



**ENGINEERING, OPERATIONS, AND
WATER RESOURCES
COMMITTEE MEETING
OF THE BOARD OF DIRECTORS
INLAND EMPIRE UTILITIES AGENCY*
AGENCY HEADQUARTERS, CHINO, CALIFORNIA**

**WEDNESDAY, OCTOBER 9, 2019
9:45 A.M.**

CALL TO ORDER

PUBLIC COMMENT

Members of the public may address the Board on any item that is within the jurisdiction of the Board; however, no action may be taken on any item not appearing on the agenda unless the action is otherwise authorized by Subdivision (b) of Section 54954.2 of the Government Code. Those persons wishing to address the Board on any matter, whether it appears on the agenda, are requested to complete and submit to the Board Secretary a "Request to Speak" form which is available on the table in the Board Room. Comments will be limited to three minutes per speaker. Thank you.

ADDITIONS TO THE AGENDA

In accordance with Section 54954.2 of the Government Code (Brown Act), additions to the agenda require two-thirds vote of the legislative body, or, if less than two-thirds of the members are present, a unanimous vote of those members present, that there is a need to take immediate action and that the need for action came to the attention of the local agency subsequent to the agenda being posted.

1. ACTION ITEMS

A. MINUTES

The Committee will be asked to approve the Engineering, Operations, and Water Resources Committee meeting minutes of September 11, 2019.

B. RP-4 INFLUENT SCREEN REPLACEMENT DESIGN-BUILD CONTRACT AWARD

Staff recommends that the Committee/Board:

1. Award a design-build contract for the RP-4 Influent Screen Replacement, Project No. EN19010, to Stanek Constructors, Inc., in the amount of \$1,898,000; and
2. Authorize the General Manager to execute the contract, subject to non-substantive changes.

C. RP-1 MECHANICAL RESTORATION AND IMPROVEMENTS PROJECT PROGRAMMING SERVICES

Staff recommends that the Committee/Board:

1. Approve a task order with Technical Services, Inc., for the RP-1 Mechanical Restoration and Improvements, through the Master Services Contract, 4600002467, for the not-to-exceed amount of \$221,715; and
2. Authorize the General Manager to execute the task order, subject to non-substantive changes.

D. RP-1 PRIMARY SLUDGE PIPING REPAIR CONSTRUCTION CONTRACT AWARD

Staff recommends that the Committee/Board:

1. Award a construction contract for the RP-1 Primary Sludge Piping Repair, Project No. EN20060, to AToM Engineering Construction, Inc., in the amount of \$107,398; and
2. Authorize the General Manager to execute the contract, subject to non-substantive changes.

E. 930 WEST RECYCLED WATER PIPELINE EASEMENT ACQUISITION

Staff recommends that the Committee/Board authorize the General Manager to approve payment of \$182,655 to the San Bernardino County Flood Control District for the valuation of the recycled water pipeline easement.

2. INFORMATION ITEM

A. FIRST QUARTER PLANNING & ENVIRONMENTAL RESOURCES UPDATE (POWERPOINT)

RECEIVE AND FILE INFORMATION ITEM

B. PLANNING & ENVIRONMENTAL RESOURCES ANNUAL REPORTS (WATER USE, RECYCLED WATER & ENERGY) (WRITTEN)

C. ENGINEERING AND CONSTRUCTION MANAGEMENT PROJECT UPDATES (POWERPOINT)

3. GENERAL MANAGER'S COMMENTS


4. COMMITTEE MEMBER COMMENTS

5. COMMITTEE MEMBER REQUESTED FUTURE AGENDA ITEMS

6. ADJOURN

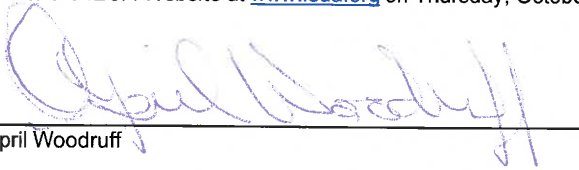
*A Municipal Water District

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Board Secretary (909-993-1736), 48 hours prior to the scheduled meeting so that the Agency can make reasonable arrangements.

Proofed by: 

DECLARATION OF POSTING

I, April Woodruff, Board Secretary/Office Manager of the Inland Empire Utilities Agency, A Municipal Water District, hereby certify that a copy of the agenda has been posted by 5:30 p.m. in the foyer at the Agency's main office, 6075 Kimball Ave., Building A, Chino, CA and to the IEUA Website at www.ieua.org on Thursday, October 3, 2019.


April Woodruff

**ACTION
ITEM
1A**



**MINUTES
ENGINEERING, OPERATIONS, AND WATER RESOURCES
COMMITTEE MEETING
INLAND EMPIRE UTILITIES AGENCY*
AGENCY HEADQUARTERS, CHINO, CA**

**WEDNESDAY, SEPTEMBER 11, 2019
9:45 A.M.**

COMMITTEE MEMBERS PRESENT

Michael Camacho, Chair
Kati Parker

COMMITTEE MEMBERS ABSENT

None

STAFF PRESENT

Shivaji Deshmukh, General Manager
Kathy Besser, Executive Manager of External Affairs & Policy Development/AGM
Randy Lee, Executive Manager of Operations/AGM
Shaun Stone, Acting Executive Manager of Engineering/AGM
Christina Valencia, Executive Manager of Finance & Administration/AGM
Joshua Aguilar, Senior Engineer
Jerry Burke, Deputy Manager of Engineering
Pietro Cambiaso, Deputy Manager of Planning & Environmental Resources
Nel Groenveld, Manager of Laboratories
Laura Mantilla, Executive Assistant
Craig Proctor, Source Control/Environmental Resources Supervisor
Daniel Solorzano, Technology Specialist I
Travis Sprague, Senior Associate Engineer
Kenneth Tam, Senior Associate Engineer
Wilson To, Technology Specialist II
Teresa Velarde, Manager of Internal Audit
April Woodruff, Board Secretary/Office Manager
Jamal Zughbi, Senior Engineer/Project Manager, P.E.

OTHERS PRESENT

None

The meeting was called to order at 9:45 a.m. There were no public comments received or additions to the agenda.

ACTION ITEMS

The Committee:

- ◆ Approved the Engineering, Operations, and Water Resources Committee meeting minutes of August 14, 2019.

◆ Recommended that the Board:

1. Award a construction contract for the RP-1 Mechanical Restoration and Improvements Project to Kiewit Infrastructure West Co., in the amount of \$6,627,000;
2. Approve a contract amendment to Stantec Consulting Services Inc., for engineering services during construction for the not-to-exceed amount of \$430,000; and
3. Authorize the General Manager to execute the contract and contract amendment, subject to non-substantive changes;

as a Consent Calendar Item on the September 18, 2019 Board meeting agenda.

◆ Recommended that the Board:

1. Award a construction contract for the San Bernardino Lift Station Facility Improvements, Project No. EN19041, to AToM Engineering Construction, Inc., in the amount of \$118,398; and
2. Authorize the General Manager to execute the contract, subject to non-substantive changes;

as a Consent Calendar Item on the September 18, 2019 Board meeting agenda.

◆ Recommended that the Board:

1. Approve a construction award to Capital Improvement Program Office (CIPO) Cloud Software, LLC for support and services on the Project Management Documentation System for a not-to-exceed amount of \$718,500 for a term of seven years;
2. Approve a budget amendment in the amount of \$210,000 in the Regional Wastewater Improvement Fund; and
3. Authorize the General Manager to execute the contract and budget amendment, subject to non-substantive changes;

as a Consent Calendar Item on the September 18, 2019 Board meeting agenda.

◆ Recommended that the Board:

1. Approve the consulting contract amendment for the RP-1 Flare Improvements, Project No. EN18006, to Lee & Ro, Inc., for a not-to-exceed amount of \$76,524; and
2. Authorize the General Manager to execute the consulting engineering services amendment, subject to non-substantive changes;

as a Consent Calendar Item on the September 18, 2019 Board meeting agenda.

◆ Recommended that the Board:

1. Approve the Sub-Grantee Agreement between SAWPA and IEUA; and
2. Authorize the General Manager to execute the Sub-Grantee Agreement, subject to non-substantive changes;

as a Consent Calendar Item on the September 18, 2019 Board meeting agenda.

◆ Recommended that the Board:

1. Adopt Resolution No. 2019-9-1, committing an additional 0.3 MGD of Pipeline and 0.3 MGD of Treatment and Disposal Capacity to the Inland Empire Brine Line Lease Capacity Pool;

as a Consent Calendar on the September 18, 2019 Board meeting agenda.

INFORMATION ITEMS

The following information items were presented or received and filed by the Committee:

- ◆ Planning & Environmental Resources Update
- ◆ Semi-Annual Laboratory Update
- ◆ Engineering and Construction Management Project Updates

GENERAL MANAGER'S COMMENTS

General Manager Shivaji Deshmukh stated that Manager of Planning & Environmental Resources Sylvie Lee, GEI Consultants, Metropolitan Water District of Southern California (MWD) representatives, and he met with the Department of Water Resources in Sacramento to discuss potential operational parameters on the Chino Basin Program (CBP).

General Manager Deshmukh stated that the Agency received two awards at the CASA Conference; the IERCA Battery and Solar Project received the Excellence in Innovation and Resiliency Award and the Agency's Operations and Maintenance Intern Volunteer Trade Program received the Organizational Excellence Award. He stated that the External Affairs Department created videos as part of the award selection, which are available on the Agency's website.

The Agency's next Rate Study Workshop is scheduled for September 16, 2019. The workshop will focus on the preliminary review of the recycled water rates.

The Agency will host an MWD Community Leaders Water Briefing with Senator Connie Leyva, Assemblymember Eloise Reyes, MWD General Manager Jeff Kightlinger and IEUA's MWD Representative Jasmin Hall on October 2, 2019 from 12:30 p.m. to 2:00 p.m.

Mr. Deshmukh also stated he attended the WaterReuse Annual Symposium from September 8 through September 10, 2019.

COMMITTEE MEMBER COMMENTS

There were no Committee member comments.

COMMITTEE MEMBER REQUESTED FUTURE AGENDA ITEMS

There were no Committee member requests for future agenda items.

With no further business, Director Camacho adjourned the meeting at 10:28 a.m.

