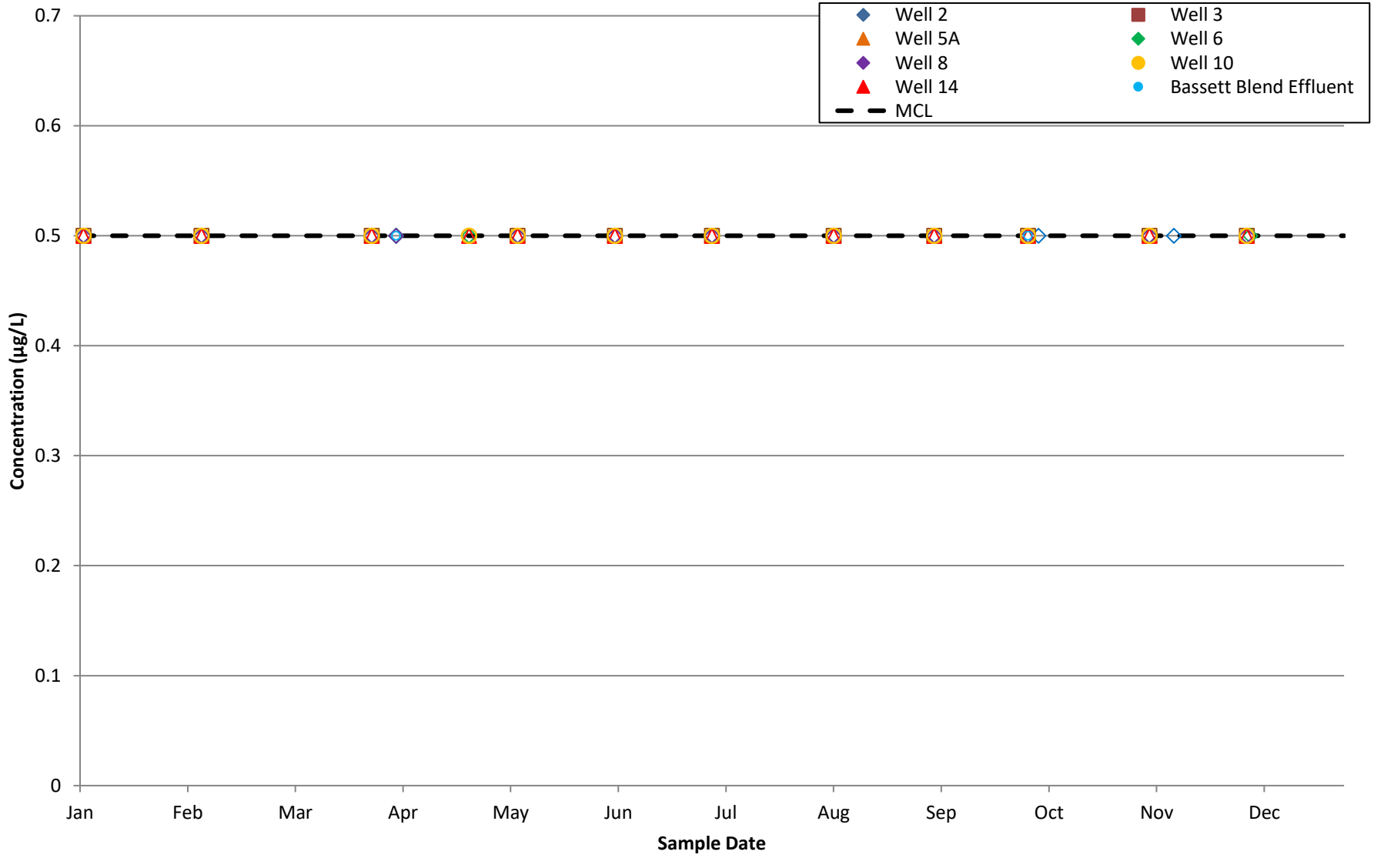
MCL = 100 ug/L

ERM

CHLOROFORM CONCENTRATIONS, RAW AND TREATED WATER FOR
SAN GABRIEL VALLEY WATER COMPANY B5 TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-40



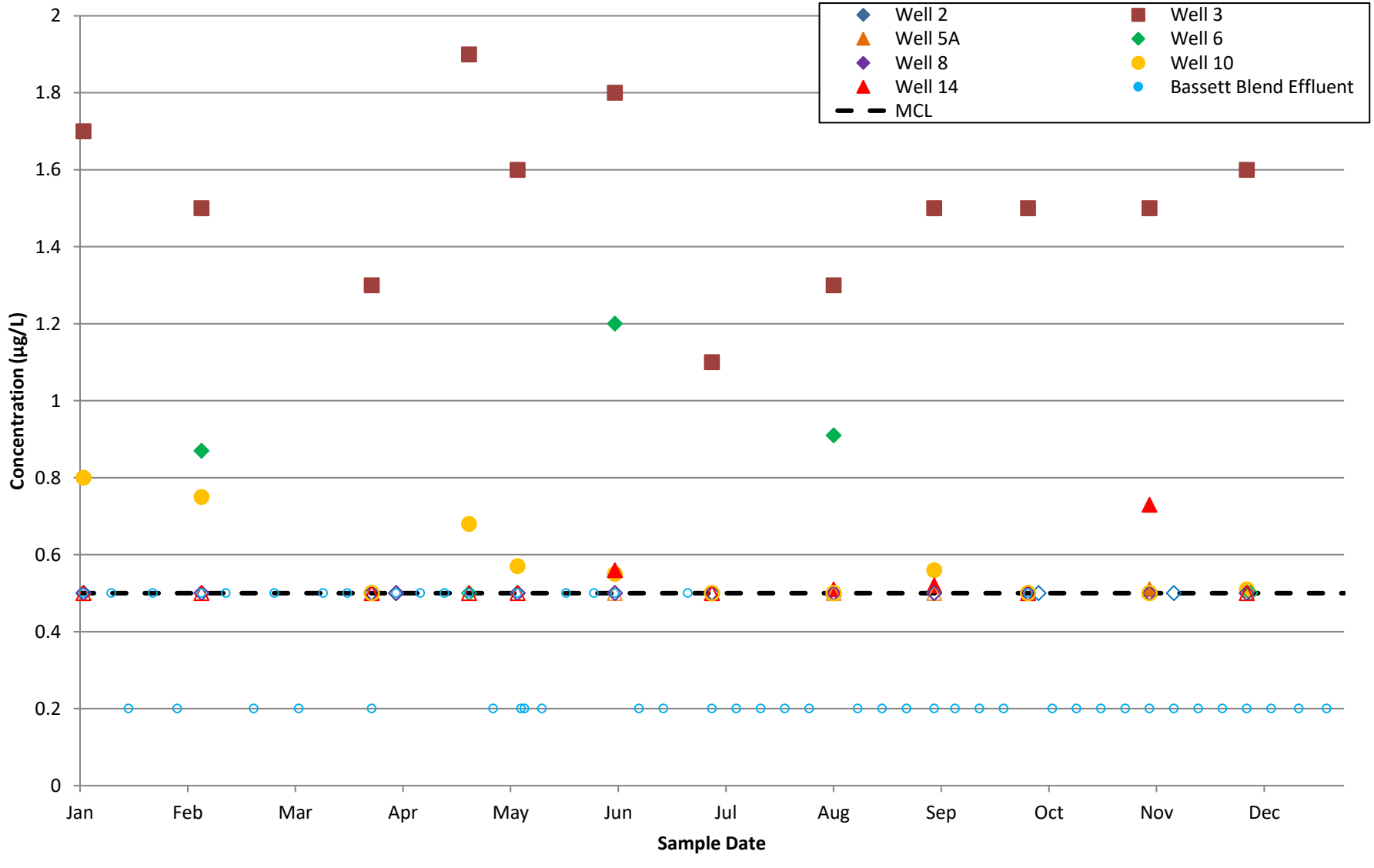
Note: Open symbols signify non-detects.

ERM

1,2-DICHLOROETHANE CONCENTRATIONS, RAW AND TREATED WATER FOR CALIFORNIA DOMESTIC WATER COMPANY TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-41



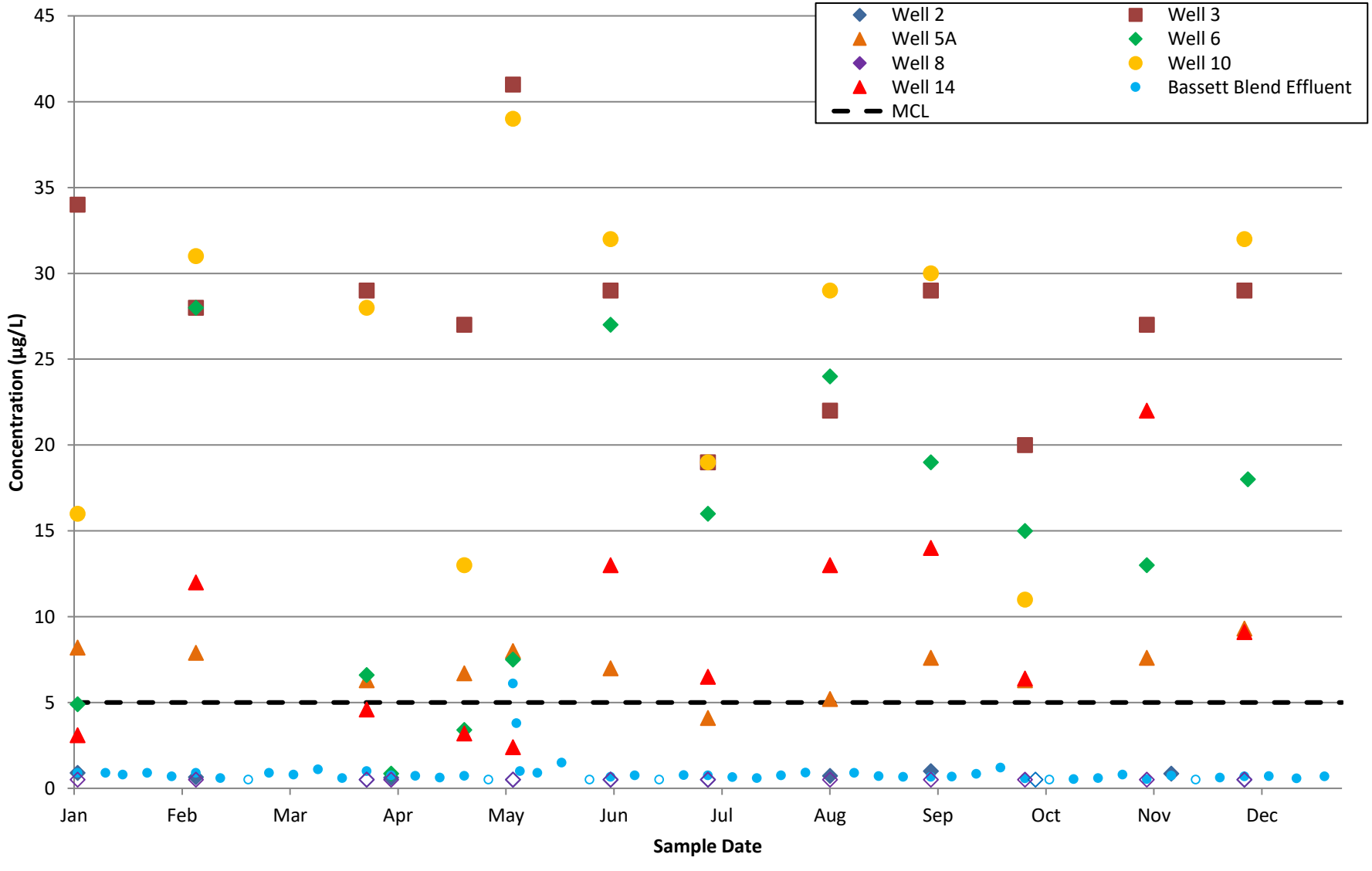
Note: Open symbols signify non-detects.

ERM

CARBON TETRACHLORIDE CONCENTRATIONS, RAW AND TREATED WATER FOR CALIFORNIA DOMESTIC WATER COMPANY TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-42



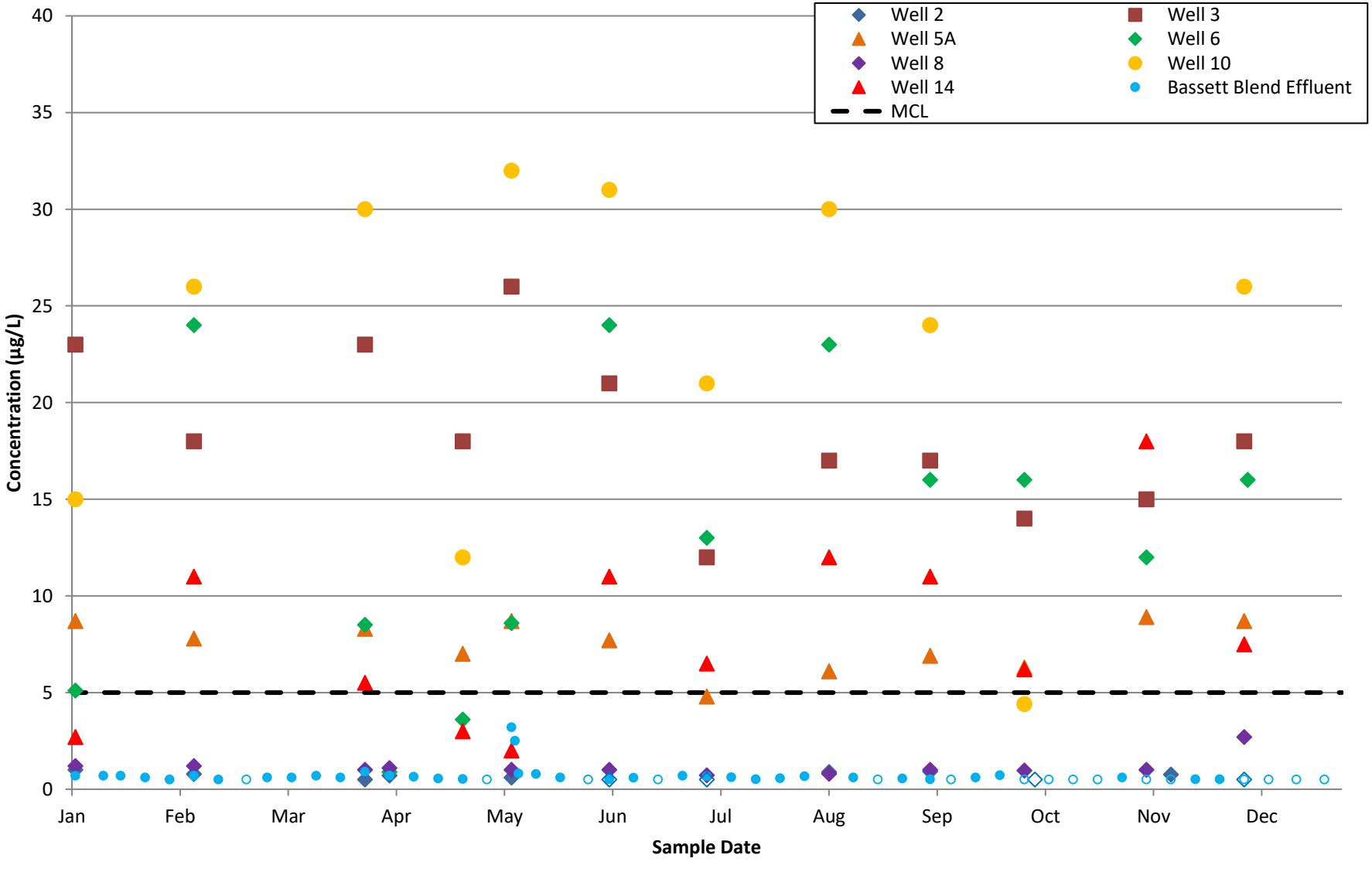
Note: Open symbols signify non-detects.

