CHINO BASIN
RECYCLED WATER GROUNDWATER RECHARGE PROGRAM

START-UP PERIOD REPORT FOR DECLEZ BASIN

May 21, 2018

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May 21, 2018

Regional Water Quality Control Board, Santa Ana Region
Attention: Ms. Milasol Gaslan
3737 Main Street, Suite 500
Riverside, California 92501

Subject: **Transmittal of the Start-Up Report for Declez Basin Chino Basin Recycled Water Groundwater Recharge Program**

Dear Ms. Gaslan:

The Inland Empire Utilities Agency (IEUA) and the Chino Basin Watermaster (CBWM) hereby submit the *Start-Up Report for Declez Basin* for the *Recycled Water Groundwater Recharge Program* being implemented by IEUA and CBWM. This document is submitted pursuant to requirements in the following documents:

- California Regional Water Quality Control Board, Santa Ana Region, Order No. R8-2007-0039 Water Recycling Requirements for Inland Empire Utilities Agency and Chino Basin Watermaster, Chino Basin Recycled Water Groundwater Recharge Program, Phase I and Phase II Projects, June 29, 2007,
- California Regional Water Quality Control Board, Santa Ana Region, Monitoring and Reporting Program No. R8-2007-0039 for Inland Empire Utilities Agency and Chino Basin Watermaster Chino Basin Recycled Water Groundwater Recharge Program Phase I and Phase II Projects San Bernardino County,
- California Regional Water Quality Control Board, Santa Ana Region, Order No. R8-2009-0057, Amending Order No. R8-2007-0039, Water Recycling Requirements For Inland Empire Utilities Agency and Chino Basin Watermaster Chino Basin Recycled Water Groundwater Recharge Program Phase I and Phase II Projects, San Bernardino County, October 23, 2009, and
- IEUA and CBWM, 2015, Start-Up Protocol Plan for Declez Basin, October 28, 2015.

The following items highlight the Start-Up Report findings of the Declez Basin:

- The start-up period for Declez Basin was December 23, 2015 to September 30, 2016 and was extended beyond 180 days to allow for subsurface travel time estimation using electrical conductivity (EC) of stormwater recharged during the 2015/16 winter rains.
- Submission of the Start-up Period Report was held until the completion of a downgradient monitoring well in April 2018.
- Declez Basin consists of three recharge cells with start-up period sampling conducted from lysimeters constructed in Cell 2.

- Measured infiltration rates for the Declez Basin range from 0.25 and 1.0 feet per day with variances being based on wetted area, depth of water and cleaning history.
- EC is an effective tracer of recycled water in samples collected from the lysimeters and is useful for estimating travel times to various depths.
- Recharged recycled water was readily observed at the lysimeters depths of 5, 10, 15, and 25 feet, but was not readily observed to dominate the 35-foot deep lysimeter. Recharge water moves downward through the soil over a period of 25 to 35 days to the 25-foot lysimeter.
- Soil-Aquifer Treatment (SAT) was effective at removing total organic carbon (TOC) in the upper 25 feet of sediment at Declez Basin and this depth is recommended as the compliance sampling point for the initial year of monitoring to begin with resumed recharge of recycled water on April 25, 2018.
- Increased TOC removal with each sampled depth indicates that further reduction in TOC may occur with depth beyond 25 feet. Declez Basin achieved 62% SAT efficiency for TOC removal by a depth of 25 feet. The average TOC was 6.5 mg/L for the surface water and 2.5 mg/L for the 25-foot lysimeter.
- Based on 2.5 mg/L of TOC for the 20-weekly sample average at the 25-foot lysimeter, an initial Recycled Water Contribution (RWC) limit of 20% is recommended using the equation RWC limit = RWC average / 0.5 mg/L.
- SAT is effective at removing total nitrogen (TN) in the upper 25 feet of sediment at Declez Basin. The observed SAT efficiency for TN removal was 91%. The average TN was 6.7 mg/L for the surface water and 0.6 mg/L for the 25-foot lysimeter.
- 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 25-foot lysimeter and surface water 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.
- The Start-Up Period Report includes an RWC Management Plan to forecast the next 120 months of recharge with recycled water recharge to maintain compliance with a 20% RWC limit. All RWC Management Plans are updated annually with current data and presented in the Annual Report of the Recycled Water Groundwater Recharge Program.

If you have any questions, please do not hesitate to call us.

Best regards,

Randy Lee, P.E.
Executive Manager of Operations/AGM

P. Kavounas

Peter Kavounas, P.E.
General Manager

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1. Introduction

Inland Empire Utilities Agency (IEUA) and Chino Basin Watermaster (CBWM) are co-permit holders for the Chino Basin Recycled Water Groundwater Recharge Program. IEUA and CBWM maintain and operate the program's recharge facilities together with Chino Basin Water Conservation District and San Bernardino County Flood Control District. The recharge program is an integral part of CBWM's Optimum Basin Management Plan goals of enhancing water supply reliability and improving groundwater quality in the Chino Basin (Wildermuth Environmental, Inc.,1999). These goals are to be met by increasing the recharge of stormwater, imported water, and recycled water.

Upon initiation of recycled water recharge at a permitted recharge facility, IEUA implements a 6-month (180-day) start-up period that involves intensive water quality testing to establish Soil-Aquifer Treatment (SAT) efficiencies for total organic carbon (TOC) and total nitrogen (TN), determine the maximum recycled water contribution (RWC) limit, and establish a measurement point of compliance for evaluating performance against these metrics after the start-up period. The locations of Recycled Water Recharge Program basins including Declez Basin are shown on Figure 1-1. The Declez Basin recharge facilities improvements were constructed under the Chino Basin Facilities Improvement Project following the release of the Chino Basin Phase I Recycled Water Recharge Project Title 22 Engineering Report (CH2MHill, 2003).

The Declez Basin Start-Up Period was conducted in accordance with the protocols approved by the State Water Resources Control Board - Division of Drinking Water (DDW) [formerly California Department Health Services (CDHS) and formerly California Department of Public Health (CDPH)] and set forth in the Start-Up Protocol Plan for Declez Basin (IEUA, 2015). This report documents the testing results, SAT efficiencies at Declez Basin for the removal of TOC and TN, and the subsequent determination of the maximum RWC limit associated with the reduced TOC concentrations at a chosen compliance point (e.g. a lysimeter or monitoring well).

1.1 Requirements of Order No. R8-2007-0039

The Chino Basin Recycled Water Groundwater Recharge Program is subject to the following requirements set forth by the Regional Water Quality Control Board Santa Ana Region:

- Order No. R8-2007-0039 Water Recycling Requirements for Inland Empire Utilities Agency and Chino Basin Watermaster, Chino Basin Recycled Water Groundwater Recharge Program, Phase I and Phase II Projects, June 29, 2007,
- Monitoring and Reporting Program No. R8-2007-0039 for Inland Empire Utilities Agency and Chino Basin Watermaster Chino Basin Recycled Water Groundwater Recharge Program Phase I and Phase II Projects, June 29, 2007, and
- California Regional Water Quality Control Board, Santa Ana Region, Order No. R8-2009-0057, Amending Order No. R8-2007-0039, Water Recycling Requirements for Inland Empire Utilities Agency and Chino Basin Watermaster Chino Basin Recycled Water Groundwater Recharge Program Phase I and Phase II Projects, San Bernardino County, October 23, 2009.

Recharge using recycled water at the Declez Basin was originally permitted under Order No. R8-2005-0033, which covered Phase I recharge sites and subsequently under Order No. R8-2007-0039, which covers both Phase I and Phase II recharge sites. Order No. R8-2007-0039 Section F.4 describes the requirements for the Start-Up Period Report:

> The Start-Up Period report shall include: site specific determinations of percolation rates, soil aquifer treatment efficiency and optimum depths and locations of lysimeters to obtain representative compliance samples of recycled water after soil aquifer treatment. The report shall specify the date that the Start-Up Period ended. The report shall make recommendations for final compliance lysimeter placement and the monitoring plan to be employed during the initial year of operation, the initial year maximum average RWC and corresponding TOC limit, and generalized method that will be used to track recharge water in the vadose zone. The analytical results from weekly lysimeter samples shall be evaluated and reported along with conclusions regarding soil aquifer treatment (SAT) performance. This report is subject to approval by the CDHS and the Regional Board Executive Officer. The report recommendations shall be implemented upon approval.

Order No. R8-2009-0057 amended R8-2007-0039 to extend the previously 60-month volume-based RWC compliance calculation to 120 months and to allow that RWC calculation to include groundwater underflow as diluent water.

1.2 Organization of the Start-Up Report

Section 2 of this report describes the installation of the lysimeters and monitoring well. Section 3 details the recharge operations during the start-up period. Sections 4 and 5 discuss the lysimeter sampling and monitoring results and the SAT efficiency in terms of TOC and TN removal. Section 6 describes the determination of the start-up period and recommendation of the compliance point. Section 7 discusses the determination of the basin's maximum RWC limit and a RWC Management Plan to ensure that the RWC limit is not exceeded in the future. Section 8 is a proposed water quality monitoring plan for the first year after the start-up period, and Section 9 lists cited references.

2. Lysimeter and Well Installation

Figure 2-1 show the three cells making up the Declez Basin and the Declez Channel used to deliver recycled water to the site from IEUA's recycled water pipeline discharge point at upstream RP3 Basin. Also shown on Figure 2-1 are the locations of the lysimeter cluster and monitoring well (DCZ-1) used to collect water samples during the Declez Basin start-up period. While shown on Figure 2-1, monitoring well DCZ-2 was installed in April 2018 after the conclusion of the start-up period. Appendix A contains the as-built drawings for the lysimeters and both monitoring wells DCZ-1 and DCZ-2.

In July 2007, a cluster of six lysimeters were installed along the northern corner of Declez Basin cell 2 at a ground elevation of approximately 850 feet above Mean Sea Level (MSL). The lysimeter construction drawings are included in Appendix A. The lysimeter cluster is comprised of individual lysimeters at depths of 5, 10, 15, two at 25, and 35 feet below ground surface (bgs). Two lysimeters were constructed at 25 feet-bgs (25A and 25B) to allow for additional sample volume should a future need arise for a larger volume sampling. The 25A depth was sampled for the start-up period. The Declez Basin lysimeter construction process is summarized in the *Start-Up Protocol Plan for Declez Basin* (IEUA, 2015). Throughout the report text, tables, and figures, water samples from the lysimeters are referred to as DCZ-xx, where xx equals the nominal depth of the porous tip of the lysimeter bgs. Depending on context, the surface water samples collected at each lysimeter are referred to as a 0-depth sample or surface water sample. These samples represent grab samples of surface water collected from the basin near the lysimeter installation. During the start-up period, surface water depth in Declez Basin cell 2 varied from about 1 to 4 feet.

Monitoring well DCZ-1 was constructed in July 2007 and is located along the northwest fence line of Declez cell 2 at a ground surface elevation of approximately 843 feet MSL. The monitoring well consists of one casing designated as DCZ-1/1 and is screened from 155 to 175 feet bgs. The top of the well casing is approximately 846 feet above MSL. At the time of construction, depth of water was approximately 133 feet below the top of the DCZ-1/1 casing.

Construction for monitoring well DCZ-2 was completed in April 2018. The well is located on the west access road along the San Sevaine flood control channel, south of Philadelphia Street, and near the San Sevaine and Declez channel intersection. The well has a ground surface elevation of approximately 365 feet MSL. The monitoring well consists of one casing designated as DCZ-2/1 which is screened from 235 to 265 feet bgs. At the time of construction, static water depth was 212 feet below top of casing.

3. Recharge Operations

3.1 Volume of Historical Diluent Water Recharged

The Declez Basin was improved to retain water for recharge as part of the Chino Basin Facilities Improvement Project basin improvements and prior to 2005 was operated as a flood control facility. Table 3-1 summarizes the monthly surface water recharge volumes at Declez Basin for July 2005 through February 2018. These flows are Declez Basin diluent water (all water recharged that is not recycled water). More specifically in this case, diluent water is imported water and locally originating surface flows (dry weather and stormwater flows). For this period of time, the Declez Basin diluent water recharge ranged from 530 and 877 acre-feet per year, and averaged 711 acre-feet per year. Recharge in Declez Basin was estimated from field observations of water depth changes during stormwater and imported water deliveries, and from periodic stream gauging of dry weather flows.

Once recycled water recharge is initiated, groundwater underflow is also credited as a diluent water source for Declez Basin's 120-month running average RWC calculation (Section 7). It is however, not listed in Table 3-1 as in-basin recharge. Groundwater underflow for Declez Basin originates upgradient of both the Declez and RP3 Basin sites. The RP3 location is shown on Figure 1-1 and the Figure 2-1 inset map. Total groundwater underflow at the Declez and RP3 Basins was estimated at 10,845 acre-feet per year (904 acre-feet per month) using an approved methodology (National Water Research Institute, 2010). The estimated groundwater underflow volume may be used for each basin as the long-travel time between basins exceeds the required travel time between recharge and extraction for potable use. The travel time from the RP3 site to the Southridge Junior High School monitoring well is estimated at 5,762 days (15.8 years) (CH2MHill, 2003). The Southridge well is about 60% of the distance towards Declez from the RP3 site making the estimated travel time between the sites is about 26 years. The groundwater underflow available for the Declez Basin RWC is thus 10,845 acre-feet per year (904 acre-feet per month).

3.2 Recharge Operations during the Start-Up Period

Water delivered to Declez Basin during the start-up period included stormwater and local runoff from Declez Channel and recycled water discharges to Declez channel at the RP3 Basin site via IEUA's recycled water pipeline. Stormwater recharge was estimated using observed increases in basin water depth correlated with the water depth-to-volume relationship of the basin's stage-storage curve. Table 3-2 lists daily water deliveries to Declez Basin during the start-up period. Table 3-3 lists the monthly deliveries since July 2005 and the calculated 120-month running-average RWC, which while discussed in detail in Section 7, is the ratio of recycled water to the total recharge. Groundwater underflow is included as a diluent water source in the RWC calculation in Table 3-3 beginning December 2015 as this is the first month of recycled water to Declez Basin.

3.3 Estimated Infiltration Rates

Infiltration rates of Declez Basin were calculated using water-level measurements from sensors in each of its three cells during times when no inflow was occurring at the basin. Table 3-4 summarizes the infiltration rate calculations based on measurements collected during 2015 to 2017. Following cleaning activity, the infiltration rates can exceed 1.0 foot per day and briefly be as high as 2.0 foot per day. Infiltration rates can vary by cell based on water depth and cleaning history. For instance, deeper water will submerge a larger area and may encompass soils having a relatively higher infiltration rate not yet adversely impacted by fine-grained storm deposits.

4. Surface Water and Lysimeter Sampling Results

4.1 Surface Water Lysimeter, and Monitoring Well Sampling Results

The monitoring schedule from the DDW-approved *Start-Up Protocol Plan for Declez Basin* (IEUA, 2015) included weekly sampling for surface water and lysimeter water, and analyses for:

- Electrical Conductivity (EC),
- TOC,
- Nitrate as Nitrogen (NO_3-N), Nitrite as Nitrogen (NO_2-N), Ammonia as Nitrogen (NH_3-N), and Total Kjeldahl Nitrogen (TKN), and
- TN, calculated as the sum of NO_3-N, NO_2-N and TKN.

Monitoring well DCZ-1/1 was sampled for EC, TOC, and TN every month for the six months leading up to the Declez Basin start-up period, then quarterly for the first six months of the start-up period, weekly for the final three months of the start-up period, and then quarterly thereafter. Lysimeter and monitoring well data are summarized in Tables 4-1 through 4-5 and are graphed on Figure 4-1a through Figure 4-3b. While time-series graphs and tabularized data are presented in this section, they are interpreted and discussed in Section 5 (Soil-Aquifer Treatment Efficiency: TOC & TN Removal) and Section 6 (Start-Up Period). Travel time of recharge between lysimeters is discussed below in Section 4-2.

Non-detect results for the nitrogen species were utilized to calculate TN (and for graphing results) by setting the result value equal to one-half the method detection limit. TN results that are non-detect (<0.6 mg/L) are graphed and averaged at half the detection limit. If not all nitrogen species results are non-detect and the sum of their concentrations is less than 0.6 mg/L and greater than 0.3 mg/L, then TN is reported as <0.6 mg/L but graphed and averaged with the summed value. If there is insufficient sample to analyze for TKN, then NH_3-N is substituted for TKN into the calculation of TN. This is done as the other components of TKN (e.g. organic nitrogen and NH_4-N) are typically removed during the wastewater treatment process. If there is insufficient sample to analyze for NO_3-N, TKN, or NH_3, then TN is not calculated.

Time series graphs of EC from Declez Basin lysimeters and monitoring well are presented on Figure 4-1a and Figure 4-1b, respectively. Time-series graphs of TOC from Declez Basin are presented on Figure 4-2a and Figure 4-2b. Time-series graphs of TN from Declez Basin are presented on Figure 4-3a and Figure 4-3b. In the upper part of all of the time-series graphs, horizontal series denote periods when various sources of water were routed into Declez Basin. Note that with each successive depth and over the passage of time, TOC concentrations are generally lower.

Changes in source waters recharged at Declez Basin were readily detected at each of the lysimeters with the exception of the 35-foot lysimeter. Detection of sources are based on comparing the measured EC values at the lysimeters with measured EC values of the source waters. Recycled water at the 35-foot lysimeter was not readily correlated as its EC values showed no fluctuations with source but did show a steady increase after about 13 weeks of recharge of recycled water. For the first 180 days of the start-up period, the EC increase at the 35-foot lysimeter was within the unpublished historical range of EC data collected in 2014 and 2015 (180 to 380 µmhos/cm). Nearly nine months after initiation of recycled water the 35-foot lysimeter reached a regular peak EC of about 480 µmhos/cm never reaching the approximate 800 µmhos/cm EC of recycled water.

4.2 Recharge Travel Times

The travel time for recharge water to reach the various sample depths is critical to the evaluation of the start-up period data and development of future monitoring protocols. Travel times along recharge flow paths were estimated by comparison of EC time-series variations of surface water and of water at the lysimeters and monitoring well. Surface water travel times to the lysimeters were evaluated to identify offset times for the pairing of surface and lysimeter data. Travel time data are also important for the development of monitoring plans such that the collected lysimeter or monitoring well samples can be referenced to a prior surface water sampling event.

Exact matching of water parameter concentrations is not always possible due to many reasons, including but not limited to the following:

- Daily recharge volumes over the study period are not constant, resulting in variations in surface water depth and percent water saturation of underlying soils.
- Recharge waters blend with water already in the soil which mute chemical changes with depth from those observed in the surface water.
- Seasonal water quality changes (such as in EC) in background groundwater at monitoring wells can be more significant than changes observed in the vadose zone using the overlying lysimeters.

The initial arrival or indication of a parameter with increased depth can represent the quickest travel time, but the peak arrival may be delayed and be more suitable for purposes of comparison of samples between depths. While intrinsic parameters such as EC can be used to estimate travel times because it is relatively conservative, the parameters TOC and TN are not suitable tracers, because their concentrations change through SAT.

4.2.1 Lysimeter Monitoring

Recharge travel times from the basin to the various depth lysimeters can typically be estimated by observation of delays in the transition from lower EC diluent water to higher EC recycled water. Prior to the delivery of recycled water at the start-up period in December 2015, diluent water recharge to the Declez Basin was very limited due to dry hydrologic conditions. Thus, accurate travel times could not be observed until the onset of regular storm events in March 2016. Following discussions with the DDW, the start-up period duration was thus extended to allow for measuring travel times of the stormwater (lower EC) through the various lysimeter depths. The travel time estimates can however vary throughout the start-up period depending on changes in basin operation and the blends of various sources in the surface water. Evaluation of the lysimeter EC data shows that the lysimeters depths of 5 to 25 feet can become dominated by EC changes of the recharge source water of Declez Basin recharge source water.

Table 5-1 summarizes the three recharge events that were used to determine recharge travel times. These travel times are used in Section 5 to provide a time offset for comparing surface water and lysimeter results and estimating SAT efficiencies. Based on EC changes observed at the 25-foot lysimeter following the observed recharge EC changes, the travel time to the 25-foot lysimeter ranged from 25 to 35 days and averaged 30 days. The dates used to make this estimate are the storm event on January 5 to 8, 2016, post storm recycled water recharge starting on January 13, 2016, and the storm event of March 6 to March 12, 2016. The following paragraph is an example of EC change tracking.

From the correlation of EC changes at lysimeters following the storm event (beginning on March 6), the general travel time to the 5- and 10-foot lysimeters is estimated to be less than 10 days, 10 days for the 15-foot lysimeter, and 25 days for the 25-foot lysimeter. Travel times to the 5-, 10-, 15-, and 25-foot lysimeters are best evaluated by tracking the pulses of lower EC (250 to 350 µmhos/cm water recharged during the March 2016 storm, as can be observed on Figure 4-1a. Prior to the March 2016 storm the lysimeters at 5-, 10-, and 15-foot depths had EC values of approximately 625 µmhos/cm, with the 25-foot lysimeter having a value of approximately 655 µmhos/cm. Sampling after the storm event indicate that the EC of 5-, 10-, 15-, 25-foot lysimeters decreased by approximately 260, 190, 45, and 40 µmhos/cm, respectively. Estimating travel time of individual storms to the 35-foot lysimeter could not be readily made as the peaks of higher EC recycled water and lower EC stormwater were significantly muted at this depth and produce one multiple month-duration continuous rise of EC. In May 2016, approximately 13 weeks following initiation of recycled water recharge, the EC of the 35-foot lysimeter does begin to show a slight long-term increase, which may signal the arrival of some recycled water at this depth. Recycled water likely percolated deeper than 35 feet and largely flowed around the sediments sampled by the 35-foot lysimeter.

4.2.2 Well Monitoring

Monitoring well DCZ-1/1 is located along the basin access road immediately west of Declez cell 2. The casing of DCZ-1/1 is screened from 155 to 175 feet bgs. Travel time from a recharge basin to a monitoring well can be estimated based on changes in water levels, and/or intrinsic water quality parameters of the recharge water, such as EC.

Figure 4-1b is a time-series graph of EC for the Declez well casing, but also shows for comparison the EC of contemporary Declez Basin surface water and of the 25-foot deep lysimeters. The EC of groundwater at monitoring well DCZ-1/1 prior to the start of recycled water recharge ranged from 450 to 550 µmhos/cm. Recycled water delivered to Declez Basin generally ranged from 700 to 800 µmhos/cm. There is no strong evidence based on EC data that recycled water reached the wells screen of monitoring well DCZ-1/1. However, groundwater level measurements indicate that recharged water is reaching the DCZ-1 well site. Figure 4-4 shows the DCZ-1/1 hydrograph reproduced from the 2017 Annual Report for the Recycled Water Groundwater Program (IEUA and CBWM, 2018). The seasonal low groundwater elevation at the site at the end of 2016 is 5 to 10 feet higher than historical lows. The seasonal-high water elevation is within the range of historical data, but remains higher for most of the year as opposed to only a seasonal peak.

5. Soil-Aquifer Treatment Efficiency: TOC & TN Removal

SAT is a natural biodegradation process occurring beneath a recharge basin as recharge water flows though shallow soil where TOC and TN concentrations are reduced. As allowed in Order R8-2007-0039, demonstrated SAT reduction of TOC concentration can be a significant influence on the RWC limit based on the formula:

$$TOC_{average} = \frac{0.5mg/L}{RWC_{average}}$$

SAT efficiency for TOC and TN removal were estimated through a comparison of surface water and 25-foot lysimeter data, specifically the average of the 20 weeks of sampling highlighted in Table 4-2 and Table 4-4, respectively. The 20 weeks of data were collected near the end of the start-up period and reflect a time when no stormwater was impacting their concentrations. The shaded areas on these two tables for the 25-foot and shallower lysimeters correlate with surface water data offset by the estimated recharge travel time. As discussed in Section 4.2.1, the travel time for recharge to reach the 25-foot lysimeter ranged from 25 to 35 days and averaged 30 days. Table 5-1 summarizes the recharge events that were used to estimate the travel time of recharge water to reach the 25-foot deep lysimeter. For the 35-foot lysimeter, recharge was not readily observed and thus the shaded area simply reflects the final 20-week samples.

Figure 5-1 is a graph of the 20-week average TOC and TN concentrations by increasing lysimeter depth at Declez Basin. The surface water grab sample is represented by the 0-foot depth, while the other depths correspond to the lysimeter depths, in feet -bgs. The TOC values plotted correspond to the average of the 20-week samples data highlighted on Table 4-2 and Table 4-4. For TN, samples were collected twice per week and thus the 20-week average TN is averaged from more than 20 samples. The surface water and 25-foot lysimeter 20-week average values are used to estimate SAT removal efficiencies for TOC and TN at that depth.

At Declez Basin, SAT removal of TOC and TN continues over time and generates fairly consistent concentrations with depth despite TOC and TN concentration variations of the surface water. Figure 5-1 shows a noticeable decrease in average TOC concentrations with increased depth and suggests that while SAT reduction of TOC continues to at least 25 feet bgs, it may continue with greater depth through the unsaturated zone. Depth to groundwater at Declez Basin during the start-up period was approximately 127 feet bgs. TOC of surface water and at the 25-foot lysimeter averaged 6.5 mg/L and 2.5 mg/L, respectively. Note the 35-foot lysimeter was determined to not be representative of source water recharge as EC did not readily change in response to changes in recharge sources. Figure 5-1 also shows a decrease in the average TN value with depth to at a minimum of the 25-foot lysimeter. TN of surface water and at the 25-foot lysimeter averaged 6.7 mg/L and 0.6 mg/L, respectively. During continued delivery of recycled water, the TN values from the 15-foot and 25-foot depth lysimeters were consistently less than the 5-mg/L compliance limit.

As shown in the lower portion of Table 5-1, **the SAT efficiencies for TOC removal during this period averaged 62% for the 25-foot lysimeter.** Data for this table are found at the bottom of Table 4-2. TOC concentrations decrease with depth as and recycled water percolates deeper. TOC concentration reduction by SAT allow for an increased volume of recycled water that can be recharged under Order R8-2007-0039. Surface water TOC during the Declez start-up period average 6.5 mg/L and fluctuated from 18.9 mg/L to 3.1 mg/L. A review of Figure 4-2a indicates measured TOC and relative changes in TOC are buffered and reduced with depth.

As shown in the lower portion of Table 5-1, **the SAT efficiencies for TN removal during this period averaged 91% for the 25-foot lysimeter**. Data for this table are found at the bottom of Table 4-4. TN concentrations decrease with depth as recycled water recharge progresses. While TN concentration reduction by SAT does not increase the volume of recycled water that can be recharged under Order R8-2007-0039, it does assist in consistently meeting the TN compliance limit of 5 mg/L. Surface water TN during the Declez start-up period fluctuated from 1.5 mg/L to 9.0 mg/L and was thus not within the TN compliance limit of 5 mg/L. At initiation of the start-up period, the 25-foot lysimeter had two TN samples exceed 5.0 mg/L at 5.1, and 5.2 mg/L. After a month of recycled water start-up, TN at the 25-foot lysimeter were consistently less than 5.0 mg/L and were less than 1.0 mg/L for the last six months of the start-up period. A review of Figure 4-3a indicates measured TN and relative changes in TN are buffered and reduced with depth.

6. Start-Up Period

6.1 Determination of the Start-Up Period

Order R8-2007-0039 establishes a start-up period for each recharge basin in the Chino Basin Recycled Water Groundwater Recharge Program (Finding 11, page 4):

> . . . a Start-Up Period will be used at the outset of recycled water recharge operations. The purposes of each Start-Up Period are to establish site characteristics, including percolation rates, the physical characteristics of the vadose zone and soil aquifer treatment efficiency, and to establish a sampling regime, based on these characteristics, that is representative of recycled water following soil aquifer treatment. The length of the Start-Up Period at each basin will be contingent on site characteristics, including percolation rates and recycled water transit time in the subsurface. The Start-up Period shall last up to 180 days following commencement of recharge of recycled water to each basin, except if recharge of recycled water at that basin is significantly interrupted, for example due to storm event(s). . . . This Order requires IEUA to submit for CDHS and Regional Board approval a proposed Start-Up Period protocol at least two weeks prior to beginning each Start-Up Period. A Start–Up Period report will be prepared at the close of each Start-Up Period and will include recommendations for the optimum depths and locations for placement of lysimeters that will be used to measure compliance, and for a compliance-monitoring program. The report will also include recommendations for the maximum running monthly average Recycled Water Contribution and maximum running average Total Organic Carbon (TOC) limit for the initial year of recharge operations following the Start-Up Period.

The start-up period for each basin will be long enough to demonstrate effective TOC removal. As long as TOC concentrations continue to decline over time, the basin is still deemed to be in the start-up period, up to 180 days unless interrupted.

Recycled water start-up period for the Declez Basin began on December 23, 2015 and ended September 30, 2016 for a duration of 283 days (about 9 months). The start-up period was extended beyond the intended 180 days (6 months) due to stormwater influence on recycled water concentrations. Major storm events occurred on January 5 and March 6, 2016, which provided opportunities to evaluate travel times to the various lysimeter depths. Diluent water, such as imported water, was not available prior to the start-up period, which would have allowed such estimates at the beginning of the start-up period.

6.2 Compliance Point Selection

As demonstrated by the EC trends shown on Figure 4-1a, the 5- to 25-foot lysimeters at Declez Basin received water representative of recharged water. EC fluctuated following changes in recharge water EC. Travel time to the 25-foot lysimeter ranged from 25 to 35 days and averaged 30 days. The 35-foot lysimeter did not readily respond to changes in EC. Therefore, the recharge water must have mostly moved past the 35-foot lysimeter without encountering the sampling lysimeter cup. There appears to be no geologic features that would cause this anomaly. Therefore, **the 25-foot lysimeter was selected to be the compliance point lysimeter.**

6.3 Maximum RWC Determination

During a basin's start-up period, an RWC limit is determined based on demonstrated TOC removal through SAT as specified within Order R8-2007-0039. Finding 12 of the Order states:

> This Order does not establish maximum average recycled water contributions (RWC) at each basin, but requires the users to determine the maximum average RWC through the Start-Up Period for each recharge basin. The determined RWC must be approved by CDHS and the Regional Board.

Recycled Water Quality Specification Section A.10 states,

> At each recharge basin, the monthly average TOC concentration of the recycled water prior to reaching the regional groundwater table shall not exceed the average TOC value calculated from the following formula:
>
> TOCaverage = 0.5 mg/L ÷ RWCaverage

Section B.6 of Order R8-2007-0039 states:

> Compliance with average TOC concentration limits specified in Recycled Water Quality Specifications A.11., above, shall be determined based on a lysimeter-based monitoring program performed at each individual recharge basin and allowing for recycled water percolation to the lysimeters to demonstrate soil aquifer treatment efficiency, unless recycled water TOC compliance can be demonstrated prior to recharge. Compliance shall be based on the running average of the most recent 20 lysimeter sample test results representative of recycled water samples.

During a basin start-up period, TOC removal through SAT is demonstrated from which an RWC limit may be determined. The 20-week sample average TOC concentrations for the 25-foot lysimeter was calculated with the sample data with little to no stormwater influence on EC, TOC, and TN (between May 17, 2016 and September 27, 2016). Although two small rain events occurred in April and May 2016, they had no significant influence on surface water EC, TOC, and TN. As shown in Table 5-1, **the 20-sample average TOC concentration is 2.5 mg/L. The maximum RWC limit is thus calculated as 20% for the Declez Basin based on monitoring at the 25-foot deep lysimeter.** The 2014 Groundwater Replenishment Reuse Projects (GRRP) Regulations and Order R8-2007-0039 limit maximum RWC to 50% for recycled water produced by tertiary treatment.

7. RWC Management Plan

RWC management is needed to keep a basin's volume-based RWC within the maximum RWC limit as first determined by the 20-week sample average TOC from the start-up period. A basin's volume-based RWC is determined by a 120-month rolling average ratio of recycled water volume to total recharge volume. Total recharge volume is the combined recharge volume from all sources including stormwater, local runoff, groundwater underflow, imported water, and recycled water. Per Order R8-2009-0057, during the start-up period and up to 120-months after initiation of recycled water recharge, the volume-based RWC may exceed the maximum RWC limit, but must be within the limit by month 120.

