Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

CHINO BASIN WATERMASTER
Partners in Basin Management

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November 15, 2018

Regional Water Quality Control Board, Santa Ana Region
Attention: Ms. Hope Smythe
3737 Main Street, Suite 500
Riverside, California 92501-3348

Subject: Chino Basin Recycled Water Groundwater Recharge Program: Quarterly Monitoring Report for July through September 2018

Dear Ms. Smythe,

Inland Empire Utilities Agency and Chino Basin Watermaster hereby submit the *Quarterly Monitoring Report* for the third quarter of 2018 (3Q18), July 1 through September 30, 2018, for the *Chino Basin Recycled Water Groundwater Recharge Program*. This document is submitted pursuant to requirements in Order No. R8-2007-0039. All required monitoring and reporting for the quarter are presented in the attached report. During 3Q18, the Groundwater Recharge Program was in compliance with all monitoring and reporting requirements as specified in the Order, with the exception of an exceedance of the 4-quarter running average for odor (secondary MCL).

Chino Basin Watermaster hereby certifies that, during the period of July 1 through September 30, 2018, there was no reported pumping for drinking water purposes in the buffer zones extending 500 feet laterally and 6 months underground travel time from each of the recharge sites using recycled water, namely 8th Street, Banana, Brooks, Declez, Ely, Hickory, RP3, San Sevaine, Turner, and Victoria Basins. In point of fact, there are no domestic or municipal production wells in the buffer zones of the aforementioned recharge sites.

DECLARATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments thereto; and that, based on my inquiry of the individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Executed on the 15th day of November in the Cities of Chino and Rancho Cucamonga.

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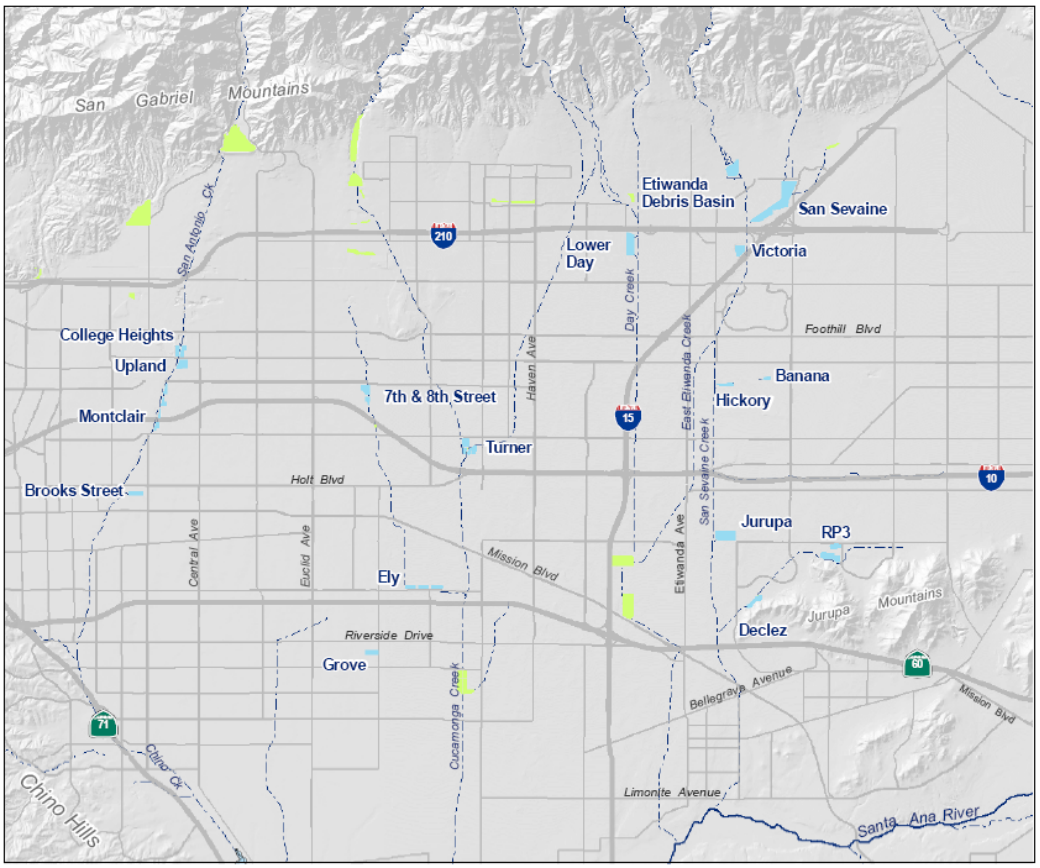
Chino Basin Recycled Water Groundwater Recharge Program

Quarterly Monitoring Report

July 1 through September 30, 2018



Prepared by:

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

November 15, 2018

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1. Introduction

Inland Empire Utilities Agency (IEUA), Chino Basin Watermaster (Watermaster), Chino Basin Water Conservation District, and San Bernardino County Flood Control District are partners in the implementation of the Chino Basin Recycled Water Groundwater Recharge Program. This is part of a comprehensive water supply program to enhance water supply reliability and improve the groundwater quality in local drinking water wells throughout the Chino Groundwater Basin by increasing the recharge of stormwater, imported water and recycled water. This program is an integral part of Watermaster's Optimum Basin Management Plan (OBMP).

A. Order No. R8-2007-0039

On June 29, 2007, the Santa Ana Regional Water Quality Control Board (Regional Board) adopted Order No. R8-2007-0039 (Order) which prescribes the requirements for recycled water use for groundwater recharge in 13 recharge sites within the Chino-North Groundwater Management Zone. The locations of recharge basins in the Chino Basin Groundwater Recharge Program are shown in Figure 1-1.

As a provision of this Order, IEUA and Watermaster must also comply with Monitoring and Reporting Program No. R8-2007-0039 (MRP). The MRP includes the water quality monitoring requirements of the Chino Basin Recycled Water Groundwater Recharge Program and the requirement for the submittal of quarterly and annual reports. This document is the quarterly report for the third quarter of 2018 (3Q18).

The quarterly report includes the following elements as prescribed in the MRP:

- Monitoring results for recycled water (including lysimeter monitoring), diluent water, and groundwater.
- Recycled water and diluent water volumes recharged at each basin.
- Reporting of any non-compliance events due to water quality, including records of any operational problems, plant upset and equipment breakdowns or malfunctions, and any diversion(s) of off-specification recycled water and the location(s) of final disposal. All corrective or preventive action(s) taken.
- Certification that no groundwater has been pumped for domestic water supply use from the buffer zone that extends 500 feet and 6-months underground travel time from the recharge basin(s) where recycled water is applied.

B. Order No. R8-2009-0057

On October 23, 2009, the Regional Board adopted Order No. R8-2009-0057, which amended the recharge permit (Order No. R8-2007-0039) by extending the previously 60-month averaging period to 120 months for determining a recharge site's recycled water contribution (RWC). The Order No. R8-2009-0057 also allowed a fraction of the groundwater underflow of the Chino Basin aquifers to be used as a source of diluent water when calculating the running average RWC.

C. Revised Monitoring & Reporting Program No. R8-2007-0039

On October 27, 2010, the Regional Board revised Monitoring and Reporting Program No. R8-2007-0039 (MRP) based on requests for modifications from IEUA and approved by the State Water Resources Control Board – Division of Drinking Water (DDW, formerly California Department of Public Health). The following changes were made to the MRP:

1) Sampling Requirements A.3, A.4, and A.5 were modified by specifying that samples shall be collected on a representative day instead of the 10th day.

2) Groundwater Monitoring Program Requirement V.1. was modified by adding a sentence to the paragraph that allows IEUA to analyze the groundwater samples collected on a quarterly basis from non-active municipal drinking water wells for dissolved metals, instead of total recoverable metals.

3) Reporting Requirement VI.B.3.b. was modified and footnote No. 18 was added to reflect that IEUA uses groundwater monitoring information contained in the *State of the Basin* report prepared on a biennial basis by the Chino Basin Watermaster, amongst other sources, for the annual determination of the recycled water groundwater flow path.

D. Title 22, Division 4, Chapter 3. Article 5.1 §60320.100

On June 18, 2014, the DDW adopted new regulations pertaining to Groundwater Replenishment Reuse Projects (GRRP), which can be found in Title 22 California Code of Regulations, Division 4, Chapter 3. Article 5.1 "Indirect Potable Reuse: Groundwater Replenishment - Surface Application" found in Sections §60320.100 through 60320.130. Pursuant to the new GRRP regulations, additional monitoring and reporting began in 3Q15.

E. Outline of the Quarterly Report

Section 2 of this quarterly report discusses the water quality monitoring results for recycled water recharge (water recycling plant effluent, distribution system, basin surface water, and lysimeter data), diluent water, and groundwater. Section 3 provides an overview of recharge operations including the volume of diluent water and recycled water recharged. Section 4 describes any operational problems and preventive and/or corrective actions taken. Section 5 contains the certification of non-pumping in the 500-foot buffer zones around each basin. Section 6 is a brief overview of the Monte Vista Water District's (MVWD) Aquifer Storage and Recovery (ASR) project.

2. Monitoring Results

A. Recycled Water: RP-1 and RP-4

The requirements for recycled water monitoring are described in the MRP. Tables 2-1 through 2-4 include all of the requisite 3Q18 data.

Recycled Water Specifications A.5 through A.9 in the Order are the narrative limits established in the permit. The corresponding monitoring data used to determine compliance with the Order are presented in Tables 2-1 and 2-2. This data is typically collected from samples of RP-1 and RP-4 effluent; however, recycled water compliance with the total nitrogen (TN) limit of 5 mg/L (Specification A.7) can also be met at the lysimeters (Table 2-5a) or at locations specified in alternative monitoring plans (Table 2-5b, and discussed in further detail in Section 2.B). During 3Q18, there were no exceedances of the TN limit.

Recycled Water Specifications A.1 through A.4 of the Order are numerical limits based on the EPA's primary maximum contaminant levels (MCLs), secondary MCLs, and Action Levels. Recycled Water Specification A.15 is a numerical limit for oil and grease. The corresponding monitoring data used to determine compliance with these specifications in the Order are presented in Table 2-3. Due to the volume of samples required for laboratory analyses, IEUA selected, and DDW approved, a sampling point along the recycled water distribution pipeline as the compliance point for the numerical limits. IEUA selected the turnout to NRG California South, LP (formerly Reliant Energy) as representative of the system blend of recycled water used for recharge.

In the Order, compliance for all constituents with MCLs or Action Levels is based on a 4-quarter running average (Recycled Water Specifications A.1 through A.4). Table 2-3 summarizes the 4-quarter running

average concentration data for each parameter from 4Q17 through 3Q18, and lists the corresponding limits for compliance.

There were no exceedances for the parameters analyzed during 3Q18, this includes the following categories: primary MCLs for inorganic chemicals, volatile organic compounds (VOCs), non-volatile synthetic organic chemicals (SOCs), radionuclides, and disinfection byproducts; action levels for lead and copper; secondary MCLs for required constituents, with the exception of odor; and oil and grease.

Odor has a secondary MCL of 3 Units in Recycled Water Specification A.3. The 4-quarter running average for 3Q18 was 15 Units, causing the threshold odor compliance metric to exceed the secondary MCL. The odor has been identified by Eaton Analytical (contract laboratory) as chlorine. Recycled water used for groundwater recharge must meet disinfected tertiary recycled water standards in accordance to Title 22. Sodium hypochlorite is used as the disinfection agent at the RP-1 and RP-4 water recycling facilities; hence, the smell of chlorine is prominent in recycled water and is therefore unavoidable. Order No. R8-2007-0039 allows compliance for secondary MCLs to be determined at the mound monitoring well. Based on the mound monitoring well data (Table 2-9a), threshold odor did not exceed 3 Units at the nearest downgradient monitoring wells during 3Q18.

Although NRG turnout is a suitable sampling location for most constituents, it is not appropriate for Total Trihalomethanes (TTHMs), Total Haloacetic Acids (HAA5), and 1,2,3-Trichloropropane (1,2,3-TCP). Compliance samples for these compounds are taken from lysimeters or monitoring wells at basins actively receiving recycled water. At these locations, the samples better represent the compounds present in the recycled water prior to reaching the groundwater table, as the concentrations of these constituents change through the recharge process. Once a quarter, a representative sample is collected from a selected compliance lysimeter/monitoring well and analyzed for these compounds. For the 3Q18 sampling for these three compounds, IEUA chose the 25-foot below ground surface lysimeter at the Declez Basin (DCZ2-LYS-25) as the compliance point. The Declez Basin lysimeter was selected as the compliance point because the basin received consistent recycled water recharge and recycled water was present at the 25-foot depth based on electrical conductivity (EC) measurements.

For constituents with no specified limits, quarterly monitoring data are summarized in Table 2-4. All required constituents were analyzed in 3Q18.

Note that in Table 2-4 there are several constituents highlighted in purple that are included in the State Water Resources Control Board's (State Water Board) proposed May 9, 2018 amendment to the Policy for Water Quality Control for Recycled Water (Recycled Water Policy). The proposed amendment included updates to the chemicals of emerging concern (CECs) monitoring list based on the 2018 Science Advisory Panel recommendations.

The public comment period for the proposed amendment ended on June 26, 2018. Following the public comment period, the State Water Board issued state notification levels for perfluorooctane sulfonate (PFOS) and perfluorooctanioc acid (PFOA) on July 13, 2018, and requested the Science Advisory Panel re-evaluate PFOS and PFOA to determine if they should be added to the CECs monitoring list. On August 27, 2018 the State Water Board issued a notice of additional revisions to the proposed amendment to include PFOS and PFOA to the CEC monitoring list. The comment period for this ended on September 10, 2018. PFOS and PFOA monitoring was added to the notification level list for diluent water during 3Q18, however was inadvertently not added to the recycled water monitoring. PFOS and PFOA monitoring of the recycled water will start in 4Q18.

B. Recycled Water: Basin and Lysimeter Samples

Total organic carbon (TOC) and nitrogen species sampling and analyses are performed weekly or monthly at lysimeters at some basins when recycled water is being delivered, for the determination of compliance with Recycled Water Specifications A.7 and A.9 of the Order. EC is also measured and

reported to assist in identifying the presence of recycled water at various depths in the vadose zone. Basin and lysimeter water quality results from 3Q18 are summarized in Table 2-5a. The table includes surface water and lysimeter data at the 25-foot depth for Brooks and Declez Basin. Most compliance sampling for TOC and TN of the recycled water at each basin is analyzed using alternative monitoring plans (Section 2.C), and not lysimeter data. Currently, the only lysimeter monitoring data used to assess compliance is at Brooks (TN only) and Declez Basins. There were no exceedances of TN and TOC during 3Q18 at the compliance lysimeters.

The Brooks Basin 25-foot lysimeter (BRK-LYS-25) is only sampled monthly due to slow travel times to the lysimeter. Please note that there are no monthly samples at Brooks Basin for surface water in August and September 2018 and at BRK-LYS-25 in September 2018 due to the basin being offline for maintenance. Sampling at the Declez Basin lysimeters re-initiated in August 2018.

C. Recycled Water: Alternative Monitoring Plans for TOC and TN

As indicated in Recycled Water Compliance Determination B.5 and B.6 of the Order, alternative monitoring plans to the lysimeter-based compliance sampling for TOC and TN under Recycled Water Specifications A.7 and A.9 can be established upon development of a soil-aquifer treatment factor using recharge demonstration studies. The alternative monitoring plans can be determined in the basin Start-up Period Reports or First Year Operations Reports. The alternative TOC and TN monitoring plans approved by the Regional Board and DDW include alternative monitoring locations that include: sampling at a recycled water distribution turnout with the application of a correction factor; monitoring at one basin lysimeter; and/or monitoring at a basin monitoring well. The following are the alternative monitoring plans for each basin:

- Banana Basin: Sampling at the NRG turnout with a correction factor of 80 percent for TOC and 37 percent for TN (added to Table 2-5b in 2Q18 because alternative monitoring plan was located in the First Year Operations Report for Banana Basin prepared by WEI & IEUA in September 2007)
- Hickory Basin: Sampling at the NRG turnout with a correction factor of 81 percent for TOC and 27 percent for TN (added to Table 2-5b in 2Q18 because alternative monitoring plan was located in the First Year Operations Report for Hickory Basins prepared by WEI & IEUA in October 2007)
- Turner Basins 1 & 2: Sampling at the NRG turnout with a correction factor of 70 percent for TOC and 87 percent for TN
- Turner Basins 3 & 4: Sampling at the NRG turnout with a correction factor of 85 percent for TOC and 87 percent for TN
- Ely Basins: Sampling RP-1 recycled water with a correction factor of 76 percent for TOC and 52 percent for TN
- RP3 Basin: Sampling at the NRG turnout with a correction factor of 88 percent for TOC and 31 percent for TN
- 8th Street Basin: Sampling at the NRG turnout with a correction factor of 88 percent for TOC and 75 percent for TN
- San Sevaine 5 Basin: Sampling at the NRG turnout with a correction factor of 78 percent for TOC and 69 percent for TN (removed from Table 2-5b in 2Q18 because this site has not received recycled water since 2014)
- Victoria Basin: Sampling at the NRG turnout with a correction factor of 78 percent for TOC and 82 percent for TN

- Brooks Basin: Sampling at the 25-foot lysimeter is the compliance point for TN, and sampling at well BRK-1/1 is the compliance point for TOC

The TOC and TN values calculated based on the alternative monitoring locations and the application of these correction factors listed above are summarized in Table 2-5b. Table 2-6 is a compliance summary table for RWC, TOC average, and TN compliance. It includes the following: when the basin started receiving recycled water, when the startup period was completed, the RWC limit, the current RWC, the current TOC average limit (based on Recycled Water Specification A.10), the calculated monthly TOC averages, compliance with the TN limit, and recharged water monitoring plans for TOC and TN. Some of these correction factors and locations for the compliance sampling have been modified since the basin's startup reports. These changes are described below.

In June 2015, the DDW issued a letter that approved the request for 50% RWC for most of the GWR basins, with the exception of RP3, San Sevaine 5, and Turner Basins. The letter stated that based on the data that was provided: "For most of the recharge basins, the data does show an increasing amount of EC and chloride in the mound monitoring wells over time, indicating that recycled water is reaching the mound. Corresponding TOC data from the mound monitoring wells also show a consistent TOC level of less than 1.0 mg/L when recycled water is present; therefore, increasing the RWC limit to 50 percent for some basins is justified." Starting 1Q17, the TOC reduction factor at the 8th Street Basin was amended to 88% to align with the DDW's evaluation and allowance of a 50% RWC. The 80% reduction factor was determined based on mound monitoring well data from 2008 to 2016.

During 3Q18, there were no exceedances of TOC and TN at the basins that have implemented alternative monitoring plans.

D. Diluent Water

In addition to recycled water recharge, the two other recharge water sources are imported water and stormwater / local runoff; these two types of water are considered diluent water. Imported water and stormwater / local runoff must be sampled quarterly in accordance with the DDW-approved Diluent Water Monitoring Plan.

Details on the methods used to measure daily diluent water flow and diluent water monitoring schedule can be found in the Diluent Water Monitoring Plan. The quarterly sampling schedule for stormwater and local runoff is presented in Table 4-2 of the plan. Stormwater is sampled during the rainy season (1st and 4th quarters) and local runoff is sampled during the dry season (2nd and 3rd quarters). Samples are collected at about half the locations during each seasonal quarter, alternating between even and odd years. Table 5-1 of the plan summarizes the sample type and reporting frequency for the parameters listed in Tables I, II, III, and IV of the Diluent Water Monitoring requirement III.3 of the MRP. For 3Q18, diluent water quality sampling of local runoff was conducted during the month of August 2018. Table 2-7a lists the results of the local runoff sampling and analyses.

E. Groundwater Monitoring Wells

Monitoring is conducted at groundwater monitoring wells quarterly and annually to evaluate groundwater quality conditions in the vicinity of the recharge basins utilizing recycled water. Groundwater monitoring results can be used to assess background conditions, time the arrival of recharge waters, and the impact that recharged water has on downgradient water supplies. The wells in the monitoring well networks for Hickory and Banana, Turner, 8th Street, Ely, Brooks, RP3, San Sevaine, Victoria, and Declez Basins are summarized in Table 2-8, and presented on Figures 2-1 through 2-7, respectively. Groundwater quality samples are collected and tested quarterly for all constituents listed in Table 1 of Section V in the MRP R8-2007-0039, and annually for constituents specified in the Phase II Findings of Fact, Attachment A in

the permit (Bullet 27 in the Conditions Section). The groundwater constituents analyzed from the monitoring wells during quarterly monitoring are presented in Table 2-9a.