ERM

TRICHLOROETHENE CONCENTRATIONS, RAW AND TREATED WATER FOR
CALIFORNIA DOMESTIC WATER COMPANY TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-43



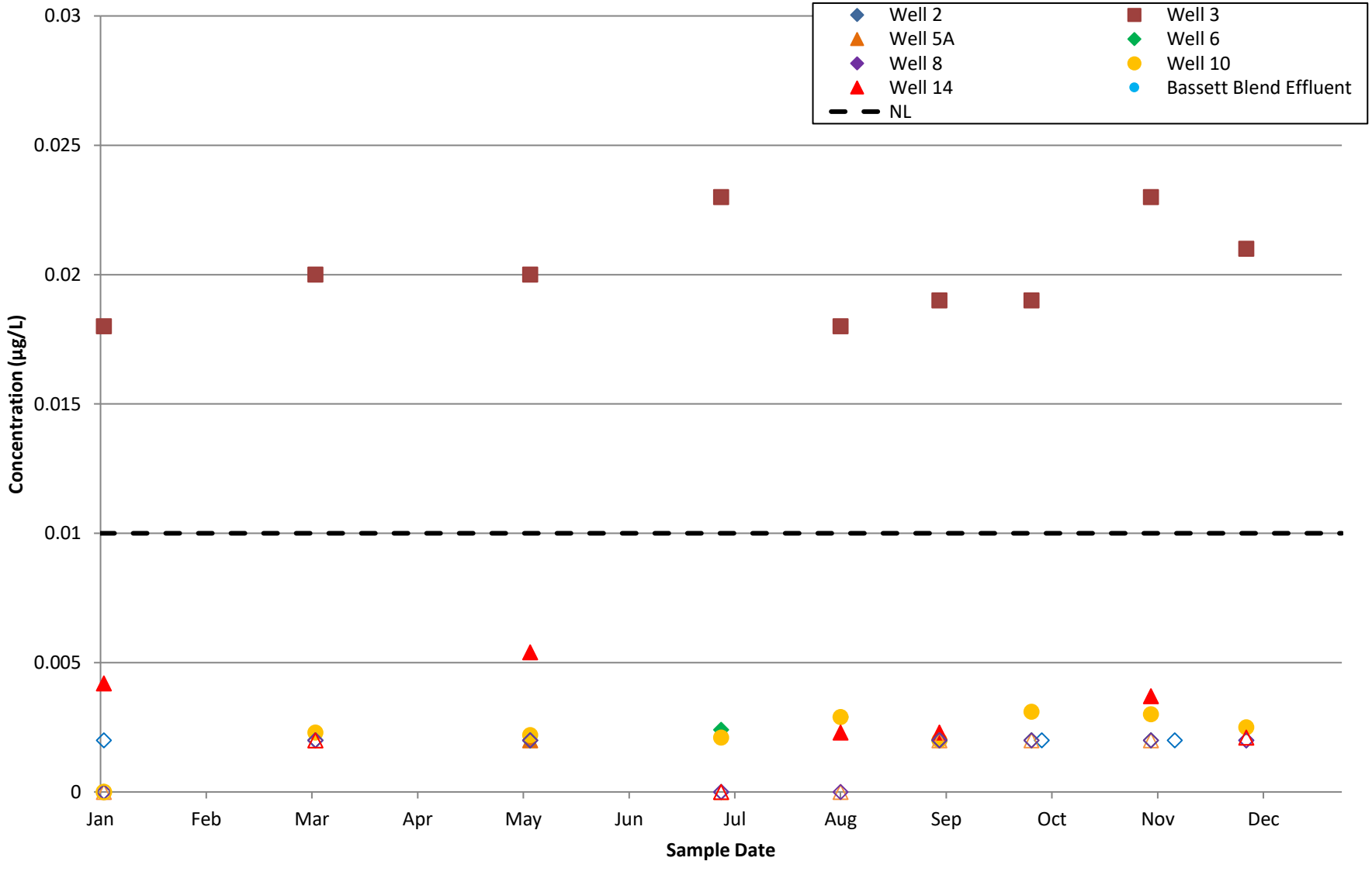
Note: Open symbols signify non-detects.

ERM

TETRACHLOROETHENE CONCENTRATIONS, RAW AND TREATED WATER FOR CALIFORNIA DOMESTIC WATER COMPANY TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-44



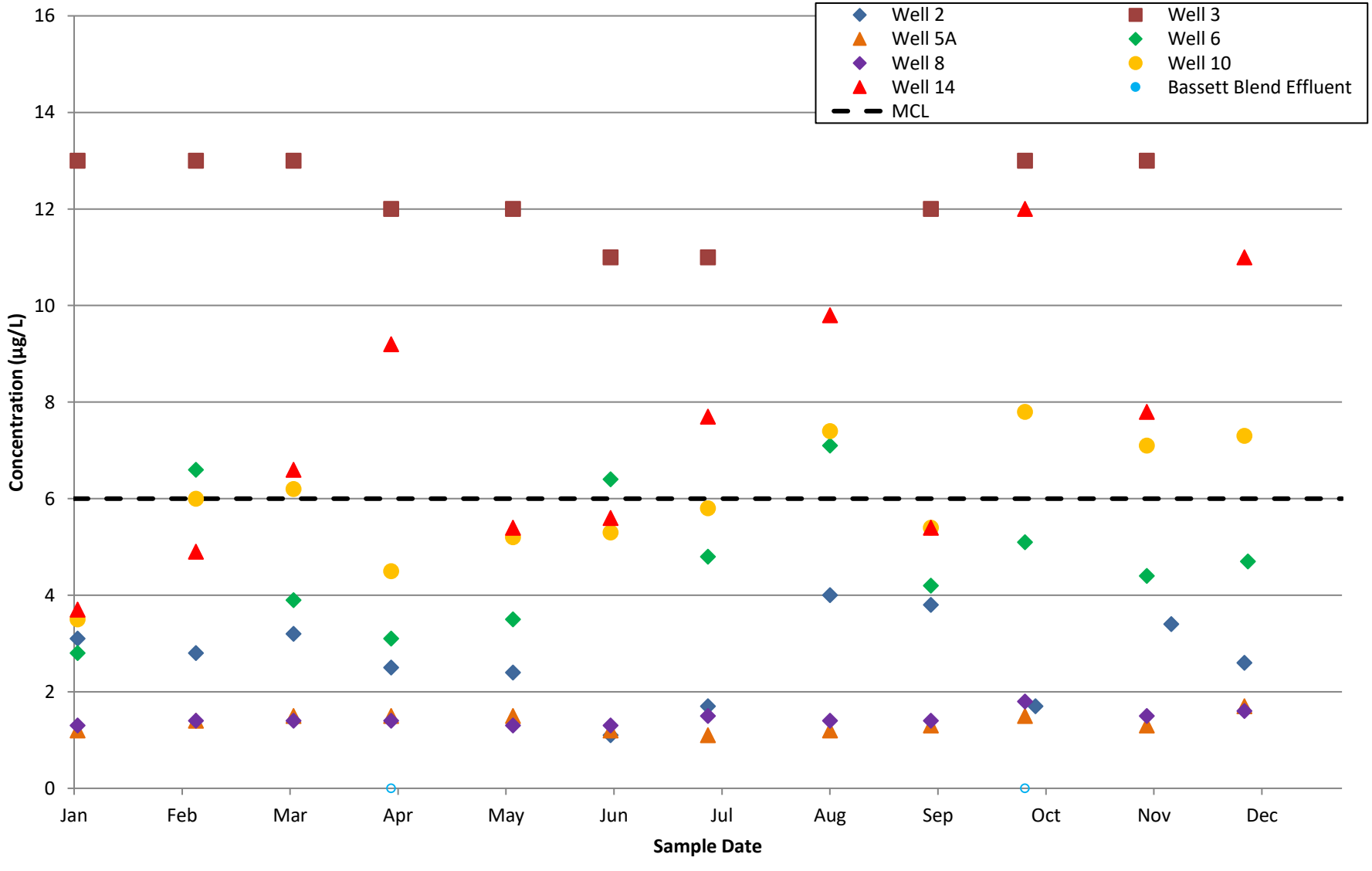
Note: Open symbols signify non-detects.

ERM

N-NITROSODIMETHYLAMINE CONCENTRATIONS, RAW AND TREATED WATER FOR CALIFORNIA DOMESTIC WATER COMPANY TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-45



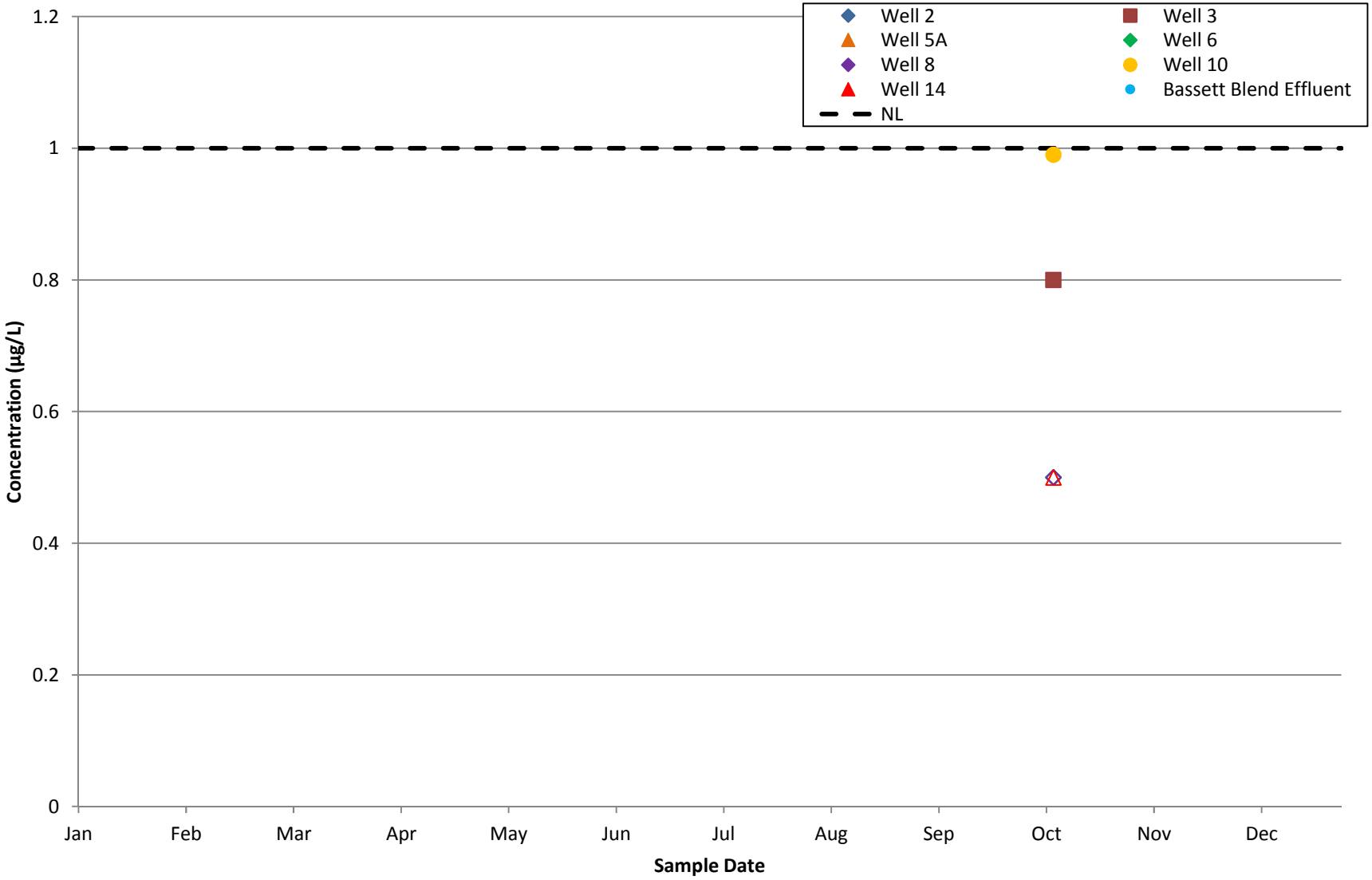
Note: Open symbols signify non-detects.

ERM

PERCHLORATE CONCENTRATIONS, RAW AND TREATED WATER FOR CALIFORNIA DOMESTIC WATER COMPANY TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-46



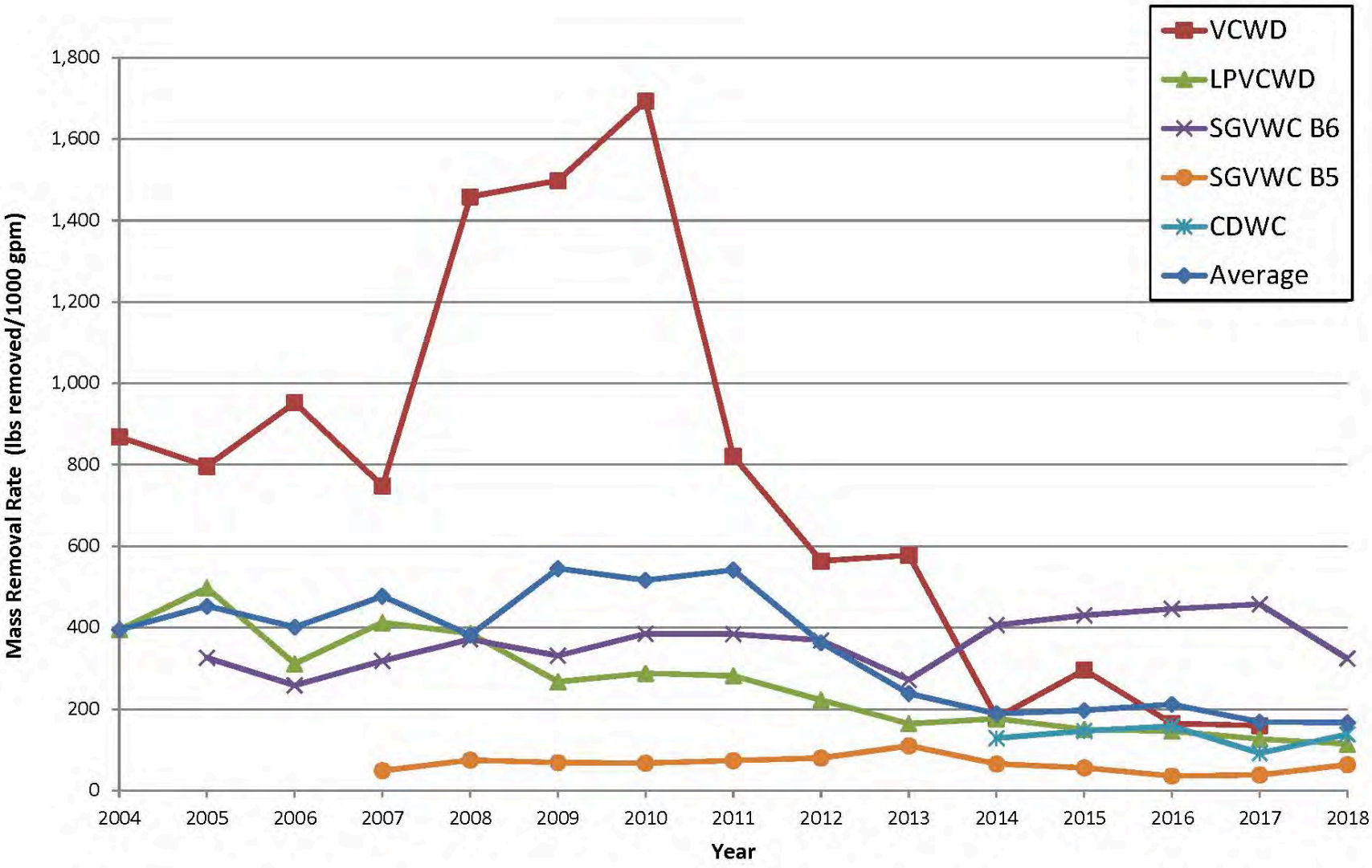
Note: Open symbols signify non-detects.