Respectfully submitted,

April Woodruff
Board Secretary/Office Manager

*A Municipal Water District

APPROVED: OCTOBER 9, 2019

**ACTION
ITEM
1B**



Date: October 16, 2019

To: The Honorable Board of Directors

From: Shivaji Deshmukh, General Manager

Committee: Engineering, Operations & Water Resources

10/09/19

Executive Contact: Christiana Daisy, Executive Manager of Engineering/AGM

Subject: RP-4 Influent Screen Replacement Design-Build Contract Award

Executive Summary:

Regional Water Recycling Plant No.4 (RP-4) currently uses two perforated plate fine screens and a washer-compactor unit to screen out solids at the front of the plant. The screens have proven to be inefficient and unreliable in removing influent rags which causes issues to downstream plant processes. The washer-compactor unit has also proven to be inefficient in removing water and organics from the collected rags.

This project is intended to replace the current screens with a more efficient screen and washer-compactor unit. This will provide effective equipment to process rags and debris for the RP-4 facility.

Four design-build contractors were pre-qualified for this project. On September 17, 2019, IEUA received two construction bids. Stanek Constructors, Inc. was the lowest responsive, responsible bidder, with a bid price of \$1,898,000. The engineer's estimate was \$1,700,000.

Staff's Recommendation:

1. Award a design-build contract for the RP-4 Influent Screen Replacement, Project No. EN19010, to Stanek Constructors, Inc., in the amount of \$1,898,000; and
2. Authorize the General Manager to execute the contract, subject to non-substantive changes.

Budget Impact Budgeted (Y/N): Y Amendment (Y/N): N Amount for Requested Approval:

Account/Project Name:

EN19010/RP-4 Influent Screen Replacement Project

Fiscal Impact (explain if not budgeted):

None.

Prior Board Action:

None.

Environmental Determination:

Categorical Exemption

CEQA identifies certain categories of projects as exempt from more detailed environmental review because these categories have been deemed to have no potential for significant impact on the environment. This project qualifies for a Categorical Exemption Class 2 as defined in Section 15302 of the State CEQA Guidelines.

Business Goal:

Attachments:

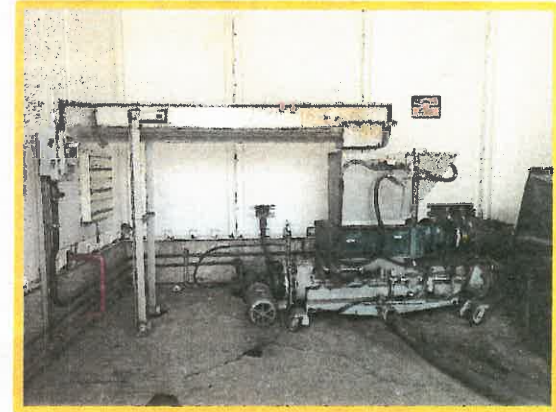
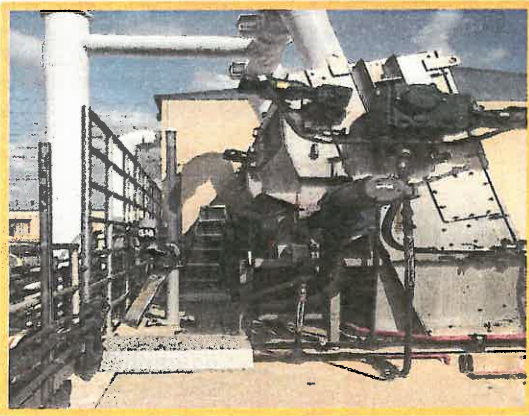
Attachment 1 - PowerPoint

Attachment 2 - Construction Contract

Attachment 1

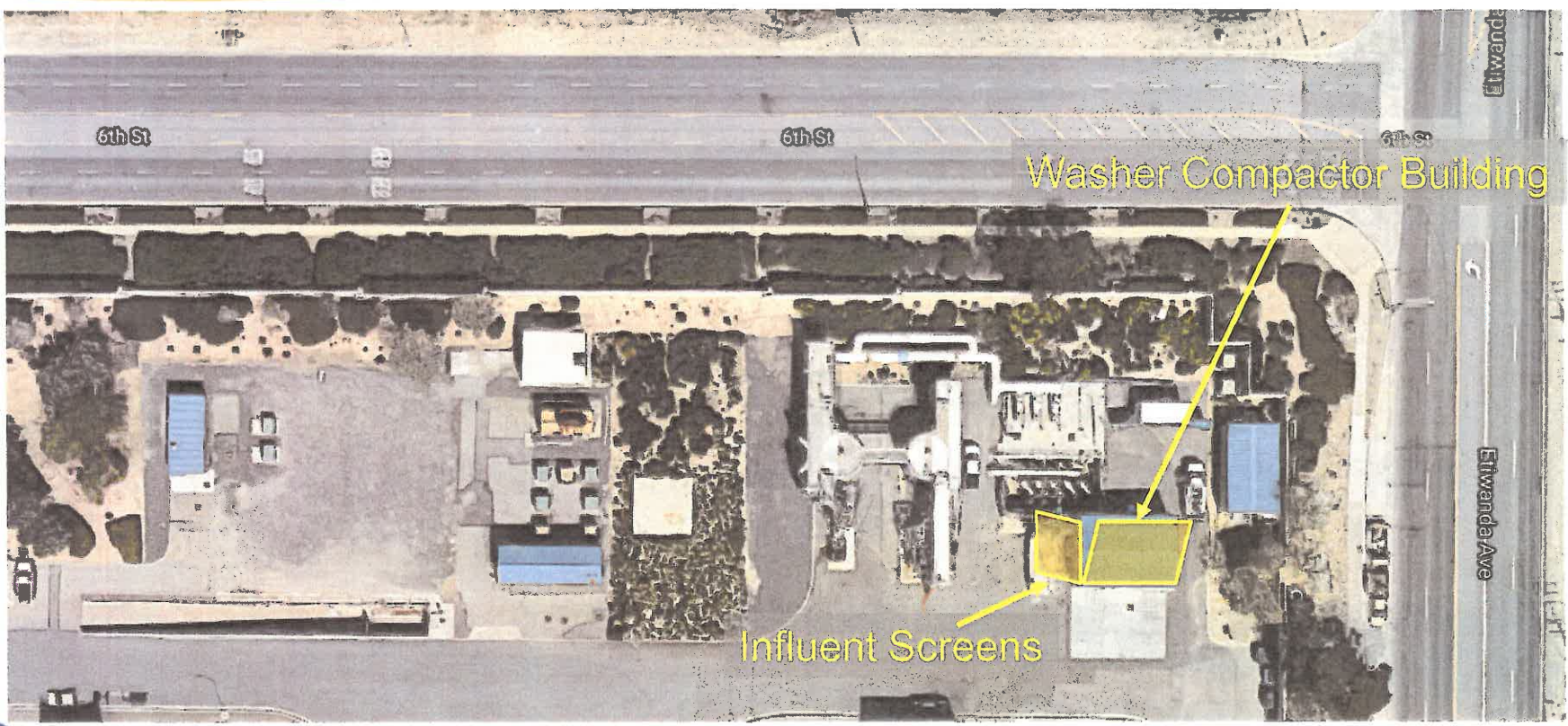
RP-4 Influent Screen Replacement Project Design-Build Contract Award

Project No. EN19010



Michael Dias, P.E.
October 2019

Project Location



The Project

- Existing screens are inefficient and unreliable
- Constant plugging of downstream pumps
- Existing washer compactor is inefficient
- Scope of Work:
 - Evaluate influent loading
 - Install two new screens (preselected)
 - Install washer compactor
 - Integrate new equipment to SCADA



Exposed Fine Screens



Rag Accumulation Inside Fine Screens

Contractor Selection

On September 17, 2019, two bids were received:

Design-Build Team Name	Final Bid Amount
Stanek Constructors/Lee & Ro	\$1,898,000
W.A. Rasic Construction Co., Inc./CivilTec	\$1,938,800
Engineer's Estimate	\$1,700,000

Project Budget and Schedule

Description	Estimated Cost
Design Services	\$48,290
Design Consultant Contract	N/A
IEUA Pre-Design Services (actuals)	\$48,290
Construction Services	\$215,000
Engineering Services During Construction (Duperon)	\$25,000
IEUA Construction Services (10%)	\$190,000
Construction	\$2,182,700
Design-Build Construction Contract (this action)	\$1,898,000
Contingency (15%)	\$284,700
Total Project Cost:	\$2,445,990
Total Project Budget:	\$3,040,000

Project Milestone	Date
Construction	
Design-Build Contract Award	October 2019
Construction Completion	October 2020

Recommendation

1. Award a design-build contract for the RP-4 Influent Screen Replacement, Project No. EN19010, to Stanek Constructors, Inc., in the amount of \$1,898,000; and
2. Authorize the General Manager to execute the contract, subject to non-substantive changes.

The RP-4 Influent Screen Replacement Project is consistent with *IEUA's Business Goal of Wastewater Management*, specifically the Asset Management objective that IEUA will ensure the treatment facilities are well maintained, upgraded to meet evolving requirements, sustainably managed, and can accommodate changes in regional water use.

Attachment 2



CONTRACT NUMBER: 4600002814
FOR
REGIONAL PLANT NO. 4 INFLUENT SCREEN REPLACEMENT
PROJECT NO. EN 19010

THIS CONTRACT (the "Contract"), is made and entered into this _____ day of _____, _____, by and between the Inland Empire Utilities Agency, a Municipal Water District, organized and existing in the County of San Bernardino under and by virtue of the laws of the State of California (hereinafter interchangeably referred to as "IEUA" and "Agency") and Stanek Constructors, Inc. with offices located in Carlsbad, California (hereinafter referred to as "Contractor"), for design-build services in support of the Regional Plant No. 4 (RP-4) Influent Screen Replacement, Project No. EN19010.

NOW, THEREFORE, in consideration of the mutual promises and obligations set forth herein, the parties agree as follows:

1. **PROJECT MANAGER ASSIGNMENT**: All technical direction related to this Contract shall come from the designated Project Manager. Details of the Agency's assignment are listed below.