Order R8-2009-0057, Section F.20

> The Discharger shall submit a RWC Management Plan to the CDPH and the Regional Board that includes estimates of future average RWCs based on anticipated recharge operations over the first 120 months of recycled water recharge at each recharge site. The RWC Management Plan shall be submitted with the Start-Up Period Report and updated with IEUA's annual report to the Regional Board during the first 120-months and shall clearly identify the plan to achieve compliance with the maximum recycled water contribution by the 120th month at each recharge site. IEUA shall update the basin-specific RWC plans annually to reflect the estimated diluent water and recycled water contributions for the upcoming year. For the purpose of the diluent water projections, implementation of a weighted averaging should be considered when it is known that imported water supplies will not be available for purposes of recharging the aquifer. The underflow of the Chino Basin aquifer may be used as a source of diluent water. CDPH may consider crediting a fraction of the flow as diluent water, which would be dependent on the accuracy of the method used to measure the flow, its distribution, and the ability to meet the other diluent water criteria in the draft regulation.

An RWC Management Plan is developed for a recharge site by preparing a history of past recharge and then determining future recycled water recharge that will keep the volume-based RWC within the maximum RWC limit based on the predicted availability of diluent water sources in the future. Future recharge must be estimated. Future diluent water is estimated based on past availability of the various sources of diluent water and is expressed as monthly averages for the recharge sites historical recharge. Recycled water recharge is then added to the plan at regular intervals to keep the RWC in compliance. The RWC generally has five distinct time periods: 1) Historical Diluent, 2) Start-Up Period, 3) Short-Term Compliance, 4) Start-Up Period Roll Off, and 5) Long-Term Stability.

Historical Diluent Recharge is that period of diluent water recharge prior to initiation of recharge using recycled water. Start-Up Period Recharge is the approximately 6 months of predominately recycled water recharge during the start-up period when a rapid rise in the volume-based RWC may occur. Short-Term Compliance (Interval 3) is the period when the volume-based RWC is brought to within the RWC compliance limit by month 120. Start-Up Period Roll Off (Interval 4) is an approximately 6-month long period when the recharge for the start-up period drops off from the rolling-average RWC and is characterized by a potentially rapid decrease in the volume-based RWC. Long-Term Stability (Interval 5) is the period after the first 120 months of recharge using recycled water when a long-term average diluent water history is available and recycled water deliveries can be regularly scheduled to maintain RWC limit compliance.

The initial RWC Management Plan for Declez Basin is presented in Table 7-1 and graphed on Figure 7-1. The historical data are shown on Figure 7-1 as solid lines with solid filled symbols.

Projected deliveries are shown as lighter colored and lighter weight solid lines and symbols. The 120 months of projected RWC are shown as a heavy weight dashed line. The Declez Basin RWC Management Plan will be updated with each annual report of the Recycled Water Groundwater Recharge Program to show current actual recharge and revised planned deliveries.

As illustrated in Table 7-1 and on Figure 7-1, the RWC plan includes the following forecasts: no imported water deliveries, average monthly stormwater recharge ranging from 7 to 147 AF per month, and recycled water recharge ranging from 0 to 180 AF per month. Actual deliveries will be dependent on availability and rainfall. Annually, the Declez Basin RWC Management Plan includes 1,620 acre-feet of recycled water recharge. Groundwater underflow as diluent water is first used in the plan upon initiation of recycled water delivery in December 2015, as intended by the 2009 recharge permit amendment. Of note the estimated groundwater underflow volume for the upgradient RP3 Basin is also used for Declez Basin. This is because the long-travel time between basins exceeds the required travel time between recharge and extraction for potable uses. It is estimated that total groundwater underflow to RP3 Basin and Declez is 10,845 acre-feet per year (904 acre-feet per month).

8. Initial Year Monitoring Plan

The start-up period reporting requirements include an initial year monitoring plan. As discussed in the prior sections and shown in the reports tables and graphs, recycled water TN compliance is met consistently at all lysimeters and TOC is reduced 62% by SAT at a 25-foot depth. Travel time to 25-foot lysimeter averages 30 days. Due to the consistent results and 30-day average travel time, **it is recommended that the first-year monitoring plan consist of sampling the 25-foot lysimeter and surface water every other week for EC, TOC, and TN with the resumption of recycled water delivery. The initial year monitoring plan began on April 25, 2018 following the construction of monitoring well DCZ-2. Following confirmation of SAT performance during the initial year of monitoring, it is recommended that the lysimeter monitoring be replaced with monitoring of recycled water from the delivery pipeline during deliveries to Declez and apply observed SAT corrections to the pipeline water results.**

The SAT correction factor portion of the plan is consistent with the existing alternative monitoring plans for 8th Street, RP3, San Sevaine, Turner, Victoria and Ely Basins wherein TN and TOC correction factors are applied to pipeline samples based on SAT efficiency observed during their respective start-up periods. Alternate monitoring plans are developed in accordance with sections B.5 and B.6 of Order R8-2007-0039 which allows either lysimeter monitoring or an "alternative-monitoring plan" be used to demonstrate both SAT performance and compliance with requirements of the order. The compliance point may be any point prior to groundwater that is predominately recycled water. Order R8-2007-0039 states in Section B6:

An alternative-monitoring plan may be approved upon submission of sampling results that demonstrate that an equal level of public health protection is achieved. (See also Provision G.8 and G.9.) Upon development of a SAT factor using recharge demonstration studies, lysimeter based compliance monitoring may be replaced with recycled water measurements leaving the treatment plant and the application of the treatment factor with prior approval by the DDW and the Regional Board.

The first year of operation is defined herein to be the 365 days beginning with the recycled water recharge following submission of the Start-Up Period Report. The future pipeline sampling location will be the sampling port on the recycled water pipeline turnout at the RRI Energy (formerly Reliant Energy) cooling water storage pond immediately north of IEUA's Regional Plant No. 4 (RP-4) in Rancho Cucamonga. This is the same sampling point that is used for quarterly and annual sampling. It is the preferred sampling location as it is a common central location for sampling that is already used for compliance monitoring of the other basins. The delivery pipeline at the RRI sample location generally has daily recycled water flow and typically contains a blend of recycled water from both IEUA's Regional Plant No. 1 and RP-4.

9. References

California Regional Water Quality Control Board, Santa Ana Region. 2005. Order No. R8-2005-0033, Water Recycling Requirements for Inland Empire Utilities Agency and Chino Basin Watermaster, Phase 1 Chino Basin Recycled Water Groundwater Recharge Project, San Bernardino County, April 15, 2005.

California Regional Water Quality Control Board, Santa Ana Region, 2007a, Order No. R8-2007-0039, Water Recycling Requirements for Inland Empire Utilities Agency and Chino Basin Watermaster, Chino Basin Recycled Water Groundwater Recharge Program, Phase I and Phase II Projects, June 29, 2007.

California Regional Water Quality Control Board, Santa Ana Region, 2007b, Monitoring and Reporting Program No. R8-2007-0039 for Inland Empire Utilities Agency and Chino Basin Watermaster Chino Basin Recycled Water Groundwater Recharge Program Phase I and Phase II Projects San Bernardino County.

California Regional Water Quality Control Board, Santa Ana Region, 2009, Order No. R8-2009-0057, Amending Order No. R8-2007-0039, Water Recycling Requirements for Inland Empire Utilities Agency and Chino Basin Watermaster Chino Basin Recycled Water Groundwater Recharge Program Phase I and Phase II Projects, San Bernardino County, October 23, 2009.

CH2MHill, 2003, Phase I Chino Basin Recycled Water Groundwater Recharge Project Title 22 Engineering Report, November 2003.

IEUA and CBWM, 2015, Start-Up Protocol Plan for Declez Basin, October 28, 2015.

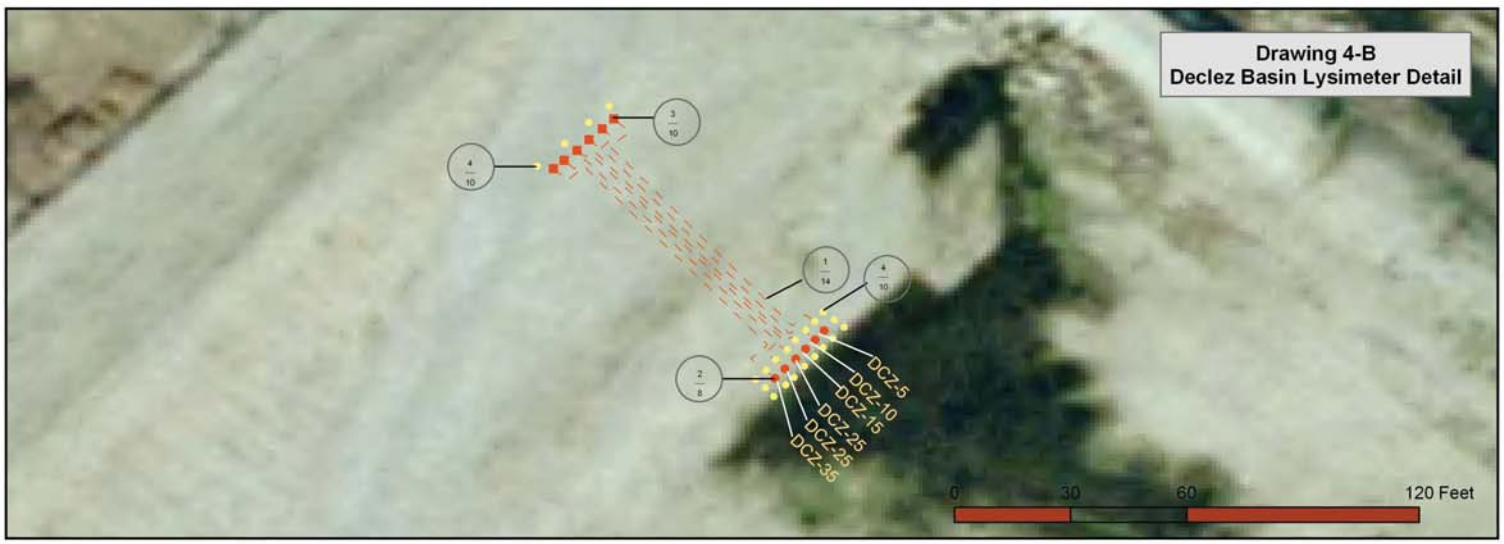
IEUA and CBWM, 2016, Chino Basin Recycled Water Groundwater Recharge Program, 2017 Annual Report, May 1, 2018.

National Water Resources Institute, 2010, Final Report of the February 8-9, 2010, Meeting of the Independent Advisory Panel, for the Inland Empire Utilities Agency's Groundwater Recharge Permit Amendment, April 14, 2010.

Wildermuth Environmental, Inc., 1999, Chino Basin Optimum Basin Management Program, Phase 1 Report, Prepared for the Chino Basin Watermaster, 1999.

APPENDIX A

LYSIMETER AND MONITORING WELL CONSTRUCTION DRAWINGS



Main Features

- Lysimeter (DCZ = Location, 35 = depth)
- Lysimeter Head
- Lysimeter Tubing (buried)
- Bollard (Crash Post)

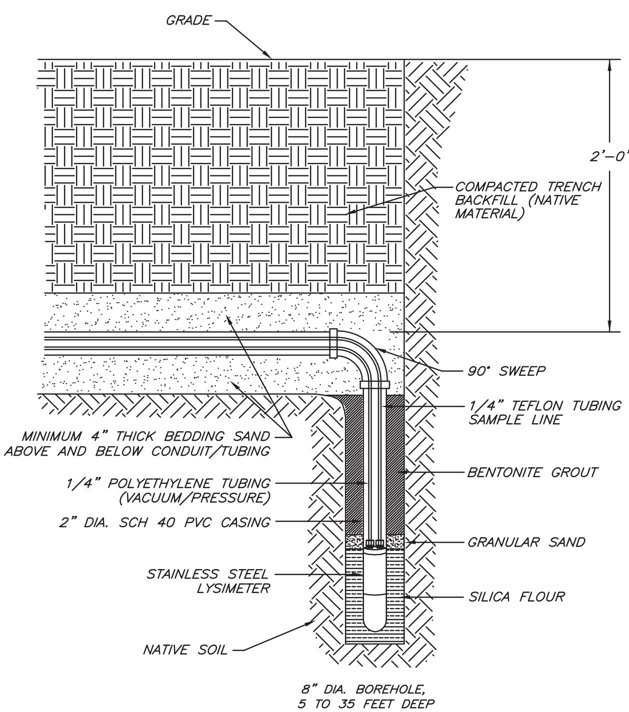
Produced by:
WILDERMUTH ENVIRONMENTAL INC.
23692 Birtcher Drive
Lake Forest, CA 92630
949.420.3030
www.wildermuthenvironmental.com

Author: WEL/TCR
Date: 20080122
File: 20080122_DCZ_Lys.mxd

007-004
059

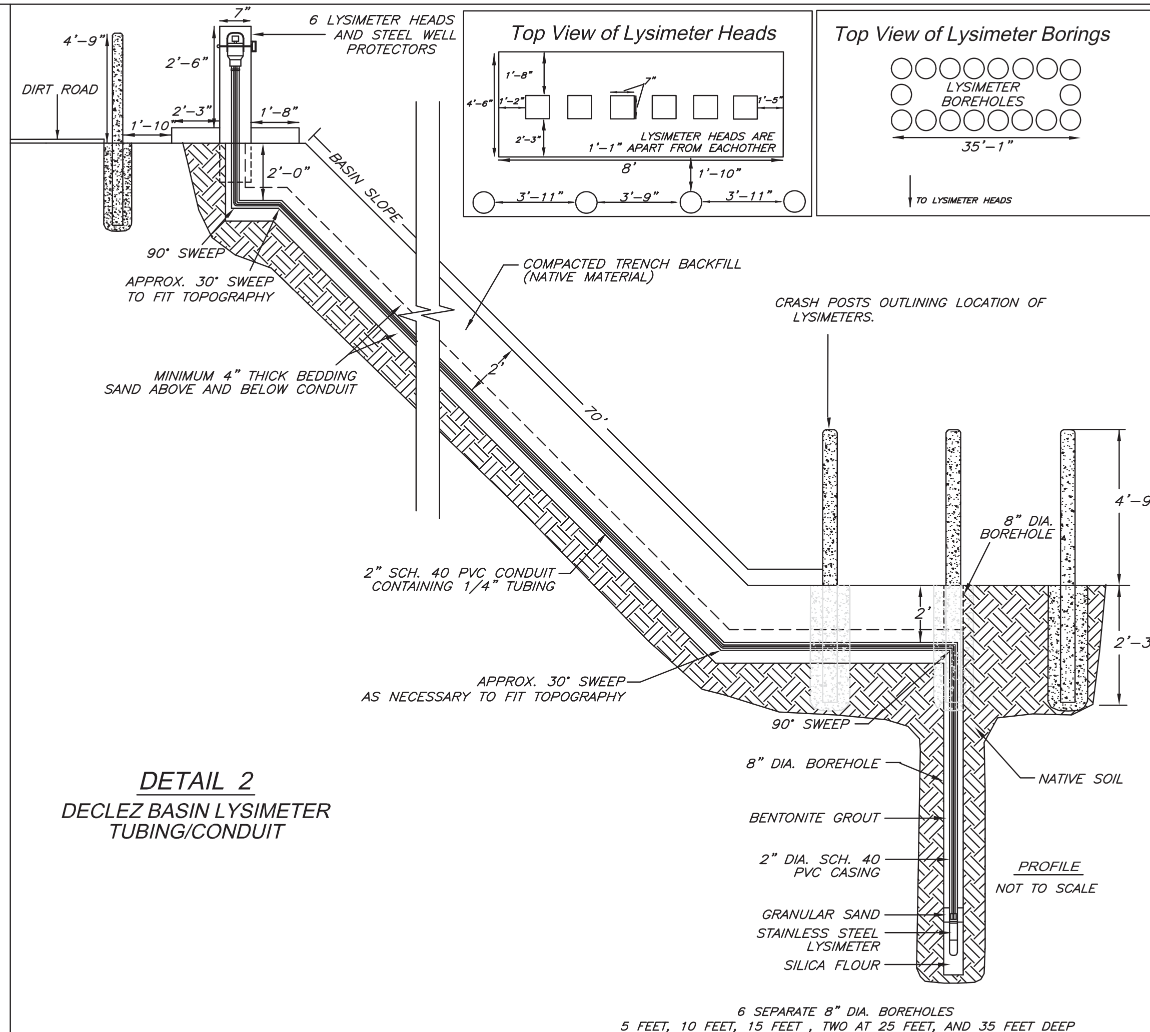
Declez Basin Lysimeters
Recycled Water Groundwater Recharge Program

Drawing 4
Sheet 4 of 15



DETAIL 1
TYPICAL LYSIMETER

PROFILE
NOT TO SCALE



DETAIL 2
DECLEZ BASIN LYSIMETER
TUBING/CONDUIT

PROFILE
NOT TO SCALE

6 SEPARATE 8" DIA. BOREHOLES
5 FEET, 10 FEET, 15 FEET , TWO AT 25 FEET, AND 35 FEET DEEP

DIGALERT 811

REVISIONS

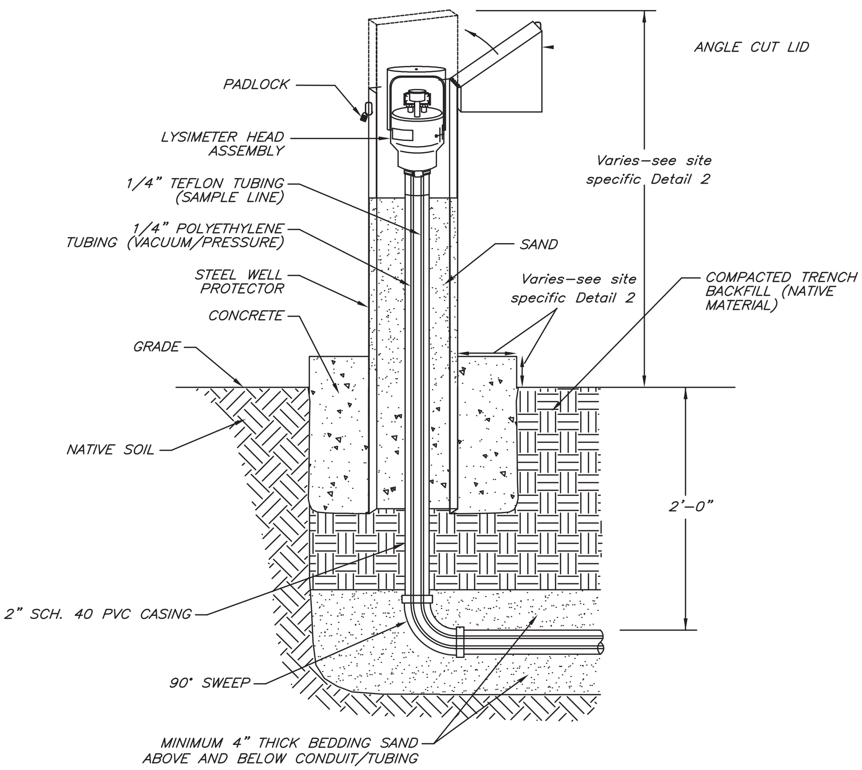
NO.	DATE	INITIAL	DESCRIPTION:	APPROVED/DATE
1	04/30/07	TCR	UPDATED FOR 2007 CONTRACT	WEL
2	12/17/07	STJ	UPDATED FOR 2007 AS BUILT	TCR

WILDERMUTH ENVIRONMENTAL INC.
Inland Empire UTILITIES AGENCY

REVIEWED BY:	DRAWN BY:	DATE:	DRAWING NO.
WEL	TCR	1/22/2008	8

AS-BUILT DETAILS 1 AND 2
DECLEZ LYSIMETER
INSTALLATION SCHEMATIC

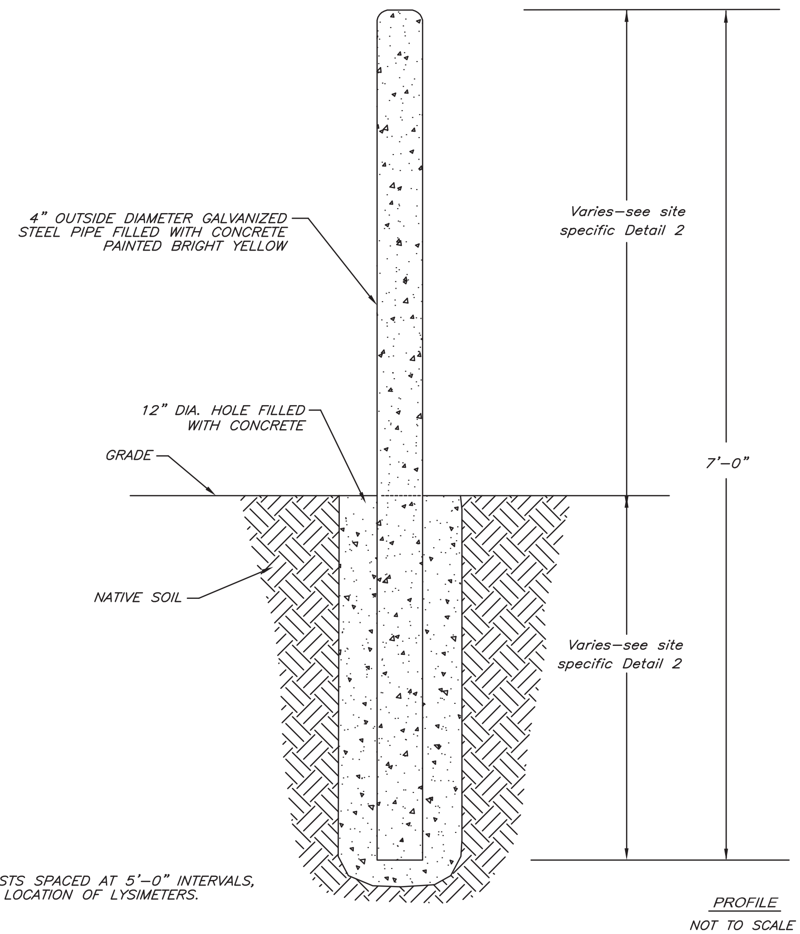
SHEET NO.
8 OF 15



PROFILE
NOT TO SCALE

DETAIL 3

TYPICAL STEEL WELL PROTECTOR
AND LYSIMETER HEAD ASSEMBLY



NOTES:
CRASH POSTS SPACED AT 5'–0" INTERVALS, OUTLINING LOCATION OF LYSIMETERS.

PROFILE
NOT TO SCALE

DETAIL 4

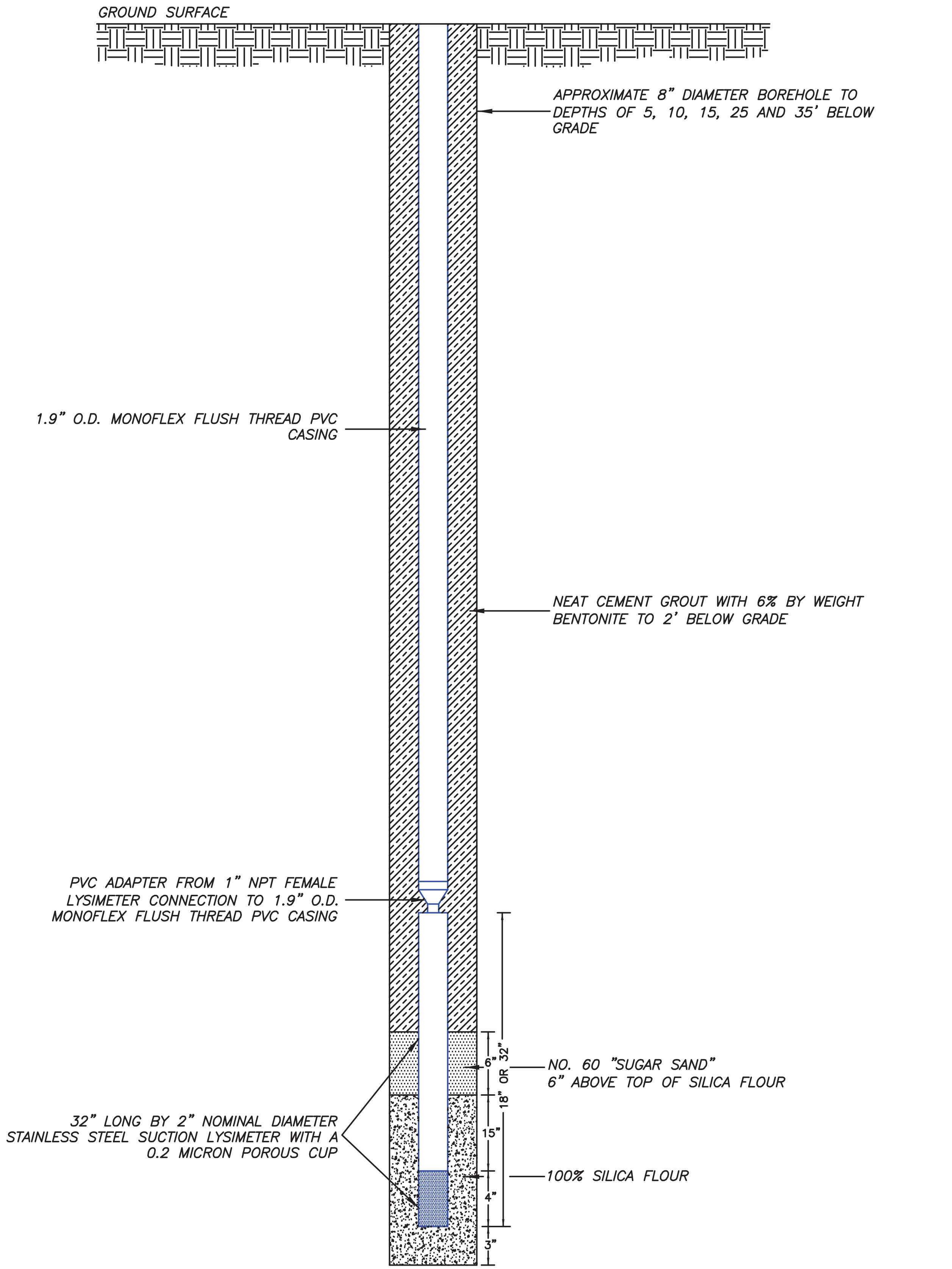
TYPICAL CRASH POST

DIGALERT 811

REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION:	APPROVED/DATE
1	04/30/2007	TCR	UPDATED FOR 2007	WEL
2	12/21/2007	STJ	UPDATED FOR 2007	WEL 1/25/2008

WILDERMUTH ENVIRONMENTAL INC.
Inland Empire UTILITIES AGENCY

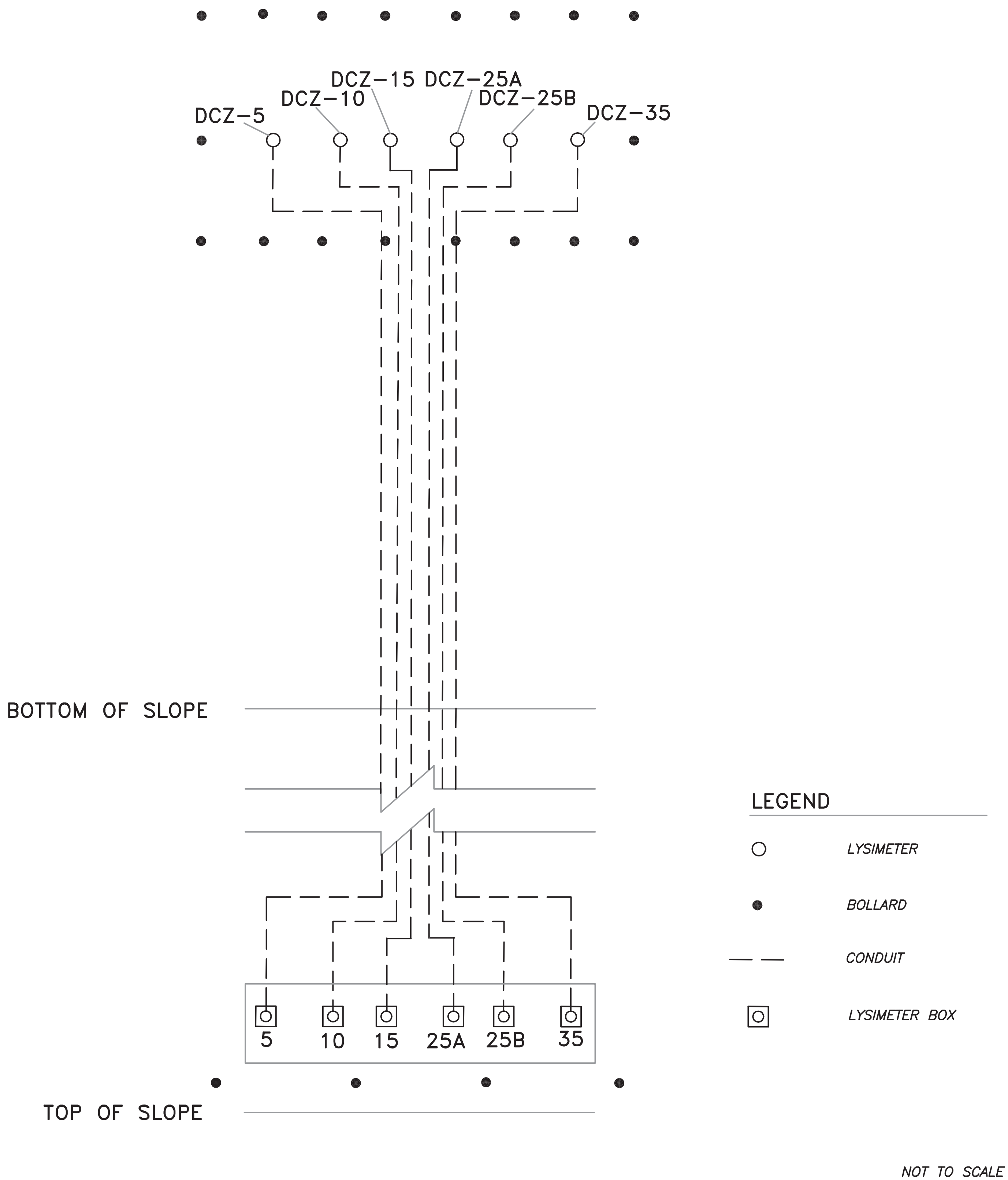
REVIEWED BY:	DRAWN BY:	START DATE:	DRAWING NO.
WEL	TCR	01/22/08	10
AS-BUILT DETAILS 3 AND 4 LYSIMETER HEAD SCHEMATIC			SHEET NO. 10 OF 15



NOT TO SCALE

DRAWING 11
AS-BUILT DETAIL 5

CHINO BASIN OPTIMUM BASIN MANAGEMENT PLAN
Recycled Water Groundwater Recharge Program



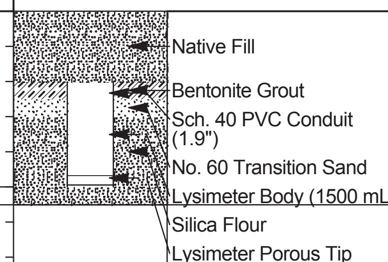
DRAWING 14
DECLEZ LYSIMETER AS-BUILT
CHINO BASIN OPTIMUM BASIN MANAGEMENT PLAN
Recycled Water Groundwater Recharge Program

Wildermuth Environmental, Inc.
01/22/2008 3:00 PM 20080122_DETAIL_DCZ.dwg

Project Name:	**Phase I RWR**
Project Location:	**Chino Basin, CA**
Project Number:	**007-004-059**
Client:	**IEUA**

LYSIMETER: DCZ-5

Date Started	**7/30/07**	Date Finished	**7/31/07**	Borehole Depth	**5.5 feet**	Drilling Contractor	**Layne Environmental**
Lat.	**34° 1' 56.55"**	Long.	**117° 29' 59.63"**	Drill Bit Size/Type	**8" Hollow Stem Auger**	Driller	**Alvaro Gutierrez**
Ground Surface Elevation	**850.0 feet**			Porous Interval	**4.5'-5' bgs**	Drill Rig Type	**CME**
Top of Casing Elevation	**NA**			Depth to Groundwater	**Not Encountered**	Drilling Method	**Hollow Stem Auger**
Logged By	**T. Rolfe**			Reviewed By	**B. Leever, PG**	Sampling Method	**Split Spoon**