Any 3Q18 sample which exceeded primary or secondary MCLs are shown in the table in bold italic font. The DDW is notified within 48 hours of receiving the results for primary MCL exceedances or coliform presence at active municipal drinking water wells. Exceedances of primary MCLs and coliform presence at non-drinking water monitoring wells and all secondary MCL exceedances are not reported to the DDW but are reported in the quarterly reports. Of note are the analyses for the following wells and constituents:

Turbidity exceeding the secondary MCL of 5 NTU was observed in five monitoring wells, namely: T-2/1, BRK-2/1, Ely MW1, Ely MW2, and DCZ-1/1. The secondary MCL for color of 15 units was exceeded at BRK-2/1, Ely MW1, and DCZ-1/1. RP3-1/1 and DCZ-1/1 exceeded the secondary MCL for manganese of 50 µg/L.

TDS and EC were higher than their secondary MCLs of 500 mg/L and 900 µmhos/cm, respectively, in Southridge JHS, ALCOA MW3, and Ely MW2. BH-1/2, ALCOA MW1, and JCSD Well No. 13 exceeded the secondary MCL for TDS only. The wells south of the Ely Basins and near the RP3 Basins are located in areas where the TDS and EC concentrations in groundwater are historically elevated. The distribution of TDS concentrations observed at wells in the Chino Basin is summarized in Watermaster's State of the Basin Reports.

Some monitoring wells at the RP3, Brooks, and Ely monitoring well networks have nitrate as nitrogen (NO_3-N) concentrations above the primary MCL of 10 mg/L. The NO_3-N levels range from 10 to 30 mg/L and are characteristic of groundwater quality in these areas of the Chino Basin. The distribution of NO_3-N concentrations observed at wells in the Chino Basin is summarized in Watermaster's State of the Basin Reports. No notifications were made to the DDW as these high NO_3-N concentrations are comparable to the ambient NO_3-N concentration in groundwater for each monitoring well's respective groundwater management zone within the Chino Basin.

The current State of the Basin Report, which is the "Chino Basin Optimum Basin Management Program 2016 State of the Basin Report" published in June 2017 was prepared by Wildermuth Environmental for the CBWM. The 2016 State of the Basin report can be downloaded from CBWM's website, www.cbwm.org.

The 2014 GRRP regulations require two downgradient monitoring wells to be monitored quarterly for Priority Pollutants, and that the wells are located (A) no less than two weeks but no more than six months of travel through the unsaturated zone affected by the project, and (B) at least 30 days upgradient of the nearest drinking water well be monitored quarterly for Priority Toxic Pollutants. The priority pollutants analysis did not take place during 3Q18 due to a pending IEUA laboratory move from the City of Ontario to the City of Chino. The priority pollutant monitoring at the downgradient monitoring wells will be re-initiated in 4Q18.

3. Recharge Operations

IEUA's GWR staff records the daily volumes of water routed to all basins. The 8th Street, Banana, Brooks, Declez, Ely, Hickory, RP3, Turner, and Victoria Basins received recycled water this quarter. Table 3-1 lists the volumes of recycled water and diluent water (local runoff, stormwater, and/or imported water) captured during 3Q18 at the basins that have initiated recharge using recycled water.

Recycled water deliveries were initiated at Declez Basin on December 23, 2015. DDW staff was contacted on June 23, 2016 informing them of IEUA's intent to extend the start-up period for Declez Basin for an additional four months beyond the initial 180-day period in order to gather more data. The request to extend the start-up period was due to winter rain events that resulted in the lysimeter EC data showing significant influence for stormwater. Recycled water deliveries to the Declez Basin were stopped

on September 8, 2016 after it was deemed that enough data was collected for the start-up period evaluation. The Declez Basin Start-Up Period Report was submitted to the RWQCB and DDW in May 2018.

An alternative monitoring plan is proposed for Declez Basin for the first year of monitoring. With travel time approximately 30 days to the 25-foot lysimeter, the proposed plan is to sample the surface water and 25-foot lysimeter (DCZ-LYS-25) for TOC, TN, and EC every other week with resumed delivery of recycled water. With confirmation of SAT performance during the initial year, lysimeter monitoring would be replaced with monitoring from the delivery pipeline and TOC and TN SAT correction factors applied to results. Pipeline monitoring would then occur weekly during active delivery.

Recycled water deliveries to Declez Basin were re-initiated on April 25, 2018. The sampling of the surface water and DCZ-LYS-25 was inadvertently not implemented during 2Q18. The biweekly monitoring for TOC, TN, and EC restarted in August 2018.

4. Operational Problems & Preventive or Corrective Actions

No operational problems were encountered this quarter, therefore no corrective actions were necessary for the following: Regional Water Recycling Facilities - RP-1 & RP-4 and recharge operations.

5. Certification of Non-Pumping in the Buffer Zones

Watermaster has certified that there was no reported pumping of groundwater in 3Q18 for domestic or municipal use from the buffer zones that extend 500 feet and 6 months underground travel time from the 8th Street, Banana, Brooks, Declez, Ely, Hickory, RP3, San Sevaine, Turner, and Victoria Basins. In fact, there are no domestic or municipal production wells within the buffer zones of these aforementioned recharge sites.

IEUA continues to work with the San Bernardino County Department of Environmental Health Services (SBCDEHS) to prevent the drilling and construction of new drinking water wells within the buffer zones. SBCDEHS has initiated control over production well permitting within the buffer zones of all recharge sites through the use of buffer zone maps that utilize the same land coordinate system (Township/Range/Section/40-acre Parcel) that is used in the permitting process. SBCDEHS reviews new well permit applications, in part, by checking the proposed location of a new drinking water well against recharge basin location maps and parcel lists, both provided by IEUA. The maps and lists show township/range/section parcels (40-acre parcels) that abut recharge basins and their 500-foot buffers.

If a proposed well falls within an abutting parcel, SBCDEHS will review the well location using maps of the basins and buffer zones. If the well falls too near the buffer zone boundary for SBCDEHS to determine the relationship of the proposed well location to the buffer boundary, SBCDEHS will defer to IEUA for a prompt field review of the proposed well location. The field review may include contacting and having the well applicant identify the exact location of the proposed well casing. To conduct a detailed field review, SBCDEHS will contact and provide the IEUA Groundwater Recharge Coordinator with a copy of the well permit application and a timeline for the completion of IEUA's review. Following the review, IEUA will notify SBCDEHS of its findings in writing. IEUA will also notify the DDW and the Regional Board of well permit applications that it recommends should be declined due to well locations determined to fall with a 500-foot buffer zone.

6. MVWD ASR Project

Reporting for the Monte Vista Water District (MVWD) Aquifer Storage and Recovery (ASR) project was allowed by the Regional Board to be included under IEUA/Watermaster Phase I Groundwater Recharge Order No. R8-2005-0033 and subsequent permit updates. In April 2007, MVWD, Watermaster,

and IEUA entered into an agreement to report the MVWD ASR project groundwater injection/recovery volumes and TIN/TDS mass balance in the recharge program quarterly reports. Initial injection began in June 2007. In September 2017, MVWD restarted injection activities for the first time since September 2011. The injection activities continued through May 2018. Table 6-1 summarizes the monthly volumes and TIN/TDS of injected and recovered water. The table also includes the mass balance of TIN/TDS from the injection-recovery cycles.

Table 2-1a
Recycled Water Monitoring: RP-1 & RP-4 Effluent Water Quality for July 2018
(Recycled Water Quality Specifications A.5, A.7, A.8, & A.9)

	RP-1 Effluent										RP-4 Effluent									
	Turbidity [1,2,7]	TOC	NO_3-N	TN	TIN [3]	pH [7]	EC [7]	TDS [3]	Hardness	Coliform [1,2,4]	Turbidity [1,2,7]	TOC	NO_3-N	TN	TIN [3]	pH [7]	EC	TDS [3]	Hardness	Coliform [1,2,4]
Unit	NTU	mg/L	mg/L	mg/L	mg/L	unit	µhmo/cm	mg/L	mg/L	mpn/100mL	NTU	mg/L	mg/L	mg/L	mg/L	unit	µhmo/cm	mg/L	mg/L	mpn/100mL
Limits	2;5;10	16 [5]		5 [6]		6<pH<9				2.2;23;240	2;5;10	16 [5]		5 [6]		6<pH<9				2.2;23;240
07/01/18	0.8	6.5	6.2	6.2	6.2	6.9	647	474		<1	0.5	5.4	3.9	4.5	3.9	6.7	807	480		<1
07/02/18	0.6	6.0	6.5		6.5	6.9	634			<1	0.5	5.4	3.2		3.2	6.8	772			<1
07/03/18	0.6	6.3				6.8	631			<1	0.5	5.2				6.9	792			<1
07/04/18	0.7	6.4	5.6		5.6	6.8	637			<1	0.5	4.8	2.9		2.9	7.0	797			<1
07/05/18	0.7	6.2	5.9		5.9	6.8	647			<1	0.5	4.6	3.8		3.8	7.0	790			<1
07/06/18	0.4	6.6				6.8	649				0.5	4.7				6.9	794			
07/07/18	0.3	6.5				6.8	652			<1	0.5	4.8				6.9	784			<1
07/08/18	0.3	6.4	4.1	4.1	4.1	6.8	638	454	142	<1	0.4	4.8	3.5	4.6	3.5	6.9	784	452	122	<1
07/09/18	0.7	6.5	4.4		4.4	6.7	643			<1	0.4	4.8	3.3		3.3	6.9	787			<1
07/10/18	0.8	6.6	4.0		4.0	6.8	668			<1	0.4	4.8	3.5		3.5	6.9	785			<1
07/11/18	0.8	6.4	3.7		3.7	6.8	680			<1	0.4	4.8	4.3		4.3	6.9	755			<1
07/12/18	0.8	6.3	3.1		3.1	6.9	669			<1	0.4	4.7	4.3		4.3	6.9	812			<1
07/13/18	0.7	6.1				6.8	683			<1	0.4	4.6				6.9	774			<1
07/14/18	0.7	5.7				6.8	685			<1	0.4	4.6				6.9	779			<1
07/15/18	0.7	6.0	4.5	4.5	4.5	6.9	663	486		<1	0.4	4.7	3.5	3.5	3.5	6.9	801	468		<1
07/16/18	0.6	6.1	4.4		4.4	6.8	660			1	0.4	4.8	3.2		3.2	6.9	767			<1
07/17/18	0.7	6.2	4.1		4.1	6.9	649			<1	0.4	4.8	3.2		3.2	6.9	765			<1
07/18/18	0.9	5.9	4.0		4.0	6.9	639			<1	0.4	4.3	3.7		3.7	6.8	780			<1
07/19/18	0.9	5.9	3.9		3.9	6.8	667			<1	0.4	4.2	4.0		4.0	6.8	782			<1
07/20/18	1.0	5.8				6.8	662			<1	0.4	4.2				6.8	790			<1
07/21/18	1.0	5.8				6.8	653			<1	0.4	4.1				6.8	791			<1
07/22/18	1.0	5.9	4.8	4.8	4.8	6.8	645	478		<1	0.4	4.3	3.3	3.3	3.3	6.8	797	464		<1
07/23/18	1.1	6.3	4.9		4.9	6.8	658			<1	0.4	4.4	3.1		3.1	6.9	814			<1
07/24/18	1.0	6.3	4.4		4.4	6.8	684			<1	0.4	4.4	3.5		3.5	6.9	738			<1
07/25/18	1.0	6.4	4.1		4.1	6.8	687			<1	0.4	4.6	3.8		3.8	6.9	787			<1
07/26/18	1.0	6.3	4.3		4.3	6.8	685			<1	0.4	4.5	3.9		3.9	6.9	788			<1
07/27/18	1.0	6.4				6.9	675			<1	0.4	4.5				6.9	788			<1
07/28/18	1.0	6.2				6.8	681			<1	0.5	4.6				6.9	787			<1
07/29/18	0.9	6.4	4.9	4.9	4.9	6.8	670	452		<1	0.5	4.8	3.7	3.7	3.7	6.9	784	454		<1
07/30/18	0.9	6.5	4.9		4.9	6.8	669			<1	0.5	0.0				6.9				<1
07/31/18	0.9	6.3	4.4		4.4	6.8	718			<1	0.5	4.8	3.3		3.3	7.0	764			<1
Avg	0.8	6.2	4.6	4.9	4.6	6.8	662	469	142	<1	0.4	4.5	3.6	3.9	3.6	6.9	785	464	122	<1
Min	0.3	5.7	3.1	4.1	3.1	6.7	631	452	142	<1	0.4	0.0	2.9	3.3	2.9	6.7	738	452	122	<1
Max	1.1	6.6	6.5	6.2	6.5	6.9	718	486	142	1	0.5	5.4	4.3	4.6	4.3	7.0	814	480	122	<1

Note: **Bolded characters signify an exceedance of a permit limitation**

Blank cells indicate that analysis was not run for a constituent on that particular date. The data presented meets/exceeds the frequency of analysis specified under the discharge permit for these facilities.

[1] Turbidity and coliform must meet water quality standards for disinfected tertiary treated recycled water, as specified in NPDES No. CA8000409, Order No. R8-2009-0021.

[2] Turbidity limits: 2 NTU average daily; 5 NTU no more than 5% of day; 10 NTU at any time. Coliform limits: 2.2 MPN/100mL 7-day median; 23 MPN/100mL in no more than 1 sample per month; 240 MPN/100mL at any time.

[3] TDS and TIN limits are based on the 12-month running average of the combined effluent from all plants, which are presented in Table 2-2.

[4] Monthly average for coliform is based on "non-detect" values equal to 2. Determination of "less than" is dependent on the number of "non-detect" occurrences more than half the days in the month.

[5] TOC shall not exceed 16 mg/L for more than two consecutive samples and an average of the last 4 sample results. TOC compliance can be met at a point prior to reaching the regional groundwater table, including lysimeters.

[6] TN compliance can be met at a point prior to reaching the regional groundwater table, including lysimeters.

[7] These values based on continuous monitoring data generated by the Supervisory Control and Data Acquisition (SCADA) system.

Table 2-1b
Recycled Water Monitoring: RP-1 & RP-4 Effluent Water Quality for August 2018
(Recycled Water Quality Specifications A.5, A.7, A.8, & A.9)

	RP-1 Effluent										RP-4 Effluent									
	Turbidity [1,2,7]	TOC	NO_3-N	TN	TIN [3]	pH [7]	EC [7]	TDS [3]	Hardness	Coliform [1,2,4]	Turbidity [1,2,7]	TOC	NO_3-N	TN	TIN [3]	pH [7]	EC	TDS [3]	Hardness	Coliform [1,2,4]
Unit	NTU	mg/L	mg/L	mg/L	mg/L	unit	µhmo/cm	mg/L	mg/L	mpn/100mL	NTU	mg/L	mg/L	mg/L	mg/L	unit	µhmo/cm	mg/L	mg/L	mpn/100mL
Limits	2;5;10	16 [5]		5 [6]		6<pH<9				2.2;23;240	2;5;10	16 [5]		5 [6]		6<pH<9				2.2;23;240
08/01/18	0.9	6.2	4.1		4.1	6.9	681			<1	0.5	4.8	3.9		3.9	7.0	735			<1
08/02/18	1.0	6.3	3.8		3.8	6.8	707			<1	0.6	4.7	4.3		4.3	7.0	745			<1
08/03/18	0.8	6.0				6.9	679			<1	0.5	4.6				6.9	784			<1
08/04/18	0.7	5.8				6.9	660			<1	0.5	4.6				6.9	796			<1
08/05/18	0.7	5.7	4.3	4.3	4.3	7.0	637	458	153	<1	0.5	4.7	3.5	3.5	3.5	6.9	955	470	135	<1
08/06/18	0.7	5.8	4.3		4.3	6.8	681			<1	0.6	4.8	2.7		2.7	6.9	789			<1
08/07/18	0.6	5.9	4.1		4.1	6.8	681			<1	0.6	4.8	3.2		3.2	6.8	780			<1
08/08/18	0.6	5.8	4.0		4.0	6.9	659			<1	0.5	4.8	3.9		3.9	6.8	783			<1
08/09/18	0.7	5.9	4.1		4.1	6.8	682			<1	0.5	4.7	4.4		4.4	6.8	781			<1
08/10/18	0.7	5.8				6.8	676			<1	0.5	4.5				6.9	793			<1
08/11/18	0.7	5.9				6.8	678			<1	0.5	4.6				7.0	820			<1
08/12/18	0.7	6.0	4.2	4.2	4.2	6.9	665	466		<1	0.5	4.7	3.6	4.1	3.6	7.0	792	436		<1
08/13/18	0.7	6.0	4.2		4.2	6.8	653			1	0.6	4.7	3.1		3.1	7.0	768			<1
08/14/18	0.9	5.9	3.1		3.1	6.9	651			<1	0.6	4.5	3.5		3.5	7.0	787			<1
08/15/18	0.8	6.1	3.6		3.6	6.9	647			<1	0.5	4.6	4.3		4.3	7.0	779			<1
08/16/18	0.8	5.8	3.9		3.9	6.9	654			<1	0.5	4.6	4.4		4.4	7.0	784			<1
08/17/18	0.7	5.8				6.9	652			<1	0.5	4.5				6.9	789			<1
08/18/18	0.7	5.6				6.9	658			<1	0.5	4.5				6.9	782			<1
08/19/18	0.7	5.7	5.3	5.3	5.3	6.9	647	488		1	0.5	4.6	3.3	4.1	3.3	6.9	778	434		<1
08/20/18	0.7	6.0	4.8		4.8	6.9	635			<1	0.5	4.7	2.8		2.8	6.9	777			<1
08/21/18	0.7	6.0	4.5		4.6	6.9	653			<1	0.4	4.7	3.4		3.4	6.9	775			<1
08/22/18	0.6	6.0	4.7		4.7	6.9	665			<1	0.4	4.6	4.3		4.3	6.9	779			<1
08/23/18	0.6	5.8	4.7		4.7	6.9	682			<1	0.4	4.6	4.7		4.7	6.9	776			<1
08/24/18	0.6	5.6				6.9	677			<1	0.4	4.3				6.9	791			<1
08/25/18	0.7	5.6				6.9	661			<1	0.4	4.5				6.9	797			<1
08/26/18	0.6	5.9	5.3	5.3	5.3	6.9	654	456		<1	0.4	4.5	3.7	3.7	3.7	6.9	799	440		<1
08/27/18	0.6	6.2	5.2		5.2	7.0	728			<1	0.5	4.6	3.2		3.2	6.9	785			<1
08/28/18	0.5	6.2	5.3		5.3	6.9	833			<1	0.6	4.6	3.7		3.7	6.9	747			<1
08/29/18	0.5	6.0				6.8	825			<1	0.6	4.6	4.5		4.5	6.9	766			<1
08/30/18	0.6	5.9	5.1		5.1	6.9	778			<1	0.6	4.5	4.7		4.7	6.9	766			<1
08/31/18	0.7	5.9				6.9	740			<1	0.6	4.3				6.9	788			<1
Avg	0.7	5.9	4.4	4.8	4.4	6.9	683	467	153	<1	0.5	4.6	3.8	3.9	3.8	6.9	786	445	135	<1
Min	0.5	5.6	3.1	4.2	3.1	6.8	635	456	153	<1	0.4	4.3	2.7	3.5	2.7	6.8	735	434	135	<1
Max	1.0	6.3	5.3	5.3	5.3	7.0	833	488	153	1	0.6	4.8	4.7	4.1	4.7	7.0	955	470	135	<1

Note: **Bolded characters signify an exceedance of a permit limitation**

Blank cells indicate that analysis was not run for a constituent on that particular date. The data presented meets/exceeds the frequency of analysis specified under the discharge permit for these facilities.

[1] Turbidity and coliform must meet water quality standards for disinfected tertiary treated recycled water, as specified in NPDES No. CA8000409, Order No. R8-2009-0021.

[2] Turbidity limits: 2 NTU average daily; 5 NTU no more than 5% of day; 10 NTU at any time. Coliform limits: 2.2 MPN/100mL 7-day median; 23 MPN/100mL in no more than 1 sample per month; 240 MPN/100mL at any time.