Project Manager: Michael Dias, P.E., Associate Engineer
Address: 6075 Kimball Avenue
Chino, California 91708
Telephone: (909) 993-1849
Facsimile: (909) 993-1982
Email: mdias@ieua.org

2. **CONTRACTOR ASSIGNMENT**: Special inquiries related to this Contract and the effects of this Contract shall be referred to the following:

Contractor: George E. Foote
Address: 701 Palomar Airport Road, Suite 280
Carlsbad, California, 92011
Telephone: (760)-871-0102
Facsimile: (760) 438-4322
Email: gfoote@stanekconstructors.com

3. **ORDER OF PRECEDENCE:** The documents referenced below represent the Contract Documents. Where any conflicts exist between the General Terms and Conditions, or addenda attached, then the governing order of precedence shall be as follows:

- A. Amendments to Contract Number 4600002814
- B. Contract Number 4600002814 General Terms and Conditions.
- C. Project Manager's Invitation for Bid (**Exhibit A**)
- D. Contractor's Proposal dated September 17, 2019 (**Exhibit B**)

4. **SCOPE OF WORK AND SERVICES:** Contractor's services and responsibilities shall be in accordance with Project Manager's Invitation for Bid, as outlined in **Exhibit A**, and Contractor's Proposal, **Exhibit B**, which are referenced herein, attached hereto, and made a part hereof (hereinafter "Work").

FAMILIARITY WITH SCOPE OF WORK: By execution of this Agreement, Contractor warrants that:

- (1) It has thoroughly investigated and considered the scope of the Work under this Agreement to be performed, based on all available information; and
- (2) It carefully considered how the Work should be performed; and
- (3) It fully understands the difficulties and restrictions attending the performance of the Work under this Agreement; and
- (4) It has the professional and technical competency to perform the Work and the production capacity to complete the Work in a timely manner with respect to the Scope of Work.

5. **TERM:** The term of this Contract shall extend from the Notice of Contract Award Date and terminate 365 calendar days thereafter, unless agreed to by both parties, reduced to writing, and amended to this Contract. The Notice to Proceed will be issued by the Project Manager after submission of the required documents listed in the Notice of Contract Award Letter.

6. **COMPENSATION:** Agency shall pay Contractor's once-monthly, properly executed invoice, approved by the Project Manager, within thirty (30) days following receipt of the invoice by Agency. Invoices shall include the name of assigned personnel, fully burdened hourly billing rate, dates worked, a brief description of work, as well as the Contract Number 4600002814 for payment. Payment shall be withheld for any service which does not meet Agency requirements or have proven unacceptable until such service is revised, the invoice resubmitted and accepted by the Project Manager. Contractor's original invoice shall be submitted electronically to apgroup@jeua.org. Should Contractor engage in any public works activity covered under California prevailing wage laws (California Labor Code §1720 et seq.) in excess of \$1,000.00 in billing value, Contractor shall provide with all public works invoicing certified payroll verifying that Contractor has paid prevailing wage in accordance with the Department of Industrial Relations requirements as stipulated in SB-854 [<http://www.dir.ca.gov/Public-Works/Certified-Payroll-Reporting.html>].

In compensation for the Work represented by this Contract, Agency shall pay Contractor NOT-TO-EXCEED a maximum total of **\$1,898,000.00** for all services provided in accordance with **Exhibit A**, referenced herein, attached hereto, and made a part hereof.

Agency may, at any time, make changes to the Scope of Work, including additions, reductions, and changes to any or all of the Work, as directed in writing by the Agency. Such changes shall be made by an Amendment to the Contract. Any changes shall be made by a written Amendment to the Contract. Contractor's invoice must be submitted according to milestones achieved by Contractor and accepted by the Agency's Project Manager, and shall include a breakdown by items completed, all associated labor provided, labor hours supplied and associated hourly rates, dates worked, the current monthly amount due, and the cumulative amount invoiced to-date against this Contract. Invoice shall not be submitted in advance and shall not be dated earlier than the actual date of submittal.

7. **CONTROL OF THE WORK:** The Contractor shall perform the Work in compliance with the Work Schedule. If performance of the Work falls behind schedule, the Contractor shall accelerate the performance of the Work to comply with the Work Schedule as directed by the Project Manager. If the nature of the Work is such that Contractor is unable to accelerate the Work, Contractor shall promptly notify the Project Manager of the delay, the causes of the delay, and submit a proposed revised Work Schedule.

8. **FITNESS FOR DUTY:**

A. **Fitness:** Contractor on the Jobsite:

1. shall report for work in a manner fit to do their job;
2. shall not be under the influence of or in possession of any alcoholic beverages or of any controlled substance (except a controlled substance as prescribed by a physician so long as the performance or safety of the Work is not affected thereby); and
3. shall not have been convicted of any serious criminal offense which, by its nature, may have a discernible adverse impact on the business or reputation of Agency.
4. **Compliance:** Contractor shall advise all Contractor and subcontractor personnel and associated third parties of the requirements of this Contract ("Fitness for Duty Requirements") before they enter on the Jobsite and shall immediately remove from the Jobsite any employee determined to be in violation of these requirements. Contractor shall impose these requirements on its Subcontractors. Agency may cancel the Contract if Contractor violates these Fitness for Duty Requirements.

B. California Department of Industrial Relations: For all public works performed in excess of **\$1,000.00**, **SB854 is applicable:**

Effective January 1, 2015: The call for bids and contract documents must include the following information:

1. No contractor or subcontractor may be listed on a bid proposal for a public works project (submitted on or after March 1, 2015) unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5 [with limited exceptions from this requirement for bid purposes only under Labor Code section 1771.1(a)].
2. No contractor or subcontractor may be awarded a contract for public work on a public works project (awarded on or after April 1, 2015) unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5.
3. This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. As such, a PWC-100 shall be generated under the direction of the IEUA Project Manager or their designee.

C. Confined Space Work:

1. Precautions and Programs:
 - a. The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the work or the activities of subcontractors, suppliers, and others at the work site.
 - b. The Contractors and subcontractors shall comply with the provisions of the Safety and Health Regulations for Construction, promulgated by the Secretary of Labor under Section 107 of the "Contract Work Hours and Safety Standards Act," as set forth in Title 29 C.F.R. If the Agency is notified of an alleged violation of the Occupational Safety and Health Standards referred to in this Section and it is established that there is a violation, the Contractor shall be subject to liquidated damages as provided in the Contract.
 - c. The Contractor and all subcontractors shall comply with the provisions of the Occupational Safety and Health Standards, promulgated by the United States Secretary of Labor under the "Occupational Safety and Health Act of 1970," as set forth in Title 29, C.F.R. Where an individual State act on occupational safety and health standards has been approved by federal authority, then the provisions of said state act shall control.

d. The Contractor shall take all necessary precautions for the safety of, and shall provide the necessary supervision, control, and direction to prevent damage, injury, or loss to:

- 1) All employees on the work or work site and other persons and organizations who may be affected thereby;
- 2) All the work and materials and equipment to be incorporated therein, whether in storage or on or off the work site; and
- 3) All other property at the site.

e. Contract work requiring confined space entry must follow Cal-OSHA Regulation 8 CCR, Sections 5157 - 5158. This regulation requires the following to be submitted to IEUA for approval prior to the start of the project:

- 1) *Proof of training on confined space procedures, as defined in Cal-OSHA Regulation 8 CCR, Section 5157. This regulation also requires the following to be submitted to IEUA for approval prior to the entry of a confined space:*
- 2) *A written plan that includes identification of confined spaces within the construction site, alternate procedures where appropriate, contractor provisions, specific procedures for permit-required and non-permit required spaces, and a rescue plan.*

f. The Contractor must also submit a copy of their Safety Program or IIPP prior to the start of the project for approval by the IEUA Safety Department.

9. **INSURANCE:** During the term of this Contract, the Contractor shall maintain at Contractor's sole expense, the following insurance.

A. **Minimum Scope of Insurance:** Coverage shall be at least as broad as:

1. Commercial General Liability (CGL): -Insurance Services Office (ISO) Form CG 00 01 covering CGL on an "occurrence" basis, including products and completed operations, property damage, bodily injury and personal & advertising injury with limits no less than \$1,000,000 per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (ISO CG 25 03 or 25 04) or the general aggregate limit shall be twice the required claim limit.
2. Automobile Liability: ISO Form Number CA 00 01 covering any auto (Code 1), or if Contractor has no owned autos, covering hired, (Code 8) and non-

owned autos (Code 9), with limit no less than \$1,000,000 per accident for bodily injury and property damage.

3. **Workers' Compensation and Employers Liability:** Workers' compensation limits as required by the State of California, with Statutory Limits, and Employer's Liability Insurance with limit of no less than \$1,000,000 per accident for bodily injury or disease.
4. **Professional Liability (Errors and Omissions):** Insurance appropriate to the Contractor's profession, with limit no less than \$1,000,000 per occurrence or claim, \$2,000,000 aggregate.

B. **Deductibles and Self-Insured Retention:** Any deductibles or self-insured retention must be declared to and approved by the Agency. At the option of the Agency, either: the insurer shall reduce or eliminate such deductibles or self-insured retention as respects the Agency, its officers, officials, employees and volunteers; or the Contractor shall procure a bond guaranteeing payment of losses and related investigations, claims administration and defense expenses.

C. **Other Insurance Provisions:** The policies are to contain, or be endorsed to contain, the following provisions:

1. **General Liability and Automobile Liability Coverage**

- a. **Additional Insured Status:** The Agency, its officers, officials, employees, and volunteers are to be covered as additional insureds on the CGL policy with respect to liability arising out of work or operations performed by or on behalf of the Contractor including materials, parts or equipment furnished in connection with such work or operations. General liability coverage can be provided in the form of an endorsement to the Contractor's insurance (at least as broad as ISO Form CG 20 10 11 85 or both CG 20 10, CG 20 26, CG 20 33, or CG 20 38; and CG 20 37 forms if later revisions used).
- b. **Primary Coverage:** The Contractor's insurance coverage shall be primary insurance coverage at least as broad as ISO CG 20 01 04 13 as respects the Agency, its officer, officials, employees and volunteers. Any insurance or self-insurance maintained by the Agency, its officers, officials, employees, volunteers, property owners or engineers under contract with the Agency shall be excess of the Contractor's insurance and shall not contribute with it.
- c. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the Agency, its officers, officials, employees or volunteers.

- d. The Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.
- e. The Contractor may satisfy the limit requirements in a single policy or multiple policies. Any such additional policies written as excess insurance shall not provide any less coverage than that provided by the first or primary policy.