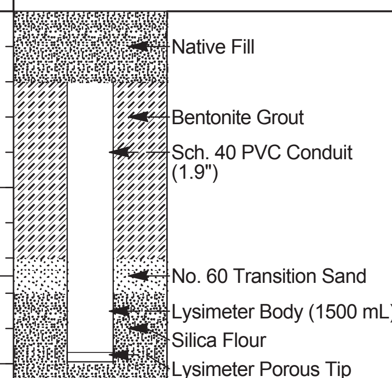
Elev., feet-msl	Depth, feet-bgs	Sample	Graphic	MATERIAL DESCRIPTION	LYSIMETER SCHEMATIC AND CONSTRUCTION DETAILS	FIELD NOTES
850	0			Well-Graded SAND with Gravel (SW): dark yellowish brown (10YR, 3/4), sand is coarse to fine.		
	5					
840	10					
	15					
830	20					
	25					
820	30					
	35					

Project Name: Phase I RWR
Project Location: Chino Basin, CA
Project Number: 007-004-059
Client: IEUA

LYSIMETER: DCZ-10

Date Started	7/30/07	Date Finished	7/31/07	Borehole Depth	10.5 feet	Drilling Contractor	Layne Environmental
Lat.	34° 1' 56.55"	Long.	117° 29' 59.63"	Drill Bit Size/Type	8" Hollow Stem Auger	Driller	Alvaro Gutierrez
Ground Surface Elevation	850.0 feet			Porous Interval	9.5'-10' bgs	Drill Rig Type	CME
Top of Casing Elevation	NA			Depth to Groundwater	Not Encountered	Drilling Method	Hollow Stem Auger
Logged By	T. Rolfe			Reviewed By	B. Leever, PG	Sampling Method	Split Spoon

Elev., feet-msl	Depth, feet-bgs	Sample	Graphic	MATERIAL DESCRIPTION	LYSIMETER SCHEMATIC AND CONSTRUCTION DETAILS	FIELD NOTES
850	0			Well-Graded SAND with Gravel (SW): dark yellowish brown (10YR, 3/4), sand is coarse to fine.		
	5					
				Well-Graded SAND with Gravel (SW): dark yellowish brown (10YR, 3/4), sand grades to gravel.		
840	10					
	15					
830	20					
	25					
820	30					
	35					

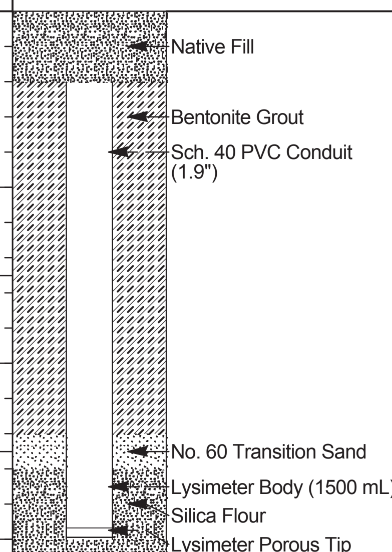


Project Name:	**Phase I RWR**
Project Location:	**Chino Basin, CA**
Project Number:	**007-004-059**
Client:	**IEUA**

LYSIMETER: DCZ-15

Date Started	**7/30/07**	Date Finished	**7/31/07**	Borehole Depth	**15.5 feet**	Drilling Contractor	**Layne Environmental**
Lat.	**34° 1' 56.55"**	Long.	**117° 29' 59.63"**	Drill Bit Size/Type	**8" Hollow Stem Auger**	Driller	**Alvaro Gutierrez**
Ground Surface Elevation	**850.0 feet**			Porous Interval	**14.5'-15' bgs**	Drill Rig Type	**CME**
Top of Casing Elevation	**NA**			Depth to Groundwater	**Not Encountered**	Drilling Method	**Hollow Stem Auger**
Logged By	**T. Rolfe**			Reviewed By	**B. Leever, PG**	Sampling Method	**Split Spoon**

Elev., feet-msl	Depth, feet-bgs	Sample	Graphic	MATERIAL DESCRIPTION	LYSIMETER SCHEMATIC AND CONSTRUCTION DETAILS	FIELD NOTES
850	0			Well-Graded SAND with Gravel (SW): dark yellowish brown (10YR, 3/4), sand is coarse to fine.		
	5					
				Well-Graded SAND with Gravel (SW): dark yellowish brown (10YR, 3/4), sand grades to gravel.		
840	10					
				Well-Graded GRAVEL (GW): very pale brown (10YR, 8/2), gravel with trace amounts of sand and silt.		
	15					
830	20					
	25					
820	30					
	35					



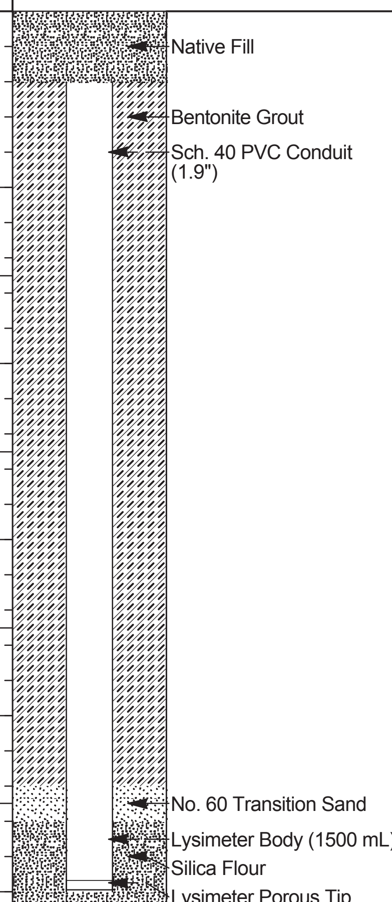
Project Name: Phase I RWR
Project Location: Chino Basin, CA
Project Number: 007-004-059
Client: IEUA

LYSIMETER: DCZ-25A

Sheet 1 of 1

Date Started 7/30/07	Date Finished 7/31/07	Borehole Depth 25.5 feet	Drilling Contractor Layne Environmental
Lat. 34° 1' 56.55"	Long. 117° 29' 59.63"	Drill Bit Size/Type 8" Hollow Stem Auger	Driller Alvaro Gutierrez
Ground Surface Elevation 850.0 feet		Porous Interval 24.5'-25' bgs	Drill Rig Type CME
Top of Casing Elevation NA		Depth to Groundwater Not Encountered	Drilling Method Hollow Stem Auger
Logged By T. Rolfe		Reviewed By B. Leever, PG	Sampling Method Split Spoon

Elev., feet-msl	Depth, feet-bgs	Sample	Graphic	MATERIAL DESCRIPTION	LYSIMETER SCHEMATIC AND CONSTRUCTION DETAILS	FIELD NOTES
850	0			Well-Graded SAND with Gravel (SW): dark yellowish brown (10YR, 3/4), sand is coarse to fine.		
	5					
				Well-Graded SAND with Gravel (SW): dark yellowish brown (10YR, 3/4), sand grades to gravel.		
840	10					
				Well-Graded GRAVEL (GW): very pale brown (10YR, 8/2), gravel with trace amounts of sand and silt.		
	15					
				Poorly Graded Sand with Silt (SP-SM): yellowish brown (10YR, 5/6), medium to fine sand with silt and trace amounts of gravel and clay.		
830	20					
				Silty SAND (SM): yellowish brown (10YR, 5/8), fine sand with silt and trace amounts of clay.		
	25					
820	30					
	35					



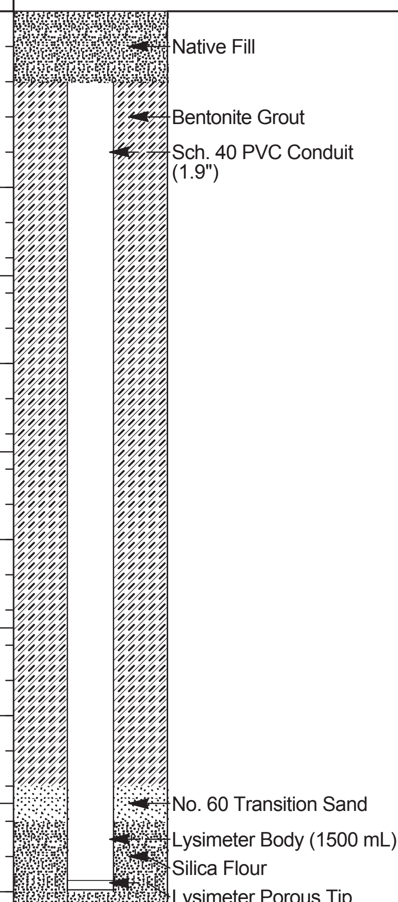
Project Name: Phase I RWR
Project Location: Chino Basin, CA
Project Number: 007-004-059
Client: IEUA

LYSIMETER: DCZ-25B

Date Started **7/30/07**	Date Finished **7/31/07**	Borehole Depth **25.5 feet**	Drilling Contractor **Layne Environmental**
Lat. **34° 1' 56.55"**	Long. **117° 29' 59.63"**	Drill Bit Size/Type **8" Hollow Stem Auger**	Driller **Alvaro Gutierrez**
Ground Surface Elevation **850.0 feet**		Porous Interval **24.5'-25' bgs**	Drill Rig Type **CME**
Top of Casing Elevation **NA**		Depth to Groundwater **Not Encountered**	Drilling Method **Hollow Stem Auger**
Logged By **T. Rolfe**		Reviewed By **B. Leever, PG**	Sampling Method **Split Spoon**

Elev., feet-msl	Depth, feet-bgs	Sample	Graphic	MATERIAL DESCRIPTION
850	0			Well-Graded SAND with Gravel (SW): dark yellowish brown (10YR, 3/4), sand is coarse to fine.
	5			
				Well-Graded SAND with Gravel (SW): dark yellowish brown (10YR, 3/4), sand grades to gravel.
840	10			
				Well-Graded GRAVEL (GW): very pale brown (10YR, 8/2), gravel with trace amounts of sand and silt.
	15			
				Poorly Graded Sand with Silt (SP-SM): yellowish brown (10YR, 5/6), medium to fine sand with silt and trace amounts of gravel and clay.
830	20			
				Silty SAND (SM): yellowish brown (10YR, 5/8), fine sand with silt and trace amounts of clay.
	25			
820	30			
	35			

LYSIMETER SCHEMATIC AND CONSTRUCTION DETAILS



FIELD NOTES

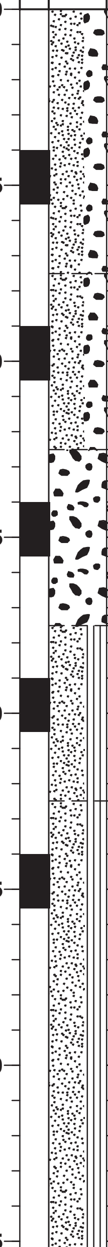
Project Name: Phase I RWR
Project Location: Chino Basin, CA
Project Number: 007-004-059
Client: IEUA

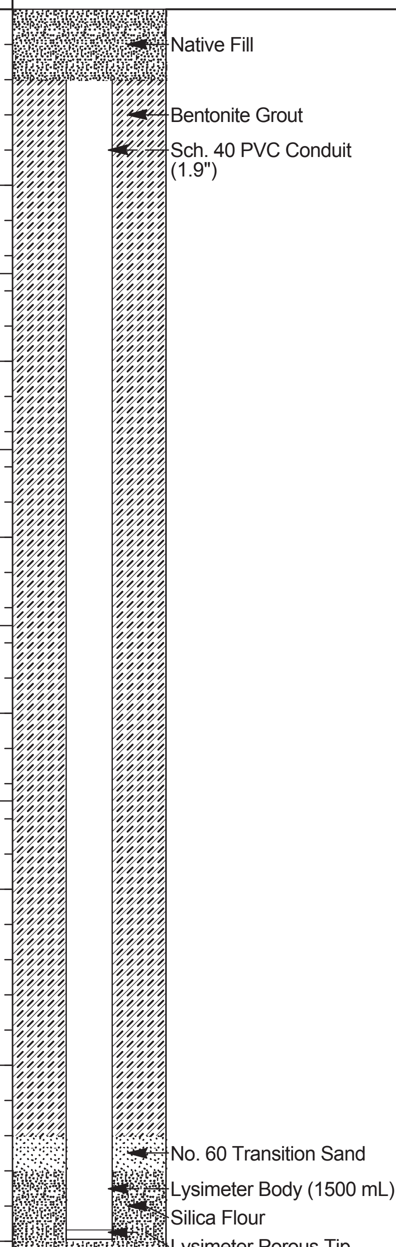
LYSIMETER: DCZ-35

Date Started	7/30/07	Date Finished	7/31/07	Borehole Depth	35.5 feet
Lat.	34° 1' 56.55"	Long.	117° 29' 59.63"	Drill Bit Size/Type	8" Hollow Stem Auger
Ground Surface Elevation	850.0 feet			Porous Interval	34.5'-35' bgs
Top of Casing Elevation	NA			Depth to Groundwater	Not Encountered
Logged By	T. Rolfe			Reviewed By	B. Leever, PG

Drilling Contractor	Layne Environmental
Driller	Alvaro Gutierrez
Drill Rig Type	CME
Drilling Method	Hollow Stem Auger
Sampling Method	Split Spoon

Elev., feet-msl	Depth, feet-bgs	Sample	Graphic	MATERIAL DESCRIPTION	LYSIMETER SCHEMATIC AND CONSTRUCTION DETAILS	FIELD NOTES
850	0			Well-Graded SAND with Gravel (SW): dark yellowish brown (10YR, 3/4), sand is coarse to fine.		
	5					
				Well-Graded SAND with Gravel (SW): dark yellowish brown (10YR, 3/4), sand grades to gravel.		
840	10					
				Well-Graded GRAVEL (GW): very pale brown (10YR, 8/2), gravel with trace amounts of sand and silt.		
	15					
				Poorly Graded Sand with Silt (SP-SM): yellowish brown (10YR, 5/6), medium to fine sand with silt and trace amounts of gravel and clay.		
830	20					
				Silty SAND (SM): yellowish brown (10YR, 5/8), fine sand with silt and trace amounts of clay.		
	25					
820	30					
	35					

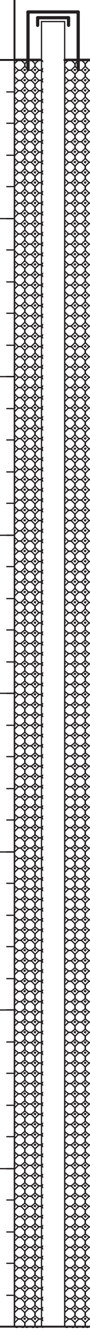




Project Name:	**Recycled Water Recharge Monitoring Program**	**Boring Log / DCZ-1**
Project Location:	**Riverside County**	
Project Number:	**007-004-060**	Sheet 1 of 5
Client:	**IEUA**	

Date Started	**7/3/07**	Date Finished	**7/13/07**	Borehole Depth	**196.0 feet**	Drilling Contractor	**Best Drill and Pump, Inc.**
Lat.	**117° 30' 6"**	Long.	**34° 1' 53"**	Drill Bit Size/Type	**17.5" Tri-cone**	Driller	**Chris Gomez**
Ground Surface Elevation	**843.0 feet**			Screened Interval(s)	**155-175 ft-bgs**	Drill Rig Type	**Jed-A**
Top of Casing Elevation	**846.0 feet**			Depth to Groundwater	**133**	Drilling Method	**Flooded Reverse**
Logged By	**A. Ligutom**			Reviewed By	**B. Leever, PG**	Sampling Method	**Interval collection by splitter box**

Elevation, feet-msl	Depth, feet-bgs	Sample Interval	Sample Time	Graphic Log	MATERIAL DESCRIPTION	WELL SCHEMATIC AND CONSTRUCTION DETAILS	FIELD NOTES
	0				Poorly Graded SAND with Gravel (SP)	Above ground completion	
840							
	5						
	10					4" dia. Sch 10 Type 304 SS casing (with stainless steel wire wrap screen from 155-175 ft-bgs)	
830							
	15					30" nominal dia. borehole with 24" x 3/8" steel conductor casing and cement sanitary seal (0-50 feet-below ground surface)	
	20						
820							
	25					17.5" nominal dia. borehole (48-196 ft-bgs)	
	30						
810							
	35						
	40						



Project Name:	**Recycled Water Recharge Monitoring Program**
Project Location:	**Riverside County**
Project Number:	**007-004-060**
Client:	**IEUA**

Boring Log / DCZ-1

Elevation, feet-msl	Depth, feet-bgs	Sample Interval	Sample Time	Graphic Log	MATERIAL DESCRIPTION	WELL SCHEMATIC AND CONSTRUCTION DETAILS	FIELD NOTES
	40						
			14:20		Poorly Graded SAND (SP): dark gray (10YR, 4/1), 10% gravel, 10% coarse sand, 80% medium sand. Gravel is 1 cm, angular, shale and quartz fragments.		7/11/2007
	45		14:48				
790							
			15:05		Well Graded SAND with Gravel (SW): dark grayish brown (10YR, 4/2), 30% gravel, 40% coarse sand, 30% medium sand. Gravel; 1-3 cm, angular to sub-angular, orange quartz and epidote fragments.		
			15:11		Poorly Graded SAND (SP): yellowish brown (10YR, 5/8), 10% coarse sand, 90% medium sand.		
	50						
			16:07		Poorly Graded SAND (SP): yellowish brown (10YR, 5/6), 5% gravel, 55% coarse sand, 35% medium sand, 5% clay.		
			16:16		Poorly Graded SAND (SP): yellowish brown (10YR, 5/6), 10% gravel, 35% coarse sand, 35% medium sand, 15% fine sand, 5% clay.		
	55					50% Benseal/50% No. 3 Sand (48-153 ft-bgs)	
780			16:15				
			16:22				
	60						
			16:30		Well Graded SAND with Gravel (SW): dark yellowish brown (10YR, 4/6), 20% gravel, 30% coarse sand, 30% medium sand, 20% fine sand. Trace amount of clay.		
			16:44				
	65						
770			16:45				
			16:53				
	70		17:00				
			17:33				
			17:38				
	75						
760			09:36		Well Graded SAND (SW): dark yellowish brown (10YR, 4/4), 10% gravel, 35% coarse sand, 35% medium sand, 15% fine sand, 5% clay. Gravel; 1-2 cm, angular, quartz and granite fragments.		7/12/2007
			09:37		Poorly Graded SAND (SP): dark yellowish brown (10YR, 3/6), 5% gravel, 10% coarse sand, 80% medium sand, 5% clay.		
	80		09:45			50% Benseal/50% No. 3 Sand (48-153 ft-bgs)	
			09:53				
			10:00				
	85						
750			10:34				

Project Name:	Recycled Water Recharge Monitoring Program
Project Location:	Riverside County
Project Number:	007-004-060
Client:	IEUA

Boring Log / DCZ-1

Elevation, feet-msl	Depth, feet-bgs	Sample Interval	Sample Time	Graphic Log	MATERIAL DESCRIPTION	WELL SCHEMATIC AND CONSTRUCTION DETAILS	FIELD NOTES
			10:41				
	90		10:50		Clayey SAND (SC): strong brown (7.5YR, 5/6), 10% coarse sand, 50% medium sand, 10% fine sand, 30% clay.		
			10:57				
	95		11:05				
740			11:14		Well Graded SAND with Clay (SW-SC): strong brown (7.5YR, 5/6), 30% coarse sand, 40% medium sand, 20% fine sand, 10% clay.		
			11:22		Well Graded SAND (SW): strong brown (7.5YR, 5/8), 5% gravel, 40% coarse sand, 45% medium sand, 10% fine sand.		
	100		11:38		Clayey SAND (SC): strong brown (7.5YR, 5/6), 40% coarse sand, 15% medium sand, 15% fine sand, 30% clay.		
			11:42				
	105		11:48				
730			12:14		Well Graded SAND with Clay (SW-SC): strong brown (7.5YR, 5/6), 35% coarse sand, 35% medium sand, 20% fine sand, 10% clay. Trace amount of gravel.		
			12:22				
	110		12:31			50% Benseal/50% No. 3 Sand (48-153 ft-bgs)	
			12:38		Clayey SAND (SC): strong brown (7.5YR, 5/6), 35% coarse sand, 25% medium sand, 20% fine sand, 20% clay.		
	115		12:44		Sandy Lean CLAY (CL): strong brown (7.5YR, 5/8), 20%medium sand, 20% fine sand, 60% clay.		
720			12:49		Clayey SAND (SC): strong brown (7.5YR, 5/8), 30% coarse sand, 30% medium sand, 20% fine sand, 20% clay.		
			12:55				
	120		13:05				
			13:12				
	125		13:19				
710			13:53		Well Graded SAND with Clay (SW-SC): strong brown (7.5YR, 4/6), 40% coarse sand, 25% medium sand, 25% fine sand, 10% clay.		
			13:58				
	130		14:05				
			14:11				

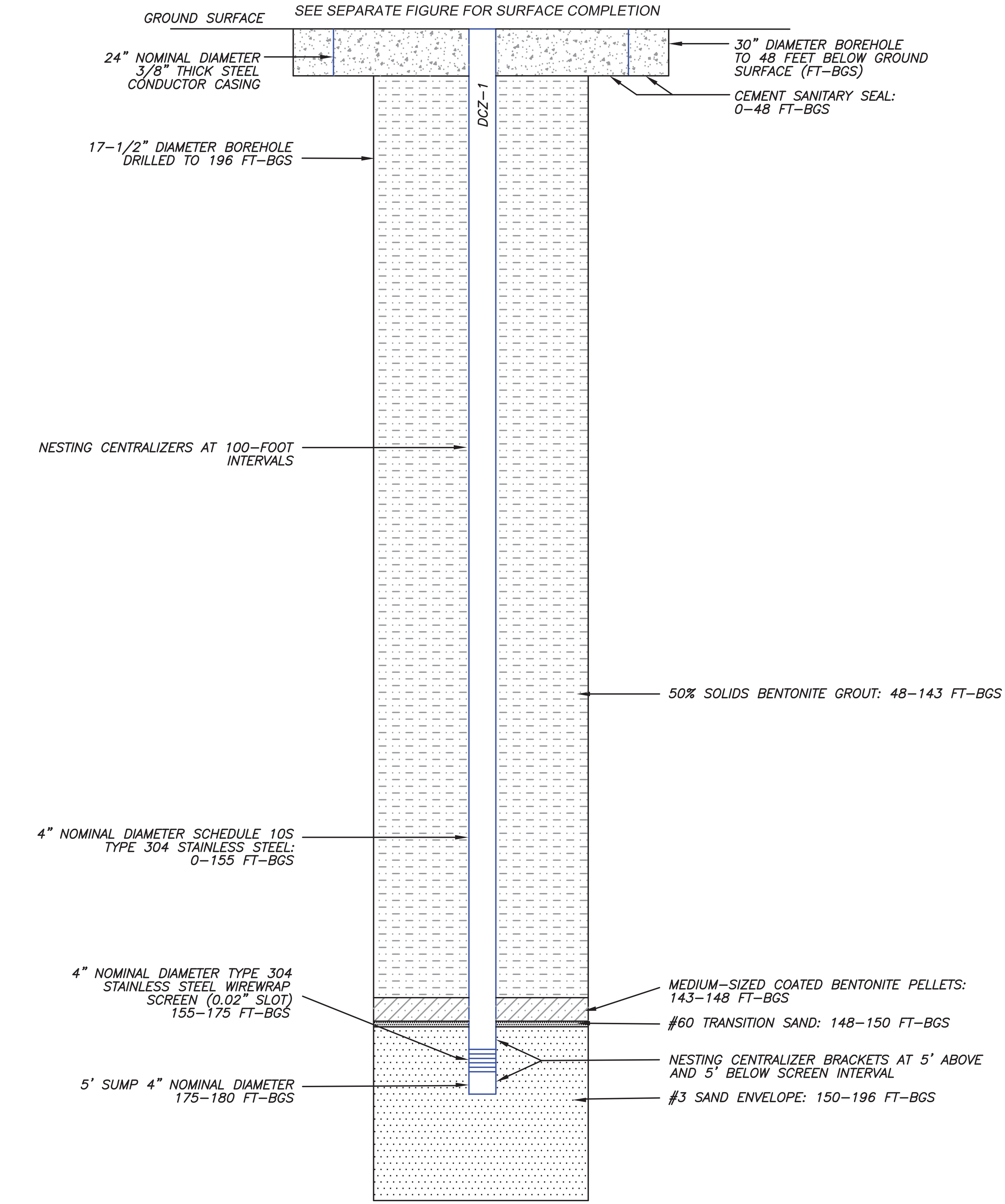
Project Name: Recycled Water Recharge Monitoring Program
Project Location: Riverside County
Project Number: 007-004-060
Client: IEUA

Boring Log / DCZ-1

Elevation, feet-msl	Depth, feet-bgs	Sample Time	MATERIAL DESCRIPTION	WELL SCHEMATIC AND CONSTRUCTION DETAILS	FIELD NOTES
		14:18			
	135				
700		14:28			
		14:35			
	140	14:40		50% Benseal/50% No. 3 Sand (48-153 ft-bgs)	
		14:45			
				Medium size coated bentonite pellets 143-148 ft-bgs)	
	145				
690		15:40			
		15:47	Poorly Graded SAND (SP): strong brown (7.5YR, 5/6), 55% coarse sand, 40% medium sand, 5% clay.	No. 60 Transition Sand (148-150 ft bgs)	
	150	15:53			
		15:56			
		16:03	Clayey SAND (SC): strong brown (7.5YR, 4/6), 20% corse sand, 50% medium sand, 10% fine sand, 20% clay.		
	155				
680		16:06			
		16:09			
	160	16:14		0.02" wire wrapped screen (155-175 ft bgs)	
		16:18			
		16:28	Poorly Graded SAND (SP): yellowish brown (10YR, 5/8), 55% coarse sand, 40% medium sand, 5% clay.		
	165			Filter Sand (150-196 ft bgs)	
670		17:17			
		08:55	Clayey SAND (SC): strong brown (7.5YR, 5/6), 20% coarse sand, 20% medium sand, 20% fine sand, 40% clay.		7/3/2007
	170	09:04	Clayey SAND (SC): strong brown (7.5YR, 5/8), 40% coarse sand, 40% medium sand, 20% clay.		
		09:10			
		09:17			
	175				
660		09:24			
		09:33			
	180				

Project Name:	**Recycled Water Recharge Monitoring Program**	**Boring Log / DCZ-1**
Project Location:	**Riverside County**	
Project Number:	**007-004-060**	
Client:	**IEUA**	

Elevation, feet-msl	Depth, feet-bgs	Sample Interval	Sample Time	Graphic Log	MATERIAL DESCRIPTION	WELL SCHEMATIC AND CONSTRUCTION DETAILS	FIELD NOTES
	180		09:45		Poorly Graded SAND (SP): yellowish brown (10YR, 5/8), 55% coarse sand, 40% medium sand, 5% clay.		
			09:55				
	185		10:07		Clayey SAND (SC): reddish brown (7.5YR, 4/4), 35% coarse sand, 35% medium sand, 30% clay. Black mica flakes present.	Filter Sand (150-196 ft bgs)	
650			10:35				
			10:49				
	190		10:55		Poorly Graded SAND (SP): gray (10YR, 5/1), 60% coarse sand, 39% fine sand, 1% clay. Abundant mica, quartz fragments, possible bedrock or decomposed granite.		
			11:15		Decomposed Granite.		
			12:10				
	195						
640							
	200						
	205						
630							
	210						
	215						
620							
	220						
	225						
610							



NOT TO SCALE

CHINO BASIN WATERMASTER — Partners in Basin Management

Inland Empire UTILITIES AGENCY

8/17/07

WELL COMPLETION AS BUILT
DCZ-1 WELL

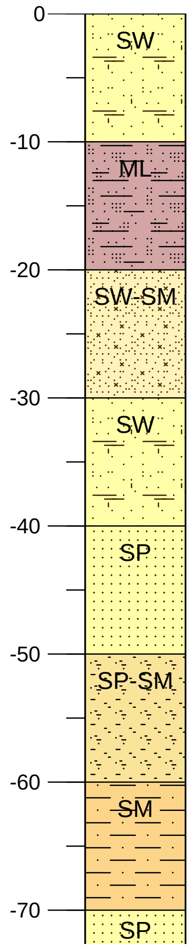
OPTIMUM BASIN MANAGEMENT PROGRAM

FN:20070817_
DCZ-1_AsBuilt.dwg

Lithologic Log

Client:	IEUA	**Drilling Contractor:**	Yellow Jacket
Borehole/ Well No:	DCZ-2	**Drilling Method:**	Reverse Circular Rotary
Project Number:	16-010-103.1	**Borehole Diameter:**	12-inch
Project:	DCZ-2	**Location of boring/ Well (State Plane, NAD 83):**	
Start Date:	3/28/18	X: 6178754 (approximate)	
Finish Date:	3/30/18	Y: 2318401 (approximate)	
Logged By:	MH, EN		

Depth	Graphic Log	Color	Sample Description



Color	Sample Description
10YR 4/4 Dark Yellowish Brown	WELL GRADED SAND: Medium-grained sand, with fine-grained sand, some coarse-grained sand, some gravel up to 45 mm, subrounded to subangular, less than 5 percent fines. Quartz, feldspar, mica and trace mafics.
10YR 4/2 Dark Grayish Brown	GRAVELLY SILT: 50 to 60 percent silt, 40 to 50 percent fine-grained sand, trace medium-grained sand, trace gravel up to 18 mm. Silt: low plasticity, low dry strength, no dilatancy, no smell.
5YR 4/6 Yellowish Red	WELL-GRADED SAND WITH SILT: Fine-grained sand, with medium grained sand, trace coarse-grained sand, some fine to coarse gravel, subrounded to subangular, 5-10 percent silt.
7.5 YR 4/3 Brown	WELL GRADED SAND: Coarse-grained sand, with medium-grained sand, trace fine grained sand, some fine to coarse gravel up to 65 mm, subrounded to subangular. Less than 5 percent silt. Quartz, feldspar, mica and trace mafics.
5 YR 4/6 Yellowish Red	POORLY GRADED SAND: Medium-grained sand, with fine-grained sand, some coarse-grained sand, subangular to subrounded. Less than 5 percent silt. Quartz, feldspar, trace mafics and mica.
10YR 5/6 Yellowish Brown	POORLY GRADED SAND WITH SILT: Fine-grained sand, trace medium- to coarse-grained sand, trace gravel up to 19 mm, subrounded to rounded. 5-10 percent silt. Quartz, feldspar, mica, and trace mafics.
10YR 6/6 Brownish Yellow	SILTY SAND: Fine-grained sand, some medium- to coarse-grained sand, trace gravel up to 15 mm, subrounded to subangular, 30-35 percent silt. Quartz and feldspar. Oblate grains.
10YR 6/3	POORLY GRADED SAND: Fine-grained sand, some medium- to coarse-grained sand,

Borehole Lithologic Log

Borehole/ Well No.:	DCZ-2
Client:	IEUA
Project No.:	16-010-103.1

Depth	Graphic Log	Color	Sample Description
		Pale Brown	subrounded to rounded, less than 5 percent silt. Quartz, feldspar, and mica.
-80	GW	10YR 6/3 Pale Brown	WELL-GRADED GRAVEL: Coarse-grained sand, some medium-grained sand, trace fine-grained sand, gravel up to 20 mm, subrounded to angular, less than 5 percent clay. Quartz, feldspar and mafics.
-90	SP	10YR 6/3 Pale Brown	POORLY GRADED SAND: Medium-grained sand, with fine-grained sand, subrounded to rounded, less than 5 percent silt. Quartz, feldspar, mafics and trace mica.
-100	SM	10YR 5/6 Yellowish Brown	SILTY SAND: Fine-grained sand, trace medium- to coarse-grained sand, trace gravel up to 17 mm, subrounded to subangular, 30-35 percent silt. Quartz, feldspar and mafics.
-110	GW	10YR 6/3 Pale Brown	WELL-GRADED GRAVEL: Medium-grained sand, with coarse-grained sand, trace fine-grained sand, gravel up to 10 mm, subrounded to angular, less than 5 percent clay. Quartz, feldspar, and mafics.
-120	SP	10YR 6/4 Light Yellowish Brown	POORLY GRADED SAND WITH GRAVEL: Coarse-grained sand, with medium-grained sand, trace fine-grained sand, gravel up to 15 mm, subrounded to rounded, less than 5 percent clay. Quartz, feldspar, and mafics.
-130	SM	10YR 5/6 Yellowish Brown	SILTY SAND: Fine-grained sand, trace medium- to coarse-grained sand, subrounded to subangular, 25-30 percent silt. Quartz, feldspar and trace mica.
-140	SP-SM	10YR 5/6 Yellowish Brown	POORLY GRADED SAND WITH SILT: Fine-grained sand, some medium- to coarse-grained sand, trace gravel up to 19 mm, subrounded to subangular, 10 percent silt. Quartz, feldspar, mica, and mafics.
-150	SP	10YR 5/6 Yellowish Brown	POORLY GRADED SAND: Fine-grained sand, with medium-grained sand, trace coarse-grained sand, subrounded to rounded, 5-10 percent clay. Quartz, feldspar, mica, and mafics.
-160		10YR 5/6 Yellowish Brown	POORLY GRADED SAND: Medium-grained sand, with fine-grained sand, trace coarse-grained sand, subrounded to angular, less than 5 percent silt. Quartz, feldspar, mica, and mafics. Oblate grains.
-170			

Borehole Lithologic Log

Borehole/ Well No.:	DCZ-2
Client:	IEUA
Project No.:	16-010-103.1

Depth	Graphic Log	Color	Sample Description
-180		10YR 6/4 Light Yellowish Brown	POORLY GRADED SAND: Medium-grained sand, with fine-grained sand, some coarse-grained sand, trace gravel up to 20 mm, subrounded to subangular, less than 5 percent silt. Quartz, feldspar, mica, and mafics.
-190		10YR 6/4 Light Yellowish Brown	POORLY GRADED SAND: Fine-grained sand, some fine-grained sand, trace coarse-grained sand, subrounded to subangular, less than 5 percent silt. Quartz, feldspar, mica, and mafics.
-200		10YR 6/4 Light Yellowish Brown	POORLY GRADED SAND: Medium-grained sand, with fine-grained sand, trace coarse-grained sand, subrounded to subangular, less than 5 percent silt. Quartz, feldspar, mica, and mafics.
-210		10YR 5/4 Yellowish Brown	POORLY GRADED SAND: Medium-grained sand, with fine-grained sand, some coarse-grained sand, subrounded to subangular, less than 5 percent silt. Quartz, feldspar, mica, and mafics.
-220		10YR 5/3 Brown	POORLY GRADED SAND: Medium-grained sand, with fine-grained sand, some coarse-grained sand, subrounded to subangular, less than 5 percent silt. Quartz, feldspar, mica, and mafics.
-230		10YR 6/3 Pale Brown	POORLY GRADED SAND: Fine-grained sand, with medium- to coarse-grained sand, subrounded to subangular, less than 5 percent silt. Quartz, feldspar, and trace mafics.
-240		10YR 6/3 Pale Brown	POORLY GRADED SAND: Medium-grained sand, with fine-grained sand, some coarse-grained sand, trace gravel up to 20 mm, subrounded to angular, less than 5 percent silt. Quartz, feldspar, and mafics.
-250		10YR 6/3 Pale Brown	POORLY GRADED SAND: Medium- to coarse-grained sand, with fine-grained sand, trace gravel up to 13 mm, subrounded to angular, less than 5 percent silt. Quartz, feldspar, and mafics.
-260		10YR 6/3 Pale Brown	POORLY GRADED SAND: Medium- to coarse-grained sand, with fine-grained sand, trace gravel up to 25 mm, subrounded to angular, less than 5 percent silt. Quartz, feldspar, trace mica and mafics.
-270		10YR 6/3 Pale Brown	POORLY GRADED SAND: Medium- to coarse-grained sand, with fine-grained sand, subrounded to subangular, less than 5 percent clay. Quartz, feldspar, mafics and trace mica.