ERM

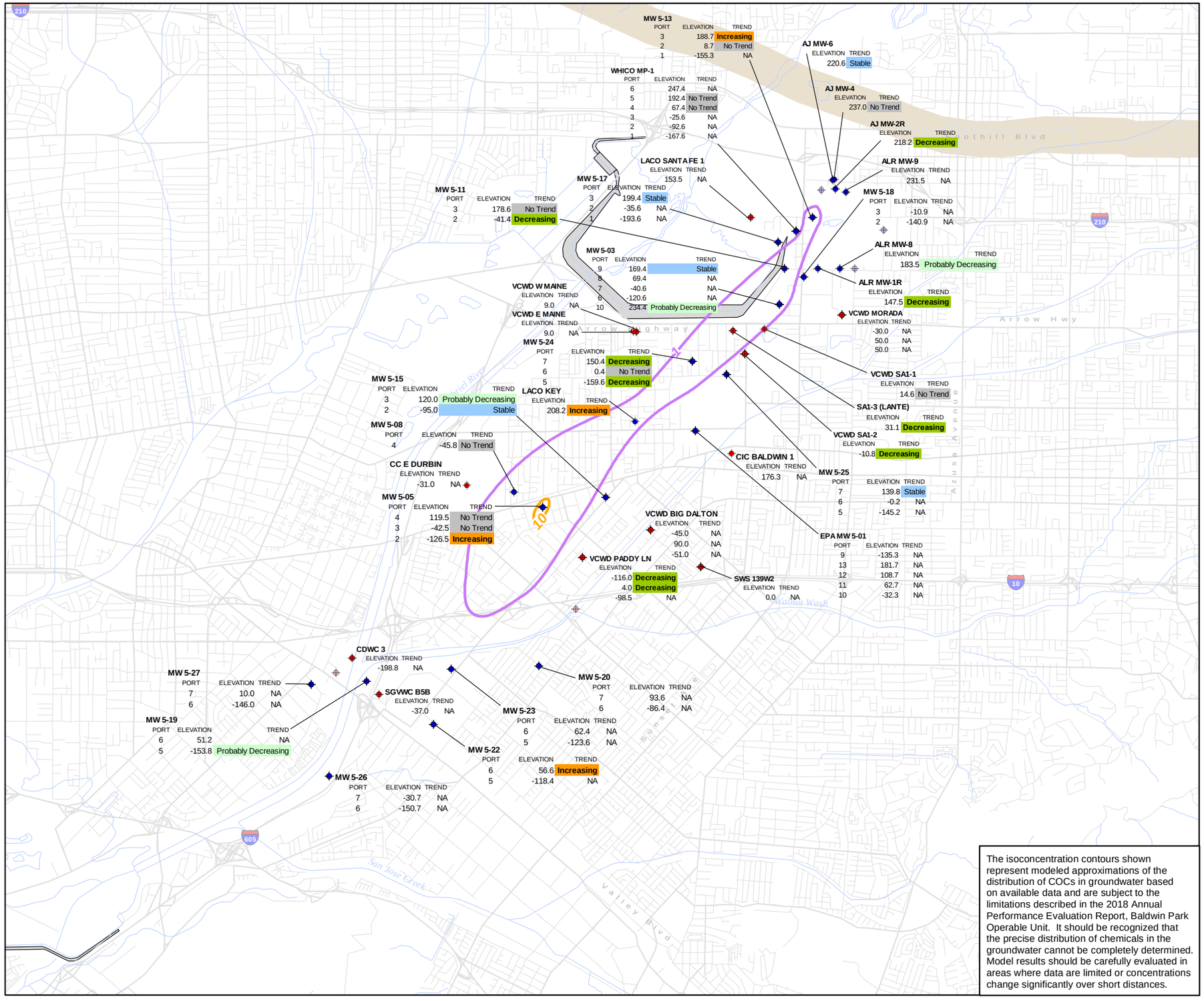
1,4-DIOXANE CONCENTRATIONS, RAW AND TREATED WATER FOR CALIFORNIA DOMESTIC WATER COMPANY TREATMENT PLANT (2018)
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No.
32710118

Figure
6-47



MASS REMOVAL RATE VERSUS TIME FOR BPOU WATER TREATMENT FACILITIES (2004-2018)
Baldwin Park Operable Unit
San Gabriel Valley, California



EXPLANATION

- Production or extraction well
- Production or extraction well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Monitoring and multiport well
- Monitoring and multiport well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- 1,4-Dioxane composite isoconcentration contour for the elevation interval above -200 feet (1 ug/L)
- 1,4-Dioxane composite isoconcentration contour for the elevation interval above -200 feet (10 ug/L)
- Duarte Fault Zone

NOTES:

1. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, Earth Volumetric Studio® (EVS).
2. Posted trends are based on sampling results for the specified elevation range.
3. Mann-Kendall trend evaluations were performed using data collected from 2004-2018.
4. A complete summary of the Mann-Kendall analysis is presented in Appendix C. The following decision matrix was used to interpret trends based on the calculated confidence of the S test statistic:

Mann-Kendall Statistic (S)	Confidence in Trend	Concentration Trend
S<0	95%	Decreasing
S<0	90-95%	Probably Decreasing
S≤0	90% and COV<1	Stable
S≤0	90% and COV≥1	No Trend
S>0	<90%	No Trend
S>0	90-95%	Probably Increasing
S>0	>95%	Increasing
Not analyzed due to <50% detection frequency		NA

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2018 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

5,000 0 5,000

SCALE IN FEET

N

MANN-KENDALL TREND ANALYSIS FOR 1,4-DIOXANE RESULTS, 2004-2018 ABOVE -200 FEET MSL

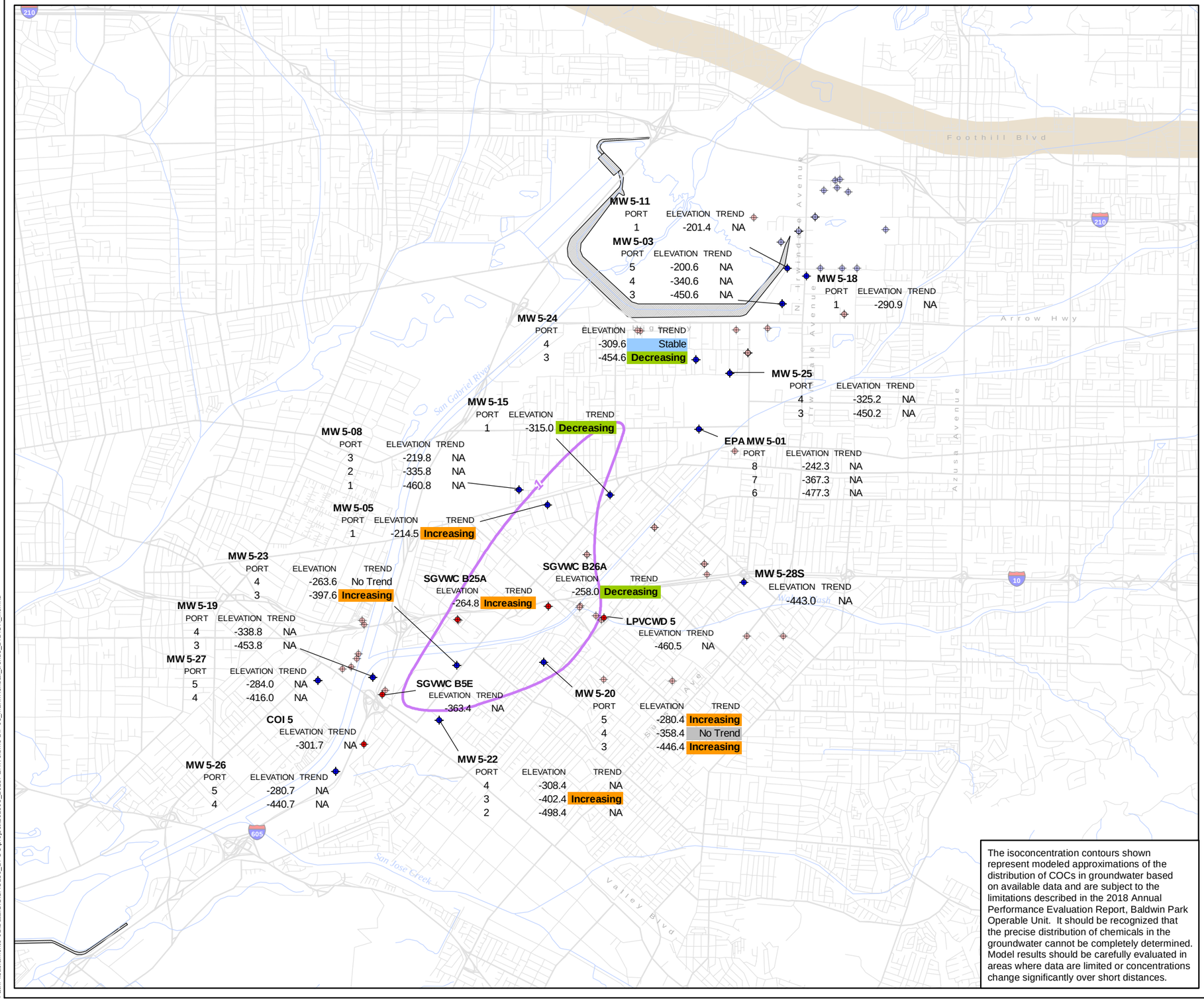
Baldwin Park Operable Unit
San Gabriel Valley, California

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Figure **7-2**

Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\20190 3_2018PERV\volume 1\7-02_MannKendall_trends_14DIOX_sh.mxd



EXPLANATION

- Production or extraction well
- Production or extraction well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Monitoring and multiport well
- Monitoring and multiport well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- 1,4-Dioxane composite isoconcentration contour for the elevation interval between -200 and -500 feet (1 ug/L)
- Duarte Fault Zone

NOTES:

1. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, Earth Volumetric Studio® (EVS).
2. Posted trends are based on sampling results for the specified elevation range.
3. Mann-Kendall trend evaluations were performed using data collected from 2004-2018.
4. A complete summary of the Mann-Kendall analysis is presented in Appendix C. The following decision matrix was used to interpret trends based on the calculated confidence of the S test statistic:

Mann-Kendall Statistic (S)	Confidence in Trend	Concentration Trend
S<0	95%	Decreasing
S<0	90-95%	Probably Decreasing
S≤0	90% and COV<1	Stable
S≤0	90% and COV≥1	No Trend
S>0	<90%	No Trend
S>0	90-95%	Probably Increasing
S>0	>95%	Increasing
Not analyzed due to <50% detection frequency		NA

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2018 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

5,000 0 5,000

SCALE IN FEET

N

MANN-KENDALL TREND ANALYSIS FOR 1,4-DIOXANE RESULTS, 2004-2018 BETWEEN -200 AND -500 FEET MSL

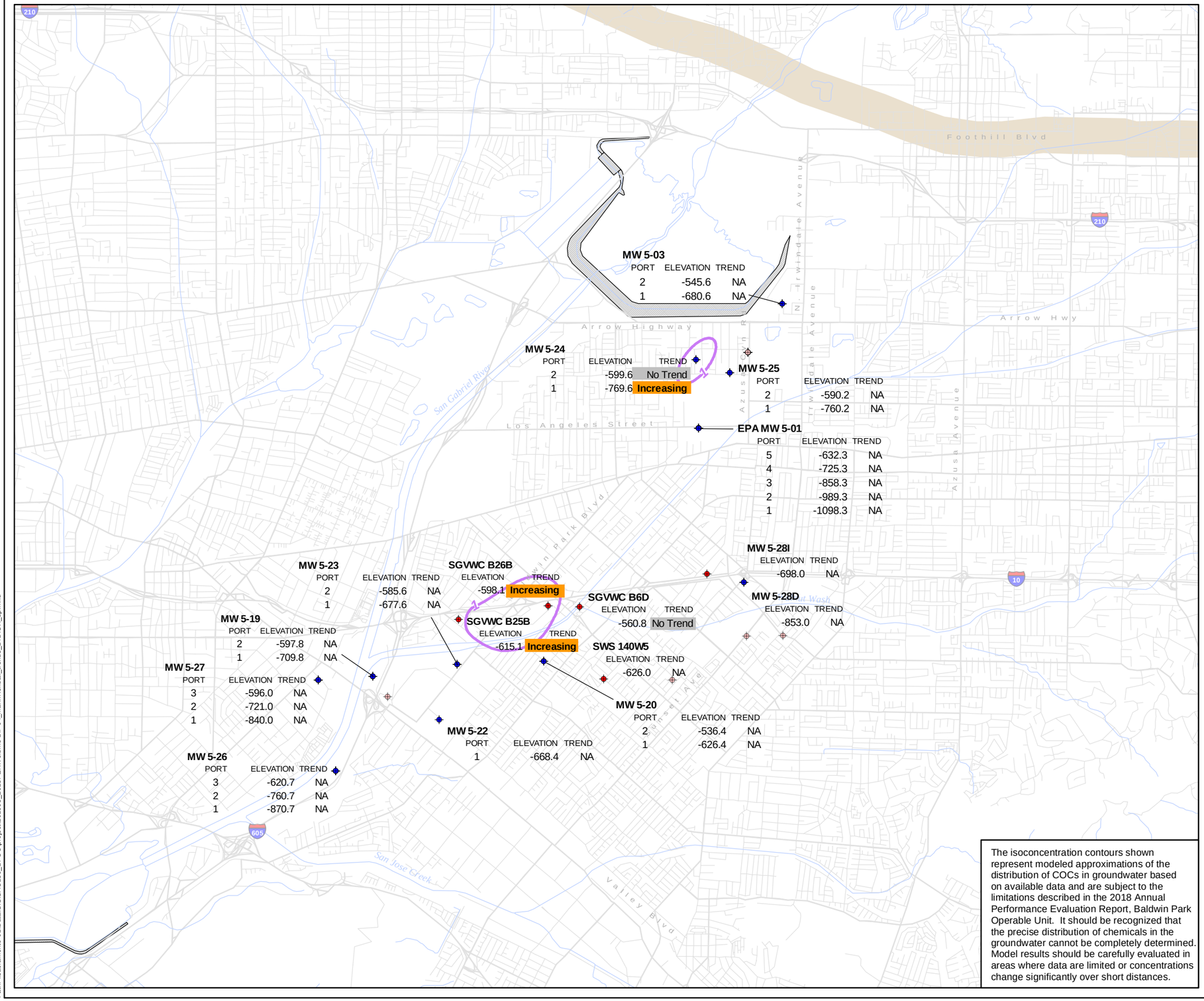
Baldwin Park Operable Unit
San Gabriel Valley, California

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Project No.: SAC150

Figure **7-3**

Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PERVolume 1\7-03_MannKendall_trends_14DIOX_int.mxd



EXPLANATION

- Production or extraction well
- Production or extraction well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Monitoring and multiport well
- Monitoring and multiport well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- 1,4-Dioxane composite isoconcentration contour for the elevation interval below -500 feet (1 ug/L)
- Duarte Fault Zone

NOTES:

1. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, Earth Volumetric Studio® (EVS).
2. Posted trends are based on sampling results for the specified elevation range.
3. Mann-Kendall trend evaluations were performed using data collected from 2004-2018.
4. A complete summary of the Mann-Kendall analysis is presented in Appendix C. The following decision matrix was used to interpret trends based on the calculated confidence of the S test statistic:

Mann-Kendall Statistic (S)	Confidence in Trend	Concentration Trend
S<0	95%	Decreasing
S<0	90-95%	Probably Decreasing
S≤0	90% and COV<1	Stable
S≤0	90% and COV≥1	No Trend
S>0	<90%	No Trend
S>0	90-95%	Probably Increasing
S>0	>95%	Increasing
Not analyzed due to <50% detection frequency		NA

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2018 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