2. Workers' Compensation and Employers Liability Coverage

The insurer hereby grants to Agency a waiver of any right to subrogation which any insurer of said Contractor may acquire against the Agency by virtue of the payment of any loss under such insurance. Contractor agrees to obtain any endorsement that may be necessary to affect this waiver of subrogation, but this provision applies regardless of whether or not the Agency has received a waiver of subrogation endorsement from the insurer.

3. All Coverages

Each insurance policy required by this contract shall be endorsed to state that coverage shall not be suspended, voided, canceled by either party, reduced in coverage or in limits except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to the Agency.

- D. Acceptability of Insurers: All insurance is to be placed with insurers with a current A.M. Best's rating of no less than A-:VII, and who are admitted insurers in the State of California.
- E. Verification of Coverage: Contractor shall furnish the Agency with original certificates and amendatory endorsements or copies of the applicable policy language effecting coverage required by this clause. All certificates and endorsements are to be received and approved by the Agency before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive the Contractor's obligation to provide them. The Agency reserves the right to require complete, certified copies of all required insurance policies, including endorsements required by these specifications, at any time.
- F. Submittal of Certificates: Contractor shall submit all required certificates and endorsements to the following:

Inland Empire Utilities Agency, a Municipal Water District
Attn: Angela Witte
P.O. Box 9020
Chino Hills, California 91709

10. LEGAL RELATIONS AND RESPONSIBILITIES

- A. Professional Responsibility: The Contractor shall be responsible, to the level of competency presently maintained by other practicing professionals performing the same or similar type of work.
- B. Status of Contractor: The Contractor is retained as an independent Contractor only, for the sole purpose of rendering the services described herein and is not an employee of the Agency.
- C. Observing Laws and Ordinances: The Contractor shall keep itself fully informed of all existing and future state and federal laws and all county and city ordinances and regulations which in any manner affect the conduct of any services or tasks performed under this Contract, and of all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the same. The Contractor shall at all times observe and comply with all such existing and future laws, ordinances, regulations, orders and decrees, and shall protect and indemnify, as required herein, the Agency, its officers, employees and agents against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order or decree, whether by the Contractor or its employees.
- D. Subcontract Services: Any subcontracts for the performance of any services under this Contract shall be subject to the written approval of the Project Manager. For this project subcontractor list law shall apply.
- E. Liquidated Damages: Liquidated Damages, in the amount of \$500 per day, may be assessed by the Agency for each calendar day that the Contractor fails to complete the services in accordance with the Work Schedule. Any and all Liquidated Damages assessed by the Agency will be taken as a direct credit against the Contractor's invoice for the missed services. The Contractor's acceptance of this contract, shall serve to indicate acceptance of this Liquidated Damages clause, and the daily assessment of damages expressed in this section
- F. Conflict of Interest: No official of the Agency who is authorized in such capacity and on behalf of the Agency to negotiate, make, accept or approve, or to take part in negotiating, making, accepting or approving this Contract, or any subcontract relating to services or tasks to be performed pursuant to this Contract, shall become directly or indirectly personally interested in this Contract.

Contractor understands and acknowledges that executing this Agreement may inhibit the Contractor from engaging in future contracts, jobs, or agreements with the Agency that is, or can be considered, related to the Scope of Work due to a potential conflict of interest.

- G. Equal Opportunity and Unlawful Discrimination: During the performance of this Contract, the Contractor shall not unlawfully discriminate against any employee or employment applicant because of race, color, religion, sex, age, marital status, ancestry, physical or mental disability, sexual orientation, veteran status or national

origin. The Agency is committed to creating and maintaining an environment free from harassment and discrimination. To accomplish these goals the Agency has established procedures regarding the implementation and enforcement of the Agency's Harassment Prohibition and Equal Employment Opportunity commitments. Please refer to IEUA Policies A-29 (Equal Employment Opportunity) and A-30 Harassment Prohibition for detailed information or contact the Agency's Human Resources Administrator. A copy of either of these Policies can be obtained by contacting the Project Manager for your respective Contract. Please advise any of your staff that believes they might have been harassed or discriminated against while on Agency property, to report said possible incident to either the Project Manager, or the Agency's Human Resources Administrator. Please be assured that any possible infraction shall be thoroughly investigated by the Agency.

- H. Non-Conforming Work and Warranty: Contractor represents and warrants that the Work and Documentation shall be adequate to serve the purposes described in the Contract. For a period of not less than one (1) year after acceptance of the completed Work, Contractor shall, at no additional cost to Agency, correct any and all errors in and shortcomings of the Work or Documentation, regardless of whether any such errors or shortcoming is brought to the attention of Contractor by Agency, or any other person or entity. Contractor shall within three (3) calendar days, correct any error or shortcoming that renders the Work or Documentation dysfunctional or unusable and shall correct other errors within thirty (30) calendar days after Contractor's receipt of notice of the error. Upon request of Agency, Contractor shall correct any such error deemed important by Agency in its sole discretion to Agency's continued use of the Work or Documentation within seven (7) calendar days after Contractor's receipt of notice of the error. If the Project Manager rejects all or any part of the Work or Documentation as unacceptable and agreement to correct such Work or Documentation cannot be reached without modification to the Contract, Contractor shall notify the Project Manager, in writing, detailing the dispute and reason for the Contractor's position. Any dispute that cannot be resolved between the Project Manager and Contractor shall be resolved in accordance with the provisions of this Contract. The Contractor's liability with respect to any claims arising out of the Work and the Contractor shall bear no liability whatsoever for any consequential loss, injury or damage incurred by the Agency, including but not limited to, claims for loss of use, loss of profits and loss of markets.
- I. Disputes:
1. All disputes arising out of or in relation to this Contract shall be determined in accordance with this section. The Contractor shall pursue the work to completion in accordance with the instruction of the Agency's Project Manager notwithstanding the existence of dispute. By entering into this Contract, both parties are obligated, and hereby agree, to submit all disputes arising under or relating to the Contract, which remain unresolved after the exhaustion of the procedures provided herein, to independent arbitration. Except as otherwise provided herein, arbitration shall be conducted under California Code of Civil Procedure Sections 1280, et. seq, or their successor.

2. Any and all disputes during the pendency of the work shall be subject to resolution by the Agency Project Manager and the Contractor shall comply, pursuant to the Agency Project Manager instructions. If the Contractor is not satisfied with any such resolution by the Agency Project Manager, they may file a written protest with the Agency Project Manager within seven (7) calendar days after receiving written notice of the Agency's decision. Failure by Contractor to file a written protest within seven (7) calendar days shall constitute waiver of protest, and acceptance of the Agency Project Manager's resolution. The Agency's Project Manager shall submit the Contractor's written protests to the General Manager, together with a copy of the Agency Project Manager's written decision, for his or her consideration within seven (7) calendar days after receipt of said protest(s). The General Manager shall make his or her determination with respect to each protest filed with the Agency Project Manager within ten (10) calendar days after receipt of said protest(s). If Contractor is not satisfied with any such resolution by the General Manager, they may file a written request for arbitration with the Project Manager within seven (7) calendar days after receiving written notice of the General Manager's decision.
3. In the event of arbitration, the parties hereto agree that there shall be a single neutral Arbitrator who shall be selected in the following manner:
 - a. The Demand for Arbitration shall include a list of five names of persons acceptable to the Contractor to be appointed as Arbitrator. The Agency shall determine if any of the names submitted by Contractor are acceptable and, if so, such person shall be designated as Arbitrator.
 - b. In the event that none of the names submitted by Contractor are acceptable to Agency, or if for any reason the Arbitrator selected in Step (a) is unable to serve, the Agency shall submit to Contractor a list of five names of persons acceptable to Agency for appointment as Arbitrator. The Contractor shall, in turn, have seven (7) calendar days in which to determine if one such person is acceptable.
 - c. If after Steps (a) and (b), the parties are unable to mutually agree upon a neutral Arbitrator, the matter of selection of an Arbitrator shall be submitted to the San Bernardino County Superior Court pursuant to Code of Civil Procedure Section 1281.6, or its successor. The costs of arbitration, including but not limited to reasonable attorneys' fees, shall be recoverable by the party prevailing in the arbitration. If this arbitration is appealed to a court pursuant to the procedure under California Code of Civil Procedure Section 1294, et. seq., or their successor, the costs of arbitration shall also include court costs associated with such appeals, including but not limited to reasonable attorneys' fees which shall be recoverable by the prevailing party.

4. **Joinder in Mediation/Arbitration:** The Agency may join the Contractor in mediation or arbitration commenced by a subcontractor on the Project pursuant to Public Contracts Code Sections 20104 et seq. Such joinder shall be initiated by written notice from the Agency's representative to the Contractor.

11. **INDEMNIFICATION:** Contractor shall indemnify the Agency, its directors, employees and assigns, and shall defend and hold them harmless from all liabilities, demands, actions, claims, losses and expenses, including reasonable attorneys' fees, which arise out of or are related to the negligence, recklessness or willful misconduct of the Contractor, its directors, employees, agents and assigns, in the performance of work under this Contract, to the extent caused by Contractor's negligence or willful misconduct. Notwithstanding the foregoing, to the extent that this Contract includes design professional services under Civil Code Section 2782.8, as may be amended from time to time, such duties of Contractor to defend and to indemnify Agency shall only be to the full extent permitted by Civil Code Section 2782.8.

12. **OWNERSHIP OF MATERIALS AND DOCUMENTS/CONFIDENTIALITY:** The Agency retains ownership of any and all partial or complete reports, drawings, plans, notes, computations, lists, and/or other materials, documents, information, or data prepared by the Contractor and/or the Contractor's subcontractor(s) pertaining to this Contract. Any modifications or reuse of such materials for purposes other than those intended by the Contract shall be at the Agency's sole risk and without liability to Contractor. Said materials and documents are confidential and shall be available to the Agency from the moment of their preparation, and the Contractor shall deliver same to the Agency whenever requested to do so by the Project Manager and/or Agency. The Contractor agrees that same shall not be made available to any individual or organization, private or public, without the prior written consent of the Agency.

13. **TITLE AND RISK OF LOSS:**
 - A. **Documentation:** Title to the Documentation shall pass to Agency when prepared; however, a copy may be retained by Contractor for its records and internal use. Contractor shall retain such Documentation in a controlled access file, and shall not reveal, display or disclose the contents of the Documentation to others without the prior written authorization of Agency or for the performance of Work related to the Project.