Thomas Harder & Co.
Groundwater Consulting

Borehole Lithologic Log

Borehole/ Well No.:	DCZ-2
Client:	IEUA
Project No.:	16-010-103.1

Depth	Graphic Log	Color	Sample Description
-270	SP-SC	10YR 5/6 Yellowish Brown	POORLY GRADED SAND WITH CLAY: Fine-grained sand, some medium- to coarse-grained sand, subrounded to subangular, 10 percent clay. Quartz, feldspar, mica, and trace mafics.
-280	SC	10YR 5/6 Yellowish Brown	CLAYEY SAND: Fine-grained sand, some medium-grained sand, trace coarse-grained sand, subrounded to subangular, 15 percent clay. Quartz, feldspar, mica, and trace mafics.
-290		10YR 6/3 Pale Brown	POORLY GRADED SAND: Medium-grained sand, trace coarse-grained sand, trace gravel up to 13 mm, subrounded to subangular, less than 5 percent silt. Quartz, feldspar, mafics and mica. Interpreted to be weathered bedrock based on gravel characteristics and geophysical logs.
-300		10YR 6/3 Pale Brown	POORLY GRADED SAND WITH GRAVEL: Medium-grained sand, with coarse-grained sand, some fine-grained sand, gravel up to 40 mm, subrounded to subangular, less than 5 percent silt. Quartz, feldspar, mafics and mica. Gravel is composed of granite. Interpreted to be weathered bedrock based on gravel characteristics and geophysical logs.
-310		10YR 6/3 Pale Brown	POORLY GRADED SAND WITH GRAVEL: Medium- to coarse-grained sand, some fine-grained sand, gravel up to 30 mm, subrounded to subangular, less than 5 percent silt. Quartz, feldspar, and mafics. Interpreted to be weathered bedrock based on gravel characteristics and geophysical logs.
-320		10YR 6/3 Pale Brown	POORLY GRADED SAND: Medium- to coarse-grained sand, with fine-grained sand, trace gravel up to 13 mm, subrounded to subangular, less than 5 percent silt. Quartz, feldspar, and mafics. Gravel is composed of granite. Interpreted to be weathered bedrock based on gravel characteristics and geophysical logs.
-330		10YR 6/3 Pale Brown	WELL GRADED SAND WITH GRAVEL: Medium- to coarse-grained sand, with fine to medium-grained sand, gravel up to 30 mm, subrounded to angular, less than 5 percent silt. Quartz, feldspar, and mafics. Gravel is composed of angular, fresh granite. Interpreted to be weathered bedrock based on gravel characteristics and geophysical logs.
-340		10YR 5/2 Grayish Brown	BEDROCK: Angular, fresh granitic gravel with some sand.
-350			

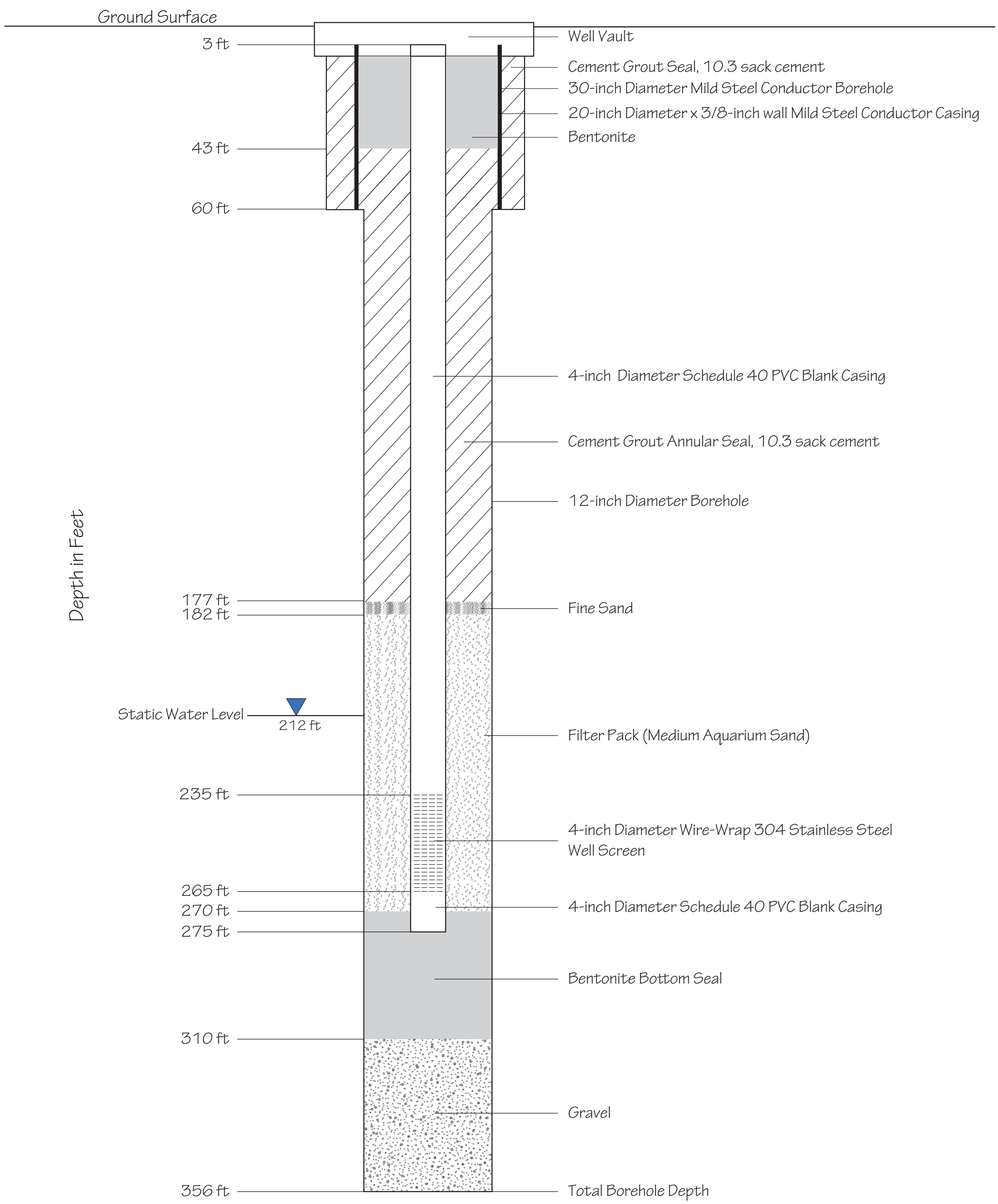
Notes:

Grain size distribution and percentages are approximate based on visual inspection of samples.

Soil types classified based on Unified Soil Classification System.

Soil color based on Munsell Soil Color Charts.

Declez Monitoring Well DCZ-2



Note: Not to scale.

DCZ-2 As-Built

TABLES

Table 3-1
Declez Basin
Historical Diluent Water Recharge [1]
(acre-feet)

Fiscal Year	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
2005/06	10.5	10.5	30.	114.4	30.	30.	35.3	109.9	190.6	101.4	57.6	16.	736.1
2006/07	14.7	19.9	18.	33.9	31.	89.8	83.1	147.	21.	88.	18.	0.	564.4
2007/08	0.	6.	33.	14.	108.	77.	256.	152.	27.	13.	36.	14.	736.
2008/09	19.	4.	7.	14.	73.	207.	26.	224.	51.	5.	6.	20.	656.
2009/10	21.	17.	6.	15.	39.	173.	73.	241.	55.	122.	6.	6.	774.
2010/11	3.	8.	2.	45.	95.	313.	52.	196.	138.	2.	14.	9.	877.
2011/12	81.	3.	6.	74.	120.	56.	87.	46.	184.	133.	7.	1.	798.
2012/13	1.	10.	15.	134.	21.	168.	48.	58.	61.	4.	6.	4.	530.
2013/14	6.	3.	2.	18.	52.	66.	101.6	176.	172.6	115.2	1.	2.	715.4
2014/15	2.	72.	30.	3.	100.	315.	47.	106.	15.	41.	99.	3.	833.
2015/16	49.	3.	147.	36.	4.	49.	158.	34.	92.	20.	12.	3.	607.
2016/17	0.	0.	1.	47.	55.	217.	167.	70.	20.	3.	24.	102.	706.
2017/18	52.	70.	26.	72.5	6.	6.2	136.3	48.5					
												Avg.	711.
												Min.	530.
												Max.	877.

Notes:

1) Historical diluent water recharge volumes in this table are surface recharge at the basin. They do not include the volume of groundwater underflow that is also credited and used as diluent water in the RWC calculation. Groundwater underflow is listed in Tables 3-3 and 7-1.

Table 3-2
Declez Basin: Daily Water Deliveries During the Start-Up Period

Date	Dry Weather / Storm Inflow (AF)	Recycled Water (AF)
12/01/15	0.1	0.0
12/02/15	0.1	0.0
12/03/15	0.1	0.0
12/04/15	0.1	0.0
12/05/15	0.1	0.0
12/06/15	0.1	0.0
12/07/15	0.1	0.0
12/08/15	0.1	0.0
12/09/15	0.1	0.0
12/10/15	0.1	0.0
12/11/15	6.6	0.0
12/12/15	0.1	0.0
12/13/15	8.2	0.0
12/14/15	0.1	0.0
12/15/15	0.1	0.0
12/16/15	0.1	0.0
12/17/15	0.1	0.0
12/18/15	0.1	0.0
12/19/15	5.1	0.0
12/20/15	0.1	0.0
12/21/15	0.1	0.0
12/22/15	27.4	0.0
12/23/15	0.1	1.5
12/24/15	0.1	2.9
12/25/15	0.1	6.5
12/26/15	0.1	6.5
12/27/15	0.1	6.5
12/28/15	0.1	6.5
12/29/15	0.1	6.5
12/30/15	0.1	6.5
12/31/15	0.1	6.5
01/01/16	0.1	6.5
01/02/16	0.1	2.3
01/03/16	0.1	0.0
01/04/16	0.1	0.0
01/05/16	85.0	0.0
01/06/16	20.0	0.0
01/07/16	12.9	0.0
01/08/16	0.1	0.0
01/09/16	0.1	0.0
01/10/16	0.1	0.0
01/11/16	0.1	0.0
01/12/16	0.1	0.0
01/13/16	0.1	4.3
01/14/16	0.1	6.0
01/15/16	0.1	6.0
01/16/16	0.1	6.0
01/17/16	0.1	6.0
01/18/16	0.1	6.0
01/19/16	0.1	0.0
01/20/16	0.1	4.2
01/21/16	0.1	4.5
01/22/16	0.1	4.0
01/23/16	0.1	4.0
01/24/16	0.1	4.0
01/25/16	0.1	5.4
01/26/16	0.1	6.0
01/27/16	0.1	3.0
01/28/16	0.1	0.0
01/29/16	0.1	0.0
01/30/16	0.1	0.0
01/31/16	36.5	0.0

Date	Dry Weather / Storm Inflow (AF)	Recycled Water (AF)
02/01/16	0.1	2.2
02/02/16	0.1	4.0
02/03/16	0.1	4.0
02/04/16	0.1	4.0
02/05/16	0.1	4.0
02/06/16	0.1	4.0
02/07/16	0.1	4.0
02/08/16	0.1	4.0
02/09/16	0.1	3.5
02/10/16	0.1	3.4
02/11/16	0.1	5.0
02/12/16	0.1	5.0
02/13/16	0.1	5.0
02/14/16	0.1	5.0
02/15/16	0.1	6.0
02/16/16	0.1	7.5
02/17/16	25.0	5.5
02/18/16	5.9	0.0
02/19/16	0.1	3.5
02/20/16	0.1	6.1
02/21/16	0.1	6.5
02/22/16	0.1	7.7
02/23/16	0.1	8.1
02/24/16	0.1	8.1
02/25/16	0.1	7.1
02/26/16	0.1	8.1
02/27/16	0.1	8.1
02/28/16	0.1	8.1
02/29/16	0.1	6.1
03/01/16	0.1	3.0
03/02/16	0.1	0.0
03/03/16	0.1	0.0
03/04/16	0.1	0.0
03/05/16	0.1	0.0
03/06/16	27.2	0.0
03/07/16	28.0	0.0
03/08/16	0.1	0.0
03/09/16	0.1	0.0
03/10/16	0.1	0.0
03/11/16	15.2	0.0
03/12/16	0.0	0.0
03/13/16	0.1	0.0
03/14/16	0.1	4.0
03/15/16	0.1	7.8
03/16/16	0.1	8.3
03/17/16	0.1	10.7
03/18/16	0.1	11.5
03/19/16	0.1	11.5
03/20/16	0.1	11.5
03/21/16	0.1	10.0
03/22/16	0.1	5.8
03/23/16	0.1	4.2
03/24/16	0.1	4.2
03/25/16	0.1	4.2
03/26/16	0.1	5.6
03/27/16	0.1	6.3
03/28/16	0.1	6.3
03/29/16	18.4	4.0
03/30/16	0.1	4.2
03/31/16	0.1	2.8

Date	Dry Weather / Storm Inflow (AF)	Recycled Water (AF)
04/01/16	0.1	6.5
04/02/16	0.1	6.5
04/03/16	0.1	6.5
04/04/16	0.1	1.7
04/05/16	0.1	0.0
04/06/16	0.1	0.0
04/07/16	0.1	0.0
04/08/16	0.1	0.0
04/09/16	0.1	0.0
04/10/16	0.1	0.0
04/11/16	0.1	0.0
04/12/16	0.1	3.0
04/13/16	0.1	8.4
04/14/16	0.1	7.5
04/15/16	0.1	6.8
04/16/16	0.1	8.4
04/17/16	0.1	8.4
04/18/16	0.1	7.8
04/19/16	0.1	5.6
04/20/16	0.1	6.0
04/21/16	0.1	6.4
04/22/16	0.1	5.7
04/23/16	0.1	5.9
04/24/16	0.1	5.8
04/25/16	16.5	4.1
04/26/16	0.1	0.0
04/27/16	0.1	0.0
04/28/16	0.1	3.9
04/29/16	0.1	8.7
04/30/16	0.1	8.7
05/01/16	0.1	8.5
05/02/16	0.1	8.0
05/03/16	0.1	5.9
05/04/16	0.1	6.3
05/05/16	0.1	6.9
05/06/16	7.9	4.0
05/07/16	0.0	2.3
05/08/16	0.1	6.8
05/09/16	0.1	6.8
05/10/16	0.1	7.7
05/11/16	0.1	9.8
05/12/16	0.1	10.4
05/13/16	0.1	10.4
05/14/16	0.1	10.3
05/15/16	0.1	10.3
05/16/16	0.1	10.3
05/17/16	0.1	9.8
05/18/16	0.1	9.4
05/19/16	0.1	7.5
05/20/16	0.1	6.9
05/21/16	0.1	7.0
05/22/16	0.1	7.0
05/23/16	0.1	7.0
05/24/16	0.1	5.9
05/25/16	0.1	5.9
05/26/16	0.1	5.6
05/27/16	0.1	5.8
05/28/16	0.1	6.3
05/29/16	0.1	6.3
05/30/16	0.1	6.3
05/31/16	0.1	6.5

Date	Dry Weather / Storm Inflow (AF)	Recycled Water (AF)
06/01/16	0.1	7.2
06/02/16	0.1	7.5
06/03/16	0.1	7.4
06/04/16	0.1	10.2
06/05/16	0.1	11.0
06/06/16	0.1	7.7
06/07/16	0.1	4.0
06/08/16	0.1	6.8
06/09/16	0.1	5.3
06/10/16	0.1	6.8
06/11/16	0.1	5.4
06/12/16	0.1	6.8
06/13/16	0.1	6.8
06/14/16	0.1	4.3
06/15/16	0.1	4.5
06/16/16	0.1	6.4
06/17/16	0.1	6.3
06/18/16	0.1	6.3
06/19/16	0.1	6.2
06/20/16	0.1	5.7
06/21/16	0.1	5.5
06/22/16	0.1	6.2
06/23/16	0.1	6.8
06/24/16	0.1	6.7
06/25/16	0.1	6.7
06/26/16	0.1	6.8
06/27/16	0.1	7.0
06/28/16	0.1	7.0
06/29/16	0.1	8.1
06/30/16	0.1	8.1
07/01/16	0.0	8.1
07/02/16	0.0	8.1
07/03/16	0.0	8.1
07/04/16	0.0	8.1
07/05/16	0.0	8.1
07/06/16	0.0	6.6
07/07/16	0.0	8.6
07/08/16	0.0	8.7
07/09/16	0.0	8.7
07/10/16	0.0	8.6
07/11/16	0.0	8.6
07/12/16	0.0	4.1
07/13/16	0.0	5.0
07/14/16	0.0	8.9
07/15/16	0.0	4.5
07/16/16	0.0	8.1
07/17/16	0.0	8.3
07/18/16	0.0	7.2
07/19/16	0.0	5.7
07/20/16	0.0	6.1
07/21/16	0.0	2.1
07/22/16	0.0	3.0
07/23/16	0.0	8.3
07/24/16	0.0	8.0
07/25/16	0.0	4.9
07/26/16	0.0	3.6
07/27/16	0.0	4.8
07/28/16	0.0	2.6
07/29/16	0.0	0.1
07/30/16	0.0	7.4
07/31/16	0.0	8.4

Date	Dry Weather / Storm Inflow (AF)	Recycled Water (AF)
08/01/16	0.0	6.3
08/02/16	0.0	5.81
08/03/16	0.0	5.8
08/04/16	0.0	4.8
08/05/16	0.0	3.0
08/06/16	0.0	2.9
08/07/16	0.0	2.9
08/08/16	0.0	3.8
08/09/16	0.0	6.3
08/10/16	0.0	6.3
08/11/16	0.0	7.0
08/12/16	0.0	6.2
08/13/16	0.0	6.1
08/14/16	0.0	3.7
08/15/16	0.0	17.4
08/16/16	0.0	5.7
08/17/16	0.0	2.1
08/18/16	0.0	2.9
08/19/16	0.0	14.3
08/20/16	0.0	10.3
08/21/16	0.0	14.7
08/22/16	0.0	15.0
08/23/16	0.0	10.3
08/24/16	0.0	11.9
08/25/16	0.0	10.4
08/26/16	0.0	21.7
08/27/16	0.0	8.0
08/28/16	0.0	15.8
08/29/16	0.0	9.9
08/30/16	0.0	9.8
08/31/16	0.0	9.8
09/01/16	0.0	9.1
09/02/16	0.0	8.2
09/03/16	0.0	5.9
09/04/16	0.0	5.9
09/05/16	0.0	5.9
09/06/16	0.0	5.8
09/07/16	0.0	5.9
09/08/16	0.0	4.8
09/09/16	0.0	0.0
09/10/16	0.0	0.0
09/11/16	0.0	0.0
09/12/16	0.0	0.0
09/13/16	0.0	0.0
09/14/16	0.0	0.0
09/15/16	0.0	0.0
09/16/16	0.0	0.0
09/17/16	0.0	0.0
09/18/16	0.0	0.0
09/19/16	0.0	0.0
09/20/16	0.0	0.0
09/21/16	0.0	0.0
09/22/16	0.0	0.0
09/23/16	0.0	0.0
09/24/16	0.0	0.0
09/25/16	0.0	0.0
09/26/16	0.0	0.0
09/27/16	0.0	0.0
09/28/16	0.0	0.0
09/29/16	0.0	0.0
09/30/16	0.0	0.0

Note:
1. Table 3-2 does not list the groundwater underflow volume credited for diluent water.

Table 3-3
Declez Basin: Historical Monthly Water Deliveries and RWC

Date		No. Mos. Since Initial RW Delivery	SW (AF)	MWD (AF)	Underflow (AF)	DW Total (AF)	DW 120-Month Total (AF)	RW (AF)	RW 120-Month Total (AF)	DW + RW 120-Month Total (AF)	RWC	Period
2005/06	Jul '05	-125	11.	0.	0.	11.	11.	0.	0.	11.	0%	HISTORICAL
	Aug '05	-124	11.	0.	0.	11.	21.	0.	0.	21.	0%	
	Sep '05	-123	30.	0.	0.	30.	51.	0.	0.	51.	0%	
	Oct '05	-122	114.	0.	0.	114.	165.	0.	0.	165.	0%	
	Nov '05	-121	30.	0.	0.	30.	195.	0.	0.	195.	0%	
	Dec '05	-120	30.	0.	0.	30.	225.	0.	0.	225.	0%	
	Jan '06	-119	35.	0.	0.	35.	261.	0.	0.	261.	0%	
	Feb '06	-118	110.	0.	0.	110.	371.	0.	0.	371.	0%	
	Mar '06	-117	191.	0.	0.	191.	561.	0.	0.	561.	0%	
	Apr '06	-116	101.	0.	0.	101.	663.	0.	0.	663.	0%	
	May '06	-115	58.	0.	0.	58.	720.	0.	0.	720.	0%	
	Jun '06	-114	16.	0.	0.	16.	736.	0.	0.	736.	0%	
2006/07	Jul '06	-113	15.	0.	0.	15.	751.	0.	0.	751.	0%	
	Aug '06	-112	20.	0.	0.	20.	771.	0.	0.	771.	0%	
	Sep '06	-111	18.	0.	0.	18.	789.	0.	0.	789.	0%	
	Oct '06	-110	34.	0.	0.	34.	823.	0.	0.	823.	0%	
	Nov '06	-109	31.	0.	0.	31.	854.	0.	0.	854.	0%	
	Dec '06	-108	90.	0.	0.	90.	943.	0.	0.	943.	0%	
	Jan '07	-107	83.	0.	0.	83.	1,026.	0.	0.	1,026.	0%	
	Feb '07	-106	147.	0.	0.	147.	1,173.	0.	0.	1,173.	0%	
	Mar '07	-105	21.	0.	0.	21.	1,194.	0.	0.	1,194.	0%	
	Apr '07	-104	88.	0.	0.	88.	1,282.	0.	0.	1,282.	0%	
	May '07	-103	18.	0.	0.	18.	1,300.	0.	0.	1,300.	0%	
	Jun '07	-102	0.	0.	0.	0.	1,300.	0.	0.	1,300.	0%	
2007/08	Jul '07	-101	0.	0.	0.	0.	1,300.	0.	0.	1,300.	0%	
	Aug '07	-100	6.	0.	0.	6.	1,306.	0.	0.	1,306.	0%	
	Sep '07	-99	33.	0.	0.	33.	1,339.	0.	0.	1,339.	0%	
	Oct '07	-98	14.	0.	0.	14.	1,353.	0.	0.	1,353.	0%	
	Nov '07	-97	108.	0.	0.	108.	1,461.	0.	0.	1,461.	0%	
	Dec '07	-96	77.	0.	0.	77.	1,538.	0.	0.	1,538.	0%	
	Jan '08	-95	256.	0.	0.	256.	1,794.	0.	0.	1,794.	0%	
	Feb '08	-94	152.	0.	0.	152.	1,946.	0.	0.	1,946.	0%	
	Mar '08	-93	27.	0.	0.	27.	1,973.	0.	0.	1,973.	0%	
	Apr '08	-92	13.	0.	0.	13.	1,986.	0.	0.	1,986.	0%	
	May '08	-91	36.	0.	0.	36.	2,022.	0.	0.	2,022.	0%	
	Jun '08	-90	14.	0.	0.	14.	2,036.	0.	0.	2,036.	0%	
2008/09	Jul '08	-89	19.	0.	0.	19.	2,055.	0.	0.	2,055.	0%	
	Aug '08	-88	4.	0.	0.	4.	2,059.	0.	0.	2,059.	0%	
	Sep '08	-87	7.	0.	0.	7.	2,066.	0.	0.	2,066.	0%	
	Oct '08	-86	14.	0.	0.	14.	2,080.	0.	0.	2,080.	0%	
	Nov '08	-85	73.	0.	0.	73.	2,153.	0.	0.	2,153.	0%	
	Dec '08	-84	207.	0.	0.	207.	2,360.	0.	0.	2,360.	0%	
	Jan '09	-83	26.	0.	0.	26.	2,386.	0.	0.	2,386.	0%	
	Feb '09	-82	224.	0.	0.	224.	2,610.	0.	0.	2,610.	0%	
	Mar '09	-81	51.	0.	0.	51.	2,661.	0.	0.	2,661.	0%	
	Apr '09	-80	5.	0.	0.	5.	2,666.	0.	0.	2,666.	0%	
	May '09	-79	6.	0.	0.	6.	2,672.	0.	0.	2,672.	0%	
	Jun '09	-78	20.	0.	0.	20.	2,692.	0.	0.	2,692.	0%	
2009/10	Jul '09	-77	21.	0.	0.	21.	2,713.	0.	0.	2,713.	0%	
	Aug '09	-76	17.	0.	0.	17.	2,730.	0.	0.	2,730.	0%	
	Sep '09	-75	6.	0.	0.	6.	2,736.	0.	0.	2,736.	0%	
	Oct '09	-74	15.	0.	0.	15.	2,751.	0.	0.	2,751.	0%	
	Nov '09	-73	39.	0.	0.	39.	2,790.	0.	0.	2,790.	0%	
	Dec '09	-72	173.	0.	0.	173.	2,963.	0.	0.	2,963.	0%	
	Jan '10	-71	73.	0.	0.	73.	3,036.	0.	0.	3,036.	0%	
	Feb '10	-70	241.	0.	0.	241.	3,277.	0.	0.	3,277.	0%	
	Mar '10	-69	55.	0.	0.	55.	3,332.	0.	0.	3,332.	0%	
	Apr '10	-68	122.	0.	0.	122.	3,454.	0.	0.	3,454.	0%	
	May '10	-67	6.	0.	0.	6.	3,460.	0.	0.	3,460.	0%	
	Jun '10	-66	6.	0.	0.	6.	3,466.	0.	0.	3,466.	0%	