[3] TDS and TIN limits are based on the 12-month running average of the combined effluent from all plants, which are presented in Table 2-2.

[4] Monthly average for coliform is based on "non-detect" values equal to 2. Determination of "less than" is dependent on the number of "non-detect" occurrences more than half the days in the month.

[5] TOC shall not exceed 16 mg/L for more than two consecutive samples and an average of the last 4 sample results. TOC compliance can be met at a point prior to reaching the regional groundwater table, including lysimeters.

[6] TN compliance can be met at a point prior to reaching the regional groundwater table, including lysimeters.

[7] These values based on continuous monitoring data generated by the Supervisory Control and Data Acquisition (SCADA) system.

Table 2-1c
Recycled Water Monitoring: RP-1 & RP-4 Effluent Water Quality for September 2018
(Recycled Water Quality Specifications A.5, A.7, A.8, & A.9)

	RP-1 Effluent										RP-4 Effluent									
	Turbidity [1,2,7]	TOC	NO_3-N	TN	TIN [3]	pH [7]	EC [7]	TDS [3]	Hardness	Coliform [1,2,4]	Turbidity [1,2,7]	TOC	NO_3-N	TN	TIN [3]	pH [7]	EC	TDS [3]	Hardness	Coliform [1,2,4]
Unit	NTU	mg/L	mg/L	mg/L	mg/L	unit	µhmo/cm	mg/L	mg/L	mpn/100mL	NTU	mg/L	mg/L	mg/L	mg/L	unit	µhmo/cm	mg/L	mg/L	mpn/100mL
Limits	2;5;10	16 [5]		5 [6]		6<pH<9				2.2;23;240	2;5;10	16 [5]		5 [6]		6<pH<9				2.2;23;240
09/01/18	0.6	5.9				6.9	738			<1	0.5	4.4				6.9	778			<1
09/02/18	0.6	5.9				7.0	746			<1	0.5	4.3				6.9	769			<1
09/03/18	0.6	6.3	5.3		5.3	6.9	759			1	0.5	4.6	3.5		3.5	7.0	719			<1
09/04/18	0.6	6.4	5.2		5.2	6.9	793			<1	0.5	4.7	3.0		3.0	7.0	718			<1
09/05/18	0.6	5.7	4.6	4.6	4.6	6.8	834	462		<1	0.5	4.4	4.0	4.5	4.0	6.9	734	418		<1
09/06/18	0.6	5.8	4.7		4.7	6.9	776			1	0.5	4.3	4.8		4.8	6.8	718			<1
09/07/18	0.6	5.5				6.9	808			<1	0.5	4.0				6.8	712			<1
09/08/18	0.6	5.4				6.9	819			<1	0.5	4.0				6.8	721			<1
09/09/18	0.5	5.4	5.3	5.3	5.3	6.9	799	454	139	<1	0.5	4.1	4.0	4.5	4.0	6.8	728	412	125	<1
09/10/18	0.7	5.8	5.3		5.3	6.9	828			<1	0.5	4.4	3.4		3.4	6.8	703			<1
09/11/18	0.7	6.0	5.0		5.0	6.9	850			<1	0.5	4.3	3.9		3.9	6.8	721			<1
09/12/18	0.7	5.8	4.5		4.5	6.9	831			<1	0.5	4.3	4.5		4.5	6.8	892			<1
09/13/18	0.7	5.6	5.1		5.1	6.8	872			<1	0.5	4.3	5.0		5.0	6.8	702			<1
09/14/18	0.7	5.9				6.7	925			<1	0.5	4.2				6.8	721			<1
09/15/18	0.7	6.0				6.8	912			<1	0.4	4.2				6.8	718			<1
09/16/18	0.6	5.9	4.5	4.5	4.5	6.8	811	474		<1	0.4	4.3	3.8	4.4	3.8	6.8	719	430		<1
09/17/18	0.6	6.0	4.4		4.4	6.9	807			<1	0.5	4.4	3.4		3.4	6.8	750			<1
09/18/18	0.5	5.9	4.5		4.5	6.8	866			<1	0.5	4.3	3.7		3.7	6.8	752			<1
09/19/18	0.6	6.1	4.5		4.5	6.9	826			<1	0.5	4.3	4.2		4.2	6.8	755			<1
09/20/18	0.6	5.6	4.9		4.9	6.9	796			<1	0.5	4.2	4.6		4.6	6.8	752			<1
09/21/18	0.6	5.2				6.9	779			<1	0.4	4.1				6.8	749			<1
09/22/18	0.7	5.2				6.9	746			<1	0.4	4.0				6.8	751			<1
09/23/18	0.7	5.3	5.0	5.0	5.0	6.9	752	456		<1	0.4	4.2	3.6	4.5	3.6	6.8	753	432		<1
09/24/18	0.7	5.2	5.5		5.5	6.9	848			<1	0.4	4.4	3.2		3.2	6.8	724			<1
09/25/18	0.7	5.8	5.6		5.6	6.9	909			<1	0.5	4.4	3.9		3.9	6.8	740			<1
09/26/18	0.7	5.6	4.3		4.3	6.9	866			<1	0.6	4.5	4.7		4.7	6.8	746			<1
09/27/18	0.6	5.3	4.5		4.5	6.9	853			<1	0.6	4.3	5.0		5.0	6.8	752			<1
09/28/18	0.6	5.1				6.9	840			<1	0.5	4.2				6.8	758			<1
09/29/18	0.6	5.1				6.9	868			<1	0.5	4.1				6.8	765			<1
09/30/18	0.7	5.4	4.8		4.8	6.9	885	460		<1	0.5	4.5	3.7	4.4	3.7	6.8	775	402		<1
Avg	0.6	5.7	4.9	4.9	4.9	6.9	825	461	139	<1	0.5	4.3	4.0	4.5	4.0	6.8	743	419	125	<1
Min	0.5	5.1	4.3	4.5	4.3	6.7	738	454	139	<1	0.4	4.0	3.0	4.4	3.0	6.8	702	402	125	<1
Max	0.7	6.4	5.6	5.3	5.6	7.0	925	474	139	1	0.6	4.7	5.0	4.5	5.0	7.0	892	432	125	<1

Note: **Bolded characters signify an exceedance of a permit limitation**

Blank cells indicate that analysis was not run for a constituent on that particular date. The data presented meets/exceeds the frequency of analysis specified under the discharge permit for these facilities.

[1] Turbidity and coliform must meet water quality standards for disinfected tertiary treated recycled water, as specified in NPDES No. CA8000409, Order No. R8-2009-0021.

[2] Turbidity limits: 2 NTU average daily; 5 NTU no more than 5% of day; 10 NTU at any time. Coliform limits: 2.2 MPN/100mL 7-day median; 23 MPN/100mL in no more than 1 sample per month; 240 MPN/100mL at any time.

[3] TDS and TIN limits are based on the 12-month running average of the combined effluent from all plants, which are presented in Table 2-2.

[4] Monthly average for coliform is based on "non-detect" values equal to 2. Determination of "less than" is dependent on the number of "non-detect" occurrences more than half the days in the month.

[5] TOC shall not exceed 16 mg/L for more than two consecutive samples and an average of the last 4 sample results. TOC compliance can be met at a point prior to reaching the regional groundwater table, including lysimeters.

[6] TN compliance can be met at a point prior to reaching the regional groundwater table, including lysimeters.

[7] These values based on continuous monitoring data generated by the Supervisory Control and Data Acquisition (SCADA) system.

Table 2-2
Recycled Water Monitoring: Agency-Wide Flow-Weighted TIN & TDS (mg/L)
(Recycled Water Quality Specifications A.6)

	TIN		TDS	
Date	**Monthly**	**12-Mo. Run Avg.**	**Monthly**	**12-Mo. Run Avg.**
Oct-17	6.1	6.0	428	466
Nov-17	6.5	6.0	455	463
Dec-17	6.8	6.0	444	459
Jan-18	5.3	6.0	464	456
Feb-18	5.3	5.9	488	456
Mar-18	4.4	5.8	504	459
Apr-18	5.0	5.8	485	460
May-18	4.8	5.7	495	463
Jun-18	4.7	5.6	490	465
Jul-18	4.6	5.4	484	468
Aug-18	4.3	5.3	478	471
Sep-18	5.2	5.3	467	473
Avg	5.3	5.7	473	463
Min	4.3	5.3	428	456
Max	6.8	6.0	504	473
Limit		8.0		550

Date source: IEUA NPDES monthly self-monitoring report (MRP No. R8-2009-0021).
Per the Regional Board, TDS is calculated using the flow-weighted averages based on discharged effluent flows and recycled water flows; TIN is calculated using the flow-weighted averages based on discharged effluent flows only.
The data reported above will supersede any information submitted for previous quarters. Agency-wide TIN & TDS were in compliance with permit limits at all times.

Table 2-3
Recycled Water Monitoring: Primary & Secondary Maximum Contaminant Levels
(Recycled Water Quality Specifications A.1, A.2, A.3, & A.15)

Constituent	4Q17	1Q18	2Q18	3Q18	4Q Run. Avg.[1]	Limit	Unit	Method
Inorganic Chemicals								
Aluminum	63	62	80	32	59	1000	µg/L	EPA 200.8
Antimony	<1	<1	<1	<1	<1	6	µg/L	EPA 200.8
Arsenic	<2	<2	<2	<2	<2	10	µg/L	EPA 200.8
Asbestos	<0.18	<0.78	<0.2	<0.2	<0.78	7	MFL	EPA 100.2
Barium	9	7	12	18	11	1000	µg/L	EPA 200.8
Beryllium	<0.5	<0.5	<0.5	<0.5	<0.5	4	µg/L	EPA 200.8
Cadmium	<0.25	<0.25	<0.25	<0.25	<0.25	5	µg/L	EPA 200.8
Chromium	1.0	1.3	1.4	1.8	1.4	50	µg/L	EPA 200.8
Chromium VI [2]	0.19	0.18	0.20	0.36	0.23	10	µg/L	EPA 218.6
Cyanide	<0.02	<0.02	<0.02	<20	<20	150	µg/L	SM 4500-CN E
Fluoride	0.2	0.1	0.2	0.2	0.2	2	mg/L	SM 4500-F C
Mercury	<0.5	<0.5	<0.5	<0.5	<0.50	2	µg/L	EPA 245.2
Nickel	3	2	3	3	3	100	µg/L	EPA 200.8
Perchlorate	<4	<4	<4	<4	<4	6	µg/L	EPA 314/331.0
Selenium	<2	<2	<2	<2	<2	50	µg/L	EPA 200.8
Thallium	<1	<1	<1	<1	<1	2	µg/L	EPA 200.8
Volatile Organic Chemicals (VOCs)								
Benzene	<0.5	<0.5	<0.5	<0.5	<0.5	1	µg/L	EPA 524.2
Carbon Tetrachloride	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	µg/L	EPA 524.2
1,2-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	600	µg/L	EPA 524.2
1,4-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	5	µg/L	EPA 524.2
1,1-Dichloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	5	µg/L	EPA 524.2
1,2-Dichloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	µg/L	EPA 524.2
1,1-Dichloroethylene	<0.5	<0.5	<0.5	<0.5	<0.5	6	µg/L	EPA 524.2
cis-1,2-Dichloroethylene	<0.5	<0.5	<0.5	<0.5	<0.5	6	µg/L	EPA 524.2
trans-1,2-Dichloroethylene	<0.5	<0.5	<0.5	<0.5	<0.5	10	µg/L	EPA 524.2
Dichloromethane	<0.5	<0.5	<0.5	<0.5	<0.5	5	µg/L	EPA 524.2
1,2-Dichloropropane	<0.5	<0.5	<0.5	<0.5	<0.5	5	µg/L	EPA 524.2
1,3-Dichloropropene	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	µg/L	EPA 524.2
Ethylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	300	µg/L	EPA 524.2
Monochlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	70	µg/L	EPA 524.2
Methyl-tert-butyl ether	<0.5	<0.5	<0.5	<0.5	<0.5	13	µg/L	EPA 524.2
Styrene	<0.5	<0.5	<0.5	<0.5	<0.5	100	µg/L	EPA 524.2
1,1,2,2-Tetrachloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	1	µg/L	EPA 524.2
Tetrachloroethylene	<0.5	<0.5	<0.5	<0.5	<0.5	5	µg/L	EPA 524.2
Toluene	<0.5	<0.5	<0.5	<0.5	<0.5	150	µg/L	EPA 524.2
1,2,4-Trichlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	5	µg/L	EPA 524.2
1,1,1-Trichloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	200	µg/L	EPA 524.2
1,1,2-Trichloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	5	µg/L	EPA 524.2
Trichloroethylene	<0.5	<0.5	<0.5	<0.5	<0.5	5	µg/L	EPA 524.2
Trichlorofluoromethane	<0.5	<0.5	<0.5	<0.5	<0.5	150	µg/L	EPA 524.2
1,1,2-Trichloro-1,2,2-Trifluoroethane	<0.5	<0.5	<0.5	<0.5	<0.5	1200	µg/L	EPA 524.2
Vinyl Chloride	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	µg/L	EPA 524.2
m,p-Xylene	<0.5	<0.5	<0.5	<0.5	<0.5	1750 [3]	µg/L	EPA 524.2
o-Xylene	<0.5	<0.5	<0.5	<0.5	<0.5		µg/L	EPA 524.2
1,2,3-Trichloropropane (added 7/17)[4]	0.012	0.008	<0.005	0.007	0.007	0.005	µg/L	CASRL 524M-TCP
Non-Volatile Synthetic Organic Chemicals (SOCs)								
Alachlor (Alanex)	<0.1	<0.1	<0.1	<0.1	<0.1	2	µg/L	EPA 505
Atrazine	<0.05	<0.05	<0.05	<5	<0.05	1	µg/L	EPA 525.2
Bentazon	<0.5	<0.5	<0.5	<0.5	<0.5	18	µg/L	EPA 515.4
Benzo(a)pyrene	<0.02	<0.02	<0.02	<0.02	<0.02	0.2	µg/L	EPA 525.2
Carbofuran	<0.5	<0.5	<0.5	<0.5	<0.5	18	µg/L	EPA 531.2
Chlordane	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	µg/L	EPA 505
2,4-D	<0.1	<0.1	<0.1	<0.1	<0.1	70	µg/L	EPA 515.4
Dalapon	5	7	6	8	6	200	µg/L	EPA 515.4
Dibromochloropropane	0.036	<0.01	0.04	<0.01	<0.01	0.2	µg/L	EPA 504.1
Di(2-ethylhexyl)adipate	<0.6	<0.6	<0.6	<0.6	<0.6	400	µg/L	EPA 525.2
Di(2-ethylhexyl)phthalate	<0.6	<0.6	<0.6	<0.6	<0.6	4	µg/L	EPA 525.2
Dinoseb	<0.2	<0.2	<0.2	<0.2	<0.2	7	µg/L	EPA 515.4
Diquat	<0.4	<0.4	<0.4	<0.4	<0.4	20	µg/L	EPA 549.2
Endothall	<5	<5	<5	<5	<5	100	µg/L	EPA 548.1
Endrin	<0.01	<0.01	<0.01	<0.01	<0.01	2	µg/L	EPA 505

Table 2-3
Recycled Water Monitoring: Primary & Secondary Maximum Contaminant Levels
(Recycled Water Quality Specifications A.1, A.2, A.3, & A.15)

Constituent	4Q17	1Q18	2Q18	3Q18	4Q Run. Avg.[1]	Limit	Unit	Method
Ethylene Dibromide	<0.01	<0.01	<0.01	<0.01	<0.01	0.05	µg/L	EPA 504.1
Glyphosate	<6	<25	<6	<6	<25	700	µg/L	EPA 547
Heptachlor	<0.01	<0.01	<0.01	<0.04	<0.01	0.01	µg/L	EPA 505
Heptachlor Epoxide	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	µg/L	EPA 505
Hexachlorobenzene	<0.05	<0.05	<0.05	<0.05	<0.05	1	µg/L	EPA 525.2
Hexachlorocyclopentadiene	<0.05	<0.05	<0.05	0.05	<0.05	50	µg/L	EPA 525.2
Lindane	<0.01	<0.01	<0.01	<0.01	<0.01	0.2	µg/L	EPA 505
Methoxychlor	<0.05	<0.05	<0.05	<0.05	<0.05	30	µg/L	EPA 505
Molinate	<0.1	<0.1	<0.1	<0.1	<0.1	20	µg/L	EPA 525.2
Oxamyl	<0.5	<0.5	<0.5	<0.5	<0.5	50	µg/L	EPA 531.2
Pentachlorophenol	<0.04	<0.04	<0.04	<0.04	<0.04	1	µg/L	EPA 515.4
Picloram	<0.1	<0.1	<0.1	<0.1	<0.1	500	µg/L	EPA 515.4
PCB 1016	<0.08	<0.08	<0.08	<0.08	<0.08	0.5	µg/L	EPA 505
PCB 1221	<0.1	<0.1	<0.1	<0.1	<0.1	0.5	µg/L	EPA 505
PCB 1232	<0.1	<0.1	<0.1	<0.1	<0.1	0.5	µg/L	EPA 505
PCB 1242	<0.1	<0.1	<0.1	<0.1	<0.1	0.5	µg/L	EPA 505
PCB 1248	<0.1	<0.1	<0.1	<0.1	<0.1	0.5	µg/L	EPA 505
PCB 1254	<0.1	<0.1	<0.1	<0.1	<0.1	0.5	µg/L	EPA 505
PCB 1260	<0.1	<0.1	<0.1	<0.1	<0.1	0.5	µg/L	EPA 505
Simazine	<0.05	<0.05	<0.05	<0.05	<0.05	4	µg/L	EPA 525.2
Thiobencarb	<0.2	<0.2	<0.2	<0.2	<0.2	70	µg/L	EPA 525.2
Toxaphene	<0.5	<0.5	<0.5	<0.5	<0.5	3	µg/L	EPA 505
2,3,7,8-TCDD (Dioxin)	<5	<5	<5.12	<4.07	<5.12	30	pg/L	EPA 1613
2,4,5-TP (Silvex)	<0.2	<0.2	<0.2	<0.2	<0.2	50	µg/L	EPA 515.4
Action Level Chemicals								
Copper	5.8	6.0	4.8	4.0	5.1	1300	µg/L	EPA 200.8
Lead	<0.5	<0.5	<0.5	<0.5	<0.5	15	µg/L	EPA 200.8
Radionuclides								
Combined Radium-226 and Radium 228	<0.39	<0.39	<0.17	<0.16	<0.39	5	pCi/L	EPA 903.0
Gross Alpha Particle Activity	<3	<3	<3	<3	<3	15	pCi/L	EPA 900.0/SM7110C
Tritium	<398	<347	<271	<344	<398	20,000	pCi/L	EPA 906
Strontium-90	<1.17	<1.05	<1.53	<1.04	<1.53	8	pCi/L	EPA 905
Gross Beta Particle Activity	15	15	14	13	14	50	pCi/L	EPA 900.0
Uranium	<0.7	<0.7	<0.7	<0.7	<0.7	20	pCi/L	EPA 200.8
Secondary Maximum Contaminant Level Chemicals								
Aluminum	63	62	80	32	59	200	µg/L	EPA 200.8
Copper	5.8	6.0	4.8	4.0	5.1	1000	µg/L	EPA 200.8
Corrosivity [5]	-0.7 (Non-Cor.)	-0.3 (Non-Cor.)	-0.6 (Non-Cor.)	-0.2 (Non-Cor.)	Non-Cor.	Non-Cor.	SI	SM 2330B
Foaming Agents (MBAS) [5]	<0.1	0.1	<0.1	<0.1	<0.1	0.5	mg/L	S5540C/EPA 425.1
Iron [5]	NR	NR	NR	NR	46	300	µg/L	EPA 200.7
Manganese	15	23	21	14	18	50	µg/L	EPA 200.8
Methyl-tert-butyl ether (MTBE) [5]	<0.5	<0.5	<0.5	<0.5	<0.5	5	µg/L	EPA 524.2
Odor--Threshold [5]	2	NA	2	40	15	3	TON	SM 2150B
Silver	<0.25	<0.25	<0.25	<0.25	<0.25	100	µg/L	EPA 200.8
Thiobencarb	<0.2	<0.5	<0.2	<0.2	<0.5	1	µg/L	EPA 525.2
Zinc	31	30	32	35	32	5000	µg/L	EPA 200.8
Miscellaneous Regulated Constituents								
Oil & Grease [6]	<1	<1	<1		<1	1	mg/L	EPA 1664
Disinfection Byproducts								
Bromate	1	1	<1	1	1	10	µg/L	EPA 300.1/317
Chlorite	<0.01	<0.01	<0.01	<0.01	<0.01	1	mg/L	EPA 300.0
	BRK-LYS-25	BH-1/2	BRK-LYS-25	DCZ2-LYS-25	<==TTHMs			
	BRK-LYS-25	BH-1/2	BRK-LYS-25	DCZ2-LYS-25	<==HAA5			
	BRK-LYS-25	BH-1/2	BRK-LYS-25	DCZ2-LYS-25	<==1,2,3-TCP			
Alternative Compliance Point Data	4Q17	1Q18	2Q18	3Q18				
Total Trihalomethanes (TTHMs)	<2	18	<2	<2	<6	80	µg/L	EPA 524.2/624
Total Haloacetic Acids (HAA5)	<2 [7]	<2	<2	<2	<2	60	µg/L	S6251B
1,2,3-Trichloropropane (added 7/17) [4]	<0.005 [7]	<0.005	<0.005	<0.005	<0.005	0.005	µg/L	CASRL 524M-TCP

NR: Not required this quarter NA: Not Analyzed; Missed hold time for odor.