 - B. **Material:** Title to all Material, field or research equipment, and laboratory models, procured or fabricated under the Contract shall pass to Agency when procured or fabricated, and such title shall be free and clear of any and all encumbrances. Contractor shall have risk of loss of any Material or Agency-owned equipment of which it has custody.

 - C. **Disposition:** Contractor shall dispose of items to which Agency has title as directed in writing by the Agreement Administrator and/or Agency.

14. PROPRIETARY RIGHTS:

A. Rights and Ownership: Agency's rights to inventions, discoveries, trade secrets, patents, copyrights, and other intellectual property, including the Information and Documentation, and revisions thereto (hereinafter collectively referred to as "Proprietary Rights"), used or developed by Contractor in the performance of the Work, shall be governed by the following provisions:

1. Proprietary Rights conceived, developed, or reduced to practice by Contractor in the performance of the Work shall be the property of Agency, and Contractor shall cooperate with all appropriate requests to assign and transfer same to Agency.
2. If Proprietary Rights conceived, developed, or reduced to practice by Contractor prior to the performance of the Work are used in and become integral with the Work or Documentation, or are necessary for Agency to have complete enjoyment of the Work or Documentation, Contractor shall grant to Agency a non-exclusive, irrevocable, royalty-free license, as may be required by Agency for the complete enjoyment of the Work and Documentation, including the right to reproduce, correct, repair, replace, maintain, translate, publish, use, modify, copy or dispose of any or all of the Work and Documentation and grant sublicenses to others with respect to the Work and Documentation.
3. If the Work or Documentation includes the Proprietary Rights of others, Contractor shall procure, at no additional cost to Agency, all necessary licenses regarding such Proprietary Rights so as to allow Agency the complete enjoyment of the Work and Documentation, including the right to reproduce, correct, repair, replace, maintain, translate, publish, use, modify, copy or dispose of any or all of the Work and Documentation and grant sublicenses to others with respect to the Work and Documentation. All such licenses shall be in writing and shall be irrevocable and royalty-free to Agency.

B. No Additional Compensation: Nothing Set forth in this Contract shall be deemed to require payment by Agency to Contractor of any compensation specifically for the assignments and assurances required hereby, other than the payment of expenses as may be actually incurred by Contractor in complying with this Contract.

15. INFRINGEMENT: Contractor represents and warrants that the Work and Documentation shall be free of any claim of trade secret, trademark, trade name, copyright, or patent infringement or other violations of any Proprietary Rights of any person. Contractor shall defend, indemnify and hold harmless, Agency, its officers, directors, agents, employees, successors, assigns, servants, and volunteers free and harmless from any and all liability, damages, losses, claims, demands, actions, causes of action, and costs including reasonable attorney's fees and expenses arising out of any claim that use of the

Work or Documentation infringes upon any trade secret, trade mark, trade name, copyright, patent, or other Proprietary Rights.

Contractor shall, at its expense and at Agency's option, refund any amount paid by Agency under the Contract, or exert its best efforts to procure for Agency the right to use the Work and Documentation, to replace or modify the Work and Documentation as approved by Agency so as to obviate any such claim of infringement, or to put up a satisfactory bond to permit Agency's continued use of the Work and Documentation.

16. **NOTICES:** Any notice may be served upon either party by delivering it in person, or by depositing it in a United States Mail deposit box with the postage thereon fully prepaid, and addressed to the party at the address set forth below:

Agency: Warren T. Green
Manager of Contracts
Inland Empire Utilities Agency, a Municipal Water District
P.O. Box 9020
Chino Hills, California 91709

Contractor: George E. Foote
President
Stanek Constructors, Inc.
701 Palomar Airport Road, Suite 280
Carlsbad, California 92011

Any notice given hereunder shall be deemed effective in the case of personal delivery, upon receipt thereof, or, in the case of mailing, at the moment of deposit in the course of transmission with the United States Postal Service.

17. **SUCCESSORS AND ASSIGNS:** All of the terms, conditions and provisions of this Contract shall inure to the benefit of and be binding upon the Agency, the Contractor, and their respective successors and assigns. Notwithstanding the foregoing, no assignment of the duties or benefits of the Contractor under this Contract may be assigned, transferred or otherwise disposed of without the prior written consent of the Agency; and any such purported or attempted assignment, transfer or disposal without the prior written consent of the Agency shall be null, void and of no legal effect whatsoever.
18. **PUBLIC RECORDS POLICY:** Information made available to the Agency may be subject to the California Public Records Act (Government Code Section 6250 et seq.) The Agency's use and disclosure of its records are governed by this Act. The Agency shall use its best efforts to notify Contractor of any requests for disclosure of any documents pertaining to this work.

In the event of litigation concerning disclosure of information Contractor considers exempt from disclosure, (e.g., "Confidential," "Proprietary" or "Trade Secret,") Agency shall act as a stakeholder only, holding the information until otherwise ordered by a court or other legal process. If Agency is required to defend an action arising out of a Public Records Act request for any of the information Contractor has marked "Confidential," "Proprietary" or

"Trade Secret," Contractor shall defend and indemnify Agency from all liability, damages, costs, and expenses, including attorneys' fees, in any action or proceeding arising under the Public Records Act.

19. CERTIFICATION UNDER LABOR CODE SECTION 1861 BY CONTRACTOR: I, the undersigned Contractor, am aware of the provisions of Section 3700 et seq. of the Labor Code which requires every employer to be insured against liability for Worker's Compensation or to undertake self-insurance in accordance with the provisions of the Code, and I, the undersigned Contractor, agree to and will comply with such provisions before commencing the performance of the work of this Agreement.
20. RIGHT TO AUDIT: The Agency reserves the right to review and/or audit all Contractor's records related to the Work. The option to review and/or audit may be exercised during the term of the Contract, upon termination, upon completion of the Contract, or at any time thereafter up to twelve (12) months after termination of the Contract. The Contractor shall make all records and related documentation available within three (3) working days after said records are requested by the Agency.
21. INTEGRATION: The Contract Documents represent the entire Contract of the Agency and the Contractor as to those matters contained herein. No prior oral or written understanding shall be of any force or effect with respect to those matters covered by the Contract Documents. This Contract may not be modified, altered or amended except by written mutual agreement by the Agency and the Contractor.
22. GOVERNING LAW: This Contract is to be governed by and constructed in accordance with the laws of the State of California, County of San Bernardino.
23. TERMINATION FOR CONVENIENCE: The Agency reserves and has the right to immediately suspend, cancel or terminate this Contract at any time upon written notice to the Contractor. In the event of such termination, the Agency shall pay Contractor for all authorized and Contractor-invoiced services up to the date of such termination.
24. FORCE MAJEURE: Neither party shall hold the other responsible for the effects of acts occurring beyond their control; e.g., war, riots, strikes, natural disasters, etcetera.
25. NOTICE TO PROCEED: No services shall be performed or furnished under this Contract unless and until this document has been properly signed by all responsible parties and a Notice to Proceed order has been issued to the Contractor.
26. AGENCY-PROVIDED INFORMATION AND SERVICES: The Agency shall furnish Contractor available studies, reports and other data pertinent to Contractor's services; obtain or authorize Contractor to obtain or provide additional reports and data as required; furnish to Contractor services of others required for the performance of Contractor's services hereunder, all subject to Agency's prior approval, and Contractor shall be entitled to use and rely upon all such information and services provided by the Agency or others in performing Contractor's services under this Agreement.

27. THIRD PARTIES: The services to be performed by Contractor are intended solely for the benefit of the Agency. No person or entity not a signatory to this Agreement shall be entitled to rely on Contractor's performance of its services hereunder, and no right to assert a claim against Contractor by assignment of indemnify rights or otherwise shall accrue to a third party as a result of this Agreement of the performance of Contractor's services hereunder.

IN WITNESS WHEREOF, the parties hereto have caused the Contract to be entered as of the day and year written above.

INLAND EMPIRE UTILITIES AGENCY:
(A Municipal Water District)

STANEK CONSTRUCTORS, INC.:

Shivaji Deshmukh
General Manager

(Date)



George E. Foote
President

9/25/19

(Date)

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**ACTION
ITEM
1C**



Date: October 16, 2019

To: The Honorable Board of Directors

From: Shivaji Deshmukh, General Manager

Committee: Engineering, Operations & Water Resources

10/09/19

Executive Contact: Christiana Daisy, Executive Manager of Engineering/AGM

Subject: RP-1 Mechanical Restoration and Improvements Project Programming Services

Executive Summary:

On September 18, 2019, the IEUA Board awarded a construction contract to Kiewit Infrastructure West Inc., to perform work at Regional Water Recycling Plant No.1 (RP-1). The contractor will replace mechanical (pumps, valves, piping, etc.) and electrical equipment (motor control centers, breakers, conductors, etc.) in both of the conventional activated sludge pump station buildings used to treat wastewater. Programming services are required through this project to integrate the new electrical equipment with the standardized software platform, Rockwell PlantPax.

On January 17, 2018, a Master Service Contract was established with Technical Systems, Inc., (TSI) to perform all RP-1 programming services and provide on-call support as needed through January 2021.

Staff requests task order approval for TSI to provide programming services during the construction of this project, through the Master Services Contract, 4600002467, for the not-to-exceed amount of \$221,715.

Staff's Recommendation:

1. Approve a task order with Technical Services, Inc., for the RP-1 Mechanical Restoration and Improvements, through the Master Services Contract, 4600002467, for the not-to-exceed amount of \$221,715; and

2. Authorize the General Manager to execute the task order, subject to non-substantive changes.

Budget Impact Budgeted (Y/N): Y Amendment (Y/N): N Amount for Requested Approval:

Account/Project Name:

EN17082/ RP-1 Mechanical Restorations and Improvements

Fiscal Impact (explain if not budgeted):

None.

Prior Board Action:

On November 21, 2018, the Board of Directors approved an amendment to Stantec's contract for consultant engineering services for the not-to-exceed amount of \$113,400.

On September 18, 2019, the Board of Directors approved an amendment to Stantec's contract for consultant engineering services for the not-to-exceed amount of \$430,000.

On September 18, 2019, the Board of Directors awarded a construction contract to Kiewit Infrastructure West Inc., for the not-to-exceed contract amount of \$6,627,000.

Environmental Determination:

Categorical Exemption

CEQA identifies certain categories of projects as exempt from more detailed environmental review because these categories have been deemed to have no potential for significant impact on the environment. This project qualifies for a Categorical Exemption Class 1 as defined in Section 15301(b) of the State CEQA Guidelines.