Table 3-3
Declez Basin: Historical Monthly Water Deliveries and RWC

Date		No. Mos. Since Initial RW Delivery	SW (AF)	MWD (AF)	Underflow (AF)	DW Total (AF)	DW 120-Month Total (AF)	RW (AF)	RW 120-Month Total (AF)	DW + RW 120-Month Total (AF)	RWC	Period
2010/11	Jul '10	-65	3.	0.	0.	3.	3,469.	0.	0.	3,469.	0%	HISTORICAL
	Aug '10	-64	8.	0.	0.	8.	3,477.	0.	0.	3,477.	0%	
	Sep '10	-63	2.	0.	0.	2.	3,479.	0.	0.	3,479.	0%	
	Oct '10	-62	45.	0.	0.	45.	3,524.	0.	0.	3,524.	0%	
	Nov '10	-61	95.	0.	0.	95.	3,619.	0.	0.	3,619.	0%	
	Dec '10	-60	313.	0.	0.	313.	3,932.	0.	0.	3,932.	0%	
	Jan '11	-59	52.	0.	0.	52.	3,984.	0.	0.	3,984.	0%	
	Feb '11	-58	196.	0.	0.	196.	4,180.	0.	0.	4,180.	0%	
	Mar '11	-57	138.	0.	0.	138.	4,318.	0.	0.	4,318.	0%	
	Apr '11	-56	2.	0.	0.	2.	4,320.	0.	0.	4,320.	0%	
	May '11	-55	14.	0.	0.	14.	4,334.	0.	0.	4,334.	0%	
	Jun '11	-54	9.	0.	0.	9.	4,343.	0.	0.	4,343.	0%	
2011/12	Jul '11	-53	81.	0.	0.	81.	4,424.	0.	0.	4,424.	0%	
	Aug '11	-52	3.	0.	0.	3.	4,427.	0.	0.	4,427.	0%	
	Sep '11	-51	6.	0.	0.	6.	4,433.	0.	0.	4,433.	0%	
	Oct '11	-50	74.	0.	0.	74.	4,507.	0.	0.	4,507.	0%	
	Nov '11	-49	120.	0.	0.	120.	4,627.	0.	0.	4,627.	0%	
	Dec '11	-48	56.	0.	0.	56.	4,683.	0.	0.	4,683.	0%	
	Jan '12	-47	87.	0.	0.	87.	4,770.	65.	65.	4,835.	1%	
	Feb '12	-46	46.	0.	0.	46.	4,816.	0.	65.	4,881.	1%	
	Mar '12	-45	184.	0.	0.	184.	5,000.	0.	65.	5,065.	1%	
	Apr '12	-44	133.	0.	0.	133.	5,133.	0.	65.	5,198.	1%	
	May '12	-43	7.	0.	0.	7.	5,140.	0.	65.	5,205.	1%	
	Jun '12	-42	1.	0.	0.	1.	5,141.	0.	65.	5,206.	1%	
2012/13	Jul '12	-41	1.	0.	0.	1.	5,142.	0.	65.	5,207.	1%	
	Aug '12	-40	10.	0.	0.	10.	5,152.	0.	65.	5,217.	1%	
	Sep '12	-39	15.	0.	0.	15.	5,167.	0.	65.	5,232.	1%	
	Oct '12	-38	134.	0.	0.	134.	5,301.	0.	65.	5,366.	1%	
	Nov '12	-37	21.	0.	0.	21.	5,322.	0.	65.	5,387.	1%	
	Dec '12	-36	168.	0.	0.	168.	5,490.	0.	65.	5,555.	1%	
	Jan '13	-35	48.	0.	0.	48.	5,538.	0.	65.	5,603.	1%	
	Feb '13	-34	58.	0.	0.	58.	5,596.	0.	65.	5,661.	1%	
	Mar '13	-33	61.	0.	0.	61.	5,657.	0.	65.	5,722.	1%	
	Apr '13	-32	4.	0.	0.	4.	5,661.	0.	65.	5,726.	1%	
	May '13	-31	6.	0.	0.	6.	5,667.	0.	65.	5,732.	1%	
	Jun '13	-30	4.	0.	0.	4.	5,671.	0.	65.	5,736.	1%	
2013/14	Jul '13	-29	6.	0.	0.	6.	5,677.	0.	65.	5,742.	1%	
	Aug '13	-28	3.	0.	0.	3.	5,680.	0.	65.	5,745.	1%	
	Sep '13	-27	2.	0.	0.	2.	5,682.	0.	65.	5,747.	1%	
	Oct '13	-26	18.	0.	0.	18.	5,700.	0.	65.	5,765.	1%	
	Nov '13	-25	52.	0.	0.	52.	5,752.	0.	65.	5,817.	1%	
	Dec '13	-24	66.	0.	0.	66.	5,818.	0.	65.	5,883.	1%	
	Jan '14	-23	3.	99.	0.	102.	5,920.	0.	65.	5,985.	1%	
	Feb '14	-22	24.	152.	0.	176.	6,096.	0.	65.	6,161.	1%	
	Mar '14	-21	56.	117.	0.	173.	6,269.	0.	65.	6,334.	1%	
	Apr '14	-20	108.	7.	0.	115.	6,384.	0.	65.	6,449.	1%	
	May '14	-19	1.	0.	0.	1.	6,385.	0.	65.	6,450.	1%	
	Jun '14	-18	2.	0.	0.	2.	6,387.	0.	65.	6,452.	1%	
2014/15	Jul '14	-17	2.	0.	0.	2.	6,389.	0.	65.	6,454.	1%	
	Aug '14	-16	72.	0.	0.	72.	6,461.	0.	65.	6,526.	1%	
	Sep '14	-15	30.	0.	0.	30.	6,491.	0.	65.	6,556.	1%	
	Oct '14	-14	3.	0.	0.	3.	6,494.	0.	65.	6,559.	1%	
	Nov '14	-13	100.	0.	0.	100.	6,594.	0.	65.	6,659.	1%	
	Dec '14	-12	315.	0.	0.	315.	6,909.	0.	65.	6,974.	1%	
	Jan '15	-11	47.	0.	0.	47.	6,956.	0.	65.	7,021.	1%	
	Feb '15	-10	106.	0.	0.	106.	7,062.	0.	65.	7,127.	1%	
	Mar '15	-9	15.	0.	0.	15.	7,077.	0.	65.	7,142.	1%	
	Apr '15	-8	41.	0.	0.	41.	7,118.	0.	65.	7,183.	1%	
	May '15	-7	99.	0.	0.	99.	7,217.	0.	65.	7,282.	1%	
	Jun '15	-6	3.	0.	0.	3.	7,220.	0.	65.	7,285.	1%	

Table 3-3
Declez Basin: Historical Monthly Water Deliveries and RWC

Date		No. Mos. Since Initial RW Delivery	SW (AF)	MWD (AF)	Underflow (AF)	DW Total (AF)	DW 120-Month Total (AF)	RW (AF)	RW 120-Month Total (AF)	DW + RW 120-Month Total (AF)	RWC	Period
2015/16	Jul '15	-5	49.	0.	0.	49.	7,258.	0.	65.	7,323.	1%	
	Aug '15	-4	3.	0.	0.	3.	7,251.	0.	65.	7,316.	1%	
	Sep '15	-3	147.	0.	0.	147.	7,368.	0.	65.	7,433.	1%	
	Oct '15	-2	36.	0.	0.	36.	7,289.	0.	65.	7,354.	1%	
	Nov '15	-1	4.	0.	0.	4.	7,263.	0.	65.	7,328.	1%	
	Dec '15	0	49.	0.	904.	953.	8,186.	50.	115.	8,301.	1%	START-UP
	Jan '16	1	158.	0.	904.	1,062.	9,213.	78.	193.	9,406.	2%	
	Feb '16	2	34.	0.	904.	938.	10,041.	153.	346.	10,387.	3%	
	Mar '16	3	92.	0.	904.	996.	10,846.	126.	472.	11,318.	4%	
	Apr '16	4	20.	0.	904.	924.	11,668.	133.	605.	12,273.	5%	
	May '16	5	12.	0.	904.	916.	12,526.	228.	833.	13,359.	6%	
	Jun '16	6	3.	0.	904.	907.	13,417.	201.	1,034.	14,451.	7%	
2016/17	Jul '16	7	0.	0.	904.	904.	14,306.	201.	1,235.	15,541.	8%	
	Aug '16	8	0.	0.	904.	904.	15,190.	261.	1,496.	16,686.	9%	
	Sep '16	9	1.	0.	904.	905.	16,077.	52.	1,548.	17,625.	9%	
	Oct '16	10	47.	0.	904.	951.	16,994.	0.	1,548.	18,542.	8%	HISTORICAL
	Nov '16	11	55.	0.	904.	959.	17,921.	0.	1,548.	19,469.	8%	
	Dec '16	12	217.	0.	904.	1,121.	18,952.	0.	1,548.	20,500.	8%	
	Jan '17	13	167.	0.	904.	1,071.	19,940.	0.	1,548.	21,488.	7%	
	Feb '17	14	70.	0.	904.	974.	20,767.	0.	1,548.	22,315.	7%	
	Mar '17	15	20.	0.	904.	924.	21,669.	0.	1,548.	23,217.	7%	
	Apr '17	16	3.	0.	904.	907.	22,488.	0.	1,548.	24,036.	6%	
	May '17	17	24.	0.	904.	928.	23,398.	0.	1,548.	24,946.	6%	
	Jun '17	18	3.	99.	904.	1,006.	24,404.	0.	1,548.	25,952.	6%	
2017/18	Jul '17	19	7.	45.	904.	956.	25,359.	0.	1,548.	26,907.	6%	
	Aug '17	20	70.	0.	904.	974.	26,327.	0.	1,548.	27,875.	6%	
	Sep '17	21	6.	20.	904.	930.	27,224.	0.	1,548.	28,772.	5%	
	Oct '17	22	6.	66.	904.	976.	28,186.	0.	1,548.	29,734.	5%	
	Nov '17	23	6.	0.	904.	910.	28,988.	0.	1,548.	30,536.	5%	
	Dec '17	24	6.	0.	904.	910.	29,821.	0.	1,548.	31,369.	5%	
	Jan '18	25	136.	0.	904.	1,040.	30,605.	0.	1,548.	32,153.	5%	
	Feb '18	26	49.	0.	904.	952.	31,405.	0.	1,548.	32,953.	5%	

Notes:

DW = Diluent Water; Total DW is the sum of Storm Water & Local Runoff (SW), Imported Water from the State Water Project (MWD), and groundwater underflow.

RW = Recycled Water

RWC = 120-month running total of recycled water / 120-month running total of all diluent and recycled water.

While an RWC calculation is provided starting on the first month of RW recharge, 120 months of data may not be available until 10 years of recharge operations.

RWC maximum = 0.5 mg/L / the Running Average of Total Organic Carbon (TOC) determined from a recharge site's start-up period. (discussed in Section 6.4)

Table 3-4
Declez Basin: Infiltration Rate Calculations

Basin/Cell	Start Date/Time, T	Water Depth H (feet)	End Date/Time, T	Water Depth H (feet)	dT (days)	dH (feet)	Infiltration Rate (feet/day)
Declez 1	01/27/15 04:16	5.03	01/28/15 00:18	3.99	0.83	1.04	1.25
Declez 1	01/31/15 02:21	3.39	02/02/15 04:24	2.03	2.09	1.36	0.65
Declez 1	02/24/15 04:44	5.00	02/27/15 02:26	2.98	2.90	2.02	0.70
Declez 1	04/25/15 22:16	5.98	04/26/15 12:17	5.00	0.58	0.98	1.68
Declez 1	04/26/15 12:17	5.00	04/27/15 06:17	3.91	0.75	1.09	1.45
Declez 1	05/08/15 12:17	5.84	05/09/15 14:17	4.79	1.08	1.05	0.97
Declez 1	05/17/15 08:18	3.99	05/20/15 14:18	1.95	3.25	2.04	0.63
Declez 1	07/20/15 06:40	5.98	07/20/15 23:23	4.98	0.70	1.00	1.44
Declez 1	09/15/15 17:34	5.89	09/16/15 13:35	4.99	0.83	0.90	1.08
Declez 1	09/16/15 13:35	4.99	09/19/15 00:34	2.94	2.46	2.05	0.83
Declez 1	09/16/15 17:35	8.91	09/19/15 18:35	6.75	3.04	2.16	0.71
Declez 1	10/06/15 10:26	3.77	10/08/15 11:55	2.02	2.06	1.75	0.85
Declez 1	12/14/15 18:52	1.84	12/17/15 02:40	0.74	2.32	1.10	0.47
Declez 1	01/07/16 13:25	6.08	01/09/16 13:44	4.94	2.01	1.14	0.57
Declez 1	01/29/16 07:47	2.71	01/31/16 08:47	1.53	2.04	1.18	0.58
Declez 1	03/08/16 06:42	5.90	03/11/16 12:37	3.69	3.25	2.21	0.68
Declez 1	03/08/16 19:41	5.14	03/20/16 01:36	4.30	11.25	0.84	0.07
Declez 1	09/08/16 20:46	5.30	09/10/16 16:46	3.98	1.83	1.32	0.72
Declez 1	09/10/16 16:46	1.71	09/12/16 13:47	0.72	1.88	0.99	0.53
Declez 1	09/12/16 13:47	0.72	09/13/16 08:47	0.42	0.79	0.30	0.38
Declez 1	10/24/16 18:45	5.90	10/25/16 06:19	4.96	0.48	0.94	1.95
Declez 1	10/25/16 06:19	4.96	10/26/16 04:02	3.68	0.90	1.28	1.41
Declez 1	10/26/16 04:02	3.68	10/26/16 19:55	2.99	0.66	0.69	1.04
Declez 1	10/26/16 19:55	2.99	10/28/16 06:03	2.01	1.42	0.98	0.69
Declez 1	10/28/16 06:03	2.01	10/30/16 07:03	1.00	2.04	1.01	0.49
Declez 1	11/21/16 05:01	6.63	11/22/16 01:01	4.97	0.83	1.66	1.99
Declez 1	11/22/16 01:01	4.97	11/22/16 19:48	3.91	0.78	1.06	1.35
Declez 1	11/24/16 00:01	3.03	11/25/16 05:01	1.94	1.21	1.09	0.90
Declez 1	01/01/17 00:16	5.56	01/03/17 08:16	4.21	2.33	1.35	0.58
Declez 1	01/03/17 08:16	4.21	01/05/17 02:17	3.36	1.75	0.85	0.49
Declez 1	03/05/17 18:00	0.99	03/06/17 18:00	0.59	1.00	0.40	0.40
Declez 1	03/22/17 18:00	2.34	03/23/17 18:00	1.50	1.00	0.84	0.84
Declez 2	02/24/15 04:44	6.78	02/27/15 02:26	4.82	2.90	1.96	0.67
Declez 2	05/08/15 12:17	2.59	05/09/15 14:17	1.43	1.08	1.16	1.07
Declez 2	05/09/15 14:17	1.43	05/10/15 23:18	0.73	1.38	0.70	0.51
Declez 2	09/15/15 17:34	7.98	09/16/15 13:35	6.87	0.83	1.11	1.33
Declez 2	09/16/15 13:35	6.87	09/19/15 00:34	4.86	2.46	2.01	0.82
Declez 2	01/07/16 13:25	8.32	01/09/16 13:44	7.33	2.01	0.99	0.49
Declez 2	01/09/16 13:44	7.33	01/11/16 13:44	6.34	2.00	0.99	0.50
Declez 2	01/17/16 14:44	4.42	01/20/16 14:12	3.90	2.98	0.52	0.17
Declez 2	01/20/16 14:12	3.90	01/26/16 00:53	2.76	5.45	1.14	0.21
Declez 2	01/26/16 00:53	2.76	01/31/16 04:47	1.48	5.16	1.28	0.25
Declez 2	03/02/16 01:40	1.90	03/04/16 07:41	1.40	2.25	0.50	0.22
Declez 2	03/04/16 07:41	1.40	03/06/16 02:41	1.03	1.79	0.37	0.21
Declez 2	04/01/16 16:35	4.45	04/04/16 19:49	3.17	3.13	1.28	0.41
Declez 2	09/12/16 13:47	3.00	09/13/16 08:47	2.66	0.79	0.34	0.43
Declez 2	09/20/16 00:01	0.64	09/23/16 09:31	0.17	3.40	0.47	0.14
Declez 2	01/01/17 00:16	4.80	01/03/17 08:16	3.91	2.33	0.89	0.38
Declez 2	01/03/17 08:16	3.91	01/05/17 02:17	3.34	1.75	0.57	0.33
Declez 3	02/24/15 03:44	9.31	02/25/15 19:38	7.97	1.66	1.34	0.81
Declez 3	02/25/15 19:38	7.97	02/27/15 15:32	7.01	1.83	0.96	0.52
Declez 3	02/27/15 15:32	7.01	03/01/15 21:41	6.08	2.26	0.93	0.41
Declez 3	03/03/15 15:05	5.99	03/06/15 01:25	5.00	2.43	0.99	0.41
Declez 3	03/06/15 01:25	5.00	03/08/15 16:53	3.98	2.64	1.02	0.39
Declez 3	03/08/15 16:53	3.98	03/11/15 10:54	3.05	2.75	0.93	0.34
Declez 3	05/08/15 12:17	4.82	05/09/15 14:17	3.72	1.08	1.10	1.02
Declez 3	09/15/15 17:34	10.27	09/16/15 13:35	9.13	0.83	1.14	1.37
Declez 3	09/16/15 13:35	9.13	09/19/15 00:34	7.15	2.46	1.98	0.81
Declez 3	09/19/15 00:34	7.15	09/20/15 15:50	6.24	1.64	0.91	0.56
Declez 3	09/29/15 02:36	2.42	10/02/15 11:11	0.96	3.36	1.46	0.43
Declez 3	01/07/16 13:25	10.63	01/09/16 13:44	9.56	2.01	1.07	0.53
Declez 3	01/09/16 13:44	9.56	01/11/16 13:44	8.52	2.00	1.04	0.52
Declez 3	01/11/16 13:44	8.52	01/13/16 06:44	7.73	1.71	0.79	0.46
Declez 3	01/13/16 06:44	7.73	01/15/16 02:44	7.26	1.83	0.47	0.26
Declez 3	01/15/16 02:44	7.26	01/17/16 14:44	6.75	2.50	0.51	0.20
Declez 3	01/17/16 14:44	6.75	01/20/16 14:12	6.06	2.98	0.69	0.23
Declez 3	01/20/16 14:12	6.06	01/26/16 00:53	4.94	5.45	1.12	0.21
Declez 3	01/26/16 00:53	4.94	01/31/16 04:47	3.64	5.16	1.30	0.25
Declez 3	02/15/16 02:44	3.25	02/17/16 15:39	2.85	2.54	0.40	0.16
Declez 3	03/04/16 07:41	3.73	03/06/16 02:41	3.30	1.79	0.43	0.24
Declez 3	03/08/16 06:42	5.38	03/11/16 12:37	4.37	3.25	1.01	0.31
Declez 3	04/01/16 16:35	6.81	04/04/16 19:49	5.43	3.13	1.38	0.44
Declez 3	04/26/16 03:45	5.60	04/27/16 10:56	5.12	1.30	0.48	0.37

Table 4-1
Declez Basin: Surface Water and Lysimeter Results
Electrical Conductivity (µmhos/cm)

Date	Surface Water	Lysimeter Depth (ft bgs)				
	0	5	10	15	25	35
01/08/16	113	469	437	538	77	252
01/13/16	73	199	189	523	367	315
01/20/16	232	261	119	408	398	331
01/27/16	764	512	315	386	421	353
02/04/16	478	653	488	445	397	334
02/11/16	445	508	528	481	406	327
02/17/16	473	504	488	514	456	322
02/25/16	527	478	506	581	510	355
03/03/16	640	597	532	608	561	323
03/09/16	248	633	625	647	600	334
03/16/16	321	364	435	581	657	335
03/24/16	813	680	706	627	614	333
03/31/16	581	808	794	660	595	332
04/07/16	664	739	584	728	620	356
04/13/16	878	674	690	733	632	353
04/20/16	882	862	740	649	733	371
04/28/16	610	864	852	720	633	360
05/03/16	800	839	807	775	671	349
05/06/16	800	837	809	747	654	353
05/11/16	772	773	792	756	671	371
05/13/16	812	823	501	776	688	357
05/17/16	808	830	814	777	702	379
05/20/16	806	815	809	775	691	350
05/24/16	783	819	811	787	692	373
05/27/16	802	826	812	791	696	371
05/31/16	822	849	810	863	711	380
06/03/16	832	857	859	808	699	380
06/07/16	850	870	856	816	708	383
06/10/16	864	861	858	825	707	384
06/14/16	847	882	869	842	720	404
06/17/16	836	860	847	832	718	377
06/21/16	920	888	876	865	737	402
06/24/16	876	737	889	885	857	388
06/28/16	872	905	925	894	770	406
07/01/16	836	862	852	870	771	396
07/05/16	863	893	874	944	798	426
07/08/16	793	833	833	885	760	395
07/12/16	776	841	833	884	803	402
07/15/16	761	814	816	868	779	401
07/19/16	783	845	845	888	813	412
07/22/16	751	796	797	840	807	401
07/26/16	761	823	825	840	816	411
07/29/16	759	800	791	812	800	405
08/02/16	801	814	816	820	806	410
08/05/16	747	803	809	812	798	410
08/09/16	775	800	841	815	807	421
08/12/16	755	767	793	785	760	404
08/16/16	775	827	823	824	781	422
08/19/16	764	815	800	820	791	423
08/23/16	826	858	852	866	839	488
08/26/16	795	833	826	836	809	439
08/30/16	826	870	865	856	832	468
09/02/16	740	805	803	800	771	720
09/06/16	771	844	845	855	812	453
09/09/16	727	811	810	839	791	445
09/13/16	707	748	742	818	780	420
09/16/16	734	805	750	863	822	481
09/20/16	1196	829	749	858	816	448
09/23/16	1143	837	776	865	821	471
09/27/16	780	832	754	791	779	423
09/30/16	634	823	766	784	799	429

Table 4-2
Declez Basin: Surface Water and Lysimeter Results
Total Organic Carbon (mg/L)

Date	Surface Water	Lysimeter Depth (ft bgs)				
	0	5	10	15	25	35
01/08/16	5.4	3.1	3.1	2.1	1.8	1.6
01/13/16	3.1	2.1	3.3	2.1	1.6	1.5
01/20/16	5.7	2.1	2.7	1.7	1.7	1.5
01/27/16	5.8	4.0	2.0	1.5	1.4	1.5
02/04/16	8.0	3.6	2.4	1.6	1.4	1.5
02/11/16	7.8	4.0	2.9	1.6	1.3	1.3
02/17/16	8.3	4.5	3.0	1.8	1.4	1.5
02/25/16	7.0	4.5	3.0	2.0	1.7	0.1
03/03/16	6.9	4.3	3.3	2.3	2.1	1.2
03/09/16	7.6	4.5	3.5	2.6	2.4	1.5
03/16/16	8.1	4.5	3.7	2.7	2.3	1.5
03/24/16	5.8	3.6	3.7	2.8	2.2	1.4
03/31/16	9.4	3.4	3.6	2.8	2.1	1.3
04/07/16	9.3	5.3	5.8	2.9	2.0	1.3
04/13/16	7.8	6.0	6.0	3.0	2.0	1.3
04/20/16	6.0	3.9	5.4	3.3	2.2	1.3
04/28/16	12.0	4.0	4.0	3.3	2.0	1.3
05/03/16	6.2	4.1	4.4	3.3	2.2	1.4
05/11/16	6.5	4.3	4.3	3.4	2.3	1.3
05/17/16	5.4	3.6	3.8	3.1	2.3	1.2
05/24/16	5.7	3.5	3.4	3.1	2.5	1.3
05/31/16	6.2	3.7	3.6	3.0	2.6	1.2
06/07/16	5.8	3.8	3.7	2.9	2.6	1.3
06/14/16	5.6	3.8	3.8	3.0	2.6	1.4
06/21/16	6.3	3.8	3.7	3.0	2.5	1.3
06/28/16	6.4	4.8	4.1	3.2	2.7	1.1
07/05/16	5.5	3.6	3.8	3.2	2.5	1.0
07/12/16	5.6	3.4	3.4	2.9	2.6	1.1
07/19/16	6.0	3.3	3.3	2.9	2.6	1.1
07/26/16	6.8	3.7	3.6	2.9	2.6	1.2
08/02/16	6.9	3.6	3.7	2.9	2.7	1.2
08/09/16	6.8	3.3	3.5	2.8	2.4	1.0
08/16/16	5.9	3.1	3.3	2.7	2.3	1.0
08/23/16	6.8	3.4	3.2	2.8	2.5	1.1
08/30/16	6.5	3.4	3.1	3.0	2.6	1.1
09/06/16	6.3	3.3	3.2	3.0	2.6	1.1
09/13/16	6.7	2.7	2.8	2.7	2.4	0.8
09/20/16	18.9	2.7	3.1	3.0	2.6	1.1
09/27/16	8.7	2.2	2.7	2.9	2.4	1.0

Depth Profile (Figure 5-1), 20-Week Average

Depth	0	5	10	15	25	35
Avg TOC	6.5	3.7	3.6	3.0	2.5	1.1

Notes:
Shaded dates are used for the 20-week averges on Table 4-6 and/or Figure 5-1

Table 4-3
Declez Basin: Surface Water and Lysimeter Results
Nitrogen Speciation (mg/L)