[1] 4-quarter running average is calculated based on ND values equal to half the detection limit. The reported 4-quarter running average value, if less than DL, will be based on highest DL found in the data set.

[2] As of September 11, 2017 the MCL for hexavalent chromium that was established in 2014 is no longer in effect; the State Board does plan on establishing a new MCL in the near future.

[3] The sum of m,p-Xylene and o-Xylene is used to calculate compliance for the Total Xylenes limit

[4] 1,2,3-Trichloropropane compliance is based on a 4-quarter running average of lysimeter samples collected prior to reaching the groundwater table

[5] 4-quarter running average is calculated based on the four most recent results. Monitoring is required annually. However, if monitoring takes place more frequently than required, those results will be reported.

[6] Oil & Grease compliance determination not based on 4-quarter running average

[7] Makeup sample collected on 2/6/18 for HAA5 and 1,2,3-TCP, for a quality control failure at the contract lab during 4Q17.

Bold signifies an exceedance of a limit in the Order. Explained in further detail in the report text.

Table 2-4
Recycled Water Monitoring: Remaining Priority Pollutants, EDCs & Pharmaceuticals, and Unregulated Chemicals
(Monitoring & Reporting Program)

Constituent	3Q18	Unit	Method
Metals			
Chromium (III) [1]	1.8	µg/L	EPA 200.8
Volatile Organic Chemicals (VOCs)			
Acrolein	<2	µg/L	EPA 624
Acrylonitrile	<2	µg/L	EPA 624
Bromoform	<0.5	µg/L	EPA 524.2/624
Chlorodibromomethane	3.8	µg/L	EPA 524.2/624
Chloroethane	<0.5	µg/L	EPA 524.2/624
2-Chloroethylvinylether	<1	µg/L	EPA 524.2/624
Chloroform	114	µg/L	EPA 524.2/624
Dichlorobromomethane	25	µg/L	EPA 524.2/624
Methyl Bromide	<0.5	µg/L	EPA 524.2/624
Methyl Chloride	<0.5	µg/L	EPA 524.2/624
Acid Extractibles			
2-Chlorophenol	<1	µg/L	EPA 625
2,4-Dichlorophenol	<2	µg/L	EPA 625
2,4-Dimethylphenol	<1	µg/L	EPA 625
2-Methyl-4,6-dinitrophenol	<2	µg/L	EPA 625
2,4-Dinitrophenol	<3	µg/L	EPA 625
2-Nitrophenol	<1	µg/L	EPA 625
4-Nitrophenol	<3	µg/L	EPA 625
4-Chloro-3-methylphenol	<1	µg/L	EPA 625
Phenol	<1	µg/L	EPA 625
2,4,6-Trichlorophenol	<1	µg/L	EPA 625
Base/Neutral Extractibles			
Acenaphthene	<1	µg/L	EPA 625
Acenaphthylene	<1	µg/L	EPA 625
Anthracene	<1	µg/L	EPA 625
Benzidine	<5	µg/L	EPA 625
Benzo(a)anthracene	<5	µg/L	EPA 625
Benzo(b)fluoranthene	<1	µg/L	EPA 625
Benzo(g,h,i)perylene	<2	µg/L	EPA 625
Benzo(k)fluoranthene	<1	µg/L	EPA 625
Bis(2-chloroethoxy)methane	<2	µg/L	EPA 625
Bis(2-chloroethyl)ether	<1	µg/L	EPA 625
Bis(2-chloroisopropyl)ether	<1	µg/L	EPA 625
4-Bromophenyl phenyl ether	<1	µg/L	EPA 625
Butyl benzyl phthalate	<1	µg/L	EPA 625
2-Chloronaphthalene	<1	µg/L	EPA 625
4-Chlorophenyl phenyl ether	<1	µg/L	EPA 625
Chrysene	<1	µg/L	EPA 625
Dibenzo(a,h)anthracene	<1	µg/L	EPA 625
1,3-Dichlorobenzene	<1	µg/L	EPA 625
3,3-Dichlorobenzidine	<5	µg/L	EPA 625
Diethyl phthalate	<2	µg/L	EPA 625
Dimethyl phthalate	<1	µg/L	EPA 625
Di-n-butyl phthalate	<1	µg/L	EPA 625
2,4-Dinitrotoluene	<1	µg/L	EPA 625
2,6-Dinitrotoluene	<2	µg/L	EPA 625
Di-n-octyl phthalate	<1	µg/L	EPA 625
Azobenzene	<1	µg/L	EPA 625
Fluoranthene	<1	µg/L	EPA 625
Fluorene	<1	µg/L	EPA 625
Hexachlorobutadiene	<1	µg/L	EPA 625
Hexachlorocyclopentadiene	<5	µg/L	EPA 625
Hexachloroethane	<1	µg/L	EPA 625
Indeno(1,2,3-cd)pyrene	<2	µg/L	EPA 625
Isophorone	<1	µg/L	EPA 625
Naphthalene	<1	µg/L	EPA 625
Nitrobenzene	<1	µg/L	EPA 625
N-Nitroso-di-n-propylamine	<1	µg/L	EPA 625
N-Nitrosodiphenylamine	<1	µg/L	EPA 625
Phenanthrene	<1	µg/L	EPA 625
Pyrene	<1	µg/L	EPA 625

Constituent	3Q18	Unit	Method
Pesticides			
Aldrin	<0.01	µg/L	EPA 505/608
BHC, alpha isomer	<0.1	µg/L	EPA 525/608
BHC, beta isomer	<0.1	µg/L	EPA 525/608
BHC, delta isomer	<0.1	µg/L	EPA 525/608
4,4'-DDT	<0.1	µg/L	EPA 525/608
4,4'-DDE	<0.1	µg/L	EPA 525/608
4,4'-DDD	<0.1	µg/L	EPA 525/608
Dieldrin	<0.01	µg/L	EPA 505/608
Endosulfan I	<0.1	µg/L	EPA 525/608
Endosulfan II	<0.1	µg/L	EPA 525/608
Endosulfan Sulfate	<0.1	µg/L	EPA 525/608
Unregulated Chemicals			
Endrin Aldehyde	<0.1	µg/L	EPA 525/608
Ethyl tertiary butyl ether	<0.5	µg/L	EPA 524.2
Tertiary amyl methyl ether	<0.5	µg/L	EPA 524.2
Chemicals w/ State Notification Levels (NLs)			
Boron	0.2	mg/L	EPA 200.7
n-butylbenzene	<0.5	µg/L	EPA 524.2
sec-butylbenzene	<0.5	µg/L	EPA 524.2
tert-butylbenzene	<0.5	µg/L	EPA 524.2
Carbon disulfide	<0.5	µg/L	EPA 524.2
Chlorate	<10*	µg/L	EPA 300.0
2-Chlorotoluene	<0.5	µg/L	EPA 524.2
4-Chlorotoluene	<0.5	µg/L	EPA 524.2
Diazinon	<0.1	µg/L	EPA 525.2
Dichlorodifluoromethane (Freon 12	<0.5	µg/L	EPA 524.2
1,4 - Dioxane	<1	µg/L	EPA 522
Ethylene glycol	<4	mg/L	EPA 8015B
Formaldehyde	31	µg/L	EPA 556
HMX	<0.4	µg/L	EPA 8330B
Isopropylbenzene	<0.5	µg/L	EPA 524.2
Methyl isobutyl ketone (MIBK)	<2	µg/L	EPA 524.2
N-Nitrosodiethylamine (NDEA)	<2	ng/L	EPA 521
N-nitrosodimethylamine (NDMA)	7	ng/L	EPA 521
Propachlor	<0.05	µg/L	EPA 525.2
N-propylbenzene	<0.5	µg/L	EPA 524.2
RDX	<0.4	µg/L	EPA 8330B
Tertiary butyl alcohol	<2	µg/L	EPA 524.2
1,2,4–trimethylbenzene	<0.5	µg/L	EPA 524.2
1,3,5-trimethylbenzene	<0.5	µg/L	EPA 524.2
2,4,6-Trinitrotoluene	<0.4	µg/L	EPA 8330B
Vanadium	<5	µg/L	EPA 200.8
Endocrine Disrupting Chemicals, Pharmaceuticals and Other Chemicals[2]			
Acetominophen	<5	ng/L	LC-MS-MS
Bis Phenol A (BPA)	<10	ng/L	LC-MS-MS
Caffeine	13	ng/L	LC-MS-MS
Carbamazepine	24	ng/L	LC-MS-MS
DEET	48	ng/L	LC-MS-MS
Estradiol	<5	ng/L	LC-MS-MS
Estrone	<5	ng/L	LC-MS-MS
Ethinyl Estradiol - 17 alpha	<5	ng/L	LC-MS-MS
Gemfibrozil	<5	ng/L	LC-MS-MS
Iohexol	9200	ng/L	LC-MS-MS
Iopromide	180	ng/L	LC-MS-MS
N-Nitrosomorphline	14	ng/L	EPA 521
Primidone	110	ng/L	LC-MS-MS
Progesterone	<5	ng/L	LC-MS-MS
Sucralose	63000	ng/L	LC-MS-MS
Sulfamethoxazole	<5	ng/L	LC-MS-MS
Testosterone	<5	ng/L	LC-MS-MS
Triclosan	23	ng/L	LC-MS-MS
Trimethoprim	<5	ng/L	LC-MS-MS
Warfarin	<5	ng/L	LC-MS-MS

[1] Trivalent chromium is measured as total chromium

NR: Not Required (Annual Requirement)

Chemicals in the proposed May 9, 2018 amendment to the RW Policy Chemicals of Emerging Concern list (see Section 1A of this report)

*Pursuant to the GRRP regulations, recharge water may be monitored in lieu of recycled water. Chlorate was sampled at DCZ2-LYS-25 during 3Q18 to meet the notification level.

Table 2-5a
Lysimeter and Surface Water Monitoring: TOC, Nitrogen Species, and EC

Brooks Basin									
Site	Depth, bgs	Date	TOC (Limit = 16 mg/L)	TN*	TIN	NO_3-N	TKN+NO_2-N	NO_2-N	EC
Unit==>	feet	mm/dd/yy	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µmho/cm
BRK-LYS-00	0	07/26/18	6.57	1.8	0.4	0.3	1.5	0.08	725
BRK-LYS-25	25	07/26/18	3.36	<0.6	<0.2	<0.1	<0.5	<0.01	751
BRK-LYS-25	25	08/14/18	3.14	<0.6	<0.2	<0.1	<0.5	<0.01	735

Declez Basin									
Site	Depth, bgs	Date	TOC (Limit = 16 mg/L)	TN*	TIN	NO_3-N	TKN+NO_2-N	NO_2-N	EC
Unit==>	feet	mm/dd/yy	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µmho/cm
DCZ2-LYS-00	0	08/09/18	6.20	3.1	1.8	1.7	1.4	0.07	693
DCZ2-LYS-00	0	08/22/18	6.67	2.3	0.8	0.8	1.5	<0.01	705
DCZ2-LYS-00	0	09/06/18	6.59	4.8	1.8	1.5	3.3	0.16	730
DCZ2-LYS-00	0	09/20/18	2.04	4.1	1.0	0.9	3.2	0.11	721
DCZ2-LYS-25	25	08/09/18	1.59	1.7	0.9	0.8	0.9	0.12	454
DCZ2-LYS-25	25	08/22/18	4.28	<0.6	0.2	0.2	<0.5	<0.01	481
DCZ2-LYS-25	25	09/06/18	2.33	0.8	<0.2	<0.1	0.8	<0.01	689
DCZ2-LYS-25	25	09/20/18	4.52	0.8	<0.2	<0.1	0.8	<0.01	524

* If TN limit of 5 mg/L is not met prior to the RW distribution system, TN compliance can be met at a point prior to reaching the regional groundwater, including lysimeters.

Table 2-5b
Alternative Monitoring Plans

Banana Basin					
Date	RW Blend*	RW Blend*	Banana	Banana	
mg/L==>	TOC	TN	TOC (80% reduction)	TN (47% reduction)	TN - 2 sample avg.
Limit ==>			16 mg/L		5 mg/L
07/03/18	5.37	5.3	1.07	2.8	2.4
07/10/18	5.10	5.0	1.02	2.7	2.7
07/17/18	4.96	4.8	0.99	2.5	2.6
07/24/18	4.31	4.1	0.86	2.2	2.4
07/31/18	4.61	3.8	0.92	2.0	2.1
08/07/18	5.46	4.0	1.09	2.1	2.1
08/14/18	5.04	4.7	1.01	2.5	2.3
08/21/18	5.03	4.1	1.01	2.2	2.3
08/28/18	4.85	5.4	0.97	2.9	2.5
09/04/18	4.77	4.7	0.95	2.5	2.7
09/11/18	4.83	5.2	0.97	2.8	2.6
09/18/18	7.57	5.2	1.51	2.8	2.8
09/25/18	4.88	5.5	0.98	2.9	2.8

Hickory Basin					
Date	RW Blend*	RW Blend*	Hickory	Hickory	
mg/L==>	TOC	TN	TOC (81% reduction)	TN (27% reduction)	TN - 2 sample avg.
Limit ==>			16 mg/L		5 mg/L
07/03/18	5.37	5.3	1.02	3.9	3.2
07/10/18	5.10	5.0	0.97	3.7	3.8
07/17/18	4.96	4.8	0.94	3.5	3.6
07/24/18	4.31	4.1	0.82	3.0	3.2
07/31/18	4.61	3.8	0.88	2.8	2.9
08/07/18	5.46	4.0	1.04	2.9	2.8
08/14/18	5.04	4.7	0.96	3.4	3.2
08/21/18	5.03	4.1	0.96	3.0	3.2
08/28/18	4.85	5.4	0.92	3.9	3.5
09/04/18	4.77	4.7	0.91	3.4	3.7
09/11/18	4.83	5.2	0.92	3.8	3.6
09/18/18	7.57	5.2	1.44	3.8	3.8
09/25/18	4.88	5.5	0.93	4.0	3.9

Turner Basin						
Date	RW Blend*	RW Blend*	Turner 1 & 2	Turner 3 & 4	Turner 1 & 2 Turner 3 & 4	
mg/L==>	TOC	TN	TOC (70% reduction)	TOC (85% reduction)	TN (87% reduction)	TN - 2 sample avg.
Limit ==>			16 mg/L	16 mg/L		5 mg/L
07/03/18	5.37	5.3	1.61	0.81	0.7	0.6
07/10/18	5.10	5.0	1.53	0.77	0.7	0.7
07/17/18	4.96	4.8	1.49	0.74	0.6	0.6
07/24/18	4.31	4.1	1.29	0.65	0.5	0.6
07/31/18	4.61	3.8	1.38	0.69	0.5	0.5
08/07/18	5.46	4.0	1.64	0.82	0.5	0.5
08/14/18	5.04	4.7	1.51	0.76	0.6	0.6
08/21/18	5.03	4.1	1.51	0.75	0.5	0.6
08/28/18	4.85	5.4	1.46	0.73	0.7	0.6
09/04/18	4.77	4.7	1.43	0.72	0.6	0.7
09/11/18	4.83	5.2	1.45	0.72	0.7	0.6
09/18/18	7.57	5.2	2.27	1.14	0.7	0.7
09/25/18	4.88	5.5	1.46	0.73	0.7	0.7

Ely Basin					
Date	RP-1 RW	RP-1 RW	Ely 3 East	Ely 3 East	
mg/L==>	TOC	TN	TOC (76% reduction)	TN (52% reduction)	TN - 2 sample avg.
Limit ==>			16 mg/L		5 mg/L
07/02/18	6.52	6.2	1.56	3.0	3.1
07/09/18	6.38	5.4	1.53	2.6	2.8
07/16/18	5.97	4.5	1.43	2.2	2.4
07/23/18	5.94	4.8	1.43	2.3	2.2
07/30/18	6.38	4.9	1.53	2.4	2.3
08/06/18	5.74	5.2	1.38	2.5	2.4
08/13/18	6.02	5.0	1.44	2.4	2.4
08/20/18	5.74	5.9	1.38	2.8	2.6
08/27/18	5.86	5.5	1.41	2.6	2.7
09/06/18	5.74	5.7	1.38	2.7	2.7
09/10/18	5.42	6.1	1.30	2.9	2.8
09/17/18	5.86	5.5	1.41	2.6	2.8
09/24/18	5.32	6.0	1.28	2.9	2.8

*The recycled water blend of RP-1 & RP-4 effluent is sampled at the NRG Energy (formerly Reliant Energy) turnout point

Note: TOC & TN compliance is based on two consecutive sample results.

Table 2-5b
Alternative Monitoring Plans

RP3 Basin

Date	RW Blend*	RW Blend*	RP3	RP3	
mg/L==>	TOC	TN	TOC (88% reduction)	TN (31% reduction)	TN - 2 sample avg.
Limit ==>			16 mg/L		5 mg/L
07/03/18	5.37	5.3	0.64	3.7	3.1
07/10/18	5.10	5.0	0.61	3.5	3.6
07/17/18	4.96	4.8	0.60	3.3	3.4
07/24/18	4.31	4.1	0.52	2.8	3.1
07/31/18	4.61	3.8	0.55	2.6	2.7
08/07/18	5.46	4.0	0.66	2.8	2.7
08/14/18	5.04	4.7	0.60	3.2	3.0
08/21/18	5.03	4.1	0.60	2.8	3.0
08/28/18	4.85	5.4	0.58	3.7	3.3
09/04/18	4.77	4.7	0.57	3.2	3.5
09/11/18	4.83	5.2	0.58	3.6	3.4
09/18/18	7.57	5.2	0.91	3.6	3.6
09/25/18	4.88	5.5	0.59	3.8	3.7

8th Street Basin

Date	RW Blend*	RW Blend*	8th Street	8th Street	
mg/L==>	TOC	TN	TOC (88% reduction)**	TN (75% reduction)	TN - 2 sample avg.
Limit ==>			16 mg/L	5 mg/L	5 mg/L
07/03/18	5.37	5.3	0.64	1.3	1.1
07/10/18	5.10	5.0	0.61	1.3	1.3
07/17/18	4.96	4.8	0.60	1.2	1.2
07/24/18	4.31	4.1	0.52	1.0	1.1
07/31/18	4.61	3.8	0.55	1.0	1.0
08/07/18	5.46	4.0	0.66	1.0	1.0
08/14/18	5.04	4.7	0.60	1.2	1.1
08/21/18	5.03	4.1	0.60	1.0	1.1
08/28/18	4.85	5.4	0.58	1.4	1.2
09/04/18	4.77	4.7	0.57	1.2	1.3
09/11/18	4.83	5.2	0.58	1.3	1.2
09/18/18	7.57	5.2	0.91	1.3	1.3
09/25/18	4.88	5.5	0.59	1.4	1.3

Victoria Basin

Date	RW Blend*	RW Blend*	Victoria	Victoria	
mg/L==>	TOC	TN	TOC (78% reduction)	TN (82% reduction)	TN - 2 sample avg.
Limit ==>			16 mg/L	5 mg/L	5 mg/L
07/03/18	5.37	5.3	1.18	1.0	0.8
07/10/18	5.10	5.0	1.12	0.9	0.9
07/17/18	4.96	4.8	1.09	0.9	0.9
07/24/18	4.31	4.1	0.95	0.7	0.8
07/31/18	4.61	3.8	1.01	0.7	0.7
08/07/18	5.46	4.0	1.20	0.7	0.7
08/14/18	5.04	4.7	1.11	0.8	0.8
08/21/18	5.03	4.1	1.11	0.7	0.8
08/28/18	4.85	5.4	1.07	1.0	0.9
09/04/18	4.77	4.7	1.05	0.8	0.9
09/11/18	4.83	5.2	1.06	0.9	0.9
09/18/18	7.57	5.2	1.67	0.9	0.9
09/25/18	4.88	5.5	1.07	1.0	1.0

*The recycled water blend of RP-1 & RP-4 effluent is sampled at the NRG Energy (formerly Reliant Energy) turnout point

**Reduction factor amended to align with the DDW's evaluation and allowance for a 50% RWC at 8th Street Basin; using mound monitoring well data (2008-2016) to calculate percent reduction in place of the available lysimeter data used in the start-up period report.