5,000 0 5,000

SCALE IN FEET

N

MANN-KENDALL TREND ANALYSIS FOR 1,4-DIOXANE RESULTS, 2004-2018 BELOW -500 FEET MSL

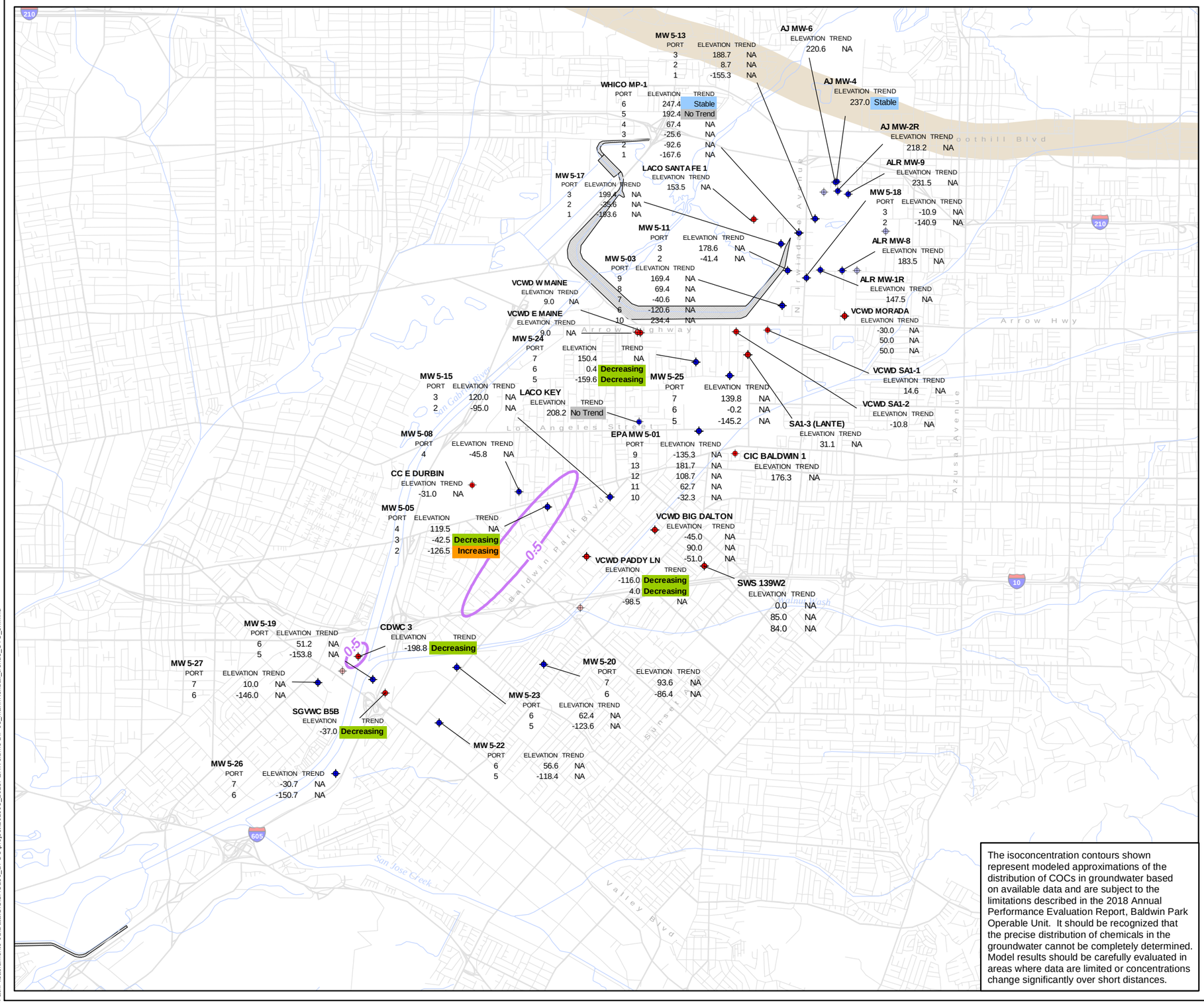
Baldwin Park Operable Unit
San Gabriel Valley, California

Geosyntec consultants

Project No.: SAC150

Figure **7-4**

Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PERVolume 1\7-04_MannKendall_trends_14DIOX_dp.mxd



EXPLANATION

- Production or extraction well
- Production or extraction well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Monitoring and multiport well
- Monitoring and multiport well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Carbon Tetrachloride composite isoconcentration contour for the elevation interval above -200 feet (0.5 ug/L)
- Duarte Fault Zone

NOTES:

1. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, Earth Volumetric Studio® (EVS).
2. Posted trends are based on sampling results for the specified elevation range.
3. Mann-Kendall trend evaluations were performed using data collected from 2004-2018.
4. A complete summary of the Mann-Kendall analysis is presented in Appendix C. The following decision matrix was used to interpret trends based on the calculated confidence of the S test statistic:

Mann-Kendall Statistic (S)	Confidence in Trend	Concentration Trend
S<0	95%	**Decreasing**
S<0	90-95%	Probably Decreasing
S≤0	90% and COV<1	Stable
S≤0	90% and COV≥1	No Trend
S>0	<90%	No Trend
S>0	90-95%	Probably Increasing
S>0	>95%	**Increasing**
Not analyzed due to <50% detection frequency		NA

5,000 0 5,000
SCALE IN FEET

N

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2018 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

MANN-KENDALL TREND ANALYSIS FOR CARBON TETRACHLORIDE RESULTS, 2004-2018, ABOVE -200 FEET MSL

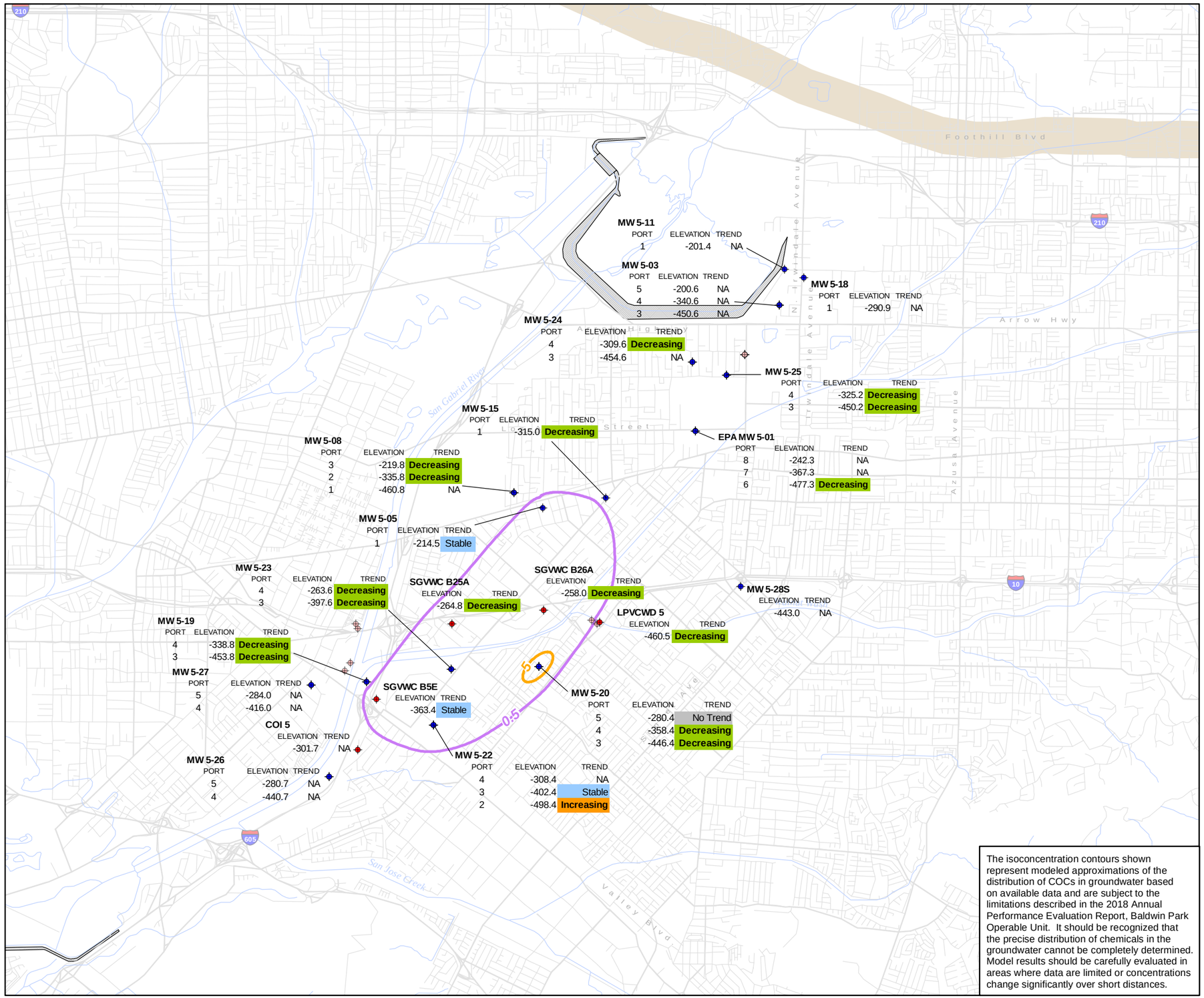
Baldwin Park Operable Unit
San Gabriel Valley, California

Geosyntec consultants

Project No.: SAC150

Figure **7-5**

Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\20190 3_2018PERVolume 1\7-05_MannKendall_trends_CTC_sh.mxd



EXPLANATION

- Production or extraction well
- Production or extraction well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Monitoring and multiport well
- Monitoring and multiport well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Carbon tetrachloride composite isoconcentration contour for the elevation interval between -200 and -500 feet (0.5 ug/L)
- Carbon tetrachloride composite isoconcentration contour for the elevation interval between -200 and -500 feet (5 ug/L)
- Duarte Fault Zone

NOTES:

1. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, Earth Volumetric Studio® (EVS).
2. Posted trends are based on sampling results for the specified elevation range.
3. Mann-Kendall trend evaluations were performed using data collected from 2004-2018.
4. A complete summary of the Mann-Kendall analysis is presented in Appendix C. The following decision matrix was used to interpret trends based on the calculated confidence of the S test statistic:

Mann-Kendall Statistic (S)	Confidence in Trend	Concentration Trend
S<0	95%	Decreasing
S<0	90-95%	Probably Decreasing
S≤0	90% and COV<1	Stable
S≤0	90% and COV≥1	No Trend
S>0	<90%	No Trend
S>0	90-95%	Probably Increasing
S>0	>95%	Increasing
Not analyzed due to <50% detection frequency		NA

5,000 0 5,000

SCALE IN FEET

N

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2018 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

MANN-KENDALL TREND ANALYSIS FOR CARBON TETRACHLORIDE RESULTS, 2004-2018 BETWEEN -200 AND -500 FEET MSL

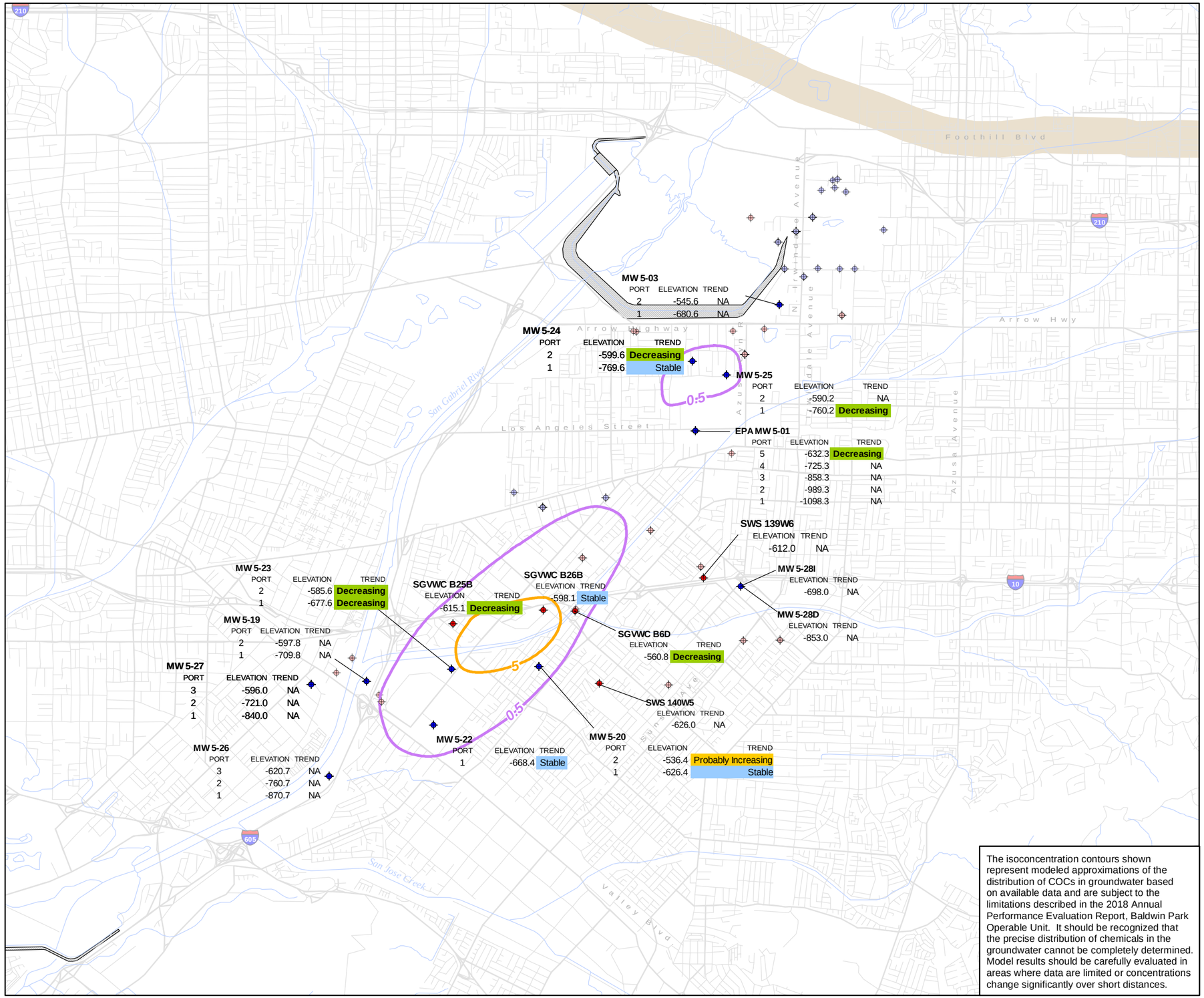
Baldwin Park Operable Unit
San Gabriel Valley, California

Geosyntec consultants

Project No.: SAC150

Figure **7-6**

Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PERVolume 1\7-06_MannKendall_trends_CTC_int.mxd



EXPLANATION

- Production or extraction well
- Production or extraction well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Monitoring and multiport well
- Monitoring and multiport well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Carbon tetrachloride composite isoconcentration contour for the elevation interval below -500 feet (0.5 ug/L)
- Carbon tetrachloride composite isoconcentration contour for the elevation interval below -500 feet (5 ug/L)
- Duarte Fault Zone

NOTES:

1. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, Earth Volumetric Studio® (EVS).
2. Posted trends are based on sampling results for the specified elevation range.
3. Mann-Kendall trend evaluations were performed using data collected from 2004-2018.
4. A complete summary of the Mann-Kendall analysis is presented in Appendix C. The following decision matrix was used to interpret trends based on the calculated confidence of the S test statistic:

Mann-Kendall Statistic (S)	Confidence in Trend	Concentration Trend
S<0	95%	Decreasing
S<0	90-95%	Probably Decreasing
S≤0	90% and COV<1	Stable
S≤0	90% and COV≥1	No Trend
S>0	<90%	No Trend
S>0	90-95%	Probably Increasing
S>0	>95%	Increasing
Not analyzed due to <50% detection frequency		NA

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2018 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

5,000 0 5,000

SCALE IN FEET

N

MANN-KENDALL TREND ANALYSIS FOR CARBON TETRACHLORIDE RESULTS, 2004-2018 BELOW -500 FEET MSL

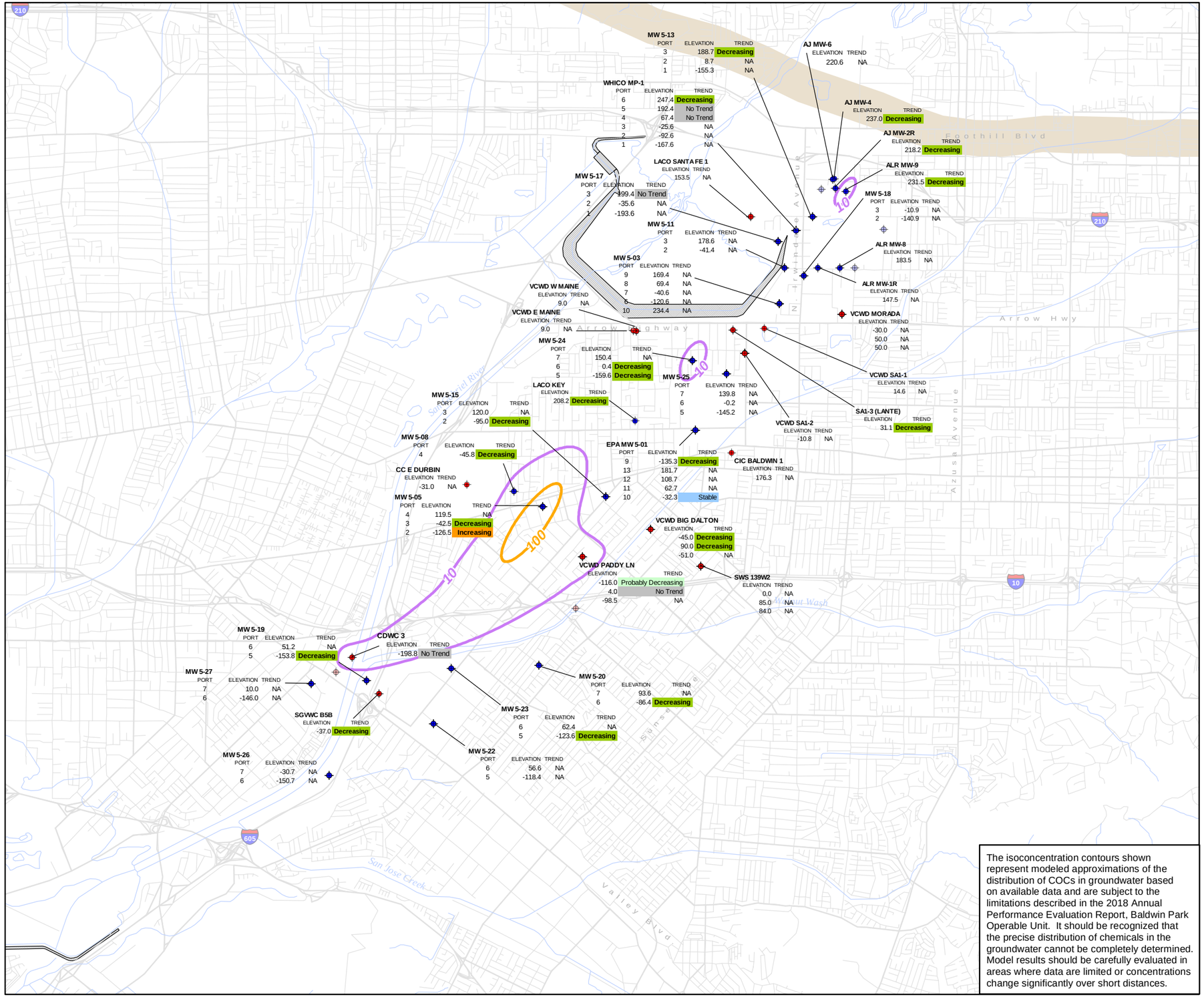
Baldwin Park Operable Unit
San Gabriel Valley, California