Date	Surface Water					Lysimeter Depth (ft bgs)																									
	0					5					10					15					25					35				
	NH_3-N	NO_3-N	NO_2-N	TKN	TN	NH_3-N	NO_3-N	NO_2-N	TKN	TN	NH_3-N	NO_3-N	NO_2-N	TKN	TN	NH_3-N	NO_3-N	NO_2-N	TKN	TN	NH_3-N	NO_3-N	NO_2-N	TKN	TN	NH_3-N	NO_3-N	NO_2-N	TKN	TN
01/06/16	0.2	0.7	<0.05	1.6	2.3																<0.1	3.0	0.16	0.6	3.7					
01/08/16						<0.1	6.7	0.12	0.9	7.7	<0.1	3.9	0.12	0.7	4.7	<0.1	6.3	0.18	<0.5	6.8						<0.1	0.6	0.22	<0.5	0.8
01/13/16	0.2	0.5	<0.05	1.0	1.5	<0.1	1.5	0.09	<0.5	2.1	<0.1	1.2	0.09	<0.5	2.2	<0.1	5.0	0.12	<0.5	5.8	<0.1	4.2	0.13	<0.5	5.1	<0.1	1.4	0.15	0.7	2.2
01/20/16	0.1	2.4	0.12	<0.5	2.9	<0.1	2.4	0.10	<0.5	2.5	<0.1	0.7	0.09	<0.5	0.8	<0.1	3.5	0.12	<0.5	3.6	<0.1	5.1	0.11	<0.5	5.2	<0.1	1.5	0.19	<0.5	1.7
01/27/16	<0.1	6.9	0.09	1.0	8.0	<0.1	4.0	0.11	<0.5	5.0	<0.1	2.1	0.09	<0.5	3.0	<0.1	2.2	0.12	<0.5	2.3	<0.1	4.0	0.11	<0.5	4.1	<0.1	1.6	0.17	<0.5	1.8
02/04/16	0.3	4.3	0.09	2.5	6.9	<0.1	5.5	0.12	1.2	6.8	<0.1	2.8	0.10	0.6	3.5	<0.1	2.2	0.12	0.7	3.0	<0.1	3.6	0.11	0.5	4.2	<0.1	1.5	0.21	0.6	2.3
02/11/16	<0.1	2.5	0.11	1.8	4.4	<0.1	3.6	0.10	0.7	4.4	<0.1	3.0	0.11	1.0	4.1	<0.1	2.1	0.13	0.7	3.0	<0.1	3.1	0.11	0.6	3.8	<0.1	1.6	0.20	0.6	2.4
02/17/16	<0.1	0.8	0.12	1.7	2.6	<0.1	0.6	0.16	1.0	1.8	<0.1	1.6	0.13	<0.5	1.9	<0.1	1.8	0.15	<0.5	2.2	<0.1	2.7	0.13	0.6	3.4	<0.1	1.7	0.23	0.6	2.5
02/25/16	0.1	2.1	0.05	1.8	3.9	<0.1	1.2	0.05	<0.5	1.6	<0.1	1.2	<0.05	<0.5	1.7	<0.1	1.6	<0.05	<0.5	1.7	<0.1	2.5	<0.05	<0.5	3.1	<0.1	2.0	0.13	<0.5	2.6
03/03/16	0.4	2.8	0.12	2.4	5.4	<0.1	0.7	0.13	0.9	1.7	<0.1	0.3	<0.05	0.6	0.9	<0.1	1.0	<0.05	0.7	1.7	<0.1	1.9	<0.05	0.6	2.5	<0.1	1.8	0.15	0.6	2.5
03/09/16	0.3	1.3	0.06	2.0	3.4	<0.1	0.9	0.05	0.9	1.9	<0.1	0.2	<0.05	0.7	0.9	<0.1	0.7	<0.05	0.9	1.6	<0.1	1.6	<0.05	0.7	2.3	<0.1	1.9	0.16	0.6	2.6
03/16/16	0.1	0.8	<0.05	1.3	2.1	<0.1	0.6	0.07	0.9	1.6	<0.1	0.1	<0.05	0.7	0.8	<0.1	0.4	<0.05	<0.5	0.6	<0.1	1.3	<0.05	<0.5	1.6	<0.1	1.9	0.14	<0.5	2.2
03/24/16	<0.1	3.5	<0.05	0.5	4.1	<0.1	2.6	<0.05	<0.5	2.9	<0.1	1.9	<0.05	<0.5	2.3	<0.1	0.2	<0.05	<0.5	<0.6	<0.1	1.0	<0.05	<0.5	1.0	<0.1	3.4	<0.05	<0.5	3.6
03/31/16	0.1	2.7	0.10	1.9	4.7	<0.1	4.3	<0.05	1.2	5.5	<0.1	3.7	<0.05	1.7	5.4	<0.1	0.3	<0.05	0.9	1.3	<0.1	0.9	<0.05	1.1	2.0	<0.1	2.0	0.14	1.1	3.3
04/07/16	<0.1	1.8	0.11	2.4	4.3	<0.1	2.6	0.09	<0.5	3.1	<0.1	0.7	0.11	<0.5	0.8	<0.1	0.2	<0.05	<0.5	<0.6	<0.1	0.7	<0.05	<0.5	1.7	<0.1	2.0	0.13	0.8	2.9
04/13/16	<0.1	6.2	<0.05	1.0	7.2	0.1	0.6	<0.05	0.9	1.5	0.1	<0.1	<0.05	0.9	0.9	<0.1	<0.1	<0.05	0.6	<0.6										
04/14/16																					<0.1	0.9	<0.05	0.7	1.6	<0.1	2.1	0.14	0.6	2.8
04/20/16	<0.1	5.5	<0.05	0.7	6.3	<0.1	4.7	<0.05	0.9	5.6	<0.1	1.1	<0.05	0.6	1.8	<0.1	<0.1	<0.05	<0.5	<0.6	<0.1	0.4	<0.05	<0.5	<0.6	<0.1	2.1	0.13	<0.5	2.3
04/28/16	0.3	2.6	0.18	2.4	5.2	<0.1	4.9	0.05	0.7	5.6	<0.1	4.7	0.09	0.8	5.5	<0.1	0.3	<0.05	0.6	0.9	<0.1	0.3	<0.05	0.5	0.8	<0.1	2.2	0.12	<0.5	2.6
05/03/16	<0.1	7.1	0.05	1.7	8.9	0.1	7.1	0.10	1.3	8.5	<0.1	5.4	0.18	1.2	6.8	<0.1	0.8	<0.05	1.2	2.0	<0.1	0.1	<0.05	0.6	0.7	<0.1	2.3	0.13	<0.5	2.8
05/06/16	<0.1	6.3	0.05	1.2	7.6	<0.1	7.6	0.07	1.2	8.9	<0.1	5.1	0.17	0.7	6.0	<0.1	1.5	<0.05	0.6	2.2	<0.1	0.1	<0.05	0.6	0.8	<0.1	2.5	0.12	<0.5	3.0
05/11/16	<0.1	5.1	<0.05	1.2	6.3	<0.1	5.9	<0.05	0.9	6.8	<0.1	5.4	<0.05	0.8	6.2	<0.1	1.6	<0.05	0.6	2.2	<0.1	0.1	<0.05	<0.5	<0.6	<0.1	2.5	<0.05	<0.5	2.8
05/13/16	<0.1	5.0	0.05	1.5	6.5	0.1	5.4	0.08	1.1	6.6	<0.1	3.8	0.16	1.0	5.0	<0.1	1.6	<0.05	0.6	2.2	<0.1	0.1	<0.05	<0.5	<0.6	<0.1	2.5	0.11	<0.5	2.8
05/17/16	<0.1	5.3	<0.05	1.0	6.3	<0.1	5.5	<0.05	0.7	6.2	<0.1	4.4	<0.05	0.5	4.9	<0.1	1.6	<0.05	0.5	2.1	<0.1	0.1	<0.05	<0.5	<0.6	<0.1	2.7	<0.05	<0.5	3.1
05/20/16	<0.1	4.8	<0.05	1.2	6.0	<0.1	4.4	<0.05	1.1	5.5	<0.1	4.7	<0.05	0.6	5.3	<0.1	1.4	<0.05	0.5	1.9	<0.1	0.1	<0.05	<0.5	<0.6	<0.1	2.6	<0.05	<0.5	2.8
05/24/16	<0.1	4.9	<0.05	1.0	5.9	<0.1	4.8	<0.05	0.9	5.7	<0.1	4.4	<0.05	1.0	5.4	<0.1	1.1	<0.05	<0.5	1.4	<0.1	<0.1	<0.05	0.1	<0.6	<0.1	2.8	<0.05	<0.5	3.3
05/27/16	<0.1	4.9	<0.05	1.5	6.4	<0.1	5.3	<0.05	0.6	5.9	<0.1	5.0	<0.05	0.9	5.9	<0.1	1.2	<0.05	0.8	2.0	<0.1	0.1	<0.05	1.0	1.1	<0.1	2.8	<0.05	0.6	3.4
05/31/16	<0.1	4.7	<0.05	1.6	6.3	<0.1	5.8	<0.05	1.0	6.8	<0.1	4.7	<0.05	0.8	5.5	<0.1	1.1	<0.05	0.7	1.8	<0.1	0.1	<0.05	0.9	1.0	<0.1	2.8	<0.05	0.8	3.6
06/03/16	<0.1	4.4	<0.05	1.0	5.4	<0.1	3.7	<0.05	0.6	4.3	<0.1	4.1	<0.05	0.6	4.7	<0.1	1.2	<0.05	0.5	1.7	<0.1	0.1	<0.05	0.5	0.6	<0.1	2.9	<0.05	0.6	3.5
06/07/16	<0.1	4.1	<0.05	1.5	5.6	<0.1	3.6	0.06	0.7	4.4	<0.1	3.3	0.07	0.9	4.3	<0.1	1.0	<0.05	0.9	2.0	<0.1	<0.1	<0.05	0.8	0.9	<0.1	3.1	0.08	0.8	4.0
06/10/16	<0.1	4.7	<0.05	1.1	5.8	<0.1	3.5	<0.05	0.7	4.2	<0.1	3.5	<0.05	0.9	4.4	<0.1	0.8	<0.05	<0.5	1.2	<0.1	<0.1	<0.05	0.7	0.7	<0.1	3.0	<0.05	<0.5	3.1
06/14/16	<0.1	3.9	<0.05	0.7	4.6	<0.1	3.6	<0.05	0.7	4.3	<0.1	2.3	<0.05	0.6	2.9	<0.1	0.7	<0.05	0.6	1.3	<0.1	<0.1	<0.05	0.1	<0.6	<0.1	3.1	<0.05	<0.5	3.1
06/17/16	<0.1	3.5	<0.05	1.6	5.1	<0.1	3.2	<0.05	1.1	4.3	<0.1	3.2	<0.05	0.9	4.1	<0.1	0.8	<0.05	0.9	1.7	<0.1	<0.1	<0.05	0.8	0.8	<0.1	3.0	<0.05	<0.5	3.5
06/21/16	<0.1	3.0	<0.05	1.7	4.7	<0.1	1.6	<0.05	1.5	3.1	<0.1	1.0	<0.05	1.3	2.3	<0.1	0.6	<0.05	1.0	1.6	<0.1	<0.1	<0.05	0.9	0.9	<0.1	3.2	0.07	1.1	4.4
06/24/16	<0.1	7.8	<0.05	0.9	8.7	<0.1	3.2	<0.05	<0.5	3.3	<0.1	0.2	<0.05	<0.5	1.2	<0.1	<0.1	<0.05	<0.5	0.6	<0.1	0.2	<0.05	<0.5	0.8	<0.1	<0.1	<0.05	0.6	<0.6
06/28/16	<0.1	7.1	<0.05	1.3	8.4	<0.1	3.9	<0.05	1.1	5.0	<0.1	0.1	<0.05	1.0	1.1	<0.1	<0.1	<0.05	<0.5	<0.6	<0.1	<0.1	<0.05	<0.5	<0.6	<0.1	3.1	0.08	<0.5	3.4
07/01/16	<0.1	4.7	<0.05	1.3	6.0	<0.1	5.6	<0.05	1.0	6.6	<0.1	3.5	<0.05	0.9	4.4	<0.1	0.2	<0.05	0.5	0.7	<0.1	<0.1	<0.05	0.7	0.7	<0.1	3.1	<0.05	0.5	3.6
07/05/16	<0.1	6.7	<0.05	1.5	<0.6	<0.1	5.8	<0.05	0.7	6.6	<0.1	4.8	<0.05	0.7	5.6	<0.1	0.2	<0.05	0.6	0.9	<0.1	<0.1	<0.05	0.7	0.7	<0.1	3.1	0.09	0.6	3.8
07/08/16	<0.1	6.0	0.08	1.3	7.4	<0.1	6.1	<0.05	0.8	6.9	<0.1	5.7	<0.05	1.1	6.8	<0.1	0.5	<0.05	1.0	1.5	<0.1	<0.1	<0.05	<0.5	<0.6	<0.1	3.1	0.08	<0.5	3.6
07/12/16	<0.1	5.7	0.07	1.4	7.2	<0.1	8.7	<0.05	1.2	9.9	<0.1	5.7	<0.05	1.1	6.9	<0.1	1.1	<0.05	1.0	2.2	<0.1	<0.1	<0.05	0.9	0.9	<0.1	3.2	0.09	0.8	4.1
07/15/16	<0.1	5.9	0.09	2.1	8.1	0.3	6.4	<0.05	1.5	7.9	<0.1	5.5	<0.05	1.1	6.8	<0.1	1.4	<0.05	1.3	2.7	<0.1	<0.1	<0.05	1.1	1.1	<0.1	3.4	0.09	0.8	4.3
07/19/16	<0.1	5.9	0.09	<0.5	6.5	<0.1	6.3	<0.05	0.9	7.2	<0.1	5.9	<0.05	0.7	6.7	<0.1	1.4	<0.05	0.6	2.0	<0.1	<0.1	<0.05	<0.5	<0.6	<0.1	3.3	0.10	<0.5	3.7
07/22/16	<0.1	5.2	0.12	1.6	6.9	<0.1	5.9	<0.05	0.8	6.8	<0.1	5.5	<0.05	1.0	6.6	<0.1	1.7	<0.05	0.9	2.7	<0.1	<0.1	<0.05	0.8	0.9	<0.1	3.1	0.10	<0.5	3.6
07/26/16	<0.1	5.0	0.12	1.8	6.9	<0.1	5.6	<0.05	1.0	6.6	<0.1	5.3	<0.05	0.8	6.2	<0.1	1.7	<0.05	0.8	2.5	<0.1	<0.1	<0.05	0.9	0.9	<0.1	3.2	0.09	0.5	3.8
07/29/16	<0.1	4.8	0.14	1.6	6.6	<0.1	5.8	<0.05	0.7	6.5	<0.1	4.6	<0.05	0.5	5.3	<0.1	1.8	<0.05	<0.5	2.1	<0.1	<0.1	<0.05	<0.5	<0.6	<0.1	3.1	0.08	<0.5	3.6
08/02/16	<0.1	4.7	0.12	1.8	6.6	<0.1	5.6	<0.05	1.3	6.9	<0.1	5.3	<0.05	1.0	6.4	<0.1	1.6	<0.05	0.9	2.5	<0.1	0.3	<0.05	0.7	1.0	<0.1	4.0	0.08	<0.5	4.6
08/05/16	<0.1	3.9	0.09	1.8	5.8	<0.1	4.5	<0.05	0.8	5.3	<0.1	4.6	<0.05	0.5	5.2	<0.1	1.8	<0.05	<0.5	2.1	<0.1	<0.1	<0.05	<0.5	<0.6	<0.1	3.1	0.08	<0.5	3.2
08/09/16	<0.1	4.0	0.18	1.0	5.1	<0.1	4.6	<0.05	1.0	5.6	<0.1	3.1	<0.05	0.6	3.9	<0.1	1.3	<0.05	1.0	2.3	<0.1	<0.1	<0.05	0.6	0.6	<0.1	2.8	0.09	<0.5	3.2
08/12/16	<0.1	5.9	0.13	1.4	7.5	<0.1	6.0	0.06	<0.5	6.5	<0.1	4.7	0.13	<0.5	5.4	<0.1	1.4	<0.05	<0.5	1.5	<0.1	0.1	<0.05	<0.5	<0.6	<0.1	3.0	0.08	<0.5	3.4
08/16/16	<0.1	6.4	0.13	1.5	8.1	<0.1	6.4	<0.05	0.7	7.1	<0.1	5.2	<0.05	0.5	5.8	<0.1	1.5	<0.05	0.5	2.1	<0.1	0.1	<0.05	<0.5	<0.6	<0.1	3.0	0.08	<0.5	3.1
08/19/16	<0.1	6.1	0.12	2.8	9.0	<0.1	4.9	<0.05	1.0	5.9	<0.1	5.7	<0.05	0.9	6.6	<0.1	1.4	<0.05	<0.5	1.7	<0.1	0.1	<0.05	<0.5	<0.6	<0.1	2.9	0.06	<0.5	3.2
08/23/16	<0.1	6.1	0.11	1.1	7.3	<0.1	4.4	<0.05	<0.5	4.8	<0.1	5.1	<0.05	<0.5	5.3	<0.1	1.6	<0.05	<0.5	2.2	<0.1	0.1	<0.05	<0.5	<0.6	<0.1	3.0	0.06	<0.5	3.5
08/26/16	<0.1	5.6	0.11	1.0	6.8	<0.1	4.3	0.05	1.1	5.5	<0.1	5.0	0.08	1.0	6.1	<0.1	0.9	<0.05	0.9	1.8	<0.1	<0.1	<0.05	0.7	0.7	<0.1	3.0	0.06	<0.5	3.2
08/30/16	<0.1	5.5	0.10	1.9	7.5	<0.1	4.5	<0.05	1.1	5.7	<0.1	5.3	<0.05	0.7	6.1	<0.1	1.1	<0.05	0.8	1.9	<0.1	<0.1	<0.05	0.6	0.6	<0.1	2.9	<0.05	<0.5	3.0
09/02/16	<0.1	5.0	0.10	1.5	6.6	<0.1	3.7	0.08	0.8	4.6	<0.1	4.8	0.06	0.6	5.5	<0.1	0.8	<0.05	0.6	1.4	<0.1	0.1	<0.05	<0.5	<0.6	<0.1	2.7	<0.05	<0.5	2.9
09/06/16	<0.1	4.6	0.11	1.9	6.6	<0.1	4.8	0.09	1.7	6.6	<0.1	5.3	0.08	1.4	6.8	<0.1	0.9	<0.05	0.5	1.5	<0.1	0.2	<0.05	0.6	0.9	<0.1	2.7	<0.05	<0.5	2.8
09/09/16	<0.1	4.6	0.12	1.4	6.1	<0.1	5.7	<0.05	0.6	6.4	<0.1	5.8	<0.05	0.5	6.3	<0.1	0.5	<0.05	0.7	1.2	<0.1	0.1	<0.05	<0.5	<0.6	<0.1	2.7	<0.05	0.5	3.2
09/13/16	<0.1	3.7	0.15	2.1	5.9	<0.1	4.0	<0.05	<0.5	4.4	<0.1	4.0	<0.05	<0.5	4.8	<0.1	0.7	<0.05	<0.5	1.2	<0.1	0.1	<0.05	<0.5	0.6	<0.1	3.0	<0.05	<0.5	3.3
09/16/16	<0.1	2.3	0.14	1.9	4.3	<0.1	3.1	<0.05	0.9	4.0	<0.1	2.2	<0.05	1.0	3.3	<0.1	0.4	<0.05	0.8	1.2	<0.1	<0.1	<0.05	0.8	0.8	<0.1	2.8	<0.05	<0.5	3.9
09/20/16	<0.1	0.9	0.17	3.1	4.2	<0.1	2.8	<0.05	<0.5	3.2	<0.1	1.0	<0.05	<0.5	2.0	<0.1	0.1	<0.05	<0.5	0.6	<0.1	<0.1	<0.05	<0.5	1.1	<0.1	2.7	<0.05	1.0	3.7
09/23/16	0.2	1.4	0.20	4.4	6.0	<0.1	2.9	<0.05	0.8	3.7	<0.1	1.0	<0.05	0.7	1.7	<0.1	<0.1	<0.05	0.5	<0.6	<0.1	<0.1	<0.05	<0.5	<0.6	<0.1	2.8	<0.05	<0.5	3.1
09/27/16	0.1	5.7	0.09	2.0	7.7	<0.1	3.1	<0.05	0.9	4.0	<0.1	1.3	<0.05	0.5	1.8	<0.1	<0.1	<0.05	0.7	0.7	<0.1	<0.1	<0.05	0.6	0.6	<0.1	2.6	<0.05	<0.5	3.1
09/30/16	0.3	0.4	0.11	3.8	4.3	<0.1	2.9	<0.05	0.7	3.6	<0.1	1.4	<0.05	0.6	2.0	<0.1	0.1	<0.05	<0.5	<0.6	<0.1	<0.1	<0.05	<0.5	<0.6	<0.1	2.6	<0.05	<0.5	2.7

Notes: Empty cell indicates insufficient sample from lysimeter, sampled later in week.

Table 4-4
Declez Basin: Surface Water and Lysimeter Results
Total Nitrogen (mg/L)

Date	Surface Water	Lysimeter Depth (ft bgs)				
	0	5	10	15	25	35
01/08/16	2.3	7.7	4.7	6.8	3.7	0.8
01/13/16	1.5	2.1	2.2	5.8	5.1	2.2
01/20/16	2.9	2.5	0.8	3.6	5.2	1.7
01/27/16	8.0	5.0	3.0	2.3	4.1	1.8
02/04/16	6.9	6.8	3.5	3.0	4.2	2.3
02/11/16	4.4	4.4	4.1	3.0	3.8	2.4
02/17/16	2.6	1.8	1.9	2.2	3.4	2.5
02/25/16	3.9	1.6	1.7	1.7	3.1	2.6
03/03/16	5.4	1.7	0.9	1.7	2.5	2.5
03/09/16	3.4	1.9	0.9	1.6	2.3	2.6
03/16/16	2.1	1.6	0.8	0.6	1.6	2.2
03/24/16	4.1	2.9	2.3	<0.6	1.0	3.6
03/31/16	4.7	5.5	5.4	1.3	2.0	3.3
04/07/16	4.3	3.1	0.8	<0.6	1.7	2.9
04/13/16	7.2	1.5	0.9	<0.6	1.6	2.8
04/20/16	6.3	5.6	1.8	<0.6	<0.6	2.3
04/28/16	5.2	5.6	5.5	0.9	0.8	2.6
05/03/16	8.9	8.5	6.8	2.0	0.7	2.8
05/06/16	7.6	8.9	6.0	2.2	0.8	3.0
05/11/16	6.3	6.8	6.2	2.2	<0.6	2.8
05/13/16	6.5	6.6	5.0	2.2	<0.6	2.8
05/17/16	6.3	6.2	4.9	2.1	<0.6	3.1
05/20/16	6.0	5.5	5.3	1.9	<0.6	2.8
05/24/16	5.9	5.7	5.4	1.4	<0.6	3.3
05/27/16	6.4	5.9	5.9	2.0	1.1	3.4
05/31/16	6.3	6.8	5.5	1.8	1.0	3.6
06/03/16	5.4	4.3	4.7	1.7	0.6	3.5
06/07/16	5.6	4.4	4.3	2.0	0.9	4.0
06/10/16	5.8	4.2	4.4	1.2	0.7	3.1
06/14/16	4.6	4.3	2.9	1.3	<0.6	3.1
06/17/16	5.1	4.3	4.1	1.7	0.8	3.5
06/21/16	4.7	3.1	2.3	1.6	0.9	4.4
06/24/16	8.7	3.3	1.2	0.6	0.8	0.6
06/28/16	8.4	5.0	1.1	<0.6	<0.6	3.4
07/01/16	6.0	6.6	4.4	0.7	0.7	3.6
07/05/16	8.2	6.6	5.6	0.9	0.7	3.8
07/08/16	7.4	6.9	6.8	1.5	<0.6	3.6
07/12/16	7.2	9.9	6.9	2.2	0.9	4.1
07/15/16	8.1	7.9	6.8	2.7	1.1	4.3
07/19/16	6.5	7.2	6.7	2.0	<0.6	3.7
07/22/16	6.9	6.8	6.6	2.7	0.9	3.6
07/26/16	6.9	6.6	6.2	2.5	0.9	3.8
07/29/16	6.6	6.5	5.3	2.1	<0.6	3.6
08/02/16	6.6	6.9	6.4	2.5	1.0	4.6
08/05/16	5.8	5.3	5.2	2.1	<0.6	3.2
08/09/16	5.1	5.6	3.9	2.3	0.6	3.2
08/12/16	7.5	6.5	5.4	1.5	<0.6	3.4
08/16/16	8.1	7.1	5.8	2.1	<0.6	3.1
08/19/16	9.0	5.9	6.6	1.7	<0.6	3.2
08/23/16	7.3	4.8	5.3	2.2	<0.6	3.5
08/26/16	6.8	5.5	6.1	1.8	0.7	3.2
08/30/16	7.5	5.7	6.1	1.9	0.6	3.0
09/02/16	6.6	4.6	5.5	1.4	<0.6	2.9
09/06/16	6.6	6.6	6.8	1.5	0.9	2.8
09/09/16	6.1	6.4	6.3	1.2	<0.6	3.2
09/13/16	5.9	4.4	4.8	1.2	0.6	3.3
09/16/16	4.3	4.0	3.3	1.2	0.8	3.9
09/20/16	4.2	3.2	2.0	0.6	1.1	3.7
09/23/16	6.0	3.7	1.7	<0.6	<0.6	3.1
09/27/16	7.7	4.0	1.8	0.7	0.6	3.1
09/30/16	4.3	3.6	2.0	<0.6	<0.6	2.7

Depth Profile (Figure 5-1) 20-Week Average

Depth (feet)	0	5	10	15	25	35
Average TN	6.7	6.0	5.3	1.8	0.6	3.4

Notes:

Shaded dates are used for the 20-week averges on Table 4-6 and/or Figure 5-1

Table 4-5
Declez Basin: Monitoring Well DCZ-1/1
Water Quality Results

Monitoring Well DCZ - 1/1							
Date	EC (μmhos/cm)	TOC mg/L	NH_3-N mg/L	NO_2-N mg/L	NO_3-N mg/L	TKN mg/L	TN mg/L
01/02/15	470	0.95	<0.1	<0.05	1.6	0.6	2.2
01/16/15	461	0.67	<0.1	<0.05	1.5	<0.5	1.5
01/21/15	467	0.90	<0.1	<0.05	1.5	<0.5	1.5
04/23/15	494	1.13	<0.1	0.13	1.1	<0.5	1.2
06/25/15	528	0.68	0.4	0.10	3.6	<0.5	3.7
07/23/15	520	0.89	<0.1	0.09	1.0	<0.5	1.1
08/20/15	510	0.90	<0.1	<0.05	1.0	<0.5	1.0
09/22/15	500	0.96	<0.1	0.09	1.3	<0.5	1.4
10/29/15	496	0.63	<0.1	<0.05	1.1	<0.5	1.1
02/16/16	446	0.76	<0.1	0.16	1.7	0.6	2.5
05/09/16	749	0.81	0.2	<0.05	1.5	<0.5	1.5
06/30/16	447	0.72	<0.1	<0.05	1.7	<0.5	1.7
07/06/16	729	0.58	<0.1	<0.05	2.2	0.7	2.9
07/13/16	427	0.73	<0.1	<0.05	2.4	<0.5	2.4
07/20/16	443	0.58	<0.1	<0.05	2.5	<0.5	2.5
07/27/16	434	0.72	<0.1	<0.05	2.6	<0.5	2.6
08/03/16	423	0.64	<0.1	<0.05	2.7	<0.5	2.7
08/10/16	423	0.78	<0.1	<0.05	2.6	<0.5	2.6
08/17/16	423	0.71	<0.1	<0.05	2.8	<0.5	2.8
08/24/16	418	0.68	<0.1	<0.05	2.7	<0.5	2.7
08/31/16	417	0.84	<0.1	<0.05	2.7	<0.5	2.7
09/07/16	407	0.78	<0.1	<0.05	2.5	0.9	3.4
09/14/16	396	0.75	<0.1	<0.05	2.4	<0.5	2.4
09/21/16	432	0.80	<0.1	<0.05	2.5	0.6	3.1
09/28/16	416	0.82	<0.1	<0.05	2.5	<0.5	2.5

Table 5-1
Declez Basin: SAT Removal Efficiencies for TOC and TN

Event	Date	Travel Time (days)
Start of RW Recharge in Basin	12/23/15	
Storm January 5 to 8, 2016	01/05/16	
Stormwater arrival at 25-ft lysimeter	02/04/16	30
Resumed Recycled Water	01/13/16	
Recycled Water Returns to 25-ft Lysimeter	02/17/16	35
Storm March 6 to 12, 2016	03/06/16	
Stormwater arrival at 25-ft lysimeter	03/31/16	25
Average Travel Time		30

	SAT Removal Efficiency for TOC		
	Surface Water TOC (mg/L) 20 weeks (April 13 to August 23, '16)	**25-foot Lysimeter TOC (mg/L)** 20 weeks (May 17 to Sept 27, '16)	**SAT Eff. (%)**
20-Week Average (at end of the Start-up Period)	6.5	2.5	62%

The 20-week average for TOC for the 25-foot deep lysimeter was used to develop the initial RWC limit for Declez Basin.

	SAT Removal Efficiency for TN		
	Surface Water TN (mg/L) 20 weeks (April 13 to August 23, '16)	**25-foot Lysimeter TN (mg/L)** 20 weeks (May 17 to Sept 27, '16)	**SAT Eff. (%)**
20-Week Average (at end of the Start-up Period)	6.7	0.6	91%

Table 7-1
RWC Management Plan for Declez Basin
(120-month averaging period)
Calculation of Recycled Water Contribution (RWC) from Historical Diluent Water (DW) and Recycled Water (RW) Deliveries

Date		No. Mos. Since Initial RW Delivery	SW (AF)	MWD (AF)	Underflow (AF)	DW (AF)	DW 120-Month Total (AF)	RW (AF)	RW 120-Month Total (AF)	DW + RW 120-Month Total (AF)	RWC	Period
2005/06	Jul '05	-125	10.5	0.	0.	11.	11.	0.	0.	11.	0%	
	Aug '05	-124	10.5	0.	0.	11.	21.	0.	0.	21.	0%	
	Sep '05	-123	30.	0.	0.	30.	51.	0.	0.	51.	0%	
	Oct '05	-122	114.4	0.	0.	114.	165.	0.	0.	165.	0%	
	Nov '05	-121	30.	0.	0.	30.	195.	0.	0.	195.	0%	
	Dec '05	-120	30.	0.	0.	30.	225.	0.	0.	225.	0%	
	Jan '06	-119	35.3	0.	0.	35.	261.	0.	0.	261.	0%	
	Feb '06	-118	109.9	0.	0.	110.	371.	0.	0.	371.	0%	
	Mar '06	-117	190.6	0.	0.	191.	561.	0.	0.	561.	0%	
	Apr '06	-116	101.4	0.	0.	101.	663.	0.	0.	663.	0%	
	May '06	-115	57.6	0.	0.	58.	720.	0.	0.	720.	0%	
	Jun '06	-114	16.	0.	0.	16.	736.	0.	0.	736.	0%	
2006/07	Jul '06	-113	14.7	0.	0.	15.	751.	0.	0.	751.	0%	
	Aug '06	-112	19.9	0.	0.	20.	771.	0.	0.	771.	0%	
	Sep '06	-111	18.	0.	0.	18.	789.	0.	0.	789.	0%	
	Oct '06	-110	33.9	0.	0.	34.	823.	0.	0.	823.	0%	
	Nov '06	-109	31.	0.	0.	31.	854.	0.	0.	854.	0%	
	Dec '06	-108	89.8	0.	0.	90.	943.	0.	0.	943.	0%	
	Jan '07	-107	83.1	0.	0.	83.	1,026.	0.	0.	1,026.	0%	
	Feb '07	-106	147.	0.	0.	147.	1,173.	0.	0.	1,173.	0%	
	Mar '07	-105	21.	0.	0.	21.	1,194.	0.	0.	1,194.	0%	
	Apr '07	-104	88.	0.	0.	88.	1,282.	0.	0.	1,282.	0%	
	May '07	-103	18.	0.	0.	18.	1,300.	0.	0.	1,300.	0%	
	Jun '07	-102	0.	0.	0.	0.	1,300.	0.	0.	1,300.	0%	
2007/08	Jul '07	-101	0.	0.	0.	0.	1,300.	0.	0.	1,300.	0%	
	Aug '07	-100	6.	0.	0.	6.	1,306.	0.	0.	1,306.	0%	
	Sep '07	-99	33.	0.	0.	33.	1,339.	0.	0.	1,339.	0%	
	Oct '07	-98	14.	0.	0.	14.	1,353.	0.	0.	1,353.	0%	
	Nov '07	-97	108.	0.	0.	108.	1,461.	0.	0.	1,461.	0%	
	Dec '07	-96	77.	0.	0.	77.	1,538.	0.	0.	1,538.	0%	
	Jan '08	-95	256.	0.	0.	256.	1,794.	0.	0.	1,794.	0%	
	Feb '08	-94	146.	0.	0.	146.	1,940.	0.	0.	1,940.	0%	
	Mar '08	-93	27.	0.	0.	27.	1,967.	0.	0.	1,967.	0%	
	Apr '08	-92	13.	0.	0.	13.	1,980.	0.	0.	1,980.	0%	
	May '08	-91	36.	0.	0.	36.	2,016.	0.	0.	2,016.	0%	
	Jun '08	-90	14.	0.	0.	14.	2,030.	0.	0.	2,030.	0%	
2008/09	Jul '08	-89	19.	0.	0.	19.	2,049.	0.	0.	2,049.	0%	
	Aug '08	-88	4.	0.	0.	4.	2,053.	0.	0.	2,053.	0%	HISTORICAL
	Sep '08	-87	7.	0.	0.	7.	2,060.	0.	0.	2,060.	0%	
	Oct '08	-86	14.	0.	0.	14.	2,074.	0.	0.	2,074.	0%	
	Nov '08	-85	73.	0.	0.	73.	2,147.	0.	0.	2,147.	0%	
	Dec '08	-84	207.	0.	0.	207.	2,354.	0.	0.	2,354.	0%	
	Jan '09	-83	26.	0.	0.	26.	2,380.	0.	0.	2,380.	0%	
	Feb '09	-82	224.	0.	0.	224.	2,604.	0.	0.	2,604.	0%	
	Mar '09	-81	51.	0.	0.	51.	2,655.	0.	0.	2,655.	0%	
	Apr '09	-80	5.	0.	0.	5.	2,660.	0.	0.	2,660.	0%	
	May '09	-79	6.	0.	0.	6.	2,666.	0.	0.	2,666.	0%	
	Jun '09	-78	20.	0.	0.	20.	2,686.	0.	0.	2,686.	0%	
2009/10	Jul '09	-77	21.	0.	0.	21.	2,707.	0.	0.	2,707.	0%	
	Aug '09	-76	17.	0.	0.	17.	2,724.	0.	0.	2,724.	0%	
	Sep '09	-75	6.	0.	0.	6.	2,730.	0.	0.	2,730.	0%	
	Oct '09	-74	15.	0.	0.	15.	2,745.	0.	0.	2,745.	0%	
	Nov '09	-73	39.	0.	0.	39.	2,784.	0.	0.	2,784.	0%	
	Dec '09	-72	173.	0.	0.	173.	2,957.	0.	0.	2,957.	0%	
	Jan '10	-71	73.	0.	0.	73.	3,030.	0.	0.	3,030.	0%	
	Feb '10	-70	241.	0.	0.	241.	3,271.	0.	0.	3,271.	0%	
	Mar '10	-69	55.	0.	0.	55.	3,326.	0.	0.	3,326.	0%	
	Apr '10	-68	122.	0.	0.	122.	3,448.	0.	0.	3,448.	0%	
	May '10	-67	6.	0.	0.	6.	3,454.	0.	0.	3,454.	0%	
	Jun '10	-66	6.	0.	0.	6.	3,460.	0.	0.	3,460.	0%	
2010/11	Jul '10	-65	3.	0.	0.	3.	3,463.	0.	0.	3,463.	0%	
	Aug '10	-64	8.	0.	0.	8.	3,471.	0.	0.	3,471.	0%	
	Sep '10	-63	2.	0.	0.	2.	3,473.	0.	0.	3,473.	0%	
	Oct '10	-62	45.	0.	0.	45.	3,518.	0.	0.	3,518.	0%	
	Nov '10	-61	95.	0.	0.	95.	3,613.	0.	0.	3,613.	0%	
	Dec '10	-60	313.	0.	0.	313.	3,926.	0.	0.	3,926.	0%	
	Jan '11	-59	52.	0.	0.	52.	3,978.	0.	0.	3,978.	0%	
	Feb '11	-58	196.	0.	0.	196.	4,174.	0.	0.	4,174.	0%	
	Mar '11	-57	138.	0.	0.	138.	4,312.	0.	0.	4,312.	0%	
	Apr '11	-56	2.	0.	0.	2.	4,314.	0.	0.	4,314.	0%	
	May '11	-55	14.	0.	0.	14.	4,328.	0.	0.	4,328.	0%	
	Jun '11	-54	9.	0.	0.	9.	4,337.	0.	0.	4,337.	0%	

(Continued)
Table 7-1
RWC Management Plan for Declez Basin

(120-month averaging period)

Calculation of Recycled Water Contribution (RWC) from Historical Diluent Water (DW) and Recycled Water (RW) Deliveries

Date		No. Mos. Since Initial RW Delivery	SW (AF)	MWD (AF)	Underflow (AF)	DW (AF)	DW 120-Month Total (AF)	RW (AF)	RW 120-Month Total (AF)	DW + RW 120-Month Total (AF)	RWC	Period
2011/12	Jul '11	-53	81.	0.	0.	81.	4,418.	0.	0.	4,418.	0%	HISTORICAL
	Aug '11	-52	3.	0.	0.	3.	4,421.	0.	0.	4,421.	0%	
	Sep '11	-51	6.	0.	0.	6.	4,427.	0.	0.	4,427.	0%	
	Oct '11	-50	74.	0.	0.	74.	4,501.	0.	0.	4,501.	0%	
	Nov '11	-49	120.	0.	0.	120.	4,621.	0.	0.	4,621.	0%	
	Dec '11	-48	56.	0.	0.	56.	4,677.	0.	0.	4,677.	0%	
	Jan '12	-47	87.	0.	0.	87.	4,764.	65.	65.	4,829.	1%	
	Feb '12	-46	46.	0.	0.	46.	4,810.	0.	65.	4,875.	1%	
	Mar '12	-45	184.	0.	0.	184.	4,994.	0.	65.	5,059.	1%	
	Apr '12	-44	133.	0.	0.	133.	5,127.	0.	65.	5,192.	1%	
	May '12	-43	7.	0.	0.	7.	5,134.	0.	65.	5,199.	1%	
	Jun '12	-42	1.	0.	0.	1.	5,135.	0.	65.	5,200.	1%	
2012/13	Jul '12	-41	1.	0.	0.	1.	5,136.	0.	65.	5,201.	1%	
	Aug '12	-40	10.	0.	0.	10.	5,146.	0.	65.	5,211.	1%	
	Sep '12	-39	15.	0.	0.	15.	5,161.	0.	65.	5,226.	1%	
	Oct '12	-38	134.	0.	0.	134.	5,295.	0.	65.	5,360.	1%	
	Nov '12	-37	21.	0.	0.	21.	5,316.	0.	65.	5,381.	1%	
	Dec '12	-36	168.	0.	0.	168.	5,484.	0.	65.	5,549.	1%	
	Jan '13	-35	48.	0.	0.	48.	5,532.	0.	65.	5,597.	1%	
	Feb '13	-34	58.	0.	0.	58.	5,590.	0.	65.	5,655.	1%	
	Mar '13	-33	61.	0.	0.	61.	5,651.	0.	65.	5,716.	1%	
	Apr '13	-32	4.	0.	0.	4.	5,655.	0.	65.	5,720.	1%	
	May '13	-31	6.	0.	0.	6.	5,661.	0.	65.	5,726.	1%	
	Jun '13	-30	4	0	0.	4.	5,665.	0.	65.	5,730.	1%	
2013/14	Jul '13	-29	6.	0.	0.	6.	5,671.	0.	65.	5,736.	1%	
	Aug '13	-28	3.	0.	0.	3.	5,674.	0.	65.	5,739.	1%	
	Sep '13	-27	2.	0.	0.	2.	5,676.	0.	65.	5,741.	1%	
	Oct '13	-26	18.	0.	0.	18.	5,694.	0.	65.	5,759.	1%	
	Nov '13	-25	52.	0.	0.	52.	5,746.	0.	65.	5,811.	1%	
	Dec '13	-24	66.	0.	0.	66.	5,812.	0.	65.	5,877.	1%	
	Jan '14	-23	3.	98.6	0.	102.	5,914.	0.	65.	5,979.	1%	
	Feb '14	-22	24.	152.	0.	176.	6,090.	0.	65.	6,155.	1%	
	Mar '14	-21	56.	116.6	0.	173.	6,263.	0.	65.	6,328.	1%	
	Apr '14	-20	108.	7.2	0.	115.	6,378.	0.	65.	6,443.	1%	
	May '14	-19	1.	0.	0.	1.	6,379.	0.	65.	6,444.	1%	
	Jun '14	-18	2	0	0.	2.	6,381.	0.	65.	6,446.	1%	
2014/15	Jul '14	-17	2.	0.	0.	2.	6,383.	0.	65.	6,448.	1%	
	Aug '14	-16	72.	0.	0.	72.	6,455.	0.	65.	6,520.	1%	
	Sep '14	-15	30.	0.	0.	30.	6,485.	0.	65.	6,550.	1%	
	Oct '14	-14	3.	0.	0.	3.	6,488.	0.	65.	6,553.	1%	
	Nov '14	-13	100.	0.	0.	100.	6,588.	0.	65.	6,653.	1%	
	Dec '14	-12	315.	0.	0.	315.	6,903.	0.	65.	6,968.	1%	
	Jan '15	-11	47.	0.	0.	47.	6,950.	0.	65.	7,015.	1%	
	Feb '15	-10	106.	0.	0.	106.	7,056.	0.	65.	7,121.	1%	
	Mar '15	-9	15.	0.	0.	15.	7,071.	0.	65.	7,136.	1%	
	Apr '15	-8	41.	0.	0.	41.	7,112.	0.	65.	7,177.	1%	
	May '15	-7	99.	0.	0.	99.	7,211.	0.	65.	7,276.	1%	
	Jun '15	-6	3	0	0.	3.	7,214.	0.	65.	7,279.	1%	
2015/16	Jul '15	-5	49.	0.	0.	49.	7,252.	0.	65.	7,317.	1%	
	Aug '15	-4	3.	0.	0.	3.	7,245.	0.	65.	7,310.	1%	
	Sep '15	-3	147.	0.	0.	147.	7,362.	0.	65.	7,427.	1%	
	Oct '15	-2	36.	0.	0.	36.	7,283.	0.	65.	7,348.	1%	
	Nov '15	-1	4.	0.	0.	4.	7,257.	0.	65.	7,322.	1%	
	Dec '15	0	49.	0.	904.	953.	8,180.	50.	115.	8,295.	1%	START-UP
	Jan '16	1	158.	0.	904.	1,062.	9,207.	78.	193.	9,400.	2%	
	Feb '16	2	34.	0.	904.	938.	10,035.	153.	346.	10,381.	3%	
	Mar '16	3	92.	0.	904.	996.	10,840.	126.	472.	11,312.	4%	
	Apr '16	4	20.	0.	904.	924.	11,662.	133.	605.	12,267.	5%	
	May '16	5	12.	0.	904.	916.	12,520.	228.	833.	13,353.	6%	
	Jun '16	6	3.	0.	904.	907.	13,411.	201.	1,034.	14,445.	7%	
2016/17	Jul '16	7	0.	0.	904.	904.	14,300.	201.	1,235.	15,535.	8%	
	Aug '16	8	0.	0.	904.	904.	15,184.	261.	1,496.	16,680.	9%	
	Sep '16	9	1.	0.	904.	905.	16,071.	52.	1,548.	17,619.	9%	
	Oct '16	10	47.	0.	904.	951.	16,988.	0.	1,548.	18,536.	8%	
	Nov '16	11	55.	0.	904.	959.	17,915.	0.	1,548.	19,463.	8%	
	Dec '16	12	217.	0.	904.	1,121.	18,946.	0.	1,548.	20,494.	8%	
	Jan '17	13	167.	0.	904.	1,071.	19,934.	0.	1,548.	21,482.	7%	
	Feb '17	14	70.	0.	904.	974.	20,761.	0.	1,548.	22,309.	7%	
	Mar '17	15	20.	0.	904.	924.	21,663.	0.	1,548.	23,211.	7%	
	Apr '17	16	3.	0.	904.	907.	22,482.	0.	1,548.	24,030.	6%	
	May '17	17	24.	0.	904.	928.	23,392.	0.	1,548.	24,940.	6%	
	Jun '17	18	3.	99.	904.	1,006.	24,398.	0.	1,548.	25,946.	6%	