Note: TOC & TN compliance is based on two consecutive sample results.

Brooks Basin

Date	BRK-LYS-00	BRK-LYS-00	BRK-LYS-00	BRK-LYS-00
	TOC (mg/L)	TN (mg/L)	EC (µmhos/cm)	
07/26/18	6.57	1.8	725	
		Basin Offline		
		Basin Offline		

Date	BRK-LYS-25	BRK-LYS-25		BRK-LYS-25
	TOC (mg/L)	TN* (mg/L)	TN - 2 sample avg.	EC (µmhos/cm)
Limit==>			5 mg/L	
07/26/18	3.36	<0.6	<0.6	751
08/14/18	3.14	<0.6	<0.6	735
		Basin Offline		

Date	BRK-1/1	BRK-1/1	BRK-1/1	BRK-1/1
	TOC* (mg/L)	TN (mg/L)	EC (µmhos/cm)	Cl
Limit==>	16 mg/L			
07/10/18	0.49	0.8	586	61
08/15/18	0.59	0.6	546	57
		Not Sampled		

*BRK-LYS-25 is the compliance point for TN and BRK-1/1 is the compliance point for TOC.

Table 2-6
RWC, TOC Average, and TN Compliance Summary

Basin	SUP Start Date	SUP End Date	SUP Report Submittal	RWC Limit	Mos. in Operation (Sep 2018)	RWC_{Avg} (Sep 2018)	TOC_{Avg} Limit* (mg/L)	Apr 2018 TOC_{Avg} (mg/L)	May 2018 TOC_{Avg} (mg/L)	Jun 2018 TOC_{Avg} (mg/L)	3Q18 TN Limit Compliance	Recharged Water Monitoring Plan
8th Street	Sep-07	Dec-10	05/23/11	50%	133	22%	2.3	0.6	0.6	0.7	Met	**Alternative monitoring:** *Weekly* RW Blend with TOC reduction of 88% and TN reduction of 75%
Banana	Jul-05	Jan-06	10/27/06	50%	159	36%	1.4	2.5	2.3	2.7	Met	**Alternative monitoring:** *Weekly* RW Blend with TOC reduction of 80% and TN reduction of 47%
Brooks	Aug-08	Dec-09	07/29/10	50%	122	15%	3.3	0.5	0.0	NA	Met	**Alternative monitoring:** *Monthly* lysimeter monitoring at 0- and 25-feet bgs & BRK-1/1 for EC, TOC, TN. 25-foot lysimeter compliance point for TN and BRK-1/1 for TOC. *Monthly* BRK-1/1 analyzed for chloride to verify presence of RW.
Declez	Dec-15	Sep-16	TBD	TBD	34	8%	6.3	-	2.9	3.4	Met	**Alternative monitoring:** Initial year monitoring - *Every other week* lysimeter monitoring at 0- and 25-ft for EC, TOC, TN. Future years - *Weekly* RW Blend with TOC reduction of 62% and TN reduction of 91%
Ely	RW initiated Sep-99	NA	NA	50%	229	23%	2.2	1.5	1.4	1.3	Met	**Alternative monitoring:** *Weekly* RP-1 RW sample with TOC reduction of 76% and TN reduction of 52%
Hickory	Sep-05	Feb-06	02/15/07	50%	157	22%	2.3	3.5	3.1	3.8	Met	**Alternative monitoring:** *Weekly* RW Blend with TOC reduction of 81% and TN reduction of 27%
RP3	Jun-09	Jun-10	12/15/10	50%	112	17%	2.9	0.6	0.6	0.7	Met	**Alternative monitoring:** *Weekly* RW Blend with TOC reduction of 88% and TN reduction of 31%
San Sevaine 5	Jul-10	Aug-11	02/08/12	27%	99	8%	6.3	1.1	1.1	1.2	Met	**Alternative monitoring:** *Weekly* RW Blend with TOC reduction of 78% and TN reduction of 69%
Turner 1&2	Dec-06	May-07	07/03/08	24%	142	23%	2.2	1.5	1.5	1.7	Met	**Alternative monitoring:** *Weekly* RW Blend with TOC reduction of 70%; TN reduction of 87%
Turner 3&4	Dec-06	May-07	07/03/08	45%	142	27%	1.9	0.7	0.8	0.8	Met	**Alternative monitoring:** *Weekly* RW Blend with TOC reduction of 85% ; TN reduction of 87%
Victoria	Sep-10	Jul-11	02/08/12	50%	97	29%	1.7	1.1	1.1	1.2	Met	**Alternative monitoring:** *Weekly* RW Blend with TOC reduction of 78% and TN reduction of 82%

SUP - Start-Up Period NA - Not Analyzed

*TOC_{Avg} limit is 0.5 mg/L divided by the RWC_{Avg}. Compliance is determined by checking that monthly TOC_{Avg} does not exceed the TOC_{Avg} limit. If the TOC_{Avg} limit is exceeded, the monthly TOC_{Avg} will be shown in bold font.

Table 2-7
Diluent Water Monitoring*: Local Runoff

Constituent	Declez Channel @ RP3 Basin 08/22/18	San Sevaine Channel @ Hickory Basin 08/21/18	Max Level to Trigger Source Water Evaluation	Unit	Method
NO_2-N	<0.02	<0.02	1	mg/L	EPA 300.0
NO_3-N	0.6	<0.1	10	mg/L	EPA 300.0
TDS	628	539	1000	mg/L	SM 2540C
Total Coliform	1600	240	-	mpn/100ml	SM 9221B
Oil & Grease	1.4	<1	-	mg/L	EPA 1664A
Inorganic Chemicals					
Aluminum	<25	60	1000	µg/L	EPA 200.7
Antimony	1	<1	6	µg/L	EPA 200.8
Arsenic	2	<2	10	µg/L	EPA 200.8
Asbestos	<3.75	<6.56	7	MFL	EPA 100.2
Barium	65	36	1000	µg/L	EPA 200.7
Beryllium	<0.5	<0.5	4	µg/L	EPA 200.7
Cadmium	<0.25	<0.25	5	µg/L	EPA 200.7
Chromium	<0.5	1.6	50	µg/L	EPA 200.7
Chromium VI	0.2	1.3	10	µg/L	EPA 218.6
Cyanide	<20	<20	150	µg/L	ASTM D7284
Fluoride	0.2	0.4	2	mg/L	SM 4500-F C
Mercury	<0.5	<0.5	2	µg/L	EPA 245.2
Nickel	3	3	100	µg/L	EPA 200.7
Perchlorate	<4	<4	6	µg/L	EPA 314
Selenium	<2	<2	50	µg/L	EPA 200.8
Thallium	<1	<1	2	µg/L	EPA 200.8
Volatile Organic Chemicals (VOCs)					
Benzene	<0.5	<0.5	1	µg/L	EPA 524.2
Carbon Tetrachloride	<0.5	<0.5	0.5	µg/L	EPA 524.2
1,2-Dichlorobenzene	<0.5	<0.5	600	µg/L	EPA 524.2
1,4-Dichlorobenzene	<0.5	<0.5	5	µg/L	EPA 524.2
1,1-Dichloroethane	<0.5	<0.5	5	µg/L	EPA 524.2
1,2-Dichloroethane	<0.5	<0.5	0.5	µg/L	EPA 524.2
1,1-Dichloroethylene	<0.5	<0.5	6	µg/L	EPA 524.2
cis-1,2-Dichloroethylene	<0.5	<0.5	6	µg/L	EPA 524.2
trans-1,2-Dichloroethylene	<0.5	<0.5	10	µg/L	EPA 524.2
Dichloromethane	<0.5	<0.5	5	µg/L	EPA 524.2
1,2-Dichloropropane	<0.5	<0.5	5	µg/L	EPA 524.2
1,3-Dichloropropene	<0.5	<0.5	0.5	µg/L	EPA 524.2
Ethylbenzene	<0.5	<0.5	300	µg/L	EPA 524.2
Chlorobenzene	<0.5	<0.5	70	µg/L	EPA 524.2
Methyl Tert-butyl ether (MTBE)	<0.5	<0.5	13	µg/L	EPA 524.2
Styrene	<0.5	<0.5	100	µg/L	EPA 524.2
1,1,2,2-Tetrachloroethane	<0.5	<0.5	1	µg/L	EPA 524.2
Tetrachloroethylene	<0.5	<0.5	5	µg/L	EPA 524.2
Toluene	8.7	<0.5	150	µg/L	EPA 524.2
1,2,4-Trichlorobenzene	<0.5	<0.5	5	µg/L	EPA 524.2
1,1,1-Trichloroethane	<0.5	<0.5	200	µg/L	EPA 524.2
1,1,2-Trichloroethane	<0.5	<0.5	5	µg/L	EPA 524.2
Trichloroethylene	<0.5	<0.5	5	µg/L	EPA 524.2
Trichlorofluoromethane	<0.5	<0.5	150	µg/L	EPA 524.2
1,1,2-Trichloro-1,2,2-Trifluoroethane	<0.5	<0.5	1200	µg/L	EPA 524.2
Vinyl Chloride	<0.5	<0.5	0.5	µg/L	EPA 524.2
Total Xylenes	<1	<1	1750	µg/L	EPA 524.2
1,2,3-Trichloropropane	<0.005	<0.005	0.005	µg/L	CASRL 524M-TCP
Non-Volatile Synthetic Organic Chemicals (SOCs)					
Alachlor (Alanex)	<0.1	<0.1	2	µg/L	EPA 505
Atrazine	<0.05	<0.05	1	µg/L	EPA 525.2
Bentazon	<0.5	<0.5	18	µg/L	EPA 515.4
Benzo(a)pyrene	<0.02	<0.02	0.2	µg/L	EPA 525.2
Carbofuran	<0.5	<0.5	18	µg/L	EPA 531.2
Chlordane	<0.1	<0.1	0.1	µg/L	EPA 505
2,4-D	<0.1	<0.1	70	µg/L	EPA 515.4
Dalapon	<1	<1	200	µg/L	EPA 515.4
Dibromochloropropane	<0.01	<0.01	0.2	µg/L	EPA 504.1
Di(2-ethylhexyl)adipate	<0.6	<0.6	400	µg/L	EPA 525.2
Di(2-ethylhexyl)phthalate	<0.6	0.6	4	µg/L	EPA 525.2
Dinoseb	<0.2	<0.2	7	µg/L	EPA 515.4
Diquat	<0.4	<0.4	20	µg/L	EPA 549.2
Endothall	<5	<5	100	µg/L	EPA 548.1
Endrin	<0.01	<0.01	2	µg/L	EPA 505
Ethylene Dibromide	<0.01	<0.01	0.05	µg/L	EPA 504.1
Glyphosate	<6	<6	700	µg/L	EPA 547
Heptachlor	<0.01	<0.01	0.01	µg/L	EPA 505
Heptachlor Epoxide	<0.01	<0.01	0.01	µg/L	EPA 505
Hexachlorobenzene	<0.05	<0.05	1	µg/L	EPA 525.2
Hexachlorocyclopentadiene	<0.05	<0.05	50	µg/L	EPA 525.2
Lindane	<0.01	<0.01	0.2	µg/L	EPA 505

Table 2-7
Diluent Water Monitoring*: Local Runoff

Constituent	Declez Channel @ RP3 Basin 08/22/18	San Sevaine Channel @ Hickory Basin 08/21/18	Max Level to Trigger Source Water Evaluation	Unit	Method
Methoxychlor	<0.05	<0.05	30	µg/L	EPA 505
Molinate	<0.1	<0.1	20	µg/L	EPA 525.2
Oxamyl	<0.5	<0.5	50	µg/L	EPA 531.2
Pentachlorophenol	<0.04	<0.04	1	µg/L	EPA 515.4
Picloram	<0.1	<0.1	500	µg/L	EPA 515.4
PCB 1016	<0.08	<0.08	0.5	µg/L	EPA 505
PCB 1221	<0.1	<0.1	0.5	µg/L	EPA 505
PCB 1232	<0.1	<0.1	0.5	µg/L	EPA 505
PCB 1242	<0.1	<0.1	0.5	µg/L	EPA 505
PCB 1248	<0.1	<0.1	0.5	µg/L	EPA 505
PCB 1254	<0.1	<0.1	0.5	µg/L	EPA 505
PCB 1260	<0.1	<0.1	0.5	µg/L	EPA 505
Simazine	<0.05	<0.05	4	µg/L	EPA 525.2
Thiobencarb	<0.2	<0.2	70	µg/L	EPA 525.2
Toxaphene	<0.5	<0.5	3	µg/L	EPA 505
2,3,7,8-TCDD (Dioxin)	<4.07	<4.05	30	pg/L	EPA 1613
2,4,5-TP (Silvex)	<0.2	<0.2	50	µg/L	EPA 515.4
Disinfection Byproducts					
Total Trihalomethanes (TTHMs)	<2	<2	80	µg/L	EPA 524.2/624
Total Haloacetic Acids (HAA5)	42	<2	60	µg/L	SM 6251B
Bromate	1	<1	10	µg/L	EPA 300.1/317
Chlorite	<0.01	<0.01	1	mg/L	EPA 300.0
Action Level Chemicals					
Copper	6.2	20.5	1300	µg/L	EPA 200.7
Lead	<0.5	<0.5	15	µg/L	EPA 200.8
Radionuclides					
Combined Radium-226 & Radium 228	<0.393	<0.43	5	pCi/L	EPA 903.0
Gross Alpha Particle Activity	<3	<3	15	pCi/L	EPA 900.0/SM7110C
Tritium	<346	<318	20,000	pCi/L	EPA 906.0
Strontium-90	<1.24	<1.17	8	pCi/L	EPA 905.0
Gross Beta Particle Activity	8	4	50	pCi/L	EPA 900.0
Uranium	6	<1	20	pCi/L	EPA 200.8
Chemicals w/ State Notification Levels					
Boron	<0.1	0.1	-	mg/L	EPA 200.7
n-butylbenzene	<0.5	<0.5	-	µg/L	EPA 524.2
sec-butylbenzene	<0.5	<0.5	-	µg/L	EPA 524.2
tert-butylbenzene	<0.5	<0.5	-	µg/L	EPA 524.2
Carbon disulfide	<0.5	<0.5	-	µg/L	EPA 524.2
Chlorate	1700	140	-	µg/L	EPA 300.0
2-Chlorotoluene	<0.5	<0.5	-	µg/L	EPA 524.2
4-Chlorotoluene	<0.5	<0.5	-	µg/L	EPA 524.2
Diazinon	<0.1	<0.1	-	µg/L	EPA 525.2
Dichlorodifluoromethane (Freon 12)	<0.5	<0.5	-	µg/L	EPA 524.2
1,4 - Dioxane	<1	<1	-	µg/L	EPA 522
Formaldehyde	9	24	-	µg/L	EPA 556
HMX	<0.1	<0.1	-	µg/L	LC-MS-MS
Isopropylbenzene	<0.5	<0.5	-	µg/L	EPA 524.2
Methyl isobutyl ketone (MIBK)	<2	<2	-	µg/L	EPA 524.2
N-Nitrosodiethylamine (NDEA)	<2	<2	-	ng/l	EPA 521
N-nitrosodimethylamine (NDMA)	<2	<2	-	ng/l	EPA 521
Propachlor	<0.05	<0.05	-	µg/L	EPA 525.2
N-propylbenzene	<0.5	<0.5	-	µg/L	EPA 524.2
PFOA	0.013	0.043	-	µg/L	EPA 537
PFOS	0.0042	0.014	-	µg/L	EPA 537
RDX	<0.1	<0.1	-	µg/L	LC-MS-MS
Tertiary butyl alcohol	<2	<2	-	µg/L	EPA 524.2 MOD
1,2,3-Trichloropropane (1,2,3-TCP)	<0.005	<0.005	-	µg/L	CASRL 524M-TCP
1,2,4 –trimethylbenzene	<0.5	<0.5	-	µg/L	EPA 524.2
1,3,5-trimethylbenzene	<0.5	<0.5	-	µg/L	EPA 524.2
2,4,6-Trinitrotoluene	<0.1	<0.1	-	µg/L	LC-MS-MS
Vanadium	<1	15	-	µg/L	EPA 200.8
Secondary Maximum Contaminant Level Chemicals					
Aluminum	<25	60	-	µg/L	EPA 200.7
Corrosivity	1.0	2.4	-	SI	SM 2330B
Foaming Agents (MBAS)	0.2	0.2	-	mg/L	SM 5540C/EPA 425.1
Iron	67	63	-	µg/L	EPA 200.7
Manganese	14	4	-	µg/L	EPA 200.7
Odor--Threshold	2	2	-	TON	SM 2150B
Silver	<0.25	<0.25	-	µg/L	EPA 200.7
Thiobencarb	<0.2	<0.2	-	µg/L	EPA 525.2
Zinc	11	49	-	µg/L	EPA 200.7

* Diluent monitoring is monitored per the schedule identified in the CDPH-approved Diluent Water Monitoring Plan

Bold signifies an exceedance of the maximum level to trigger a source water evaluation. Explained in further detail in the report text.