Business Goal:

The RP-1 Mechanical Restoration and Improvements Project is consistent with IEUA's Business Goal of Wastewater Management, specifically the Asset Management objective that IEUA will ensure the treatment facilities are well maintained, upgraded to meet evolving requirements, sustainably managed, and can accommodate changes in regional water use.

Attachments:

Attachment 1 - PowerPoint

Attachment 2 - TSI Task Order

Attachment 1

RP1 Mechanical Restoration & Improvements

Technical Services, Inc. Task Order

Project No. EN17082

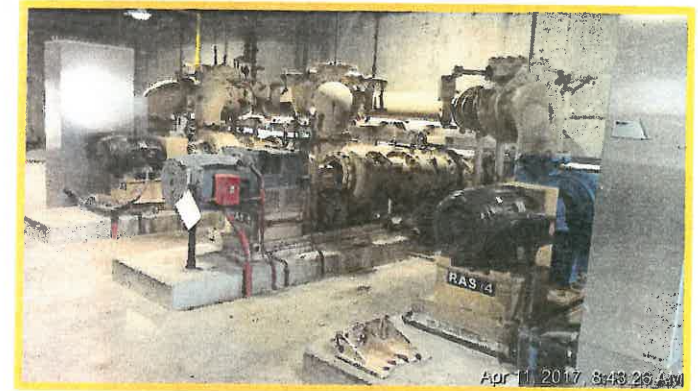


Project Location

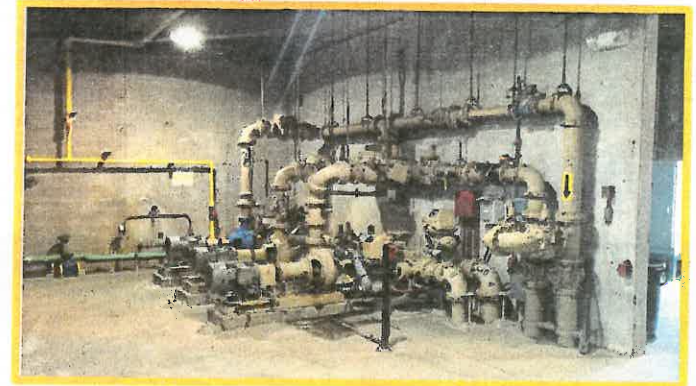


The Project

- Construction Contract Awarded on September 18, 2019
 - Replace all sludge pumps, scum pumps, and piping
 - Upgrade inefficient motor drives
 - Replace motor control centers
- Programming services required for new electrical equipment
 - Integration needed for new electrical equipment
 - Standardized software platform, Rockwell PlantPax



Return Activated Sludge Pump Equipment



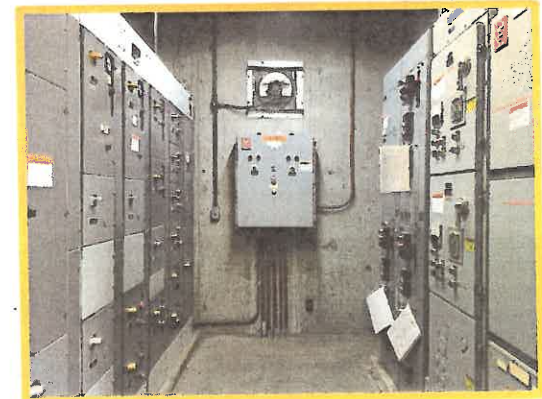
Waste Activated Sludge Pump Equipment

System Integration Master Service Contract

- **Technical Systems, Inc. (TSI) Master Services Contract**
 - Perform all RP-1 programming services;
 - Provide on-call support as needed;
 - Contract not-to-exceed value is \$1,800,000; and
 - Contract through January 31, 2021
- **Project controls programming services support:**
 - Serve as the qualified systems integrator through construction
 - Integrate new electrical equipment with the standardized software platform, Rockwell PlantPAX
 - Provide controls testing, training, startup, and commissioning



Building E Pump Station



Existing Motor Control Center

Project Budget and Schedule

Description	Estimated Cost	Project Milestone	Date
Design Services		Construction	
	\$797,639	Construction Contract Award	September 2019
Design Consultant Contract	\$583,287	Construction Completion	March 2021
IEUA Design Services (actuals)	\$214,352		
Construction Services			
	\$1,115,605		
Engineering Services During Construction	\$430,000		
IEUA Construction Services (estimate)	\$463,890		
TSI Task Order (this action)	\$221,715		
Construction			
	\$7,289,700		
Construction Contract	\$6,627,000		
Contingency (~10%)	\$662,700		
Total Project Cost:	\$9,202,944		
Total Project Budget:	\$10,646,000		

Recommendations

- Approve a task order with Technical Services, Inc., for the RP-1 Mechanical Restoration and Improvements, through the Master Services Contract, 4600002467, for the not-to-exceed amount of \$221,715; and
- Authorize the General Manager to execute the task order, subject to non-substantive changes.

The RP-1 Mechanical Restoration and Improvements Project is consistent with *IEUA's Business Goal of Wastewater Management*, specifically the Asset Management objective that IEUA will ensure the treatment facilities are well maintained, upgraded to meet evolving requirements, sustainably managed, and can accommodate changes in regional water use.

Attachment 2



Date: September 17, 2019
Consultant: Technical Systems, Inc.

Task Order Number: 3
Contract Number: 4600002467

Project / Task Description: Mechanical Restoration and Upgrades

I. RECITALS

This Task Order is issued for the procurement of professional consulting services needed in support of the Inland Empire Utilities Agency (hereinafter interchangeably "IEUA" and "Agency") Project No. EN17082.00.

Agency and Consultant previously entered into Master Services Contract 4600002467. Except as otherwise specified herein, all terms and conditions of that Agreement are incorporated into this Task Order via this reference.

II. TASK ORDER AGREEMENTS

1. Scope of Work: Consultant shall furnish the qualified personnel, equipment, materials, and supplies necessary to perform the work as outlined in **Exhibit 1**, which is attached hereto, referenced herein, and made a part hereof.
 - 1.1 SB854 Requirements:
 - No contractor or subcontractor may be listed on a bid proposal for a public works project (submitted on or after March 1, 2015) unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5 [with limited exceptions from this requirement for bid purposes only under Labor Code section 1771.1(a)].
 - No contractor or subcontractor may be awarded a contract for public work on a public works project (awarded on or after April 1, 2015) unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5.
 - This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. Basis this Task Order's valuation, a PWC-100 shall be generated as per **Exhibit 2**.
2. Period of Performance: From date of Project Manager's Notice to Proceed through Project's completion. All work is to be performed in a timely manner and in accordance with the Project Manager's schedule, unless agreed to by both parties, reduced to writing, and amended to this Task Order.

3. Compensation: Authorized total payments to Consultant for performance of this time-and-materials Task Order shall sum to a total **not-to-exceed maximum** of **\$221,715.00** as estimated in Consultant's Quote dated September 9, 2019, attached hereto, referenced herein, and made a part hereof as **Exhibit 2** and as approved by SAP Purchase Requisition 10050778. NOTE: Compensation is based on submitted fees rates included in the Master Services Contract.)

4. Assigned Personnel: The below-listed named personnel are assigned to direct the performance of this Task Order on behalf of the respective Parties:

PROJECT MANAGER ASSIGNMENT: All technical direction related to this Task Order shall come from the designated Project Manager. Details of Agency's assignment are listed below:

Project Manager: Travis Sprague, Senior Associate Engineer
Address: 6075 Kimball Avenue, Building "B"
Chino, California 91708
Telephone: (909) 993-1942
Email: tsprague@ieua.org

CONSULTANT ASSIGNMENT: Special inquiries related to this Agreement and the effects of this Agreement shall be referred to the following:

Project Manager: Brad Peistrup, Sr. Vice President - Business Development
Address: 2303 196th Street SW
Lynnwood, WA 98036
Telephone: (425) 678-4170
Email: bradp@tsicontrols.com

5. Task Order Modifications: No communication, either written or oral, by other than written and bi-laterally executed change order shall be effective to modify or otherwise affect the provisions of this Task Order.

III. SIGNATURES

INLAND EMPIRE UTILITIES AGENCY:
(A Municipal Water District)

TECHNICAL SYSTEMS, INC.:

Shivaji Deshmukh
General Manager

Brad Peistrup
Senior Vice President - Business Development

Date: _____

Date: _____

Exhibit 1

Task Order Request for Master Contract 4600002467

Project Number: EN17082

Project Title: RP-1 Mechanical Restoration and Improvements

Project Contact: Travis Sprague

Date Sent: 08/21/2019

Contact Number: (909) 635-5297

Contact Email: tsprague@ieau.org

Task/Direction: RP-1 Mechanical Restoration and Improvements Controls Programming Services

Project Background:

The site of work is located at Regional Plant No. 1 (RP-1) Water Recycling Facility located in Ontario, CA. IEUA intends to Restore conditions of the pumping equipment and mechanical piping in Building K and Building E; improve sludge pumping facilities at DAF Thickener 3 and the Digester Sludge Transfer Pump Station No.1, including the following installations:

- Replace existing (9) RAS and (5) WAS pumps with new horizontal solids-handling pumps with flushless mechanical seals.
- Replace existing motor starters and "eddy current clutch" drives for (3) RAS pumps and (3) WAS pumps and replace existing VFDs for (2) WAS pumps, with new VFDs.
- Demolish disconnected controllers/panels in both Building K and Building E. Replace existing MCC-5M and MCC-5MA with (2) new MCCs and a new Panelboard in Building K. Replace existing MCC-14 with (2) new MCCs and a new Panelboard in Building E.
- Replace existing power conductors and control wires serving new and existing equipment. Install new conduits as needed.
- Modify existing (6) RAS pump VFDs to Ethernet based monitoring system.
- Replace existing (1) 4" WAS flow meter in Building K and replace existing (1) 14"
- Replace existing (4) scum pumps at Building K and Building E with centrifugal chopper pumps and replace existing scum piping and valves associated with pumps.
- Replace existing (2) scum pump control panels in Building K and Building E.
- Replace existing roof exhaust fans with larger capacity units on the roof of Building K and Building E.
- Install new air conditioning systems in MCC rooms in Building K and Building E.
- Install (2) sludge grinders on suctions of existing thickened sludge transfer pumps at DAFT 3 and modify sludge piping as necessary for grinder installation. Install grinder motor starters in existing MCC.
- Install (2) sludge grinders on suctions of two existing sludge transfer pumps at the Digester Sludge Transfer Pump Station No.1 and modify sludge piping at necessary for grinder installation. Install grinder motor starter in existing MCC.