(Continued)

Table 7-1

RWC Management Plan for Declez Basin

(120-month averaging period)

Calculation of Recycled Water Contribution (RWC) from Historical Diluent Water (DW) and Recycled Water (RW) Deliveries

Date		No. Mos. Since Initial RW Delivery	SW (AF)	MWD (AF)	Underflow (AF)	DW (AF)	DW 120-Month Total (AF)	RW (AF)	RW 120-Month Total (AF)	DW + RW 120-Month Total (AF)	RWC	Period
2017/18	Jul '17	19	7.	45.	904.	956.	25,353.	0.	1,548.	26,901.	6%	
	Aug '17	20	70.	0.	904.	974.	26,321.	0.	1,548.	27,869.	6%	
	Sep '17	21	6.	20.	904.	930.	27,218.	0.	1,548.	28,766.	5%	
	Oct '17	22	6.2	66.3	904.	976.	28,180.	0.	1,548.	29,728.	5%	
	Nov '17	23	6.	0.	904.	910.	28,982.	0.	1,548.	30,530.	5%	
	Dec '17	24	6.2	0.	904.	910.	29,815.	0.	1,548.	31,363.	5%	
	Jan '18	25	136.3	0.	904.	1,040.	30,599.	0.	1,548.	32,147.	5%	
	Feb '18	26	48.5	0.	904.	952.	31,405.	0.	1,548.	32,953.	5%	
	Mar '18	27	81.	0.	904.	985.	32,363.	0.	1,548.	33,911.	5%	PLANNED
	Apr '18	28	57.9	0.	904.	962.	33,312.	0.	1,548.	34,860.	4%	
	May '18	29	23.9	0.	904.	928.	34,203.	170.	1,718.	35,921.	5%	
	Jun '18	30	7.1	0.	904.	911.	35,100.	180.	1,898.	36,998.	5%	
2018/19	Jul '18	31	17.3	0.	904.	921.	36,002.	170.	2,068.	38,070.	5%	
	Aug '18	32	13.	0.	904.	917.	36,915.	170.	2,238.	39,153.	6%	
	Sep '18	33	24.8	0.	904.	929.	37,836.	170.	2,408.	40,244.	6%	
	Oct '18	34	45.7	0.	904.	949.	38,772.	150.	2,558.	41,330.	6%	
	Nov '18	35	60.7	0.	904.	964.	39,663.	130.	2,688.	42,351.	6%	
	Dec '18	36	146.7	0.	904.	1,050.	40,507.	50.	2,738.	43,245.	6%	
	Jan '19	37	86.3	0.	904.	990.	41,471.	100.	2,838.	44,309.	6%	
	Feb '19	38	116.8	0.	904.	1,021.	42,267.	80.	2,918.	45,185.	6%	
	Mar '19	39	81.	0.	904.	985.	43,201.	110.	3,028.	46,229.	7%	
	Apr '19	40	57.9	0.	904.	962.	44,158.	140.	3,168.	47,326.	7%	
	May '19	41	23.9	0.	904.	928.	45,079.	170.	3,338.	48,417.	7%	
	Jun '19	42	7.1	0.	904.	911.	45,970.	180.	3,518.	49,488.	7%	
2019/20	Jul '19	43	17.3	0.	904.	921.	46,870.	170.	3,688.	50,558.	7%	
	Aug '19	44	13.	0.	904.	917.	47,770.	170.	3,858.	51,628.	7%	
	Sep '19	45	24.8	0.	904.	929.	48,693.	170.	4,028.	52,721.	8%	
	Oct '19	46	45.7	0.	904.	949.	49,627.	150.	4,178.	53,805.	8%	
	Nov '19	47	60.7	0.	904.	964.	50,553.	130.	4,308.	54,861.	8%	
	Dec '19	48	146.7	0.	904.	1,050.	51,430.	50.	4,358.	55,788.	8%	
	Jan '20	49	86.3	0.	904.	990.	52,347.	100.	4,458.	56,805.	8%	
	Feb '20	50	116.8	0.	904.	1,021.	53,127.	80.	4,538.	57,665.	8%	
	Mar '20	51	81.	0.	904.	985.	54,056.	110.	4,648.	58,704.	8%	
	Apr '20	52	57.9	0.	904.	962.	54,896.	140.	4,788.	59,684.	8%	
	May '20	53	23.9	0.	904.	928.	55,818.	170.	4,958.	60,776.	8%	
	Jun '20	54	7.1	0.	904.	911.	56,723.	180.	5,138.	61,861.	8%	
2020/21	Jul '20	55	17.3	0.	904.	921.	57,641.	170.	5,308.	62,949.	8%	
	Aug '20	56	13.	0.	904.	917.	58,549.	170.	5,478.	64,027.	9%	
	Sep '20	57	24.8	0.	904.	929.	59,476.	170.	5,648.	65,124.	9%	
	Oct '20	58	45.7	0.	904.	949.	60,380.	150.	5,798.	66,178.	9%	
	Nov '20	59	60.7	0.	904.	964.	61,250.	130.	5,928.	67,178.	9%	
	Dec '20	60	146.7	0.	904.	1,050.	61,987.	50.	5,978.	67,965.	9%	
	Jan '21	61	86.3	0.	904.	990.	62,925.	100.	6,078.	69,003.	9%	
	Feb '21	62	116.8	0.	904.	1,021.	63,750.	80.	6,158.	69,908.	9%	
	Mar '21	63	81.	0.	904.	985.	64,597.	110.	6,268.	70,865.	9%	
	Apr '21	64	57.9	0.	904.	962.	65,556.	140.	6,408.	71,964.	9%	
	May '21	65	23.9	0.	904.	928.	66,470.	170.	6,578.	73,048.	9%	
	Jun '21	66	7.1	0.	904.	911.	67,372.	180.	6,758.	74,130.	9%	
2021/22	Jul '21	67	17.3	0.	904.	921.	68,212.	170.	6,928.	75,140.	9%	
	Aug '21	68	13.	0.	904.	917.	69,125.	170.	7,098.	76,223.	9%	
	Sep '21	69	24.8	0.	904.	929.	70,048.	170.	7,268.	77,316.	9%	
	Oct '21	70	45.7	0.	904.	949.	70,923.	150.	7,418.	78,341.	9%	
	Nov '21	71	60.7	0.	904.	964.	71,768.	130.	7,548.	79,316.	10%	
	Dec '21	72	146.7	0.	904.	1,050.	72,762.	50.	7,598.	80,360.	9%	
	Jan '22	73	86.3	0.	904.	990.	73,665.	100.	7,633.	81,298.	9%	
	Feb '22	74	116.8	0.	904.	1,021.	74,640.	80.	7,713.	82,353.	9%	
	Mar '22	75	81.	0.	904.	985.	75,441.	110.	7,823.	83,264.	9%	
	Apr '22	76	57.9	0.	904.	962.	76,269.	140.	7,963.	84,232.	9%	
	May '22	77	23.9	0.	904.	928.	77,190.	170.	8,133.	85,323.	10%	
	Jun '22	78	7.1	0.	904.	911.	78,100.	180.	8,313.	86,413.	10%	
2022/23	Jul '22	79	17.3	0.	904.	921.	79,020.	170.	8,483.	87,503.	10%	
	Aug '22	80	13.	0.	904.	917.	79,927.	170.	8,653.	88,580.	10%	
	Sep '22	81	24.8	0.	904.	929.	80,840.	170.	8,823.	89,663.	10%	
	Oct '22	82	45.7	0.	904.	949.	81,656.	150.	8,973.	90,629.	10%	
	Nov '22	83	60.7	0.	904.	964.	82,599.	130.	9,103.	91,702.	10%	
	Dec '22	84	146.7	0.	904.	1,050.	83,482.	50.	9,153.	92,635.	10%	
	Jan '23	85	86.3	0.	904.	990.	84,424.	100.	9,253.	93,677.	10%	
	Feb '23	86	116.8	0.	904.	1,021.	85,386.	80.	9,333.	94,719.	10%	
	Mar '23	87	81.	0.	904.	985.	86,310.	110.	9,443.	95,753.	10%	
	Apr '23	88	57.9	0.	904.	962.	87,268.	140.	9,583.	96,851.	10%	
	May '23	89	23.9	0.	904.	928.	88,189.	170.	9,753.	97,942.	10%	
	Jun '23	90	7.1	0.	904.	911.	89,096.	180.	9,933.	99,029.	10%	

(Continued)

Table 7-1

RWC Management Plan for Declez Basin

(120-month averaging period)

Calculation of Recycled Water Contribution (RWC) from Historical Diluent Water (DW) and Recycled Water (RW) Deliveries

Date		No. Mos. Since Initial RW Delivery	SW (AF)	MWD (AF)	Underflow (AF)	DW (AF)	DW 120-Month Total (AF)	RW (AF)	RW 120-Month Total (AF)	DW + RW 120-Month Total (AF)	RWC	Period
2023/24	Jul '23	91	17.3	0.	904.	921.	90,011.	170.	10,103.	100,114.	10%	PLANNED
	Aug '23	92	13.	0.	904.	917.	90,925.	170.	10,273.	101,198.	10%	
	Sep '23	93	24.8	0.	904.	929.	91,851.	170.	10,443.	102,294.	10%	
	Oct '23	94	45.7	0.	904.	949.	92,783.	150.	10,593.	103,376.	10%	
	Nov '23	95	60.7	0.	904.	964.	93,695.	130.	10,723.	104,418.	10%	
	Dec '23	96	146.7	0.	904.	1,050.	94,680.	50.	10,773.	105,453.	10%	
	Jan '24	97	86.3	0.	904.	990.	95,568.	100.	10,873.	106,441.	10%	
	Feb '24	98	116.8	0.	904.	1,021.	96,413.	80.	10,953.	107,366.	10%	
	Mar '24	99	81.	0.	904.	985.	97,225.	110.	11,063.	108,288.	10%	
	Apr '24	100	57.9	0.	904.	962.	98,071.	140.	11,203.	109,274.	10%	
	May '24	101	23.9	0.	904.	928.	98,998.	170.	11,373.	110,371.	10%	
	Jun '24	102	7.1	0.	904.	911.	99,907.	180.	11,553.	111,460.	10%	
2024/25	Jul '24	103	17.3	0.	904.	921.	100,826.	170.	11,723.	112,549.	10%	
	Aug '24	104	13.	0.	904.	917.	101,671.	170.	11,893.	113,564.	10%	
	Sep '24	105	24.8	0.	904.	929.	102,569.	170.	12,063.	114,632.	11%	
	Oct '24	106	45.7	0.	904.	949.	103,516.	150.	12,213.	115,729.	11%	
	Nov '24	107	60.7	0.	904.	964.	104,380.	130.	12,343.	116,723.	11%	
	Dec '24	108	146.7	0.	904.	1,050.	105,115.	50.	12,393.	117,508.	11%	
	Jan '25	109	86.3	0.	904.	990.	106,059.	100.	12,493.	118,552.	11%	
	Feb '25	110	116.8	0.	904.	1,021.	106,973.	80.	12,573.	119,546.	11%	
	Mar '25	111	81.	0.	904.	985.	107,943.	110.	12,683.	120,626.	11%	
	Apr '25	112	57.9	0.	904.	962.	108,864.	140.	12,823.	121,687.	11%	
	May '25	113	23.9	0.	904.	928.	109,692.	170.	12,993.	122,685.	11%	
	Jun '25	114	7.1	0.	904.	911.	110,600.	180.	13,173.	123,773.	11%	
2025/26	Jul '25	115	17.3	0.	904.	921.	111,472.	170.	13,343.	124,815.	11%	
	Aug '25	116	13.	0.	904.	917.	112,386.	170.	13,513.	125,899.	11%	
	Sep '25	117	24.8	0.	904.	929.	113,167.	170.	13,683.	126,850.	11%	
	Oct '25	118	45.7	0.	904.	949.	114,081.	150.	13,833.	127,914.	11%	
	Nov '25	119	60.7	0.	904.	964.	115,041.	130.	13,963.	129,004.	11%	
	Dec '25	120	146.7	0.	904.	1,050.	115,139.	50.	13,963.	129,102.	11%	
	Jan '26	121	86.3	0.	904.	990.	115,067.	100.	13,985.	129,052.	11%	
	Feb '26	122	116.8	0.	904.	1,021.	115,150.	80.	13,912.	129,062.	11%	
	Mar '26	123	81.	0.	904.	985.	115,139.	110.	13,896.	129,035.	11%	
	Apr '26	124	57.9	0.	904.	962.	115,177.	140.	13,903.	129,080.	11%	
	May '26	125	23.9	0.	904.	928.	115,189.	170.	13,845.	129,034.	11%	
	Jun '26	126	7.1	0.	904.	911.	115,193.	180.	13,824.	129,017.	11%	
2026/27	Jul '26	127	17.3	0.	904.	921.	115,210.	170.	13,793.	129,003.	11%	
	Aug '26	128	13.	0.	904.	917.	115,223.	170.	13,702.	128,925.	11%	
	Sep '26	129	24.8	0.	904.	929.	115,247.	170.	13,820.	129,067.	11%	
	Oct '26	130	45.7	0.	904.	949.	115,246.	150.	13,970.	129,216.	11%	
	Nov '26	131	60.7	0.	904.	964.	115,251.	130.	14,100.	129,351.	11%	
	Dec '26	132	146.7	0.	904.	1,050.	115,181.	50.	14,150.	129,331.	11%	
	Jan '27	133	86.3	0.	904.	990.	115,100.	100.	14,250.	129,350.	11%	
	Feb '27	134	116.8	0.	904.	1,021.	115,147.	80.	14,330.	129,477.	11%	
	Mar '27	135	81.	0.	904.	985.	115,208.	110.	14,440.	129,648.	11%	
	Apr '27	136	57.9	0.	904.	962.	115,263.	140.	14,580.	129,843.	11%	
	May '27	137	23.9	0.	904.	928.	115,263.	170.	14,750.	130,013.	11%	
	Jun '27	138	7.1	0.	904.	911.	115,168.	180.	14,930.	130,098.	11%	
2027/28	Jul '27	139	17.3	0.	904.	921.	115,133.	170.	15,100.	130,233.	12%	
	Aug '27	140	13.	0.	904.	917.	115,076.	170.	15,270.	130,346.	12%	
	Sep '27	141	24.8	0.	904.	929.	115,075.	170.	15,440.	130,515.	12%	
	Oct '27	142	45.7	0.	904.	949.	115,048.	150.	15,590.	130,638.	12%	
	Nov '27	143	60.7	0.	904.	964.	115,103.	130.	15,720.	130,823.	12%	
	Dec '27	144	146.7	0.	904.	1,050.	115,243.	50.	15,770.	131,013.	12%	
	Jan '28	145	86.3	0.	904.	990.	115,193.	100.	15,870.	131,063.	12%	
	Feb '28	146	116.8	0.	904.	1,021.	115,262.	80.	15,950.	131,212.	12%	
	Mar '28	147	81.	0.	904.	985.	115,262.	110.	16,060.	131,322.	12%	
	Apr '28	148	57.9	0.	904.	962.	115,262.	140.	16,200.	131,462.	12%	
	May '28	149	23.9	0.	904.	928.	115,262.	170.	16,200.	131,462.	12%	
	Jun '28	150	7.1	0.	904.	911.	115,262.	180.	16,200.	131,462.	12%	
2028/29	Jul '28	151	17.3	0.	904.	921.	115,262.	170.	16,200.	131,462.	12%	
	Aug '28	152	13.	0.	904.	917.	115,262.	170.	16,200.	131,462.	12%	
	Sep '28	153	24.8	0.	904.	929.	115,262.	170.	16,200.	131,462.	12%	
	Oct '28	154	45.7	0.	904.	949.	115,262.	150.	16,200.	131,462.	12%	
	Nov '28	155	60.7	0.	904.	964.	115,262.	130.	16,200.	131,462.	12%	
	Dec '28	156	146.7	0.	904.	1,050.	115,262.	50.	16,200.	131,462.	12%	
	Jan '29	157	86.3	0.	904.	990.	115,262.	100.	16,200.	131,462.	12%	
	Feb '29	158	116.8	0.	904.	1,021.	115,262.	80.	16,200.	131,462.	12%	
	Mar '29	159	81.	0.	904.	985.	115,262.	110.	16,200.	131,462.	12%	
	Apr '29	160	57.9	0.	904.	962.	115,262.	140.	16,200.	131,462.	12%	
	May '29	161	23.9	0.	904.	928.	115,262.	170.	16,200.	131,462.	12%	
	Jun '29	162	7.1	0.	904.	911.	115,262.	180.	16,200.	131,462.	12%	

(Continued)

Table 7-1

RWC Management Plan for Declez Basin

(120-month averaging period)

Calculation of Recycled Water Contribution (RWC) from Historical Diluent Water (DW) and Recycled Water (RW) Deliveries

Date		No. Mos. Since Initial RW Delivery	SW (AF)	MWD (AF)	Underflow (AF)	DW (AF)	DW 120-Month Total (AF)	RW (AF)	RW 120-Month Total (AF)	DW + RW 120-Month Total (AF)	RWC	Period
2029/30	Jul '29	163	17.3	0.	904.	921.	115,262.	170.	16,200.	131,462.	12%	PLANNED
	Aug '29	164	13.	0.	904.	917.	115,262.	170.	16,200.	131,462.	12%	
	Sep '29	165	24.8	0.	904.	929.	115,262.	170.	16,200.	131,462.	12%	
	Oct '29	166	45.7	0.	904.	949.	115,262.	150.	16,200.	131,462.	12%	
	Nov '29	167	60.7	0.	904.	964.	115,262.	130.	16,200.	131,462.	12%	
	Dec '29	168	146.7	0.	904.	1,050.	115,262.	50.	16,200.	131,462.	12%	
	Jan '30	169	86.3	0.	904.	990.	115,262.	100.	16,200.	131,462.	12%	
	Feb '30	170	116.8	0.	904.	1,021.	115,262.	80.	16,200.	131,462.	12%	
	Mar '30	171	81.	0.	904.	985.	115,262.	110.	16,200.	131,462.	12%	
	Apr '30	172	57.9	0.	904.	962.	115,262.	140.	16,200.	131,462.	12%	
	May '30	173	23.9	0.	904.	928.	115,262.	170.	16,200.	131,462.	12%	
	Jun '30	174	7.1	0.	904.	911.	115,262.	180.	16,200.	131,462.	12%	
2030/31	Jul '30	175	17.3	0.	904.	921.	115,262.	170.	16,200.	131,462.	12%	
	Aug '30	176	13.	0.	904.	917.	115,262.	170.	16,200.	131,462.	12%	
	Sep '30	177	24.8	0.	904.	929.	115,262.	170.	16,200.	131,462.	12%	
	Oct '30	178	45.7	0.	904.	949.	115,262.	150.	16,200.	131,462.	12%	
	Nov '30	179	60.7	0.	904.	964.	115,262.	130.	16,200.	131,462.	12%	
	Dec '30	180	146.7	0.	904.	1,050.	115,262.	50.	16,200.	131,462.	12%	
	Jan '31	181	86.3	0.	904.	990.	115,262.	100.	16,200.	131,462.	12%	
	Feb '31	182	116.8	0.	904.	1,021.	115,262.	80.	16,200.	131,462.	12%	
	Mar '31	183	81.	0.	904.	985.	115,262.	110.	16,200.	131,462.	12%	
	Apr '31	184	57.9	0.	904.	962.	115,262.	140.	16,200.	131,462.	12%	
	May '31	185	23.9	0.	904.	928.	115,262.	170.	16,200.	131,462.	12%	
	Jun '31	186	7.1	0.	904.	911.	115,262.	180.	16,200.	131,462.	12%	
2031/32	Jul '31	187	17.3	0.	904.	921.	115,262.	170.	16,200.	131,462.	12%	
	Aug '31	188	13.	0.	904.	917.	115,262.	170.	16,200.	131,462.	12%	
	Sep '31	189	24.8	0.	904.	929.	115,262.	170.	16,200.	131,462.	12%	
	Oct '31	190	45.7	0.	904.	949.	115,262.	150.	16,200.	131,462.	12%	
	Nov '31	191	60.7	0.	904.	964.	115,262.	130.	16,200.	131,462.	12%	
	Dec '31	192	146.7	0.	904.	1,050.	115,262.	50.	16,200.	131,462.	12%	
	Jan '32	193	86.3	0.	904.	990.	115,262.	100.	16,200.	131,462.	12%	
	Feb '32	194	116.8	0.	904.	1,021.	115,262.	80.	16,200.	131,462.	12%	
	Mar '32	195	81.	0.	904.	985.	115,262.	110.	16,200.	131,462.	12%	
	Apr '32	196	57.9	0.	904.	962.	115,262.	140.	16,200.	131,462.	12%	
	May '32	197	23.9	0.	904.	928.	115,262.	170.	16,200.	131,462.	12%	
	Jun '32	198	7.1	0.	904.	911.	115,262.	180.	16,200.	131,462.	12%	
2032/33	Jul '32	199	17.3	0.	904.	921.	115,262.	170.	16,200.	131,462.	12%	
	Aug '32	200	13.	0.	904.	917.	115,262.	170.	16,200.	131,462.	12%	
	Sep '32	201	24.8	0.	904.	929.	115,262.	170.	16,200.	131,462.	12%	
	Oct '32	202	45.7	0.	904.	949.	115,262.	150.	16,200.	131,462.	12%	
	Nov '32	203	60.7	0.	904.	964.	115,262.	130.	16,200.	131,462.	12%	
	Dec '32	204	146.7	0.	904.	1,050.	115,262.	50.	16,200.	131,462.	12%	
	Jan '33	205	86.3	0.	904.	990.	115,262.	100.	16,200.	131,462.	12%	
	Feb '33	206	116.8	0.	904.	1,021.	115,262.	80.	16,200.	131,462.	12%	
	Mar '33	207	81.	0.	904.	985.	115,262.	110.	16,200.	131,462.	12%	
	Apr '33	208	57.9	0.	904.	962.	115,262.	140.	16,200.	131,462.	12%	
	May '33	209	23.9	0.	904.	928.	115,262.	170.	16,200.	131,462.	12%	
	Jun '33	210	7.1	0.	904.	911.	115,262.	180.	16,200.	131,462.	12%	

Notes:

DW = Diluent Water; Total DW is the sum of Stormwater & Local Runoff (SW), Imported Water from the State Water Project (MWD), and groundwater underflow.

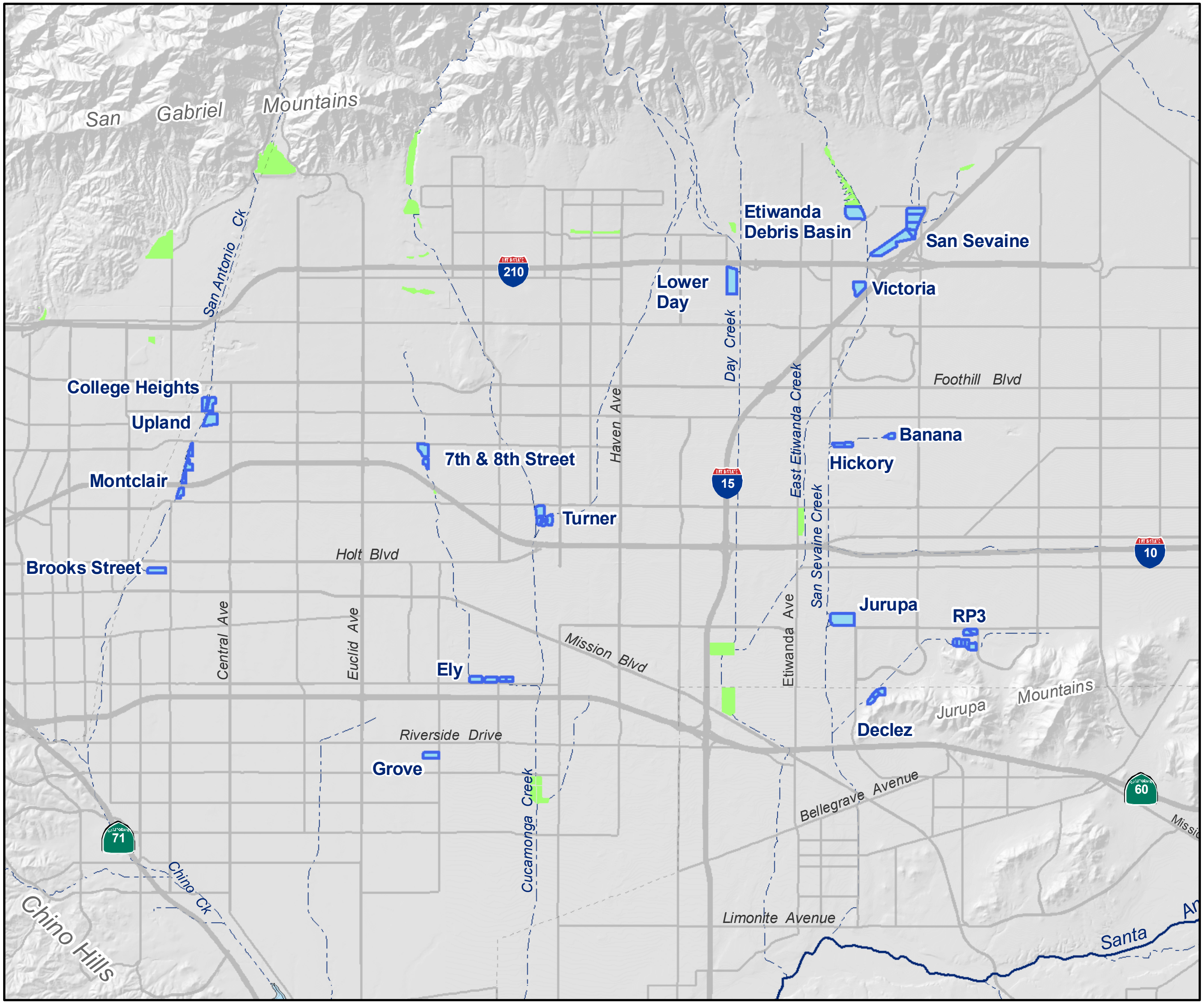
RW = Recycled Water

RWC = 120-month running total of recycled water / 120-month running total of all diluent and recycled water.

While an RWC calculation is provided starting on the first month of RW recharge, 120 months of data may not be available until 10 years of recharge operations.