Table 2-8
Summary of Wells in Groundwater Monitoring Networks

BASIN	CBWM_ID	OWNER/LOCAL NAME	SEPARATION DISTANCE (feet)	SCREENED INTERVAL(S) (feet bgs)	CASING DIAMETER (inches)	STATUS	TYPE
Hickory and Banana Basins	600490	Fontana Water Company - F7a***	3330 upgradient	590-1000	18	Active	Municipal
	600660	California Speedway - Infield Well	2070 downgradient	NA	NA	Active	Industrial
	3601365	California Speedway 2	2780 downgradient	451-455, 491-603, & 664-780	20	Active	Industrial
	3600371	Reliant Energy - East Well	4070 downgradient	434-467, 500-513, 553-580, 593-652, & 825-847	20	Active	Industrial
	3602267	City Of Ontario - 20	14500 downgradient	NA	20	Active	Municipal
	601001	Inland Empire Utilities Agency - BH-1/1	340 downgradient	365-405	4	Active	Monitoring
	601002	Inland Empire Utilities Agency - BH-1/2	340 downgradient	435-475	4	Active	Monitoring
Turner Basins	3600010	City Of Ontario - 25	2530 crossgradient	370-903	20	Inactive	Municipal
	600453	City Of Ontario - 29	2810 downgradient	400-1095	18	Active	Municipal
	600585	City of Ontario - 38*	4600 crossgradient	500-1010	16	Active	Municipal
	600997	Inland Empire Utilities Agency - TRN-1/1	50 downgradient	340-360	4	Active	Monitoring
	600998	Inland Empire Utilities Agency - TRN-1/2	50 downgradient	380-400	4	Active	Monitoring
	600999	Inland Empire Utilities Agency - TRN-2/1	50 downgradient	350-370	4	Active	Monitoring
	601000	Inland Empire Utilities Agency - TRN-2/2	50 downgradient	392-412	4	Active	Monitoring
Declez Basin	300208	Jurupa Community Services District - 19	8900 downgradient	230-390	18	Active	Municipal
	300207	Jurupa Community Services District - 17	5240 downgradient	259-290, & 300-400	NA	Active	Municipal
	300200	Jurupa Community Services District - 13	5730 downgradient	220-446	16-34	Active	Municipal
	300484	Inland Empire Utilities Agency - DCZ-1	50 downgradient	155-175	4	Active	Monitoring
	--	Inland Empire Utilities Agency - D-1/2	50 downgradient	185-205	4	NA	Monitoring
RP-3 Basins	600492	Fontana Water Company - F23a	7900 upgradient	450-740	18	Active	Municipal
	600477	Inland Empire Utilities Agency - Southridge JHS	5500 downgradient	NA	NA	Active	Monitoring
	600848	Alcoa - Offsite MW1	9480 downgradient	NA	NA	Active	Monitoring
	600850	Alcoa - Offsite MW3	4725 downgradient	NA	NA	Active	Monitoring
	601040	Inland Empire Utilities Agency - RP3-1/1	100 downgradient	215-235	4	Active	Monitoring
	601041	Inland Empire Utilities Agency - RP3-1/2	100 downgradient	265-285	4	Active	Monitoring
Jurupa Basin	Not currently planned for recharge						
7th & 8th Street Basins	3601561	San Antonio Water Company No. 12	740 downgradient	379-480, 525-563, 578-609, & 634-679	16	Inactive	Municipal
	3601772	City of Ontario No. 4	3429 downgradient	526-910	16-20	Inactive	Municipal
	--	City of Ontario No. 51	3402 downgradient	Not Yet Constructed	NA	NA	Municipal
	600493	City of Ontario No. 35	9695 downgradient	580-1020	18-36	Active	Municipal
	601036	Inland Empire Utilities Agency - 8TH-1/1	150 downgradient	495-535	4	Active	Monitoring
	601037	Inland Empire Utilities Agency - 8TH-1/2	150 downgradient	595-645	4	Active	Monitoring
	601038	Inland Empire Utilities Agency - 8TH-2/1	2460 downgradient	465-505	4	Active	Monitoring
	601039	Inland Empire Utilities Agency - 8TH-2/2	2460 downgradient	576-616	4	Active	Monitoring
Brooks Basins	1901719	City of Pomona P-10	1983 downgradient	295-784	20	Active	Municipal
	1901713	City of Pomona P-04	2620 downgradient	254-338, & 403-452	NA	Inactive	Municipal
	1904001	City of Pomona P-34	2550 downgradient	363-367,380-400, 419-427	20	Active	Municipal
	1903156	City of Pomona P-30	2160 crossgradient	565-875	20	Inactive	Municipal
	1903016	City of Pomona P-2	3455 downgradient	NA	NA	Active	Municipal
	1901725	City of Pomona P-17	4500 downgradient	454-536	20	Inactive	Municipal
	601050	Inland Empire Utilities Agency - BRK-1/1	144 downgradient	310-350	4	Active	Monitoring
	601051	Inland Empire Utilities Agency - BRK-1/2	144 downgradient	520-560	4	Active	Monitoring
	601048	Inland Empire Utilities Agency - BRK-2/1	1305 downgradient	320-360	4	Active	Monitoring
	601049	Inland Empire Utilities Agency - BRK-2/2	1305 downgradient	560-600	4	Active	Monitoring
San Sevaine Basins	600905	Cucamonga Valley Water District No. 39	8300-13170 downgradient	750-870, 940-960, 970-1060, & 1080-1130,	20	Active	Municipal
	600905	Cucamonga Valley Water District No. 39	8300-13170 downgradient	750-870, 940-960, 970-1060, & 1080-1130,	20	Active	Municipal
	601115	Inland Empire Utilities Agency - SS-1/1 and 1/2	~39-116 downgradient	640-680	4	Active	Monitoring
	--	Inland Empire Utilities Agency - SS-2/1 and 2/2	~39-116 downgradient	650-690	4	NA	Monitoring
	--	Inland Empire Utilities Agency - SS-3/1 and 3/2	~750 downgradient	650-690	4	NA	Monitoring
	600576	Unitex IRR	~ 1338 downgradient	NA	NA	NA	Private Irrigation
	600462	Unitex 91090	~1601 downgradient	NA	NA	Active	Private Domestic
	600369	Unitex CalDOT	~ 2850 downgradient	400-684	NA	NA	Irrigation
Victoria Basin	600905	Cucamonga Valley Water District No. 39	4329 downgradient	750-870, 940-960, 970-1060, & 1080-1130,	20	Active	Municipal
	601033	Cucamonga Valley Water District No. 43**	8300 downgradient	650-800	32-42	Active	Municipal
	601117	Inland Empire Utilities Agency - VCT-1/1 and 1/2	~39-116 downgradient	570-610	4	Active	Monitoring
	--	Inland Empire Utilities Agency - VCT-1/1 and 1/2	~ 2000 downgradient	570-610	4	Active	Monitoring
Ely Basin	601003	Ely Basin MW-1, Philadelphia Well (Casing 3)	100 downgradient	280 - 300	2	Active	Monitoring
	601004	Ely Basin MW-2, Walnut Well (Casing 2)	3050 downgradient	290 - 310	4	Active	Monitoring
	3600975	Riverside Drive Well (43840-CWW)	6046 downgradient	NA	NA	Active	Private Irrigation
	600134	Bishop Of San Bernardino Corp. - DOM	6500 downgradient	NA	NA	Active	Private Domestic

Notes:

NA = Data not available
CBWM ID = Chino Basin Water Master well identification number
bgs = below ground surface
* = Ontario Well No. 38 replaced Ontario Well No. 19, which is inactive
** = Cucamonga Valley Water District No. 43 replaced CVWD Well Nos. 35 & 36, which are inactive.
*** = Fontana Water Company Well 7A replaced Fontana Water Company Well 37A (1Q18)

Table 2-9
Groundwater Monitoring Well Results (Quarterly)

	Sample Location	Date	TOC (mg/L)	Total Coliform (MPN/100mL)	pH	EC (µmho/cm)	Al (µg/L)	Color (units)	Cu (µg/L)	Corrosivity Index (SI)	Foaming Agents (mg/L)	Fe (µg/L)	Mn (µg/L)	MTBE (µg/L)	Odor Threshold (TON)	Ag (µg/L)	Thiobencarb (µg/L)	Turbidity (NTU)	Zn (µg/L)	TDS (mg/L)	Cl (mg/L)	Hardness (mg $CaCO_3$/L)	Na (mg/L)	SO_4 (mg/L)	Nitrogen, Total (mg/L)	NO_2-N (mg/L)	NO_3-N (mg/L)	Dissolved Oxygen (mg/L)
Banana & Hickory	Fontana Water Co. - F7a	07/17/18	<0.10	<1.1	7.6	380	<25	<3	0.8	0.1	<0.05	<15	<1	<0.5	2	<0.25	<0.2	0.8	<1	252	12	159	17	14	5.4	<0.02	5.4	5.2
	California Speedway - Infield Well	07/18/18	0.21	<1.1	7.8	618	<25	<3	40.2	0.3	<0.05	<15	<1	<0.5	<1	<0.25	<0.2	0.4	4	416	47	259	23	65	8.4	<0.02	8.4	5.8
	California Speedway 2	07/18/18	0.15	<1.1	7.8	455	<25	<3	1.1	0.3	<0.05	<15	<1	<0.5	2	<0.25	<0.2	0.2	<1	312	21	188	19	30	6.5	<0.02	6.5	6.1
	Reliant Energy - East Well	08/08/18	0.15	<1.1	7.6	428	<25	<3	0.8	0.2	<0.05	<15	<1	<0.5	2	2.79	<0.2	3.6	<1	280	25	163	18	20	8.1	<0.02	8.1	6.9
	BH-1/2*	07/11/18	0.47	<1.1	7.6	697	<25	<3	1.9	0.2	<0.05	<15	4	<0.5	1	<0.25	<0.2	2.6	2	***504***	96	256	27	46	2.3	<0.02	2.3	8.2
Turner	Ontario Well No. 29	07/12/18	<0.10	<1.1	7.9	314	<25	<3	0.8	0.2	<0.05	<15	<1	<0.5	<1	<0.25	<0.2	0.2	<1	218	7	123	22	13	1.4	<0.02	1.4	5.3
	Ontario Well No. 38	07/12/18	<0.10	<1.1	8.0	776	<25	<3	0.8	0.2	<0.05	<15	<1	<0.5	2	<0.25	<0.2	0.5	<1	208	5	118	20	9	1.4	<0.02	1.4	5.4
	T-1/2*	07/18/18	0.66	<1.1	7.3	524	<25	5	2.1	-0.2	<0.05	183	2	<0.5	1	<0.25	<0.2	1.1	3	350	74	164	42	15	<0.6	<0.02	0.1	2.6
	T-2/1*	07/19/18	1.15	<1.1	7.4	380	74	5	2.1	-0.5	<0.05	224	3	<0.5	1	<0.25	<0.2	***11.0***	3	260	55	90	36	19	1.2	<0.02	1.2	1.6
	T-2/2*	07/19/18	0.58	<1.1	7.3	397	<25	<3	2.0	-0.4	<0.05	125	2	<0.5	2	<0.25	<0.2	0.3	4	272	46	114	33	24	2.0	<0.02	2.0	1.3
RP3	Fontana Water Co. - F23a	07/17/18	<0.10	<1.1	7.9	364	<25	<3	0.8	0.1	<0.05	<15	<1	<0.5	<1	<0.25	<0.2	1.0	1	238	16	146	18	19	5.1	<0.02	5.1	5.7
	Southridge JHS*	08/01/18	0.43	<1.1	6.8	***919***	<25	10	4.4	0.1	<0.05	39	9	<0.5	<1	<0.25	<0.2	1.9	15	***592***	90	362	59	77	15.5	<0.02	***14.9***	7.0
	Alcoa MW1*	07/31/18	0.25	<1.1	7.2	709	<25	<3	1.0	0.1	<0.05	<15	<1	<0.5	2	<0.25	<0.2	0.7	1	***582***	133	258	28	55	18.6	<0.02	***18.6***	8.2
	Alcoa MW3*	07/31/18	0.33	<1.1	6.7	***1050***	<25	<3	1.6	0.1	<0.05	<15	<1	<0.5	2	<0.25	<0.2	1.5	2	***838***	89	389	44	27	13.5	<0.02	***13.5***	7.9
	RP3-1/1*	07/30/18	0.90	<1.1	7.4	667	<25	5	2.6	-0.3	<0.05	49	***86***	<0.5	<1	<0.25	<0.2	2.0	2	404	97	158	67	38	3.4	<0.02	3.4	0.4
8th Street	Ontario Well No. 35	07/12/18	0.12	<1.1	7.8	335	<25	5	0.8	0.1	<0.05	<15	<1	<0.5	<1	<0.25	<0.2	0.6	<1	232	8	130	22	22	3.2	<0.02	3.2	3.8
	8TH-1/1*	07/10/18	0.36	<1.1	7.1	408	<25	<3	1.2	-0.2	<0.05	199	3	<0.5	2	<0.25	<0.2	1.9	4	290	39	166	10	22	2.4	<0.02	2.4	8.6
	8TH-1/2*	08/02/18	0.23	<1.1	7.8	383	<25	10	0.7	-0.2	<0.05	<15	10	<0.5	<1	<0.25	<0.2	4.0	1	276	52	154	15	17	1.5	<0.02	1.5	6.6
	8TH-2/1*	08/02/18	0.28	<1.1	7.6	437	<25	<3	0.6	0.0	<0.05	<15	<1	<0.5	<1	2.86	<0.2	0.3	2	294	22	200	13	18	7.7	<0.02	7.7	8.7
	8TH-2/2*	08/09/18	0.17	<1.1	7.0	422	<25	<3	0.6	-0.3	<0.05	<15	2	<0.5	2	<0.25	<0.2	2.6	2	298	38	162	15	30	4.9	<0.02	4.9	9.6
Brooks	Pomona Well No. 10	08/07/18	0.16	<1.1	6.5	562	<25	5	1.8	0.3	<0.05	<15	<1	<0.5	<1	<0.25	<0.2	0.4	<1	382	45	242	12	42	8.0	<0.02	8.0	11.6
	Pomona Well No. 34	08/07/18	0.18	<1.1	6.5	574	<25	<3	0.8	0.4	<0.05	<15	<1	<0.5	<1	<0.25	<0.2	0.3	<1	396	38	246	12	42	12.0	<0.02	***12.0***	11.0
	BRK-1/1*	07/10/18	0.49	<1.1	7.4	586	<25	10	2.9	0.0	<0.05	46	8	<0.5	2	<0.25	<0.2	4.3	3	370	61	196	37	41	0.8	<0.02	0.8	7.2
	BRK-1/2*	07/10/18	0.16	<1.1	7.4	640	<25	<3	0.6	0.2	<0.05	<15	<1	<0.5	2	<0.25	<0.2	0.5	2	454	25	275	15	51	22.4	<0.02	***22.4***	8.0
	BRK-2/1*	07/12/18	1.00	44	7.5	596	<25	***20***	6.1	0.0	<0.05	<15	30	<0.5	2	<0.25	<0.2	***33.0***	3	464	84	264	11	37	1.7	<0.02	1.7	2.6
	BRK-2/2*	07/12/18	0.14	16	8.0	264	<25	<3	1.6	0.0	<0.05	68	<1	<0.5	2	<0.25	<0.2	0.7	3	182	6	68	33	23	3.5	<0.02	3.5	2.1
Ely	Ely Basin MW1 Philadelphia St.*	07/17/18	1.43	<1.1	7.3	523	<25	***20***	2.7	-0.5	<0.05	<15	31	<0.5	2	<0.25	<0.2	***9.0***	4	318	81	148	40	28	<0.6	<0.02	0.3	0.8
	Ely Basin MW2 Walnut St.*	07/25/18	0.95	308	7.2	***1143***	<25	<3	2.1	0.4	<0.05	<15	4	<0.5	2	<0.25	<0.2	***9.3***	4	***816***	100	521	37	67	32.2	<0.02	***31.6***	6.2
	Riverside Well (43840-CWW)*	07/16/18	0.16	<1.1	7.9	562	<25	<3	0.9	0.3	<0.05	<15	<1	<0.5	2	<0.25	<0.2	0.2	32	370	28	231	21	32	9.7	<0.02	9.7	3.0
Victoria & San Sevaine	SS-1/1*	07/23/18	0.18	<1.1	6.8	306	***482***	5	3.7	-0.9	<0.05	<15	16	<0.5	<1	<0.25	<0.2	0.7	3	222	22	114	17	22	3.3	<0.02	3.3	10.9
	SSV-2*	09/10/18	0.26	727	6.6	400	<25	5	0.7	-0.2	<0.05	<15	2	<0.5	<1	<0.25	<0.2	4.5	5	266	37	170	20	28	1.9	<0.02	1.9	10.2
	VCT-1/1*	07/25/18	0.69	<1.1	6.7	615	<25	5	3.5	-0.3	<0.05	<15	<1	<0.5	1	<0.25	<0.2	0.3	28	476	94	264	24	40	1.5	<0.02	1.5	7.6
	VCT-2/2*	08/06/18	<0.10	<1.1	7.4	337	<25	<3	0.8	-0.1	<0.05	<15	<1	<0.5	<1	<0.25	<0.2	0.3	4	220	12	127	17	11	5.1	<0.02	5.1	11.4
	CVWD Well No. 39	08/01/18	<0.10	<1.1	7.8	282	<25	5	1.7	-0.2	<0.05	53	<1	<0.5	<1	<0.25	<0.2	0.9	<1	180	6	105	17	10	3.3	<0.02	3.3	5.4
	CVWD Well No. 43	08/01/18	<0.10	<1.1	7.7	334	<25	5	1.6	0.0	<0.05	<15	<1	<0.5	<1	<0.25	<0.2	0.7	1	218	11	133	18	15	3.5	<0.02	3.5	5.7
	Unitex 91090	07/16/18	<0.10	<1.1	7.9	395	<25	<3	0.5	-0.1	<0.05	<15	<1	<0.5	2	<0.25	<0.2	0.3	1	260	23	164	14	32	2.8	<0.02	2.2	4.4
Declez	JCSD Well No. 13	08/02/18	0.16	<1.1	7.6	680	<25	<3	1.0	0.3	<0.05	<15	<1	<0.5	<1	<0.25	<0.2	0.4	<1	***530***	102	268	28	31	8.0	<0.02	8.0	4.7
	JCSD Well No. 19	08/02/18	<0.10	<1.1	7.8	351	<25	<3	0.9	0.1	<0.05	<15	<1	<0.5	<1	<0.25	<0.2	0.6	<1	222	14	130	25	16	4.2	<0.02	4.2	4.2
	DCZ-1/1*	07/26/18	0.94	<1.1	6.9	523	<25	***20***	1.4	0.0	<0.05	<15	***278***	<0.5	<1	<0.25	<0.2	***14.4***	<1	336	50	182	29	40	1.4	<0.02	1.4	1.0
	DCZ-2*	08/07/18	11.6	<1.1	7.8	484	<25	<3	1.4	0.2	<0.05	<15	2	<0.5	1	<0.25	<0.2	0.4	148	312	34	151	34	30	7.8	<0.02	7.8	4.4
	Primary Maximum Contaminant Level						1000		1300					13			70									1	10	
	Secondary Maximum Contaminant Level				6.5-8.5	900	200	15	1000		0.5	300	50	5	3	100	1	5	5000	500	250			250				

Blank cells indicate that analysis was not run for a constituent on that particular date. On certain dates, supplemental analysis was conducted on several monitoring wells. On those occasions, a full set of analysis was not necessary and only parameters of interest were analyzed.

* Total dissolved metals reported for these wells. The remaining wells report total recoverable metals values.

Table 3-1
Diluent & Recycled Water Recharge Volume (Acre-Feet)

	Diluent Water																				Recycled Water									
	Imported Water										Local Runoff / Storm Flow																				
Date	7th & 8th St.	Banana	Brooks	Declez	Ely	Hickory	RP3	San Sevaine	Turner	Victoria	7th & 8th St.	Banana	Brooks	Declez	Ely	Hickory	RP3	San Sevaine	Turner	Victoria	7th & 8th St.	Banana	Brooks	Declez	Ely	Hickory	RP3	San Sevaine	Turner	Victoria
Oct-17	218	126	0	0	9	160	171	525	0	156	51	2	1	6	48	10	4	0	4	0	217	252	104	0	91	178	301	0	248	45
Nov-17	0	0	0	0	0	0	0	55	0	0	3	0	3	6	0	15	0	0	7	0	102	470	154	0	37	172	289	0	149	41
Dec-17	0	140	0	0	0	69	64	1121	0	4	3	2	1	6	0	8	1	0	2	0	215	256	124	0	222	107	409	0	158	100
4Q17 Total	**218**	**266**	**0**	**0**	**9**	**230**	**234**	**1700**	**0**	**160**	**57**	**4**	**5**	**18**	**48**	**33**	**5**	**0**	**13**	**0**	**533**	**977**	**381**	**0**	**350**	**458**	**999**	**0**	**556**	**187**
Jan-18	0	95	5	0	0	40	63	906	0	36	121	115	28	136	255	85	92	104	153	57	100	128	96	0	31	86	226	0	26	7
Feb-18	0	0	0	0	0	0	0	0	0	0	85	11	9	48	91	16	19	21	94	9	82	209	107	0	184	136	233	0	13	34
Mar-18	0	0	0	0	0	0	0	0	0	0	142	60	43	223	266	59	103	127	315	40	9	89	13	0	0	17	104	0	54	25
1Q18 Total	**0**	**95**	**5**	**0**	**0**	**40**	**63**	**906**	**0**	**36**	**348**	**186**	**80**	**408**	**611**	**160**	**214**	**253**	**562**	**106**	**191**	**426**	**216**	**0**	**215**	**239**	**563**	**0**	**94**	**66**
Apr-18	0	0	0	0	0	0	0	0	0	0	12	0	2	18	19	10	30	0	10	3	0	180	38	58	161	193	295	0	180	0
May-18	0	0	0	0	0	0	0	0	0	0	7	0	3	30	0	0	9	4	40	0	7	169	89	307	313	139	253	0	172	0
Jun-18	62	0	0	0	0	0	0	0	0	0	6	0	2	17	0	2	1	0	16	0	0	135	114	249	236	96	261	0	231	0
2Q18 Total	**62**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**25**	**0**	**7**	**65**	**19**	**12**	**39**	**4**	**66**	**3**	**7**	**484**	**240**	**614**	**710**	**428**	**808**	**0**	**583**	**0**
Jul-18	60	0	0	0	0	0	0	0	0	0	6	2	0	11	0	3	41	2	16	0	97	153	47	278	218	19	162	0	97	105
Aug-18	0	0	0	0	0	0	0	0	0	0	6	0	0	9	0	2	9	0	9	0	153	17	19	287	264	127	165	0	165	199
Sep-18	0	0	0	0	0	0	0	0	0	0	6	0	0	11	0	3	7	0	16	0	260	95	0	269	350	16	207	0	113	166
3Q18 Total	**60**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**18**	**2**	**0**	**31**	**0**	**8**	**57**	**2**	**41**	**0**	**511**	**265**	**66**	**834**	**833**	**162**	**534**	**0**	**375**	**470**