The project scope listed above has equipment which have long lead times ranging from 18 – 32 weeks. The RP-1 Mechanical Restorations and Improvements project anticipates a construction contract award on September 18, 2019, with project completion April 2021.

IEUA desires to retain Technical Systems, Inc. to provide professional controls programming services associated with the construction of the RP-1 Mechanical Restoration and Improvements project.

IEUA is requesting a proposal from Technical Systems, Inc. to provide the following controls programming services for the subject project:

1. Attend and participate as needed at the Pre-Construction Conference. (4 hours)
2. Attend and participate as needed at the Overall System Workshop. (4-6 hours)
3. Attend and participate as needed at the Electrical I&C and Mechanical Workshop. (4-6 hours)
4. Attend and present at the SCADA System Programming Workshop. (4-6 hours)
5. Attend and participate as needed at the 70% complete Workshop. (4 hours)
6. Attend and participate as needed at the Project Testing, Training, Startup & Commissioning Workshop. (4-6 hours)
7. Provide system integrations and coordination with the Contractor for Instrumentation and Controls, specified in Technical Specification 17010.
8. Provide programming and coordination with the Contractor for PLC/HMI Applications Software, specified

in Technical Specification 17100; Control Strategy, specified in Technical Specification 17300; PLC-Based Control System Hardware, specified in Technical Specification 17510; and PLC-Based Control System Software, specified in Technical Specification 17520.

9. Technical Systems, Inc. will be considered the qualified Systems Integrator responsible for the PLC/HMI development and the DCS development of the Rockwell PlantPAx systems for the project.
10. Provide the labor, research, documents, software, tools, and other items and services necessary to implement the required controls programming for the project. This shall include time to prepare submittals, potential resubmittals, and controls programming.
11. Provide the necessary controls testing, training, startup & commissioning activities necessary for the requirements of the project.
12. Provide the necessary services for project closeout pertaining to the controls programming.

Please use the following FTP link (<https://ieua.hostedftp.com/>) to access the project bid package and addendums for the complete project requirements.

Please provide IEUA with a proposal by close of business August 30, 2019, or if possible, sooner. Please contact Travis Sprague at (909) 635 - 5297 or at tsprague@ieua.org with any questions. IEUA looks forward to receiving your proposal.

Consultant Notes:

- ❖ *Project number includes work breakdown structure used in accounting, and should be used when invoicing.*
- ❖ *Task or direction may change at any time, but must be coordinated via discussion, email, or other form of communication between Consultant and Project Manager.*
- ❖ *If the Consultant anticipates additional hours to those estimated/allocated by the Project Manager, the Consultant shall notify the Project Manager prior to performing work beyond the task order estimated hours.*
- ❖ *Following receipt of the task order, the Consultant shall contact the Project Manager and confirm receipt.*

Exhibit 2



So. CA Office
36-B Mauchly
Irvine, CA 92618
TSIcontrols.com

Scope Letter: 3 pages

September 9, 2019

Quote Number: xxxx

To: IEUA

Attn: John Scherck

Project: RP-1 Mechanical Restoration Controls Programming Services

**Reference: Task Order Sent 8/21/19
Project Plans and Specs**

Bid Date:

Bid Time:

Technical Systems, Inc. (TSI) is pleased to provide a quote for the above referenced project. No material is supplied as part of this project. TSI's price includes applicable taxes.

TSI's price for the scope of work detailed on the following pages:

Project Scope of Work Breakdown Pricing:

Project Management:	152 Hours/\$190.00	<u>\$ 28,880.00</u>
Programming:	1032 Hours/\$175.00	<u>\$180,600.00</u>
Travel:		<u>\$ 12,235.00</u>
Total Pricing:		<u>\$221,715.00</u>

Terms: Net 30

FOB: Lynnwood WA

Freight: Prepaid

Please call me with any question you may have concerning pricing or any technical questions.

Sincerely,

Leo Rodgers
Technical Systems, Inc.
1-425-775-5696
leor@tsicontrols.com

Project Scope of Work

Meetings will be attended by the PM, and/or the Software Engineer. (either by phone or in person)

1. Attend and participate as needed at the Pre-Construction Conference.
2. Attend and participate as needed at the Overall System Workshop.
3. Attend and participate as needed at the Electrical I&C and Mechanical Workshop.
4. Attend and present at the SCADA System Programming Workshop.
5. Attend and participate as needed at the 70% complete Workshop.
6. Attend and participate as needed at the Project Testing, Training, Startup & Commissioning Workshop.
7. Provide system integrations and coordination with the Contractor for Instrumentation and Controls, specified in Technical Specification 17010.
8. Provide programming and coordination with the Contractor for PLC/HMI Applications Software, specified in Technical Specification 17100; Control Strategy, specified in Technical Specification 17300; PLC-Based Control System Hardware, specified in Technical Specification 17510; and PLC-Based Control System Software, specified in Technical Specification 17520.
9. Provide the labor research, documents, software, tools, and other items and services necessary to implement the required controls programming for the project. This shall include time to prepare submittals, potential resubmittals, and controls programming.
10. Provide the necessary controls testing, training, startup & commissioning activities necessary for the requirements of the project.
11. Provide the necessary services for project closeout pertaining to the controls programming.
12. TSI will be upgrading the existing ABCL12 PLC code to IEUA PlantPAX standards. Project EN-17082 depicts the upgrades to the RAS, WAS, Sludge Grinders, and Scum Pumps. These drawings show a combined 237 I/O points.
13. The ABLC12 PLC program also includes programming for the Aerated Grit, Pista Grit, Washer Clarifiers, Aeration, Mixed Liquor, and various HVAC systems. The programming for these systems do not align with the Agency's current programming standards and methods. TSI shall reprogram to follow the Agency's new programming structure. Interfaces to the Montclair Lift Station, Philadelphia Lift Station, Montclair Diversion Structure, Aeration Blowers, and Boilers shall be maintained. Additionally, the tags identified as interfaces to the existing Foxboro will also be maintained.
14. TSI will develop new SCADA screens for project EN17082. TSI assumes these will be imported into existing factory talk applications.
15. TSI will program the DLR network as needed to include the new VFD's and Stratix switches. TSI will not provide networking configuration for any existing switches.
16. No Local OIT/Panelview programming is included.

Preliminary List of Submittals

1. PLC I/O List
2. 30% Programming Submittal (HMI Screens and PLC program)
3. 70% Programming Submittal (HMI Screens and PLC program)
4. Software Testing Plan

General

1. TSI supplies a bill of materials, CAD-based drawings, and Operations and Maintenance Manuals for all equipment furnished by TSI.
2. TSI supplies the required field startup services for this project.
3. Panels fabricated by TSI are UL 508 labeled.

STANDARD INCLUSIONS

We provide the following unless specifically excluded on our bill of material:

- 1) Equipment shipped FOB factory with freight allowed, tailgate, destination.
- 2) Field wiring diagrams showing interconnection of field instruments and instrumentation panels for any equipment supplied by TSI.
- 3) Instruction manuals as required.
- 4) All necessary field start-up and calibration of the equipment supplied by TSI.

STANDARD EXCLUSIONS

We do NOT include the following unless specifically included in our bill of material:

- 1) Pipe, tubing, valves or fittings between the instrument and the process.
- 2) Conduit, wire or cable not an integral part of the instrument.
- 3) Mounting brackets, stanchions, supports or mounting pads not an integral part of the instrument.
- 4) **Labor to install the equipment.**
- 5) The Cost, (if due to local union regulations), to have local craftsman make adjustments or wiring modifications to our equipment during start-up and calibration.
- 6) Any material or services not in our quoted sections.
- 7) Freight of MCC's from TSI to Jobsite
- 8) Bonding Costs
- 9) Any software or software license costs
- 10) PLC Hardware
- 11) Local OIT/Panelview programming
- 12) Reports programming

**ACTION
ITEM
1D**



Date: October 16, 2019

To: The Honorable Board of Directors

From: Shivaji Deshmukh, General Manager SD

Committee: Engineering, Operations & Water Resources

10/09/19

Executive Contact: Christiana Daisy, Executive Manager of Engineering/AGM

Subject: RP-1 Primary Sludge Piping Repair Construction Contract Award

Executive Summary:

Regional Water Recycling Plant No.1 (RP-1) primary sludge pumping system is currently off-line due to discharge piping rupturing in the pump station gallery. The goal of the project is to repair the piping to bring the pump system back on-line. In addition, this project will address the clogging issues occurring within the grit pumping system's discharge piping at headworks.

On September 9, 2019, IEUA received three construction bids from the "two-million and under" pre-qualified contractor list. AToM Engineering Construction, Inc. was the lowest responsive and responsible bidder with a bid price of \$107,398. The engineer's estimate was \$55,000.

Staff's Recommendation:

1. Award a construction contract for the RP-1 Primary Sludge Piping Repair, Project No. EN20060, to AToM Engineering Construction, Inc., in the amount of \$107,398; and
2. Authorize the General Manager to execute the contract, subject to non-substantive changes.

Budget Impact *Budgeted (Y/N): Y* *Amendment (Y/N): N* *Amount for Requested Approval:*

Account/Project Name:

EN20060/ RP-1 Primary Sludge Piping Repair

Fiscal Impact (explain if not budgeted):

None.

Prior Board Action:

None.

Environmental Determination:

Statutory Exemption

The project is statutorily exempt based on the CEQA General Rule found in Section 15061(b)(3) of the State CEQA Guidelines.

Business Goal:

The RP-1 Primary Sludge Piping Repair Project is consistent with IEUA's Business Goal of Wastewater Management, specifically the Asset Management objective that IEUA will ensure the treatment facilities are well maintained, upgraded to meet evolving requirements, sustainably managed, and can accommodate changes in regional water use.