RWC maximum = 0.5 mg/L / the Running Average of Total Organic Carbon (TOC) determined from a recharge site's start-up period

FIGURES



Main Map Features

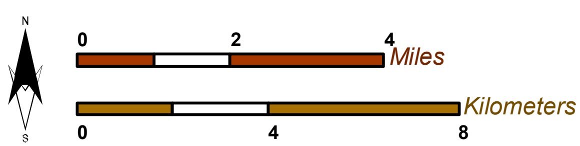
Recharge Basins in the Recycled Water Groundwater Recharge Program

Non-program basins

Rivers and Streams

Chino Basin Recycled Water Groundwater Recharge Programs

Basin Locations



Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Figure 1-1

FIGURE 2-1
LOCATION OF FACILITIES AT DECLEZ BASIN

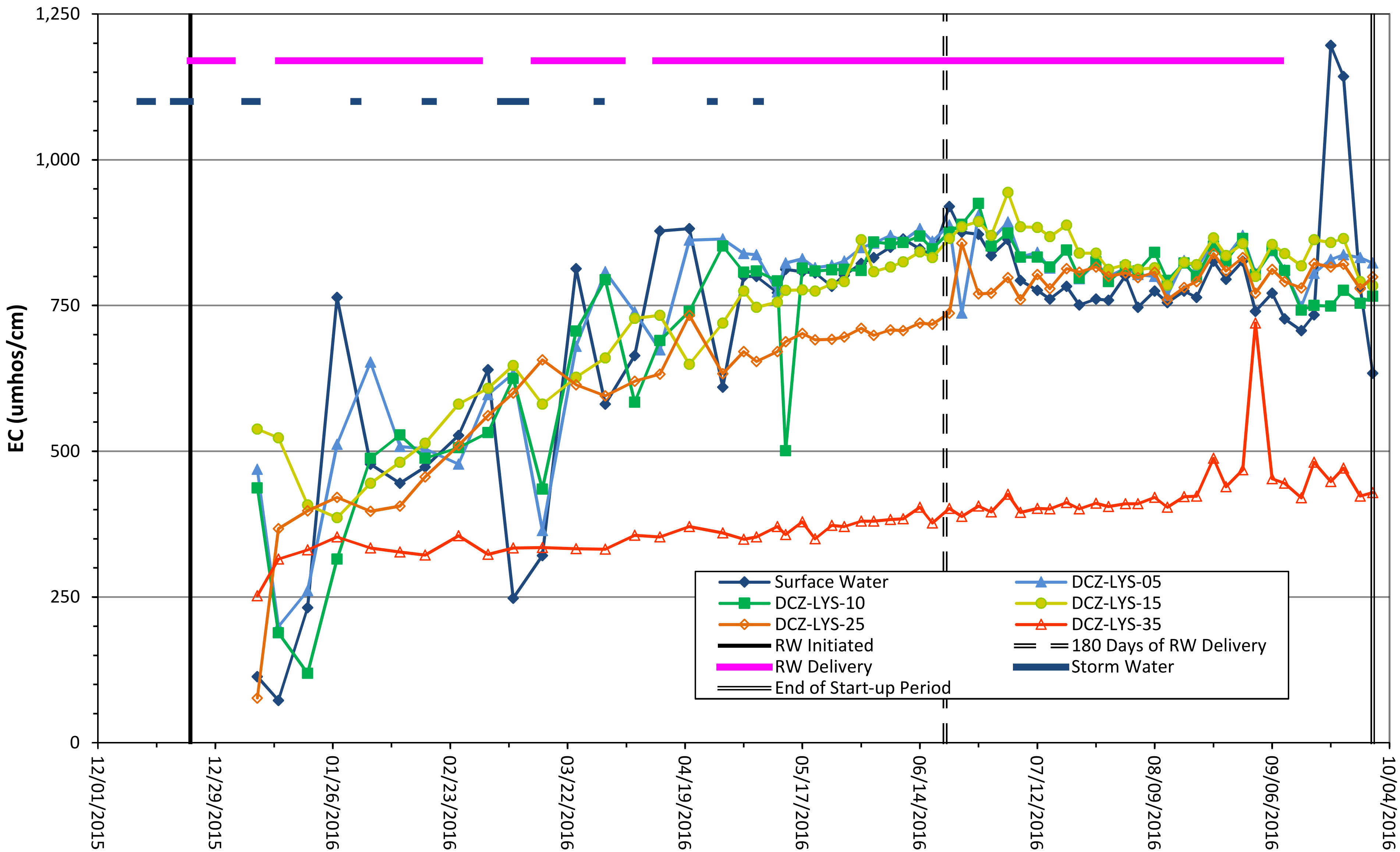


FIGURE 4-1a
DECLEZ BASIN: LYSIMETERS
ELECTRICAL CONDUCTIVITY TIME HISTORY

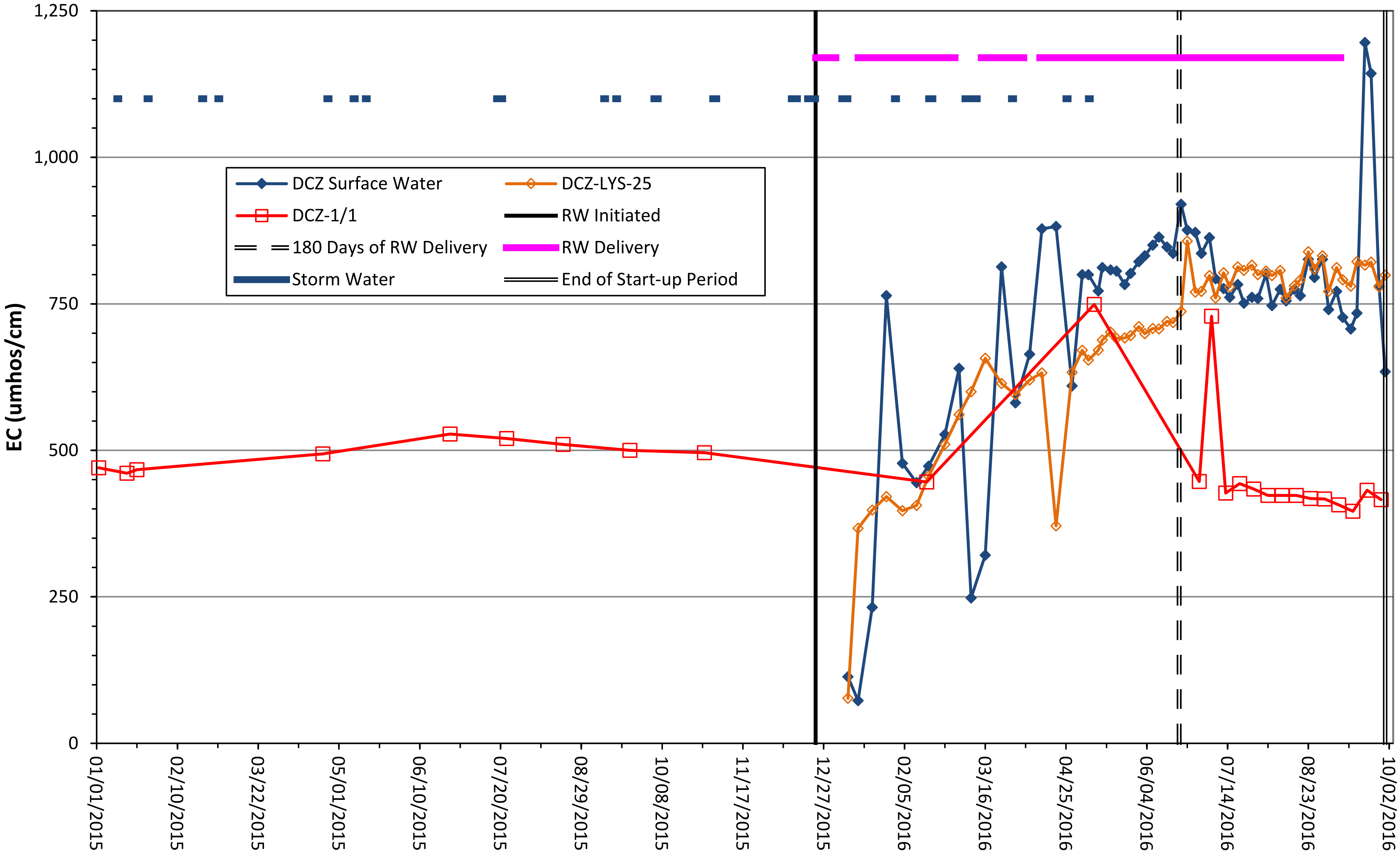


FIGURE 4-1b
DECLEZ BASIN: MONITORING WELL
ELECTRICAL CONDUCTIVITY TIME-SERIES

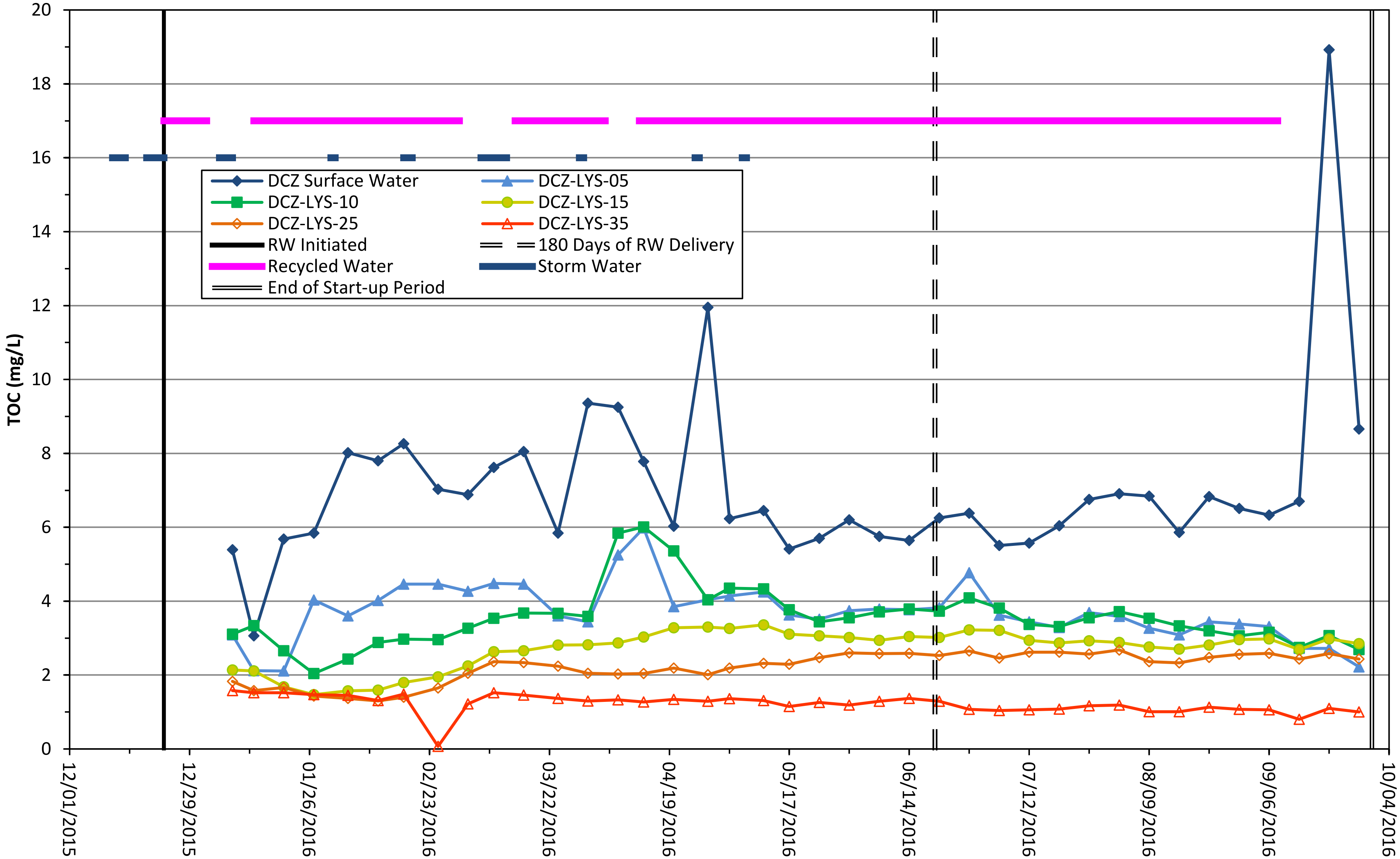


FIGURE 4-2a
DECLEZ BASIN: LYSIMETERS
TOTAL ORGANIC CARBON TIME-SERIES

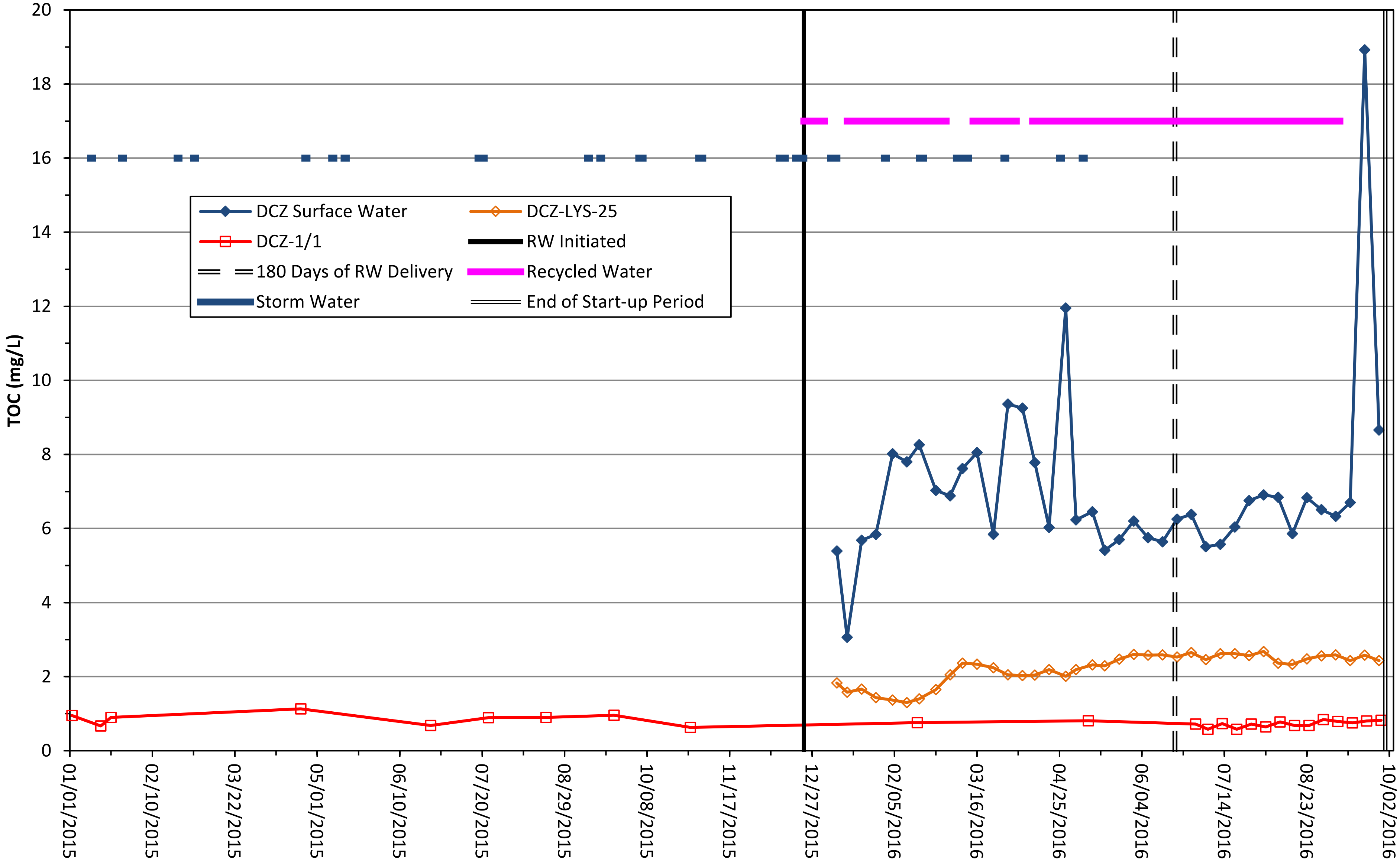


FIGURE 4-2b
DECLEZ BASIN: MONITORING WELL
TOTAL ORGANIC CARBON TIME-SERIES

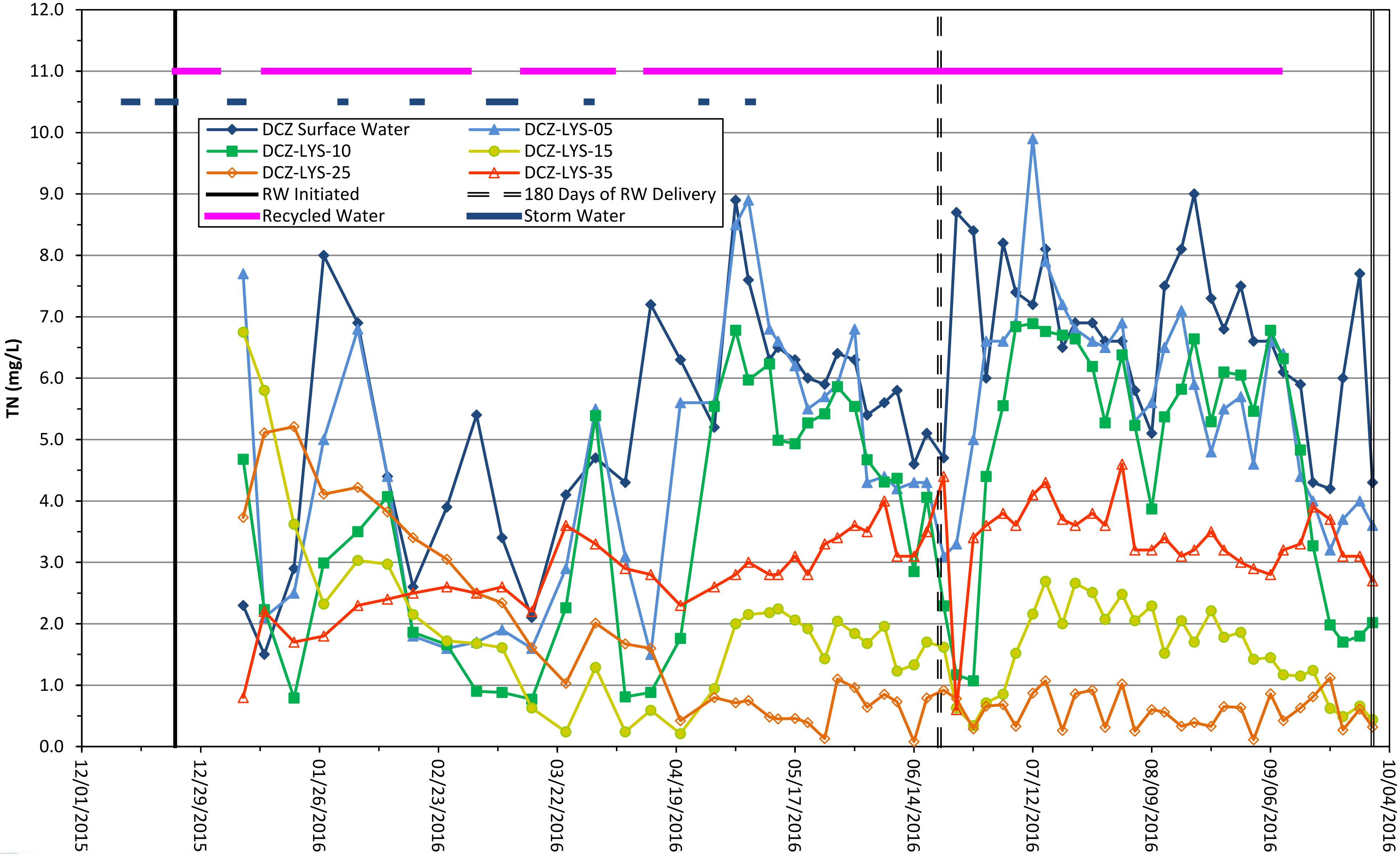


FIGURE 4-3a
DECLEZ BASIN: LYSIMETERS
TOTAL NITROGEN TIME-SERIES

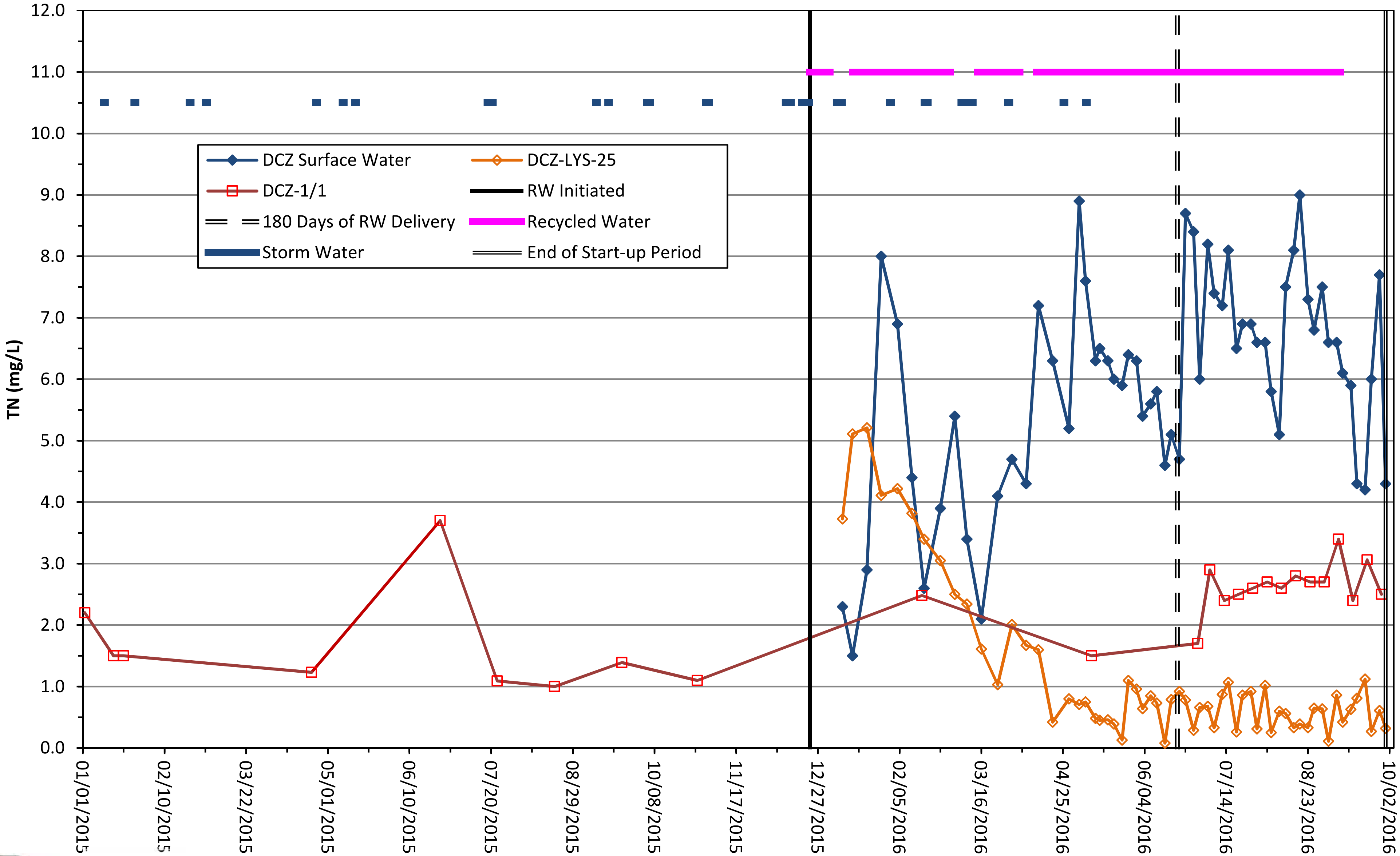


FIGURE 4-3b
DECLEZ BASIN: MONITORING WELL
TOTAL NITROGEN TIME-SERIES

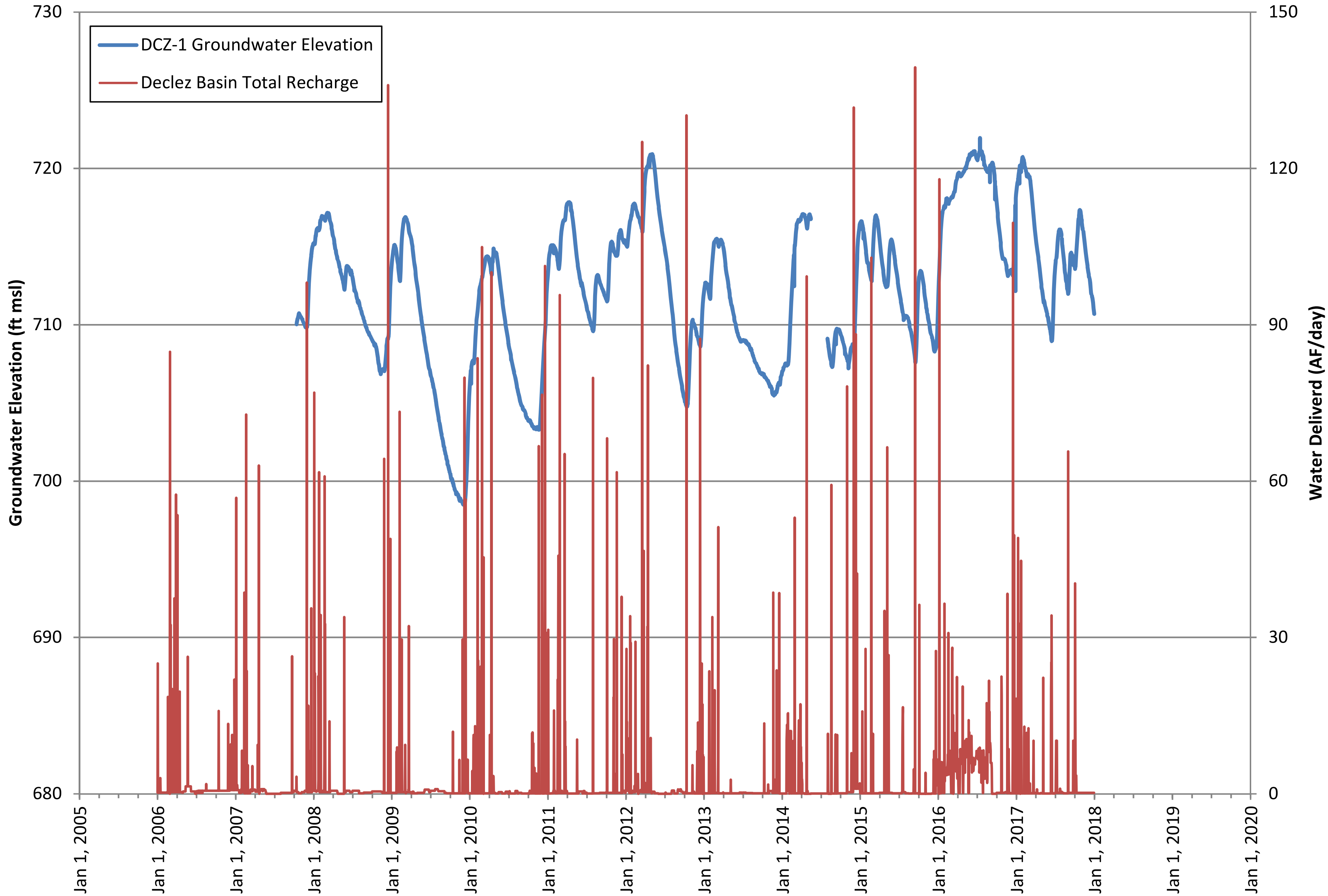


FIGURE 4-4
DECLEZ BASIN: MONITORING WELL HYDROGRAPH

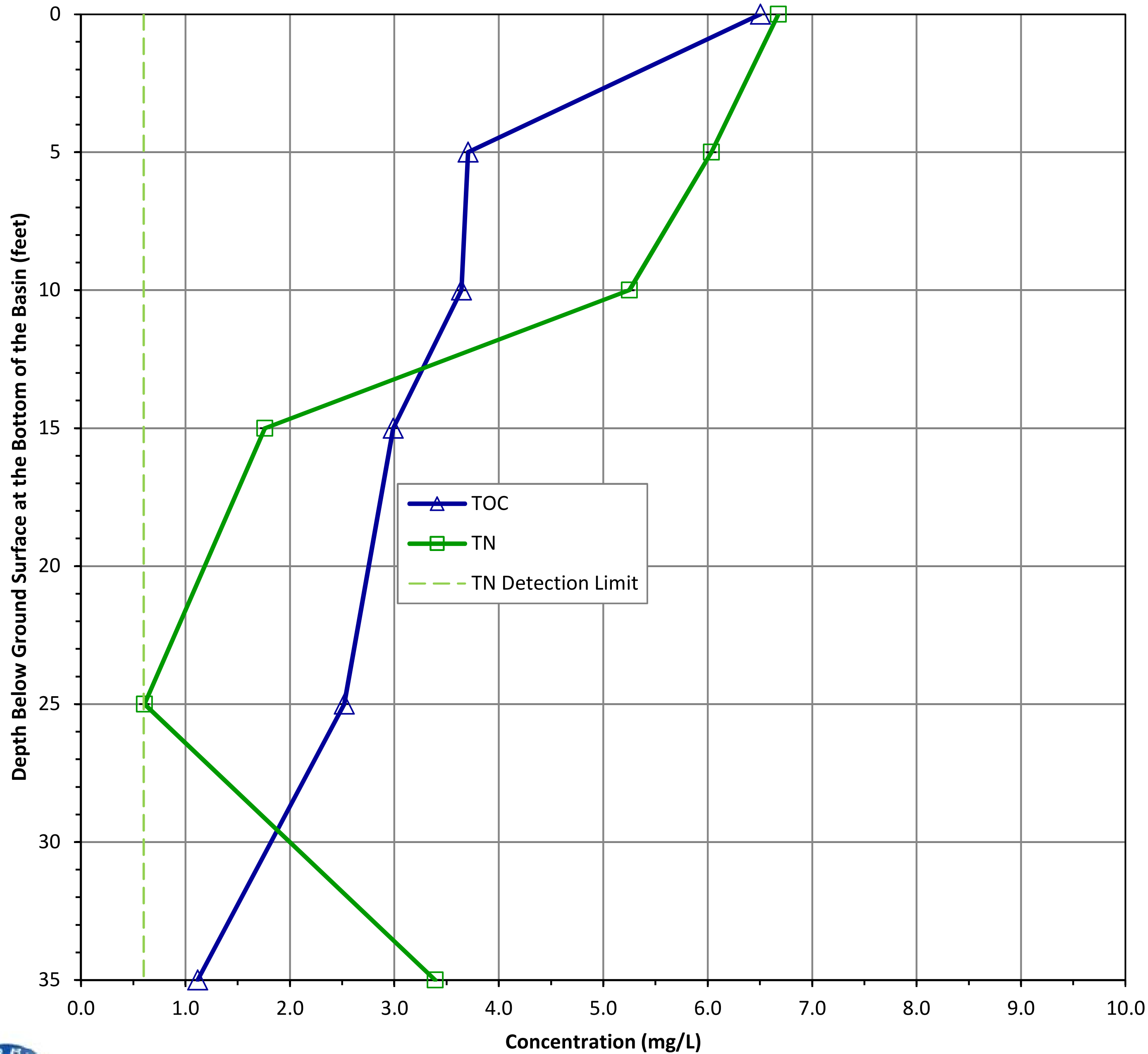


FIGURE 5-1
DECLEZ BASIN
DEPTH PROFILE OF AVERAGE TOC AND TN

RWC MANAGEMENT PLAN - DECLEZ BASIN

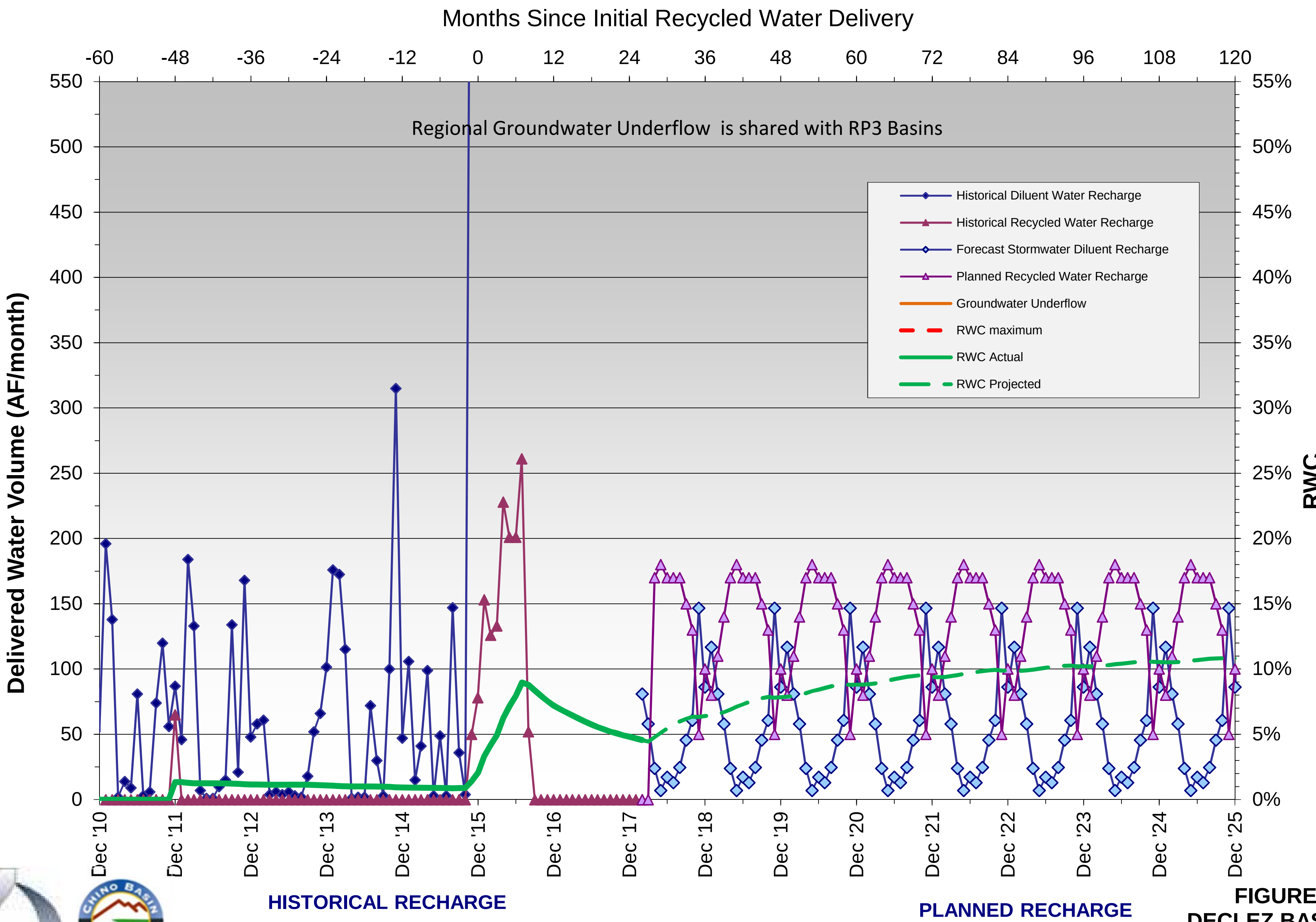


FIGURE 7-1
DECLEZ BASIN:
RWC MANAGEMENT PLAN