Table 6-1
MVWD ASR Project - TIN/TDS Mass Balance

	ASR Well No. 4										
		Injection			Recovery			Mass Balance			
	Date	Volume (AF)	TIN (mg/L)	TDS (mg/L)	Volume (AF)	TIN (mg/L)	TDS (mg/L)	Storage (AF)	TIN (kg)	TDS (kg)	
4Q17	Oct-17	0.0	<0.4	160	57	12.8	380	(1,459)	(24,680)	(688,794)	
	Nov-17	0.0	<0.4	160	10	13.0	380	(1,469)	(24,847)	(693,674)	
	Dec-17	0.0	<0.4	160	0	13.0	380	(1,469)	(24,847)	(693,674)	
1Q18	Jan-18	0.0	0.6	230	0	13.0	380	(1,469)	(24,847)	(693,674)	
	Feb-18	0.0	0.6	230	5	13.0	380	(1,474)	(24,921)	(695,836)	
	Mar-18	0.0	0.6	230	4	13.0	380	(1,478)	(24,982)	(697,605)	
2Q18	Apr-18	28.8	0.6	230	0	13.0	380	(1,449)	(24,960)	(689,442)	
	May-18	38.6	0.6	230	3	13.0	380	(1,413)	(24,976)	(679,786)	
	Jun-18	0.0	0.6	230	66	13.0	380	(1,479)	(26,030)	(710,596)	
3Q18	Jul-18	0.0	0.6	230	112	13.0	380	(1,591)	(27,824)	(763,044)	
	Aug-18	0.0	0.6	230	109	13.0	380	(1,700)	(29,580)	(814,362)	
	Sep-18	0.0	0.6	230	104	13.0	380	(1,804)	(31,249)	(863,148)	

	ASR Well No. 30										
		Injection			Recovery			Mass Balance			
	Date	Volume (AF)	TIN (mg/L)	TDS (mg/L)	Volume (AF)	TIN (mg/L)	TDS (mg/L)	Storage (AF)	TIN (kg)	TDS (kg)	
4Q17	Oct-17	139.2	<0.4	160	0	12.0	320	(18)	(25,935)	(264,567)	
	Nov-17	135.7	<0.4	160	0	12.0	320	118	(25,868)	(237,782)	
	Dec-17	139.7	<0.4	160	0	12.0	320	258	(25,799)	(210,208)	
1Q18	Jan-18	138.1	0.6	230	0	12.0	320	396	(25,697)	(171,015)	
	Feb-18	124.5	0.6	230	0	12.0	320	520	(25,610)	(135,830)	
	Mar-18	142.6	0.6	230	0	12.0	320	662	(25,504)	(95,383)	
2Q18	Apr-18	99.5	0.6	230	61	12.0	320	701	(26,334)	(91,228)	
	May-18	102.8	0.6	230	27	12.0	320	777	(26,656)	(72,694)	
	Jun-18	0.0	0.6	230	244	12.0	320	533	(30,271)	(169,089)	
3Q18	Jul-18	0.0	0.6	230	0	12.0	320	533	(30,271)	(169,089)	
	Aug-18	0.0	0.6	230	48	12.0	320	485	(30,982)	(188,042)	
	Sep-18	0.0	0.6	230	0	12.0	320	484	(30,985)	(188,113)	

	ASR Well No. 32										
		Injection			Recovery			Mass Balance			
	Date	Volume (AF)	TIN (mg/L)	TDS (mg/L)	Volume (AF)	TIN (mg/L)	TDS (mg/L)	Storage (AF)	TIN (kg)	TDS (kg)	
4Q17	Oct-17	0.0	<0.4	160	0	6.5	320	(3,654)	(43,137)	(829,745)	
	Nov-17	0.0	<0.4	160	0	6.5	320	(3,654)	(43,137)	(829,745)	
	Dec-17	0.0	<0.4	160	0	6.5	320	(3,654)	(43,137)	(829,745)	
1Q18	Jan-18	0.0	0.6	230	0	6.5	320	(3,654)	(43,137)	(829,745)	
	Feb-18	71.2	0.6	230	0	6.5	320	(3,582)	(43,085)	(809,531)	
	Mar-18	126.4	0.6	230	0	6.5	320	(3,456)	(42,991)	(773,678)	
2Q18	Apr-18	91.3	0.6	230	60	6.5	320	(3,425)	(43,404)	(771,432)	
	May-18	94.2	0.6	230	28	6.5	320	(3,359)	(43,562)	(755,916)	
	Jun-18	0.0	0.6	230	225	6.5	320	(3,584)	(45,366)	(844,697)	
3Q18	Jul-18	0.0	0.6	230	0	6.5	320	(3,584)	(45,366)	(844,701)	
	Aug-18	0.0	0.6	230	0	6.5	320	(3,584)	(45,366)	(844,701)	
	Sep-18	0.0	0.6	230	0	6.5	320	(3,584)	(45,366)	(844,698)	

The injected water is WFA-treated water, which meets CCR Title 22 drinking water standards.

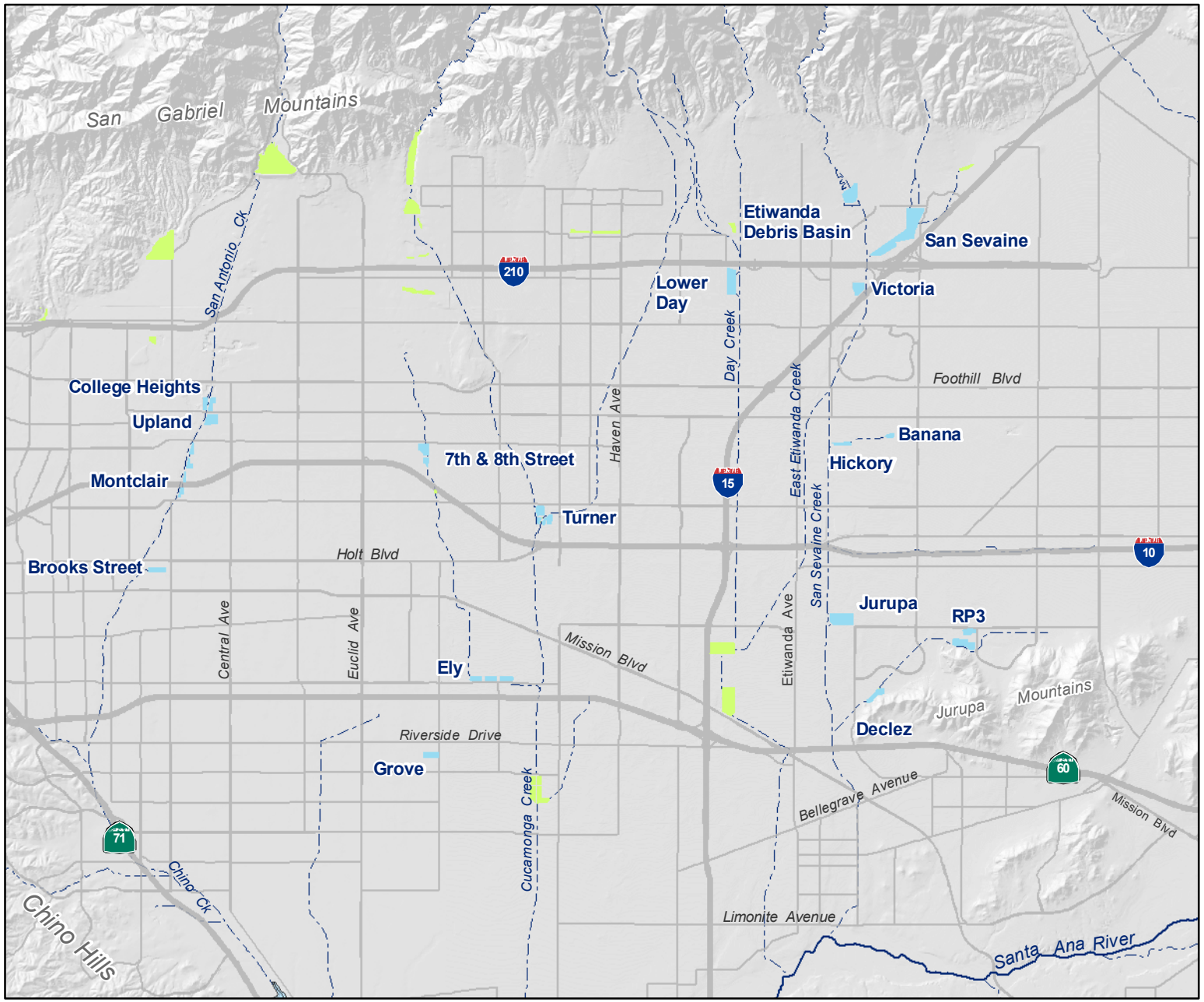
Cells shaded in grey reflect most recent lab values.

Table 6-1
MVWD ASR Project - TIN/TDS Mass Balance

	ASR Well No. 33									
		Injection			Recovery			Mass Balance		
	Date	Volume (AF)	TIN (mg/L)	TDS (mg/L)	Volume (AF)	TIN (mg/L)	TDS (mg/L)	Storage (AF)	TIN (kg)	TDS (kg)
4Q17	Oct-17	138.4	<0.4	160	0	18.0	320	(3,627)	(79,980)	(1,521,696)
	Nov-17	131.8	<0.4	160	0	18.0	320	(3,495)	(79,915)	(1,495,681)
	Dec-17	136.8	<0.4	160	0	18.0	320	(3,358)	(79,848)	(1,468,679)
1Q18	Jan-18	110.3	0.6	230	0	18.0	320	(3,248)	(79,766)	(1,437,380)
	Feb-18	120.5	0.6	230	0	18.0	320	(3,127)	(79,677)	(1,403,198)
	Mar-18	93.8	0.6	230	0	18.0	320	(3,034)	(79,607)	(1,376,580)
2Q18	Apr-18	67.4	0.6	230	0	18.0	320	(2,966)	(79,558)	(1,357,468)
	May-18	71.2	0.6	230	0	18.0	320	(2,895)	(79,505)	(1,337,263)
	Jun-18	0.0	0.6	230	0	18.0	320	(2,895)	(79,505)	(1,337,260)
3Q18	Jul-18	0.0	0.6	230	0	18.0	320	(2,895)	(79,505)	(1,337,260)
	Aug-18	0.0	0.6	230	0	18.0	320	(2,895)	(79,505)	(1,337,260)
	Sep-18	0.0	0.6	230	0	18.0	320	(2,895)	(79,505)	(1,337,257)

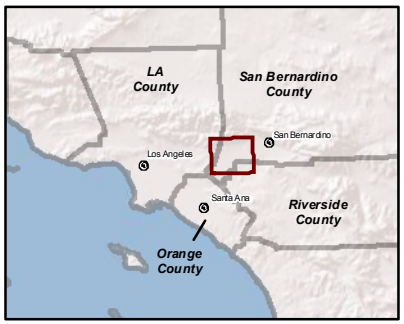
The injected water is WFA-treated water, which meets CCR Title 22 drinking water standards.
Cells shaded in grey reflect most recent lab values.

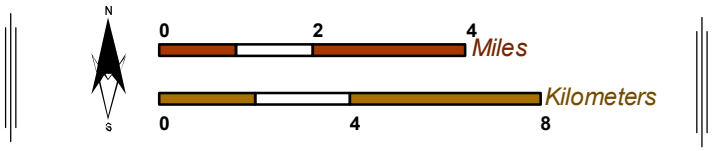
	Total Project (All Wells)			
			Mass Balance	
	Date		Storage (AF)	TIN (kg)	TDS (kg)
4Q17	Oct-17		(8,757)	(173,732)	(3,304,802)
	Nov-17		(8,500)	(173,767)	(3,256,882)
	Dec-17		(8,224)	(173,631)	(3,202,306)
1Q18	Jan-18		(7,975)	(173,447)	(3,131,814)
	Feb-18		(7,664)	(173,292)	(3,044,395)
	Mar-18		(7,305)	(173,084)	(2,943,247)
2Q18	Apr-18		(7,139)	(174,256)	(2,909,569)
	May-18		(6,890)	(174,699)	(2,845,659)
	Jun-18		(7,425)	(181,171)	(3,061,642)
3Q18	Jul-18		(7,537)	(182,966)	(3,114,093)
	Aug-18		(7,695)	(185,432)	(3,184,364)
	Sep-18		(7,799)	(187,104)	(3,233,216)



Main Map Features

- Recharge Basins in the Recycled Water Groundwater Recharge Program
- Non-Program Basins
- Rivers and Streams