Geosyntec consultants

Project No.: SAC150

Figure 7-7

Path: \\sacramento-01\Data\GIS\SAC150_BPOU\Project\201903_2018PERVolume 1\7-07_MannKendall_trends_CTC_dp.mxd



EXPLANATION

- Production or extraction well
- Production or extraction well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Monitoring and multiport well
- Monitoring and multiport well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- N-Nitrosodimethylamine composite isoconcentration contour for the elevation interval above -200 feet (10 ng/L)
- N-Nitrosodimethylamine composite isoconcentration contour for the elevation interval above -200 feet (100 ng/L)
- Duarte Fault Zone

NOTES:

1. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, Earth Volumetric Studio® (EVS).
2. Posted trends are based on sampling results for the specified elevation range.
3. Mann-Kendall trend evaluations were performed using data collected from 2004-2018.
4. A complete summary of the Mann-Kendall analysis is presented in Appendix C. The following decision matrix was used to interpret trends based on the calculated confidence of the S test statistic:

Mann-Kendall Statistic (S)	Confidence in Trend	Concentration Trend
S<0	95%	Decreasing
S<0	90-95%	Probably Decreasing
S≤0	90% and COV<1	Stable
S≤0	90% and COV≥1	No Trend
S>0	<90%	No Trend
S>0	90-95%	Probably Increasing
S>0	>95%	Increasing
Not analyzed due to <50% detection frequency		NA

5,000 0 5,000

SCALE IN FEET

N

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2018 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

MANN-KENDALL TREND ANALYSIS FOR N-NITROSODIMETHYLAMINE RESULTS, 2004-2018, ABOVE -200 FEET MSL

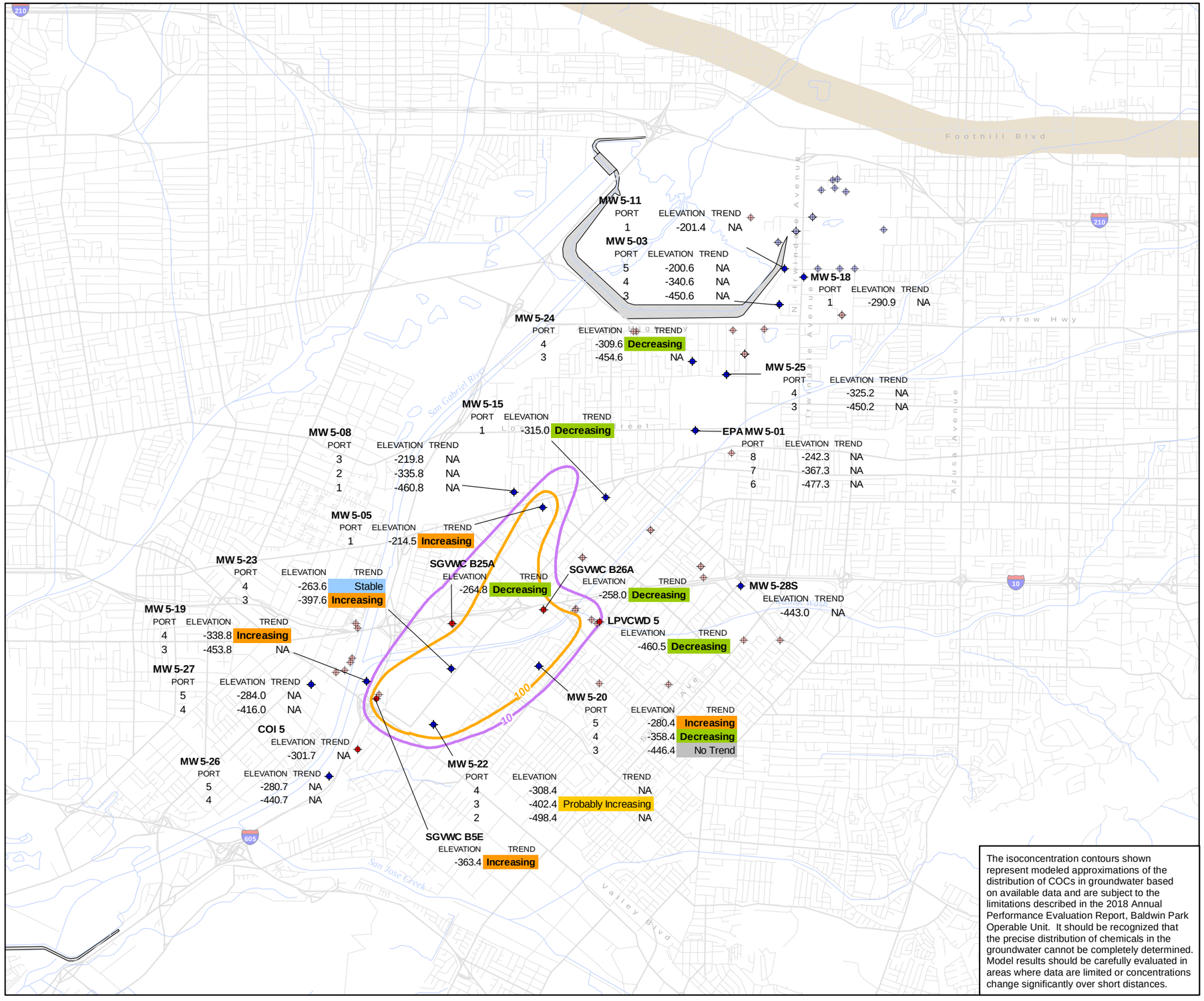
Baldwin Park Operable Unit
San Gabriel Valley, California

Geosyntec consultants

Project No.: SAC150

Figure **7-8**

Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PERVolume 1\7-08_MannKendall_trends_NDMA_sh.mxd



EXPLANATION

- Production or extraction well
- Production or extraction well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Monitoring and multiport well
- Monitoring and multiport well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- N-Nitrosodimethylamine composite isoconcentration contour for the elevation interval between -200 and -500 feet (10 ng/L)
- N-Nitrosodimethylamine composite isoconcentration contour for the elevation interval between -200 and -500 feet (100 ng/L)
- Duarte Fault Zone

NOTES:

1. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, Earth Volumetric Studio® (EVS).
2. Posted trends are based on sampling results for the specified elevation range.
3. Mann-Kendall trend evaluations were performed using data collected from 2004-2018.
4. A complete summary of the Mann-Kendall analysis is presented in Appendix C. The following decision matrix was used to interpret trends based on the calculated confidence of the S test statistic:

Mann-Kendall Statistic (S)	Confidence in Trend	Concentration Trend
S<0	95%	Decreasing
S<0	90-95%	Probably Decreasing
S≤0	90% and COV<1	Stable
S≤0	90% and COV≥1	No Trend
S>0	<90%	No Trend
S>0	90-95%	Probably Increasing
S>0	>95%	Increasing
Not analyzed due to <50% detection frequency		NA

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2018 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

5,000 0 5,000

SCALE IN FEET

N

MANN-KENDALL TREND ANALYSIS FOR N-NITROSODIMETHYLAMINE RESULTS, 2004-2018, BETWEEN -200 AND -500 FEET MSL

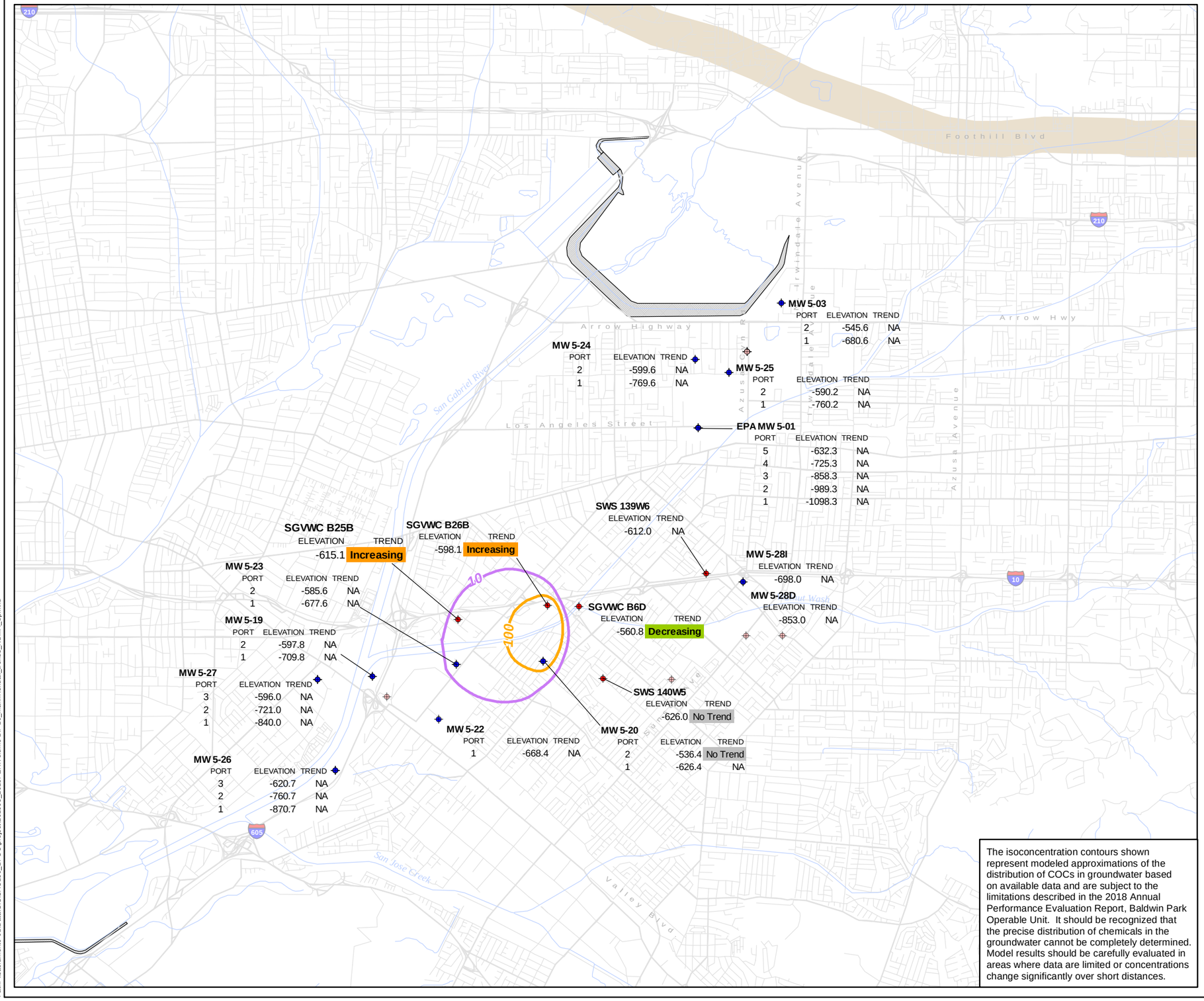
Baldwin Park Operable Unit
San Gabriel Valley, California

Geosyntec consultants

Project No.: SAC150

Figure **7-9**

Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PERVolume 1\7-09_MannKendall_trends_NDMA_int.mxd



EXPLANATION

- Production or extraction well
- Production or extraction well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Monitoring and multiport well
- Monitoring and multiport well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- N-Nitrosodimethylamine composite isoconcentration contour for the elevation interval below -500 feet (10 ng/L)
- Duarte Fault Zone

NOTES:

1. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, Earth Volumetric Studio® (EVS).
2. Posted trends are based on sampling results for the specified elevation range.
3. Mann-Kendall trend evaluations were performed using data collected from 2004-2018.
4. A complete summary of the Mann-Kendall analysis is presented in Appendix C. The following decision matrix was used to interpret trends based on the calculated confidence of the S test statistic:

Mann-Kendall Statistic (S)	Confidence in Trend	Concentration Trend
S<0	95%	Decreasing
S<0	90-95%	Probably Decreasing
S≤0	90% and COV<1	Stable
S≤0	90% and COV≥1	No Trend
S>0	<90%	No Trend
S>0	90-95%	Probably Increasing
S>0	>95%	Increasing
Not analyzed due to <50% detection frequency		NA

5,000 0 5,000

SCALE IN FEET

N

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2018 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

MANN-KENDALL TREND ANALYSIS FOR N-NITROSODIMETHYLAMINE RESULTS, 2004-2018, BELOW -500 FEET MSL

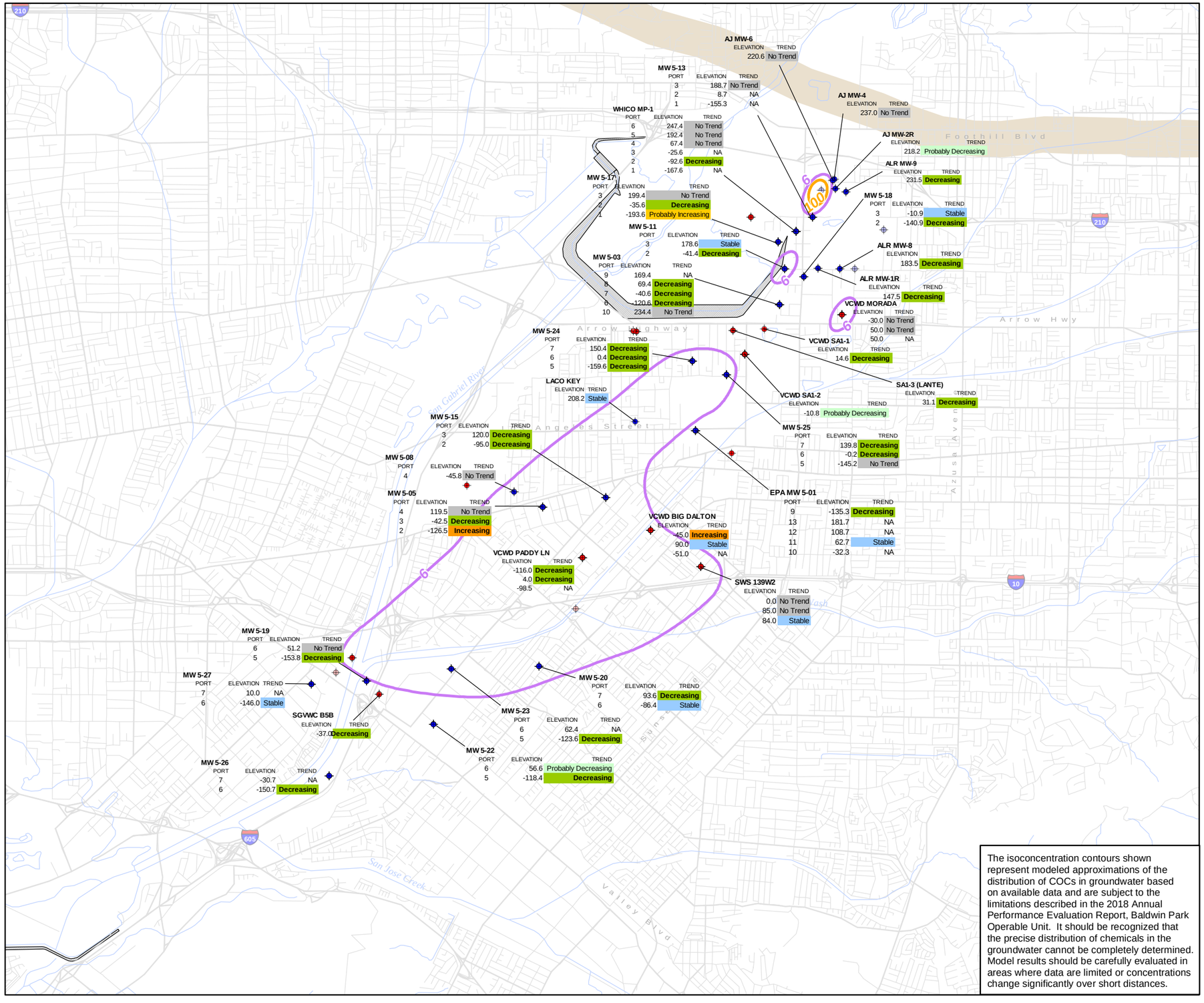
Baldwin Park Operable Unit
San Gabriel Valley, California

Geosyntec consultants

Project No.: SAC150

Figure **7-10**

Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PER\Volume 1\7-10_MannKendall_trends_NDMA_dp.mxd



EXPLANATION

- Production or extraction well
- Production or extraction well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Monitoring and multiport well
- Monitoring and multiport well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Perchlorate composite isoconcentration contour for the elevation interval between -200 and -500 feet (6 ug/L)
- Perchlorate composite isoconcentration contour for the elevation interval between -200 and -500 feet (100 ug/L)
- Duarte Fault Zone

NOTES:

1. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, Earth Volumetric Studio® (EVS).
2. Posted trends are based on sampling results for the specified elevation range.
3. Mann-Kendall trend evaluations were performed using data collected from 2004-2018.
4. A complete summary of the Mann-Kendall analysis is presented in Appendix C. The following decision matrix was used to interpret trends based on the calculated confidence of the S test statistic:

Mann-Kendall Statistic (S)	Confidence in Trend	Concentration Trend
S<0	95%	Decreasing
S<0	90-95%	Probably Decreasing
S≤0	90% and COV<1	Stable
S≤0	90% and COV≥1	No Trend
S>0	<90%	No Trend
S>0	90-95%	Probably Increasing
S>0	>95%	Increasing
Not analyzed due to <50% detection frequency		NA

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2018 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

5,000 0 5,000

SCALE IN FEET

N

MANN-KENDALL TREND ANALYSIS FOR PERCHLORATE RESULTS, 2004-2018 ABOVE -200 FEET MSL

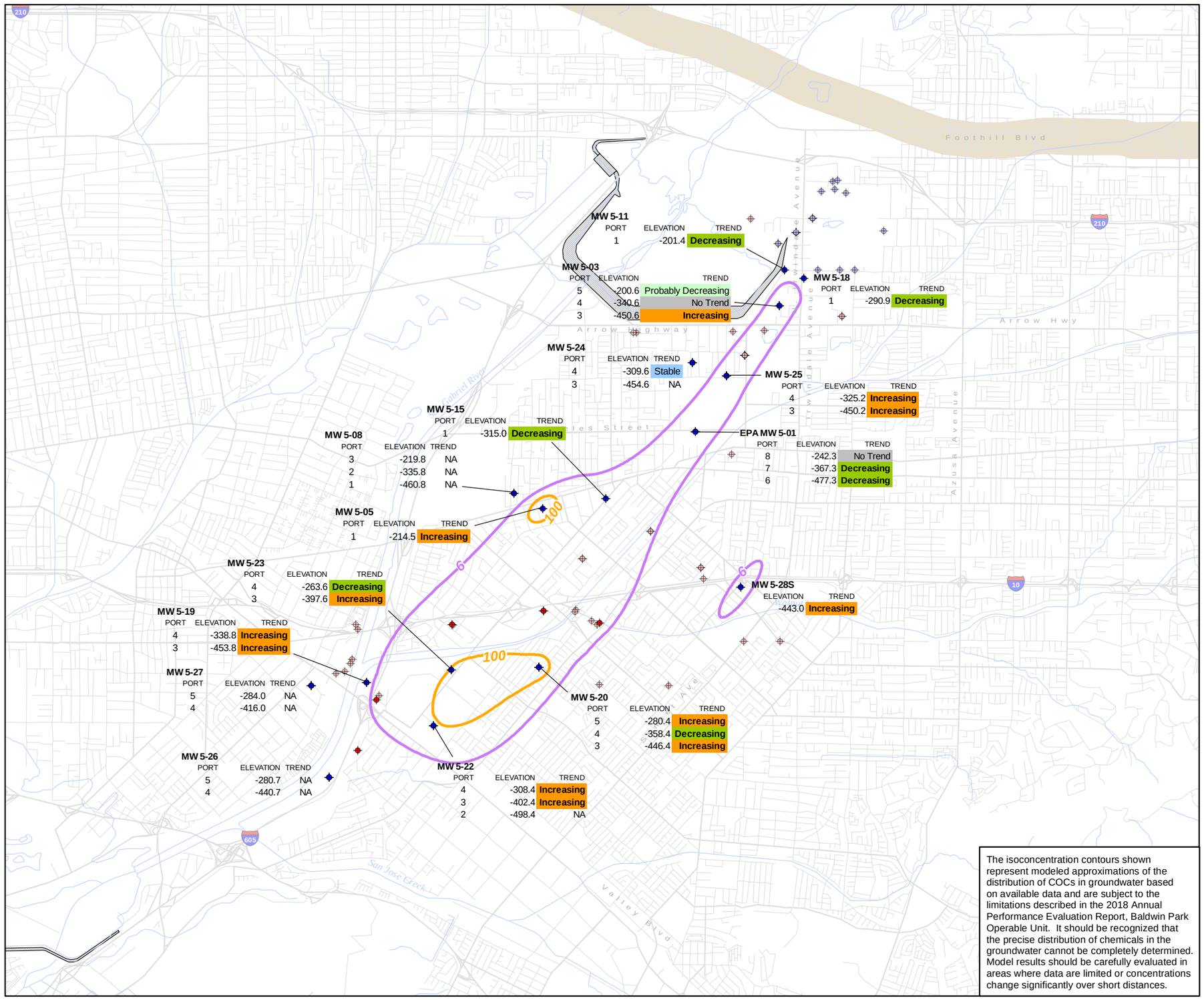
Baldwin Park Operable Unit
San Gabriel Valley, California

Geosyntec consultants

Project No.: SAC150

Figure **7-11**

Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PERVolume 1\7-11_MannKendall_trends_PERCH_sh.mxd



EXPLANATION

- Production or extraction well
- Production or extraction well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Monitoring and multiport well
- Monitoring and multiport well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Perchlorate composite isoconcentration contour for the elevation interval between -200 and -500 feet (6 ug/L)
- Perchlorate composite isoconcentration contour for the elevation interval between -200 and -500 feet (100 ug/L)
- Duarte Fault Zone

NOTES:

1. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, Earth Volumetric Studio® (EVS).
2. Posted trends are based on sampling results for the specified elevation range.
3. Mann-Kendall trend evaluations were performed using data collected from 2004-2018.
4. A complete summary of the Mann-Kendall analysis is presented in Appendix C. The following decision matrix was used to interpret trends based on the calculated confidence of the S test statistic:

Mann-Kendall Statistic (S)	Confidence in Trend	Concentration Trend
S<0	95%	Decreasing
S<0	90-95%	Probably Decreasing
S≤0	90% and COV<1	Stable
S≤0	90% and COV≥1	No Trend
S>0	<90%	No Trend
S>0	90-95%	Probably Increasing
S>0	>95%	Increasing
Not analyzed due to <50% detection frequency		NA

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2018 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

5,000 0 5,000

SCALE IN FEET

N

MANN-KENDALL TREND ANALYSIS FOR PERCHLORATE RESULTS, 2004-2018 BETWEEN -200 AND -500 FEET MSL

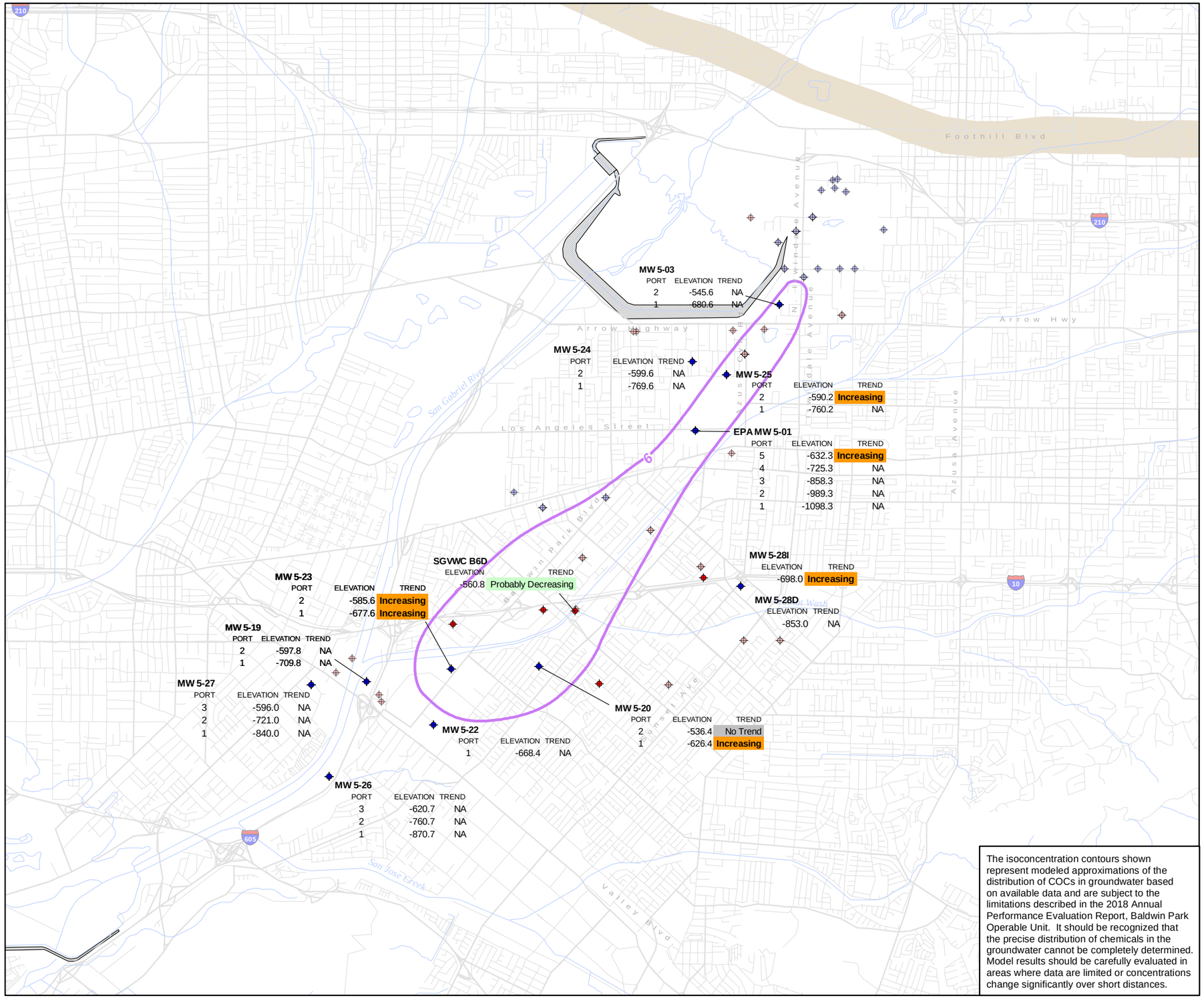
Baldwin Park Operable Unit
San Gabriel Valley, California

Geosyntec consultants

Project No.: SAC150

Figure **7-12**

Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PER\Volume 1\7-12_MannKendall_trends_PERCH_int.mxd



EXPLANATION

- Production or extraction well
- Production or extraction well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Monitoring and multiport well
- Monitoring and multiport well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Perchlorate composite isoconcentration contour for the elevation interval below -500 feet (6 ug/L)
- Duarte Fault Zone

NOTES:

1. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, Earth Volumetric Studio® (EVS).
2. Posted trends are based on sampling results for the specified elevation range.
3. Mann-Kendall trend evaluations were performed using data collected from 2004-2018.
4. A complete summary of the Mann-Kendall analysis is presented in Appendix C. The following decision matrix was used to interpret trends based on the calculated confidence of the S test statistic:

Mann-Kendall Statistic (S)	Confidence in Trend	Concentration Trend
S<0	95%	Decreasing
S<0	90-95%	Probably Decreasing
S≤0	90% and COV<1	Stable
S≤0	90% and COV≥1	No Trend
S>0	<90%	No Trend
S>0	90-95%	Probably Increasing
S>0	>95%	Increasing
Not analyzed due to <50% detection frequency		NA

5,000 0 5,000

SCALE IN FEET

N

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2018 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

MANN-KENDALL TREND ANALYSIS FOR PERCHLORATE RESULTS, 2004-2018 BELOW -500 FEET MSL

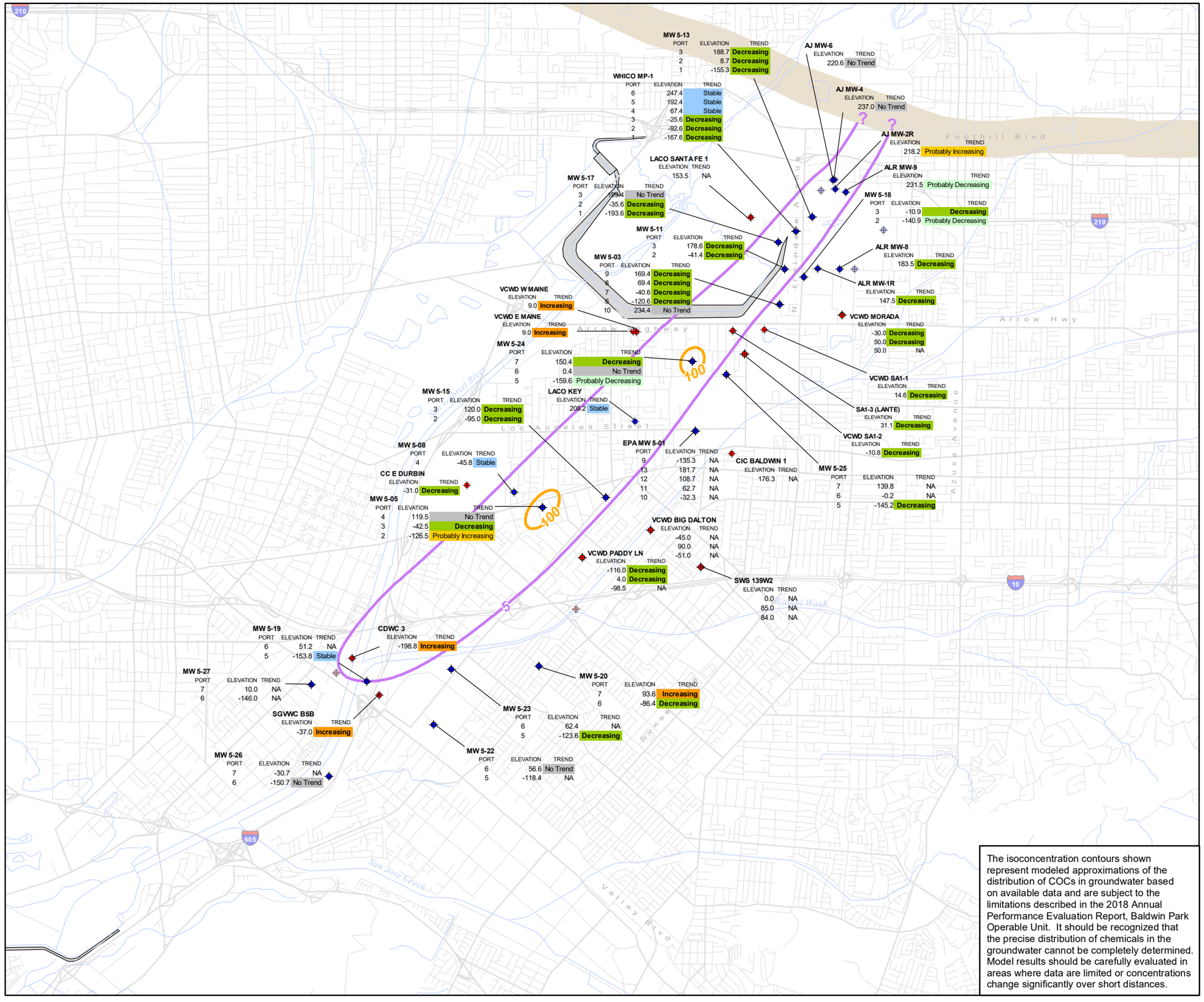
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Figure **7-13**

Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PERI\Volume 1\7-13_MannKendall_trends_PERCH_dp.mxd



EXPLANATION

- Production or extraction well
- Production or extraction well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Monitoring and multiport well
- Monitoring and multiport well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Tetrachloroethene composite isoconcentration contour for the elevation interval above -200 feet (5 ug/L)
- Tetrachloroethene composite isoconcentration contour for the elevation interval above -200 feet (100 ug/L)
- Duarte Fault Zone

NOTES:

1. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, Earth Volumetric Studio® (EVS).
2. Posted trends are based on sampling results for the specified elevation range.
3. Mann-Kendall trend evaluations were performed using data collected from 2004-2018.
4. A complete summary of the Mann-Kendall analysis is presented in Appendix C. The following decision matrix was used to interpret trends based on the calculated confidence of the S test statistic:

Mann-Kendall Statistic (S)	Confidence in Trend	Concentration Trend
S<0	95%	Decreasing
S<0	90-95%	Probably Decreasing
S≤0	90% and COV<1	Stable
S≤0	90% and COV≥1	No Trend
S>0	<90%	No Trend
S>0	90-95%	Probably Increasing
S>0	>95%	Increasing
Not analyzed due to <50% detection frequency		NA

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2018 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

5,000 0 5,000

SCALE IN FEET

N

MANN-KENDALL TREND ANALYSIS FOR TETRACHLOROETHENE RESULTS, 2004-2018, ABOVE -200 FEET MSL

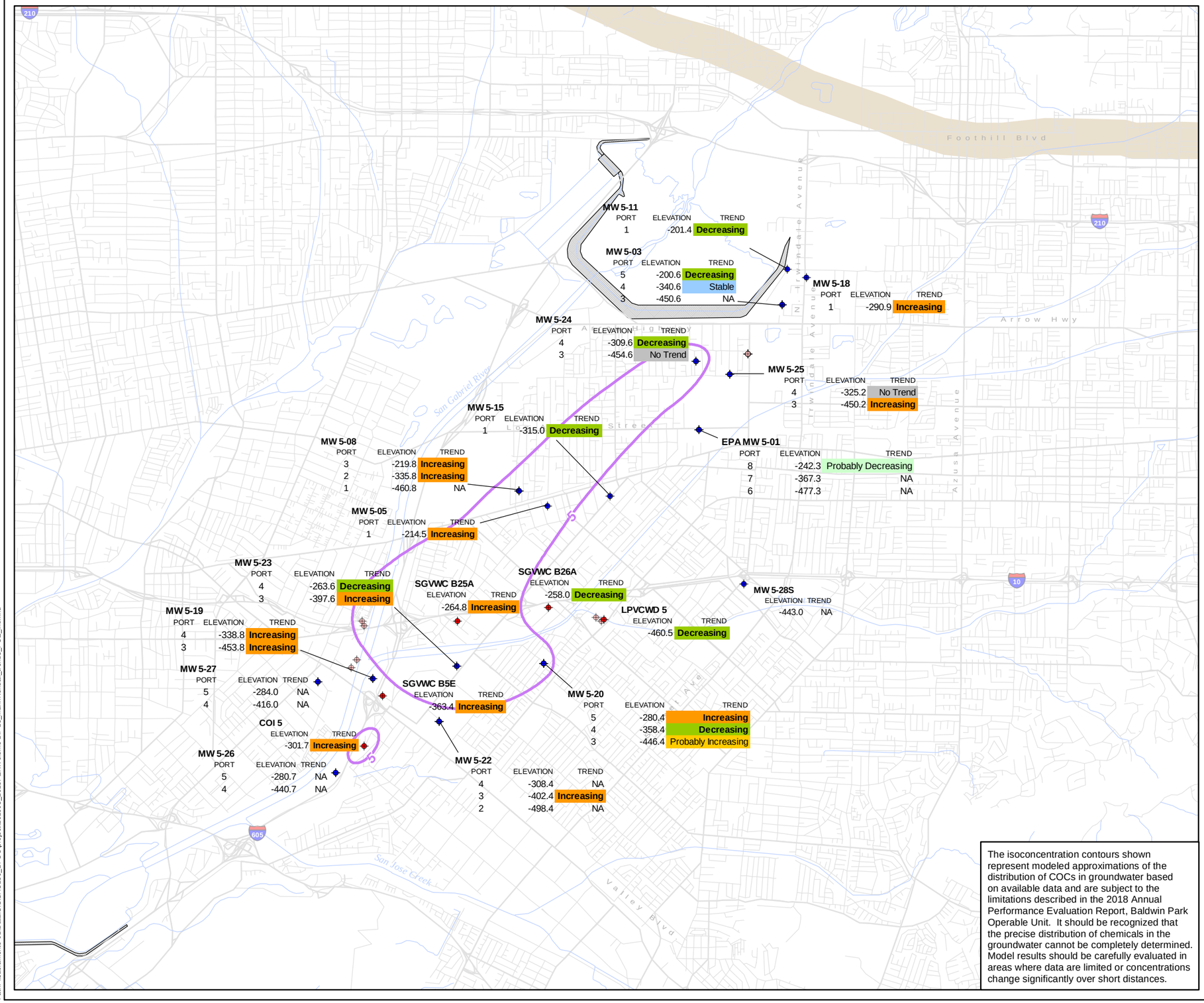
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Figure 7-14

Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PERVolume 1\7-14_MannKendall_trends_PCE_sh.mxd



EXPLANATION

- Production or extraction well
- Production or extraction well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Monitoring and multiport well
- Monitoring and multiport well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Tetrachloroethene composite isoconcentration contour for the elevation interval between -200 and -500 feet (5 ug/L)
- Duarte Fault Zone

NOTES:

1. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, Earth Volumetric Studio® (EVS).
2. Posted trends are based on sampling results for the specified elevation range.
3. Mann-Kendall trend evaluations were performed using data collected from 2004-2018.
4. A complete summary of the Mann-Kendall analysis is presented in Appendix C. The following decision matrix was used to interpret trends based on the calculated confidence of the S test statistic:

Mann-Kendall Statistic (S)	Confidence in Trend	Concentration Trend
S<0	95%	Decreasing
S<0	90-95%	Probably Decreasing
S≤0	90% and COV<1	Stable
S≤0	90% and COV≥1	No Trend
S>0	<90%	No Trend
S>0	90-95%	Probably Increasing
S>0	>95%	Increasing
Not analyzed due to <50% detection frequency		NA

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2018 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

5,000 0 5,000

SCALE IN FEET

N

MANN-KENDALL TREND ANALYSIS FOR TETRACHLOROETHENE RESULTS, 2004-2018, BETWEEN -200 AND -500 FEET MSL

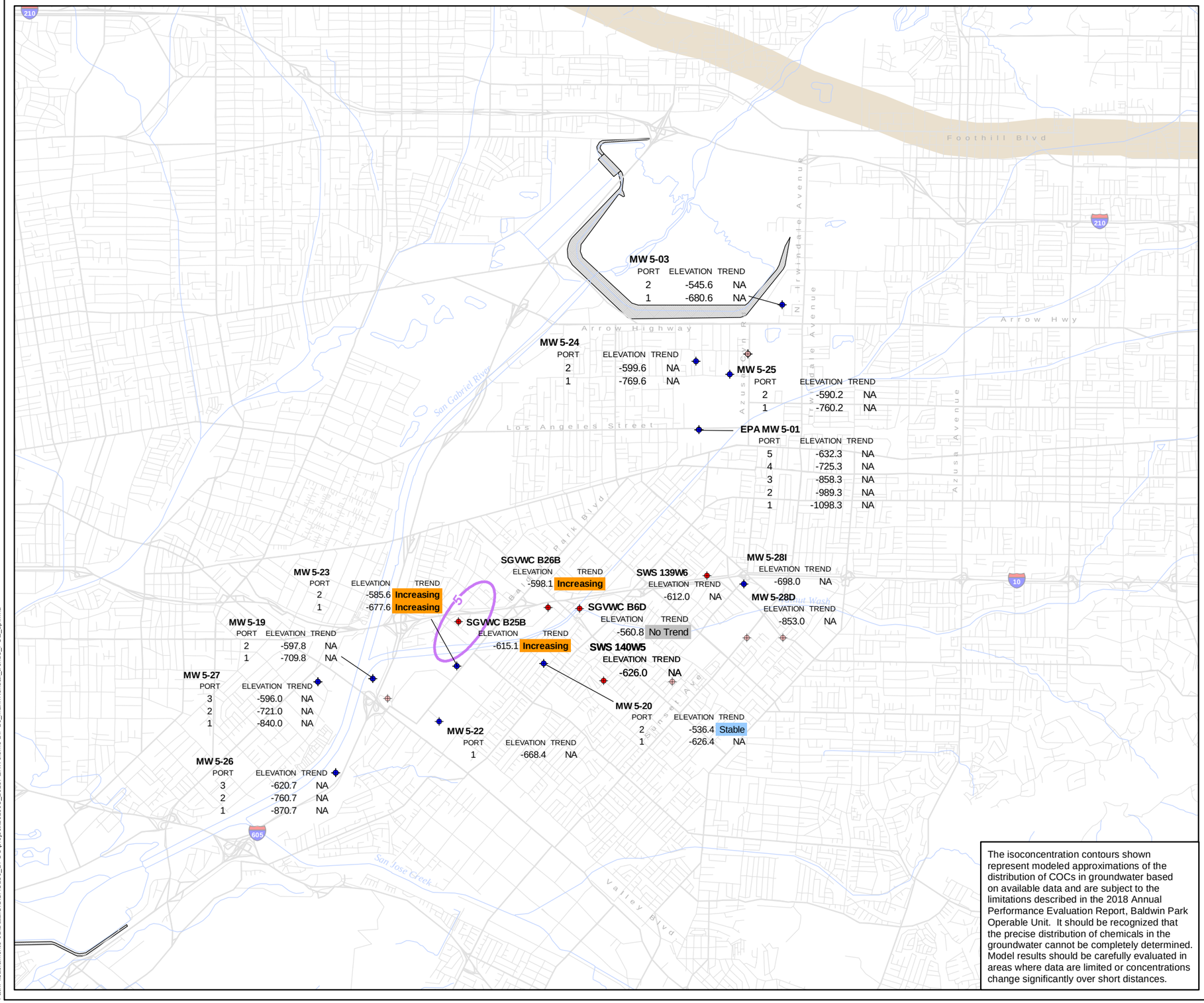
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San Gabriel Valley, California

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Figure **7-15**

Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PERVolume 1\7-15_MannKendall_trends_PCE_int.mxd



EXPLANATION

- Production or extraction well
- Production or extraction well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Monitoring and multiport well
- Monitoring and multiport well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Tetrachloroethene composite isoconcentration contour for the elevation interval below -500 feet (5 ug/L)
- Duarte Fault Zone

NOTES:

1. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, Earth Volumetric Studio® (EVS).
2. Posted trends are based on sampling results for the specified elevation range.
3. Mann-Kendall trend evaluations were performed using data collected from 2004-2018.
4. A complete summary of the Mann-Kendall analysis is presented in Appendix C. The following decision matrix was used to interpret trends based on the calculated confidence of the S test statistic:

Mann-Kendall Statistic (S)	Confidence in Trend	Concentration Trend
S<0	95%	Decreasing
S<0	90-95%	Probably Decreasing
S≤0	90% and COV<1	Stable
S≤0	90% and COV≥1	No Trend
S>0	<90%	No Trend
S>0	90-95%	Probably Increasing
S>0	>95%	Increasing
Not analyzed due to <50% detection frequency		NA

5,000 0 5,000

SCALE IN FEET

N

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2018 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

MANN-KENDALL TREND ANALYSIS FOR TETRACHLOROETHENE RESULTS, 2004-2018, BELOW -500 FEET MSL

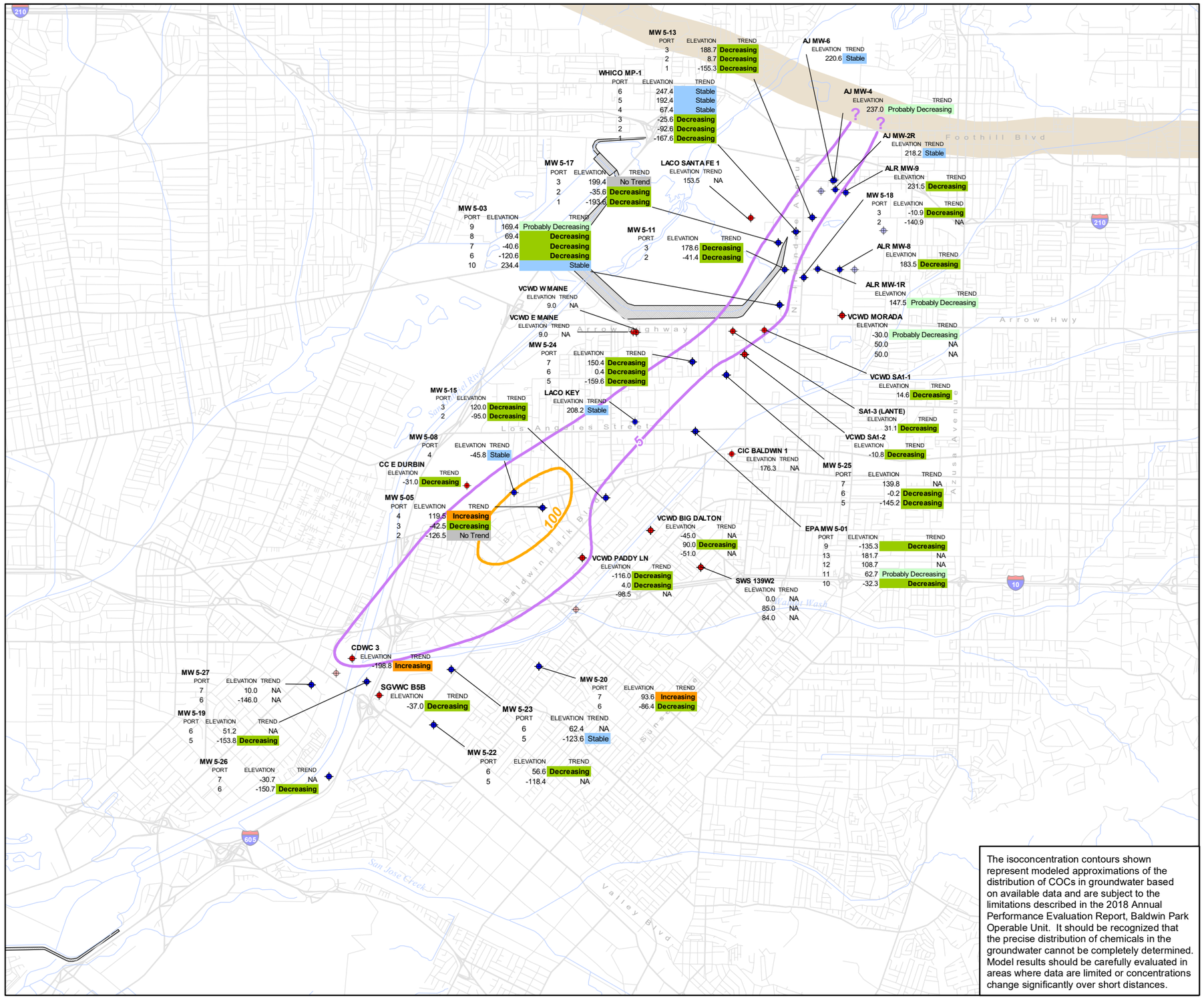
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Figure **7-16**

Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PERVolume 1\7-16_MannKendall_trends_PCE_dp.mxd



EXPLANATION

- Production or extraction well
- Production or extraction well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Monitoring and multiport well
- Monitoring and multiport well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Trichloroethene composite isoconcentration contour for the elevation interval above -200 feet (6 ug/L)
- Trichloroethene composite isoconcentration contour for the elevation interval above -200 feet (100 ug/L)
- Duarte Fault Zone

NOTES:

1. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, Earth Volumetric Studio® (EVS).
2. Posted trends are based on sampling results for the specified elevation range.
3. Mann-Kendall trend evaluations were performed using data collected from 2004-2018.
4. A complete summary of the Mann-Kendall analysis is presented in Appendix C. The following decision matrix was used to interpret trends based on the calculated confidence of the S test statistic:

Mann-Kendall Statistic (S)	Confidence in Trend	Concentration Trend
S<0	95%	Decreasing
S<0	90-95%	Probably Decreasing
S≤0	90% and COV<1	Stable
S≤0	90% and COV≥1	No Trend
S>0	<90%	No Trend
S>0	90-95%	Probably Increasing
S>0	>95%	Increasing
Not analyzed due to <50% detection frequency		NA

5,000 0 5,000
SCALE IN FEET

N

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2018 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

MANN-KENDALL TREND ANALYSIS FOR TRICHLOROETHENE RESULTS, 2004-2018 ABOVE -200 FEET MSL

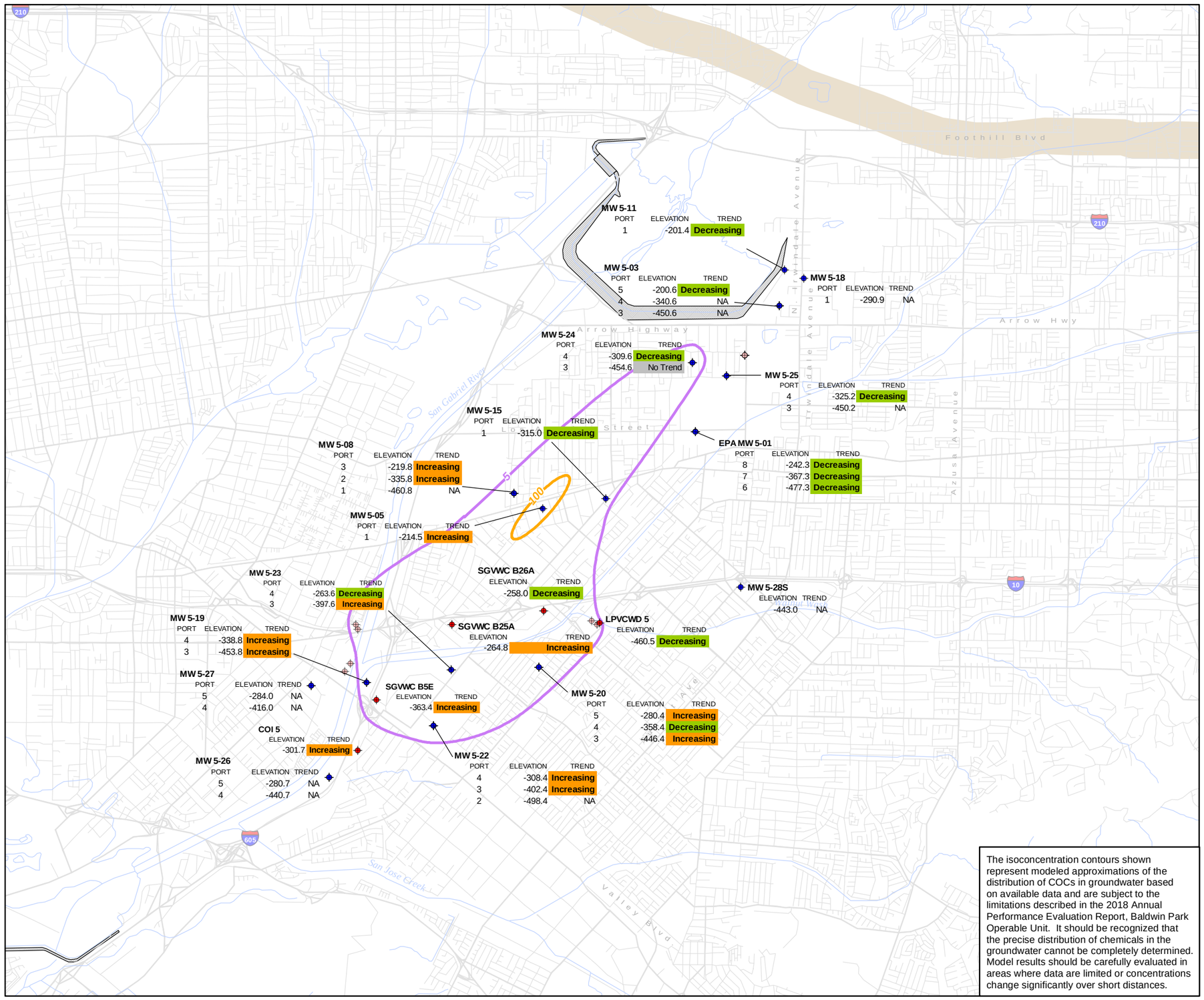
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Figure **7-17**

Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\2019\03_2018PERVolume 1\7-17_MannKendall_trends_TCE_sh.mxd



EXPLANATION

- Production or extraction well
- Production or extraction well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Monitoring and multiport well
- Monitoring and multiport well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Trichloroethene composite isoconcentration contour for the elevation interval between -200 and -500 feet (5 ug/L)
- Trichloroethene composite isoconcentration contour for the elevation interval between -200 and -500 feet (100 ug/L)
- Duarte Fault Zone

NOTES:

1. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, Earth Volumetric Studio® (EVS).
2. Posted trends are based on sampling results for the specified elevation range.
3. Mann-Kendall trend evaluations were performed using data collected from 2004-2018.
4. A complete summary of the Mann-Kendall analysis is presented in Appendix C. The following decision matrix was used to interpret trends based on the calculated confidence of the S test statistic:

Mann-Kendall Statistic (S)	Confidence in Trend	Concentration Trend
S<0	95%	Decreasing
S<0	90-95%	Probably Decreasing
S≤0	90% and COV<1	Stable
S≤0	90% and COV≥1	No Trend
S>0	<90%	No Trend
S>0	90-95%	Probably Increasing
S>0	>95%	Increasing
Not analyzed due to <50% detection frequency		NA

5,000 0 5,000

SCALE IN FEET

N

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2018 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

MANN-KENDALL TREND ANALYSIS FOR TRICHLOROETHENE RESULTS, 2004-2018 BETWEEN -200 AND -500 FEET MSL

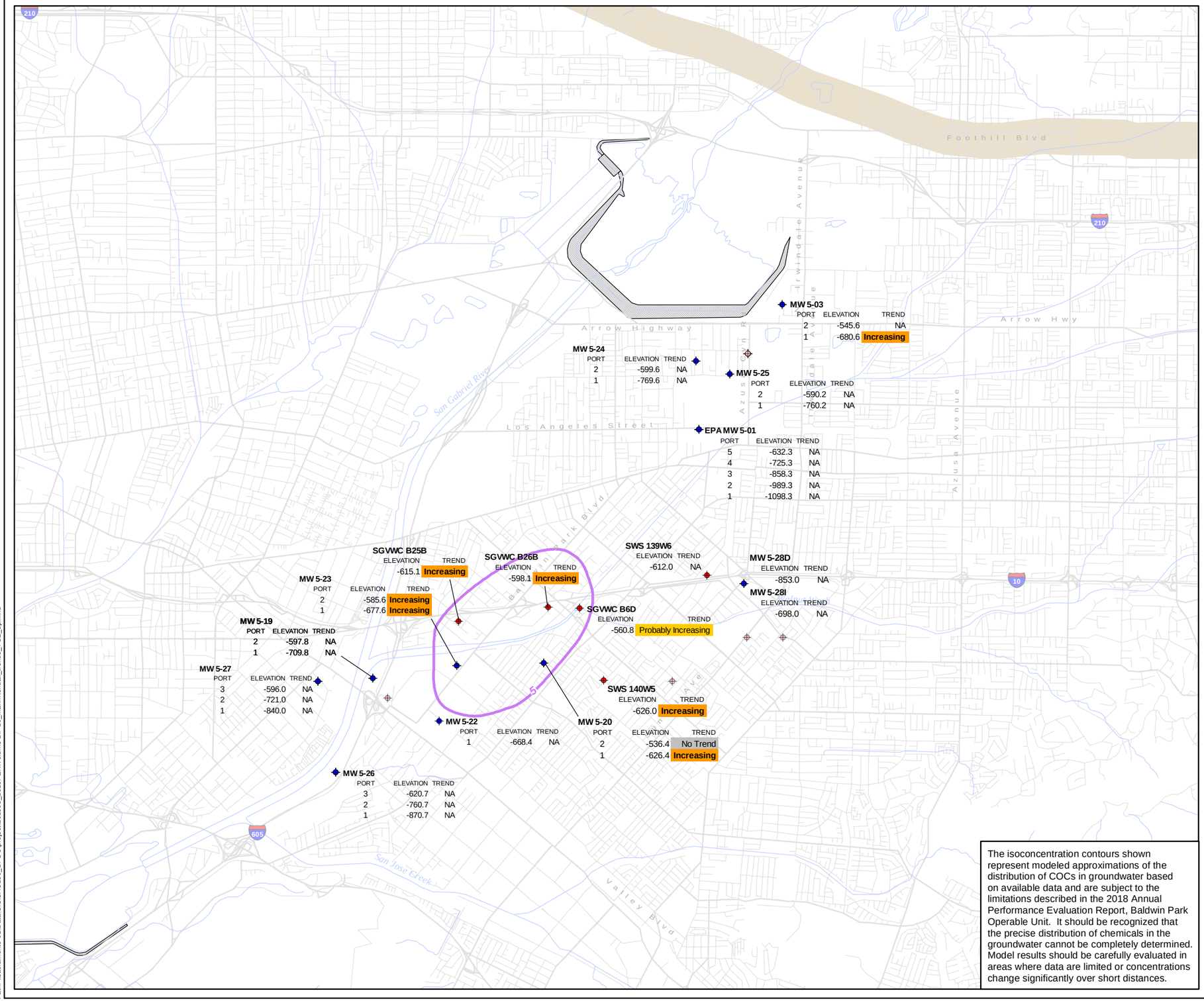
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Figure **7-18**

Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PER\Volume 1\7-18_MannKendall_trends_TCE_int.mxd



EXPLANATION

- Production or extraction well
- Production or extraction well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Monitoring and multiport well
- Monitoring and multiport well (Mann-Kendall analysis not performed, refer to Notes 2 and 3)
- Trichloroethene composite isoconcentration contour for the elevation interval below -500 feet (5 ug/L)
- Duarte Fault Zone

NOTES:

1. The isoconcentration contours were generated using the three-dimensional geospatial modeling software, Earth Volumetric Studio® (EVS).
2. Posted trends are based on sampling results for the specified elevation range.
3. Mann-Kendall trend evaluations were performed using data collected from 20104 - 2018.
4. A complete summary of the Mann-Kendall analysis is presented in Appendix C. The following decision matrix was used to interpret trends based on the calculated confidence of the S test statistic:

Mann-Kendall Statistic (S)	Confidence in Trend	Concentration Trend
S<0	95%	Decreasing
S<0	90-95%	Probably Decreasing
S≤0	90% and COV<1	Stable
S≤0	90% and COV≥1	No Trend
S>0	<90%	No Trend
S>0	90-95%	Probably Increasing
S>0	>95%	Increasing
Not analyzed due to <50% detection frequency		NA

5,000 0 5,000

SCALE IN FEET

N

The isoconcentration contours shown represent modeled approximations of the distribution of COCs in groundwater based on available data and are subject to the limitations described in the 2018 Annual Performance Evaluation Report, Baldwin Park Operable Unit. It should be recognized that the precise distribution of chemicals in the groundwater cannot be completely determined. Model results should be carefully evaluated in areas where data are limited or concentrations change significantly over short distances.

MANN-KENDALL TREND ANALYSIS FOR TRICHLOROETHENE RESULTS, 2004-2018 BELOW -500 FEET MSL

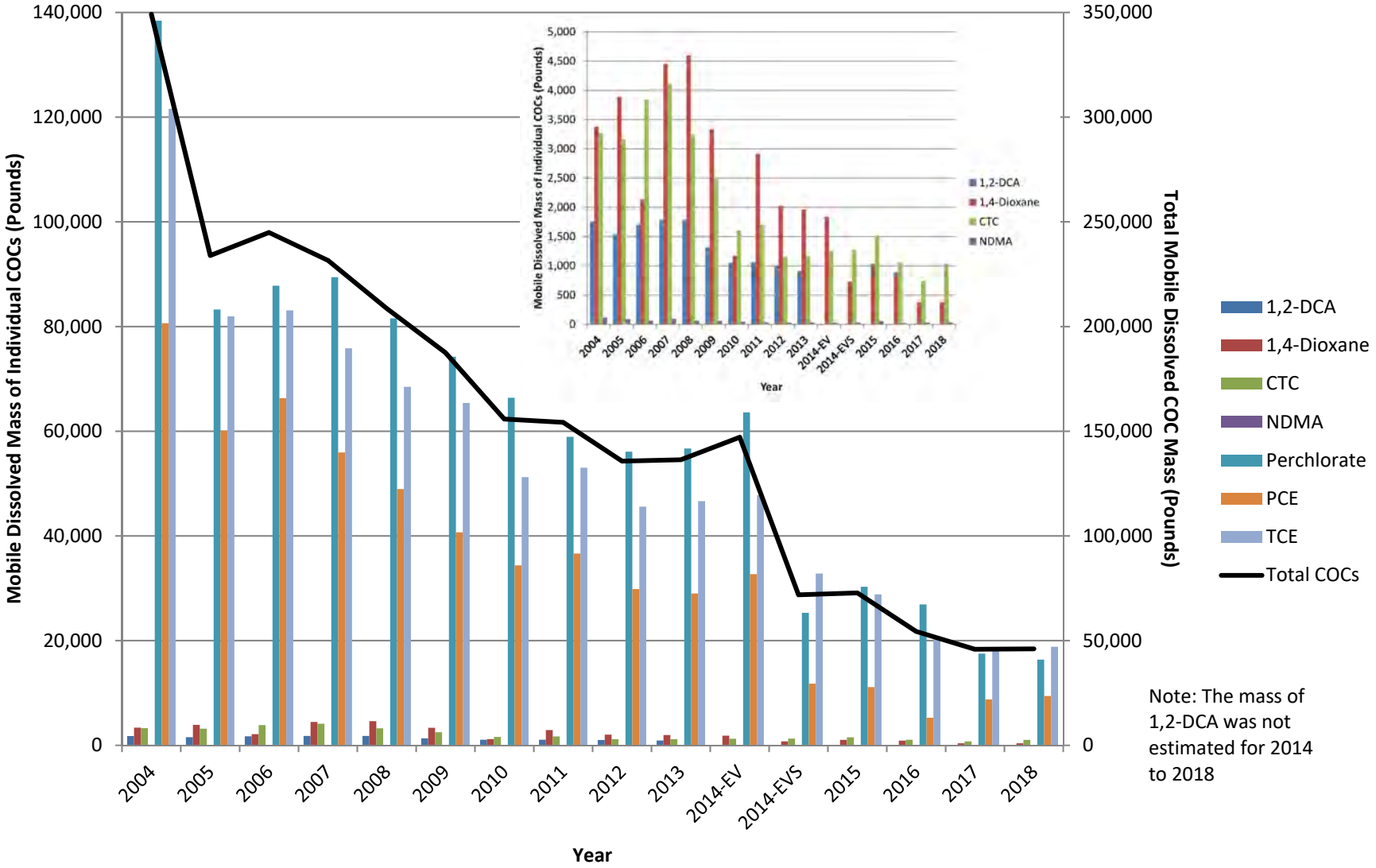
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Figure **7-19**

Path: \\sacramento-01\Data\GIS\SAC150_BPOU\project\201903_2018PERVolume 1\7-19_MannKendall_trends_TCE_dp.mxd



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ESTIMATED MOBILE DISSOLVED COC MASS IN GROUNDWATER
Baldwin Park Operable Unit
San Gabriel Valley, California

Project No. SAC150

Figure **7-20**