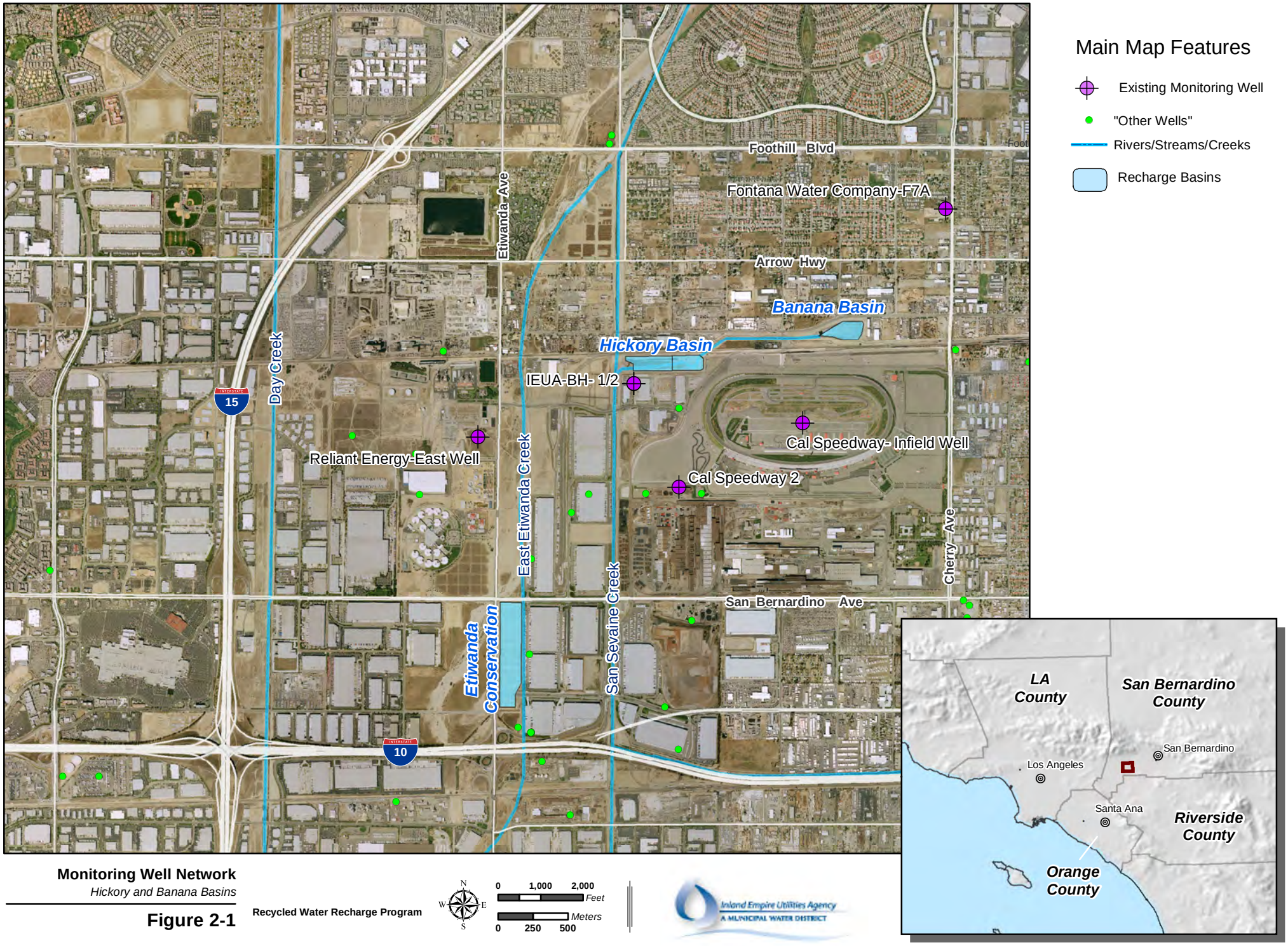




Chino Basin Recycled Water Groundwater Recharge Program

Basin Locations

Figure 1-1

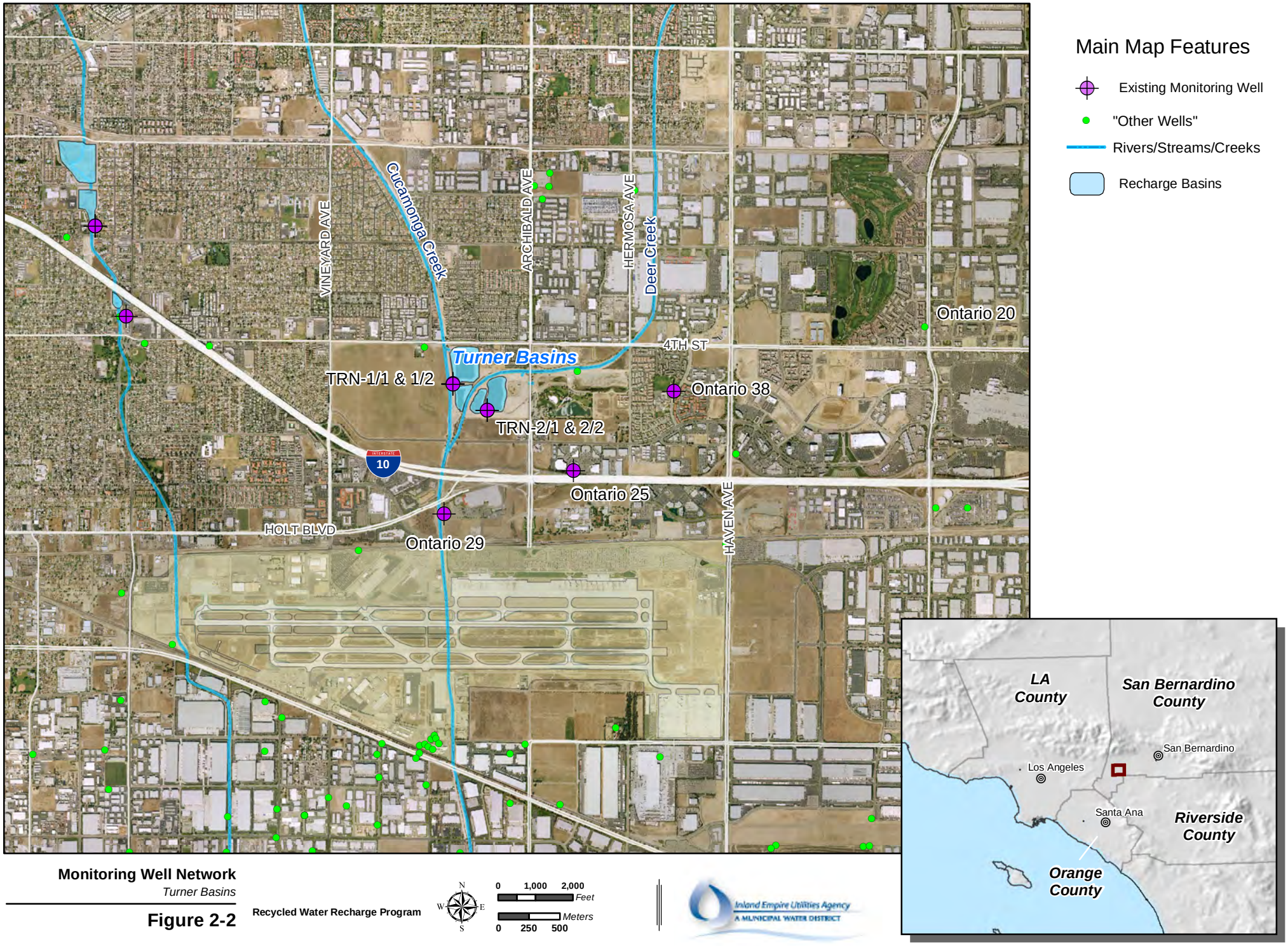


Monitoring Well Network

Hickory and Banana Basins

Figure 2-1

Recycled Water Recharge Program

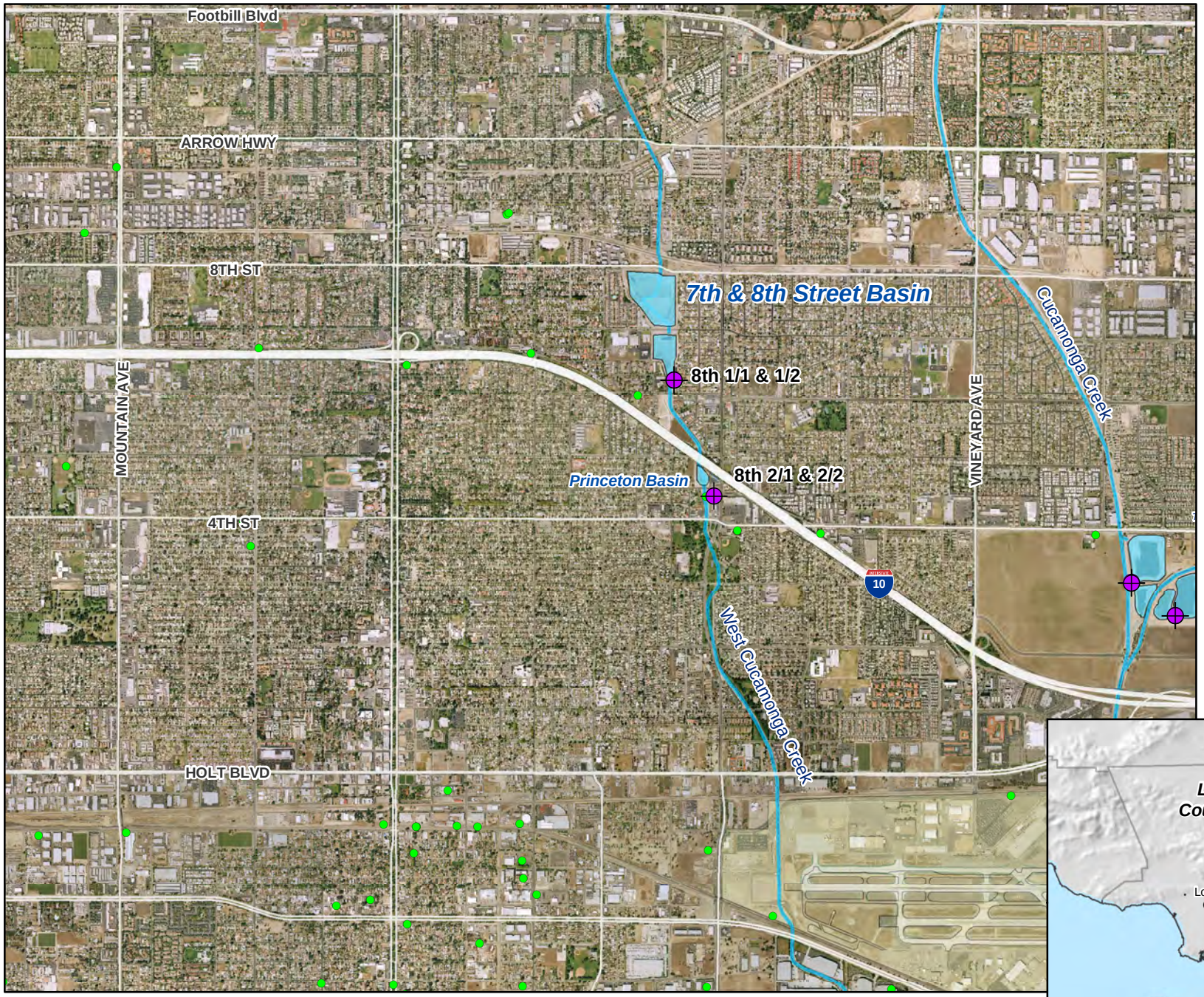


Monitoring Well Network

Turner Basins

Figure 2-2

Recycled Water Recharge Program



Main Map Features

- Existing Monitoring Well
- "Other Wells"
- Rivers/Streams/Creeks
- Recharge Basins

Monitoring Well Network

7th and 8th Street Basin

Figure 2-3

Recycled Water Recharge Program

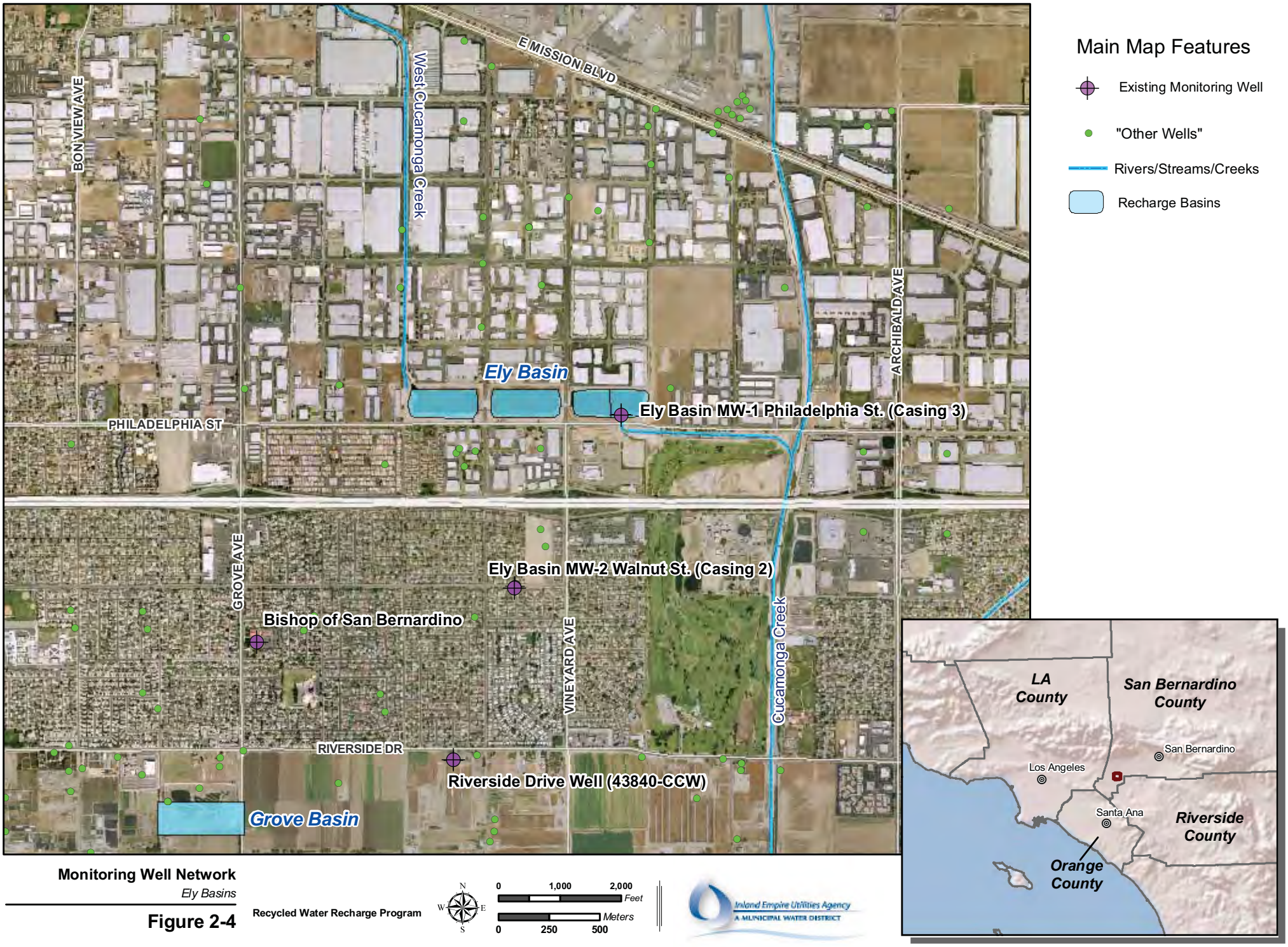
N W E S

0 1,000 2,000 Feet

0 250 500 Meters

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

20160203

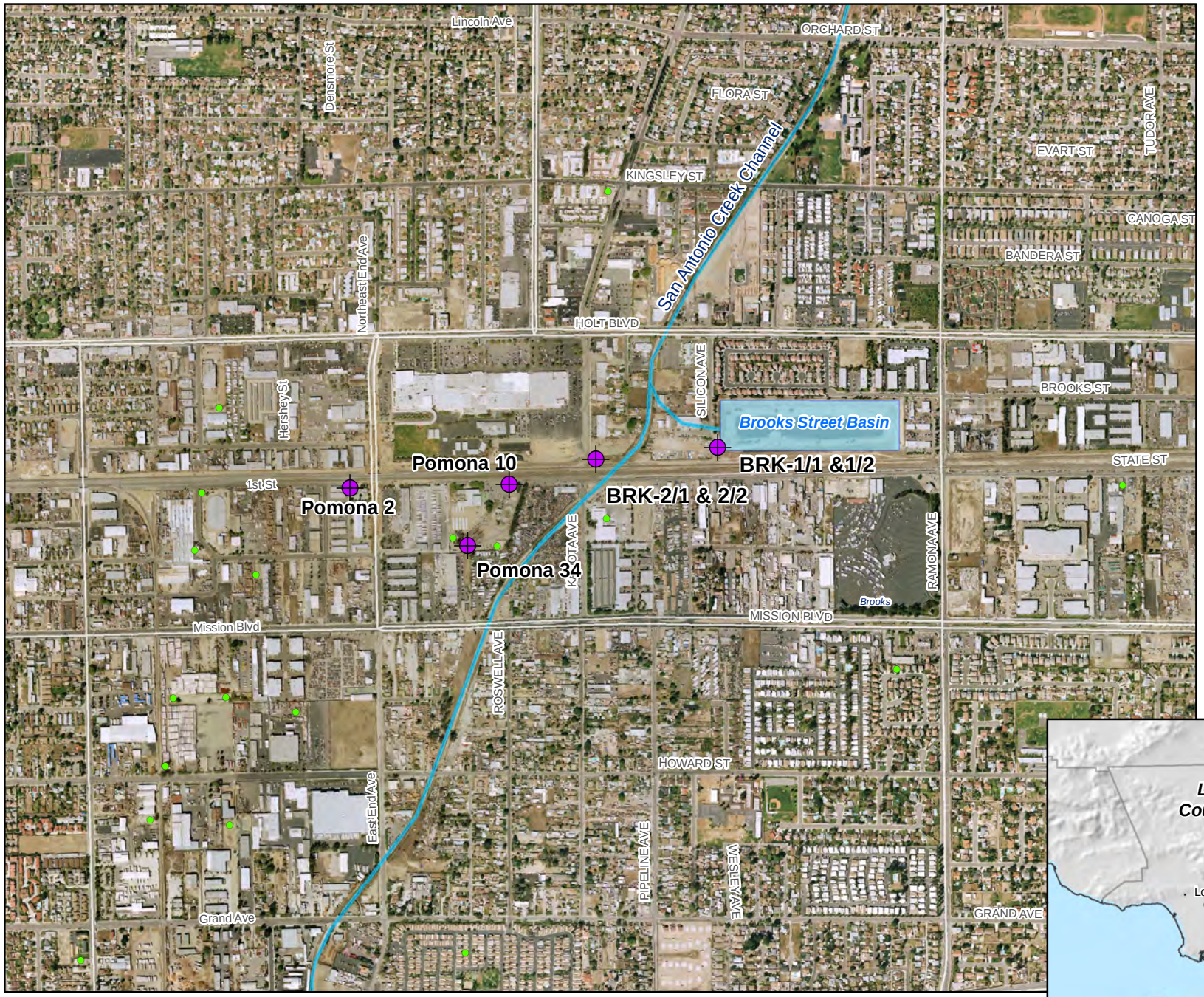


Monitoring Well Network

Ely Basins

Figure 2-4

Recycled Water Recharge Program



Main Map Features

- Existing Monitoring Well
- "Other" Wells
- Rivers/Streams/Creeks
- Recharge Basins

Monitoring Well Network

Brooks Street Basin

Figure 2-5

Recycled Water Recharge Program

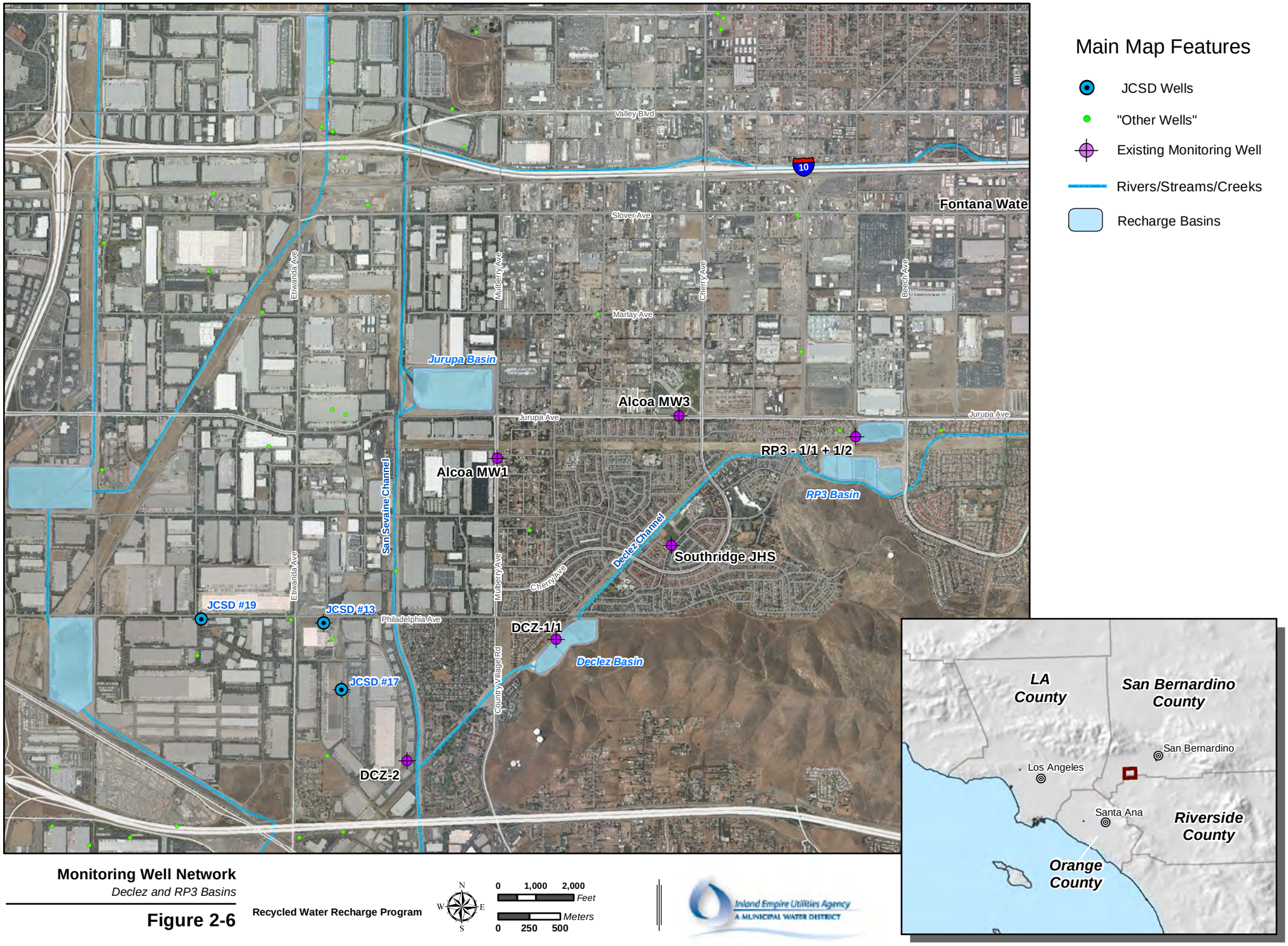
N W E S

0 1,000 Feet

0 300 Meters

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

20160203

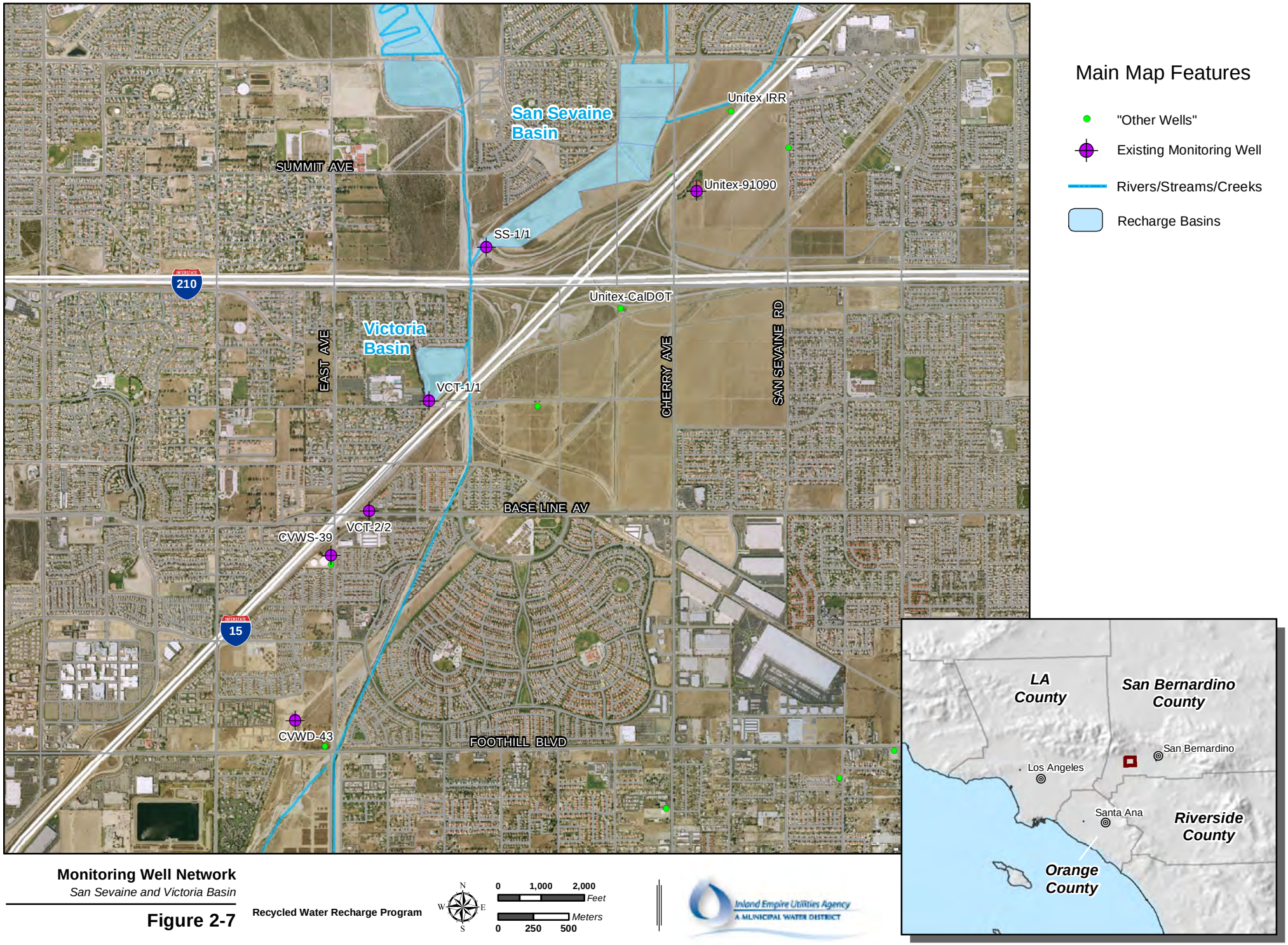


Monitoring Well Network

Declez and RP3 Basins

Figure 2-6

Recycled Water Recharge Program



Monitoring Well Network

San Sevaine and Victoria Basin

Figure 2-7

Recycled Water Recharge Program