Attachments:

Attachment 1 - PowerPoint

Attachment 2 - Construction Contract

Attachment 1

RP-1 Primary Sludge Piping Repair Construction Contract Award

Project No. EN20060



Project Location



The Project

- Primary sludge piping failed
- Headworks grit pump pipeline clogging
- Scope includes:
 - Demo/remove existing piping
 - Replace primary sludge piping
 - Modify the headworks grit piping



Ruptured Primary Sludge Piping



Grit Pump Discharge Pipeline

Contractor Selection

Three bids were received on September 9, 2019:

Bidder's Name	Final Bid Amount
AToM Engineering Construction, Inc.	\$107,398
Tharsos, Inc.	\$116,000
W.A. Rasic Construction	\$137,572
Engineer's Estimate	\$55,000

Project Budget and Schedule

Description	Estimated Cost
Design Services	\$0
IEUA Design Services	\$0
Construction Services	\$7,500
IEUA Construction Services (~7%)	\$7,500
Construction	\$122,500
Construction Contract (this action)	\$107,398
Contingency (~15%)	\$15,102
Total Project Cost:	\$130,000
Total Project Budget:	\$140,000

Project Milestone	Date
Construction	
Construction Contract Award	October 2019
Construction Completion	January 2020

Recommendation

1. Award a construction contract for the RP-1 Primary Sludge Piping Repair, Project No. EN20060, to AToM Engineering Construction, Inc., in the amount of \$107,398; and
2. Authorize the General Manager to execute the contract, subject to non-substantive changes.

The RP-1 Primary Sludge Piping Repair Project is consistent with **IEUA's Business Goal of Wastewater Management**, specifically the Asset Management objective that IEUA will ensure the treatment facilities are well maintained, upgraded to meet evolving requirements, sustainably managed, and can accommodate changes in regional water use.

Attachment 2

SECTION D - CONTRACT AND RELEVANT DOCUMENTS

1.0 CONTRACT

THIS CONTRACT, made and entered into this _____ day of _____, 20____, by and between AToM Engineering Construction, Inc., hereinafter referred to as "CONTRACTOR," and The Inland Empire Utilities Agency, a Municipal Water District, located in San Bernardino County, California, hereinafter referred to as "IEUA".

WITNESSETH:

That for and in consideration of the promises and agreements hereinafter made and exchanged, IEUA and the CONTRACTOR agree as follows:

- A. CONTRACTOR agrees to perform and complete in a workmanlike manner, all Work required under these Bid Documents **FOR RP-1 Plant 2 Sludge Piping Repair Project No. EN20060**, in accordance with the Bid Documents, and to furnish at their own expense, all labor, materials, equipment, tools, and services necessary, except such materials, equipment, and services as may be stipulated in said Bid Documents to be furnished by IEUA, and to do everything required by this Contract and the said Bid Documents.
- B. For furnishing all said labor, materials, equipment, tools, and services, furnishing and removing all plant, temporary structures, tools and equipment, and doing everything required by this Contract and said Bid Documents; also for all loss and damage arising out of the nature of the Work aforesaid, or from the action of the elements, or from any unforeseen difficulties which may arise during the prosecution of the Work until its acceptance by IEUA, and for all risks of every description connected with the Work; also for all expenses resulting from the suspension or discontinuance of Work, except as in the said Bid Documents are expressly stipulated to be borne by IEUA; and for completing the Work in accordance with the requirements of said Bid Documents, IEUA will pay and said CONTRACTOR shall receive, in full compensation therefore, the price(s) set forth in this Contract.
- C. That IEUA will pay the CONTRACTOR progress payments and the final payment, in accordance with the provisions of the Contract Documents, with warrants drawn on the appropriate fund or funds as required, at the prices bid in the Bidding and Contract Requirements, Section C - Bid Forms and accepted by IEUA, and set forth in this below.

Total Bid Price \$ One Hundred Seven, Three Hundred Ninety Eight Dollars and
Zero Cents.

- D. IEUA hereby employs the CONTRACTOR to perform the Work according to the terms of this Contract for the above-mentioned price(s), and agrees to pay the same at the time, in the manner, and upon the conditions stipulated in the said Bid Documents; and the said parties for themselves, their heirs, executors, administrators, successors, and assigns, do hereby agree to the full performance of the covenants herein contained.
- E. The Notice Inviting Bids, Instructions to Bidders, Bid Forms, Information Required of Bidder, Performance Bond, Payment Bond, Contractor's License Declaration, Specifications, Drawings, all General Conditions Special Conditions and all Project Requirements, and all Addenda issued by IEUA with respect to the foregoing prior to the opening of bids, are hereby incorporated in and made part of this Contract, as if fully set forth.
- F. The CONTRACTOR agrees to commence Work under this Contract on or before the date to be specified in a written "Notice To Proceed" and to complete said Work to the satisfaction of IEUA one hundred twenty (120) calendar days after award of the Contract. All Work shall be completed before final payment is made.
- G. Time is of the essence on this Contract.
- H. CONTRACTOR agrees that in case the Work is not completed before or upon the expiration of the Contract Time, damage will be sustained by IEUA, and that it is and will be impracticable to determine the actual damage which IEUA will sustain in the event and by reason of such delay, and it is therefore agreed that the CONTRACTOR shall pay to IEUA the amounts as set forth in General Conditions, Section C – Changes to the Contract for each day of delay, which shall be the period between the expiration of the Contract Time and the date of final acceptance by IEUA, as liquidated damages and not as a penalty. It is further agreed that the amount stipulated for liquidated damages per day of delay is a reasonable estimate of the damages that would be sustained by IEUA, and the CONTRACTOR agrees to pay such liquidated damages as herein provided. In case the liquidated damages are not paid, the CONTRACTOR agrees that IEUA may deduct the amount thereof from any money due or that may become due to the CONTRACTOR by progress payments or otherwise under the Contract, or if said amount is not sufficient, recover the total amount.
- I. In addition to the liquidated damages, which may be imposed if the CONTRACTOR fails to complete the Work within the time agreed upon, IEUA may also deduct from any sums due or to become due to the CONTRACTOR, penalties and fines for violations of applicable local, state, and federal law.

- J. That the CONTRACTOR shall carry Workers' Compensation Insurance and require all subcontractors to carry Workers' Compensation Insurance as required by the California Labor Code.
- K. That the CONTRACTOR shall have furnished, prior to execution of the Contract, two bonds approved by IEUA, one in the amount of one hundred (100) percent of the Contract Price, to guarantee the faithful performance of the Work, and one in the amount of one hundred (100) percent of the Contract Price to guarantee payment of all claims for labor and materials furnished.
- L. The CONTRACTOR hereby agrees to protect, defend, indemnify and hold IEUA and its employees, agents, officers, directors, servants and volunteers free and harmless from any and all liability, claims, judgments, costs and demands, including demands arising from injuries or death of persons (including employees of IEUA and the CONTRACTOR) and damage to property, arising directly or indirectly out of the obligation herein undertaken or out of the operations conducted by the CONTRACTOR, its employees agents, representatives or subcontractors under or in connection with this Contract to the extent permitted by law.

The CONTRACTOR further agrees to investigate, handle, respond to, provide defense for and defend any such claims, demands or suit at the sole expense of the CONTRACTOR

IN WITNESS WHEREOF, The CONTRACTOR and the General Manager of Inland Empire Utilities Agency*, thereunto duly authorized, have caused the names of said parties to be affixed hereto, each in duplicate, the day and year first above written.

- M. The CONTRACTOR, by signing the contract does swear under penalty of perjury that no more than one final unappeasable finding of contempt of court by a Federal court has been issued against the CONTRACTOR within the immediately preceding two year period because of the CONTRACTOR's failure to comply with an order of a Federal court which orders the CONTRACTOR to comply with an order of the National Labor Relations Board (Public Contract Code 10296).

Inland Empire Utilities Agency*,
San Bernardino County, California.

By _____
General Manager

CONTRACTOR

By  _____
Secretary

Title

* A Municipal Water District

**ACTION
ITEM
1E**



Date: October 16, 2019

To: The Honorable Board of Directors

From: Shivaji Deshmukh, General Manager

Committee: Engineering, Operations & Water Resources

ASD
10/09/19

Executive Contact: Christiana Daisy, Executive Manager of Engineering/AGM

Subject: 930 West Recycled Water Pipeline Easement Acquisition

Executive Summary:

In 2011, the design of the 30-inch 930 West Recycled Water Pipeline was completed. A segment of the alignment was located within the Carbon Creek Channel east of Peyton Avenue. A construction permit was obtained from the San Bernardino County Flood Control District for this segment. One of the permit conditions was to obtain a license agreement for installation, operations, and maintenance of the pipeline. In subsequent negotiations with the County, it was mutually agreed upon that a perpetual grant of easement was desired in lieu of an agreement. In 2015, an appraisal of the encroached channel area containing approximately 41,000 square feet was valued at \$182,655 and provided to the County's Real Estate Services Department for review. A final determination was made by the County in July 2019 to accept the appraisal value of the easement area.

Upon payment of this amount, the Real Estate Services Department will process the execution of the grant of easement for the County's Board of Directors' approval.

Staff's Recommendation:

1. Authorize the General Manager to approve payment of \$182,655 to the San Bernardino County Flood Control District for the valuation of the recycled water pipeline easement.

Budget Impact Budgeted (Y/N): Y Amendment (Y/N): N Amount for Requested Approval:

Account/Project Name:

EN15043 - SBCFCD Recycled Water Easement

Fiscal Impact (explain if not budgeted):

None.

Prior Board Action:

On June 18, 2014, the Board of Directors approved the creation of the project, San Bernardino County Flood Control District Recycled Water Easements, within the Recycled Water Capital (WC) Fund with a total project budget of \$1,100,000 and authorized the General Manager to execute the pipeline easements.

Environmental Determination:

Not Applicable

Business Goal:

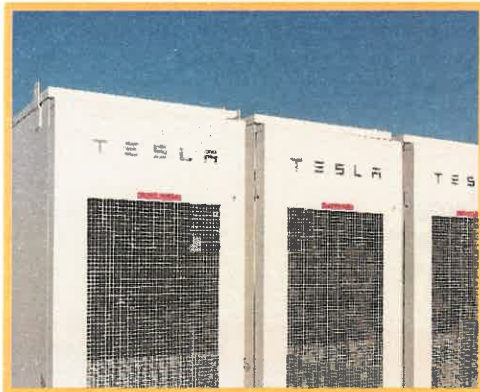
The recycled water pipeline easement acquisition is consistent with IEUA's goal of Water Reliability, specifically, to maximize the use of recycled water to enhance regional water reliability.

Attachments:

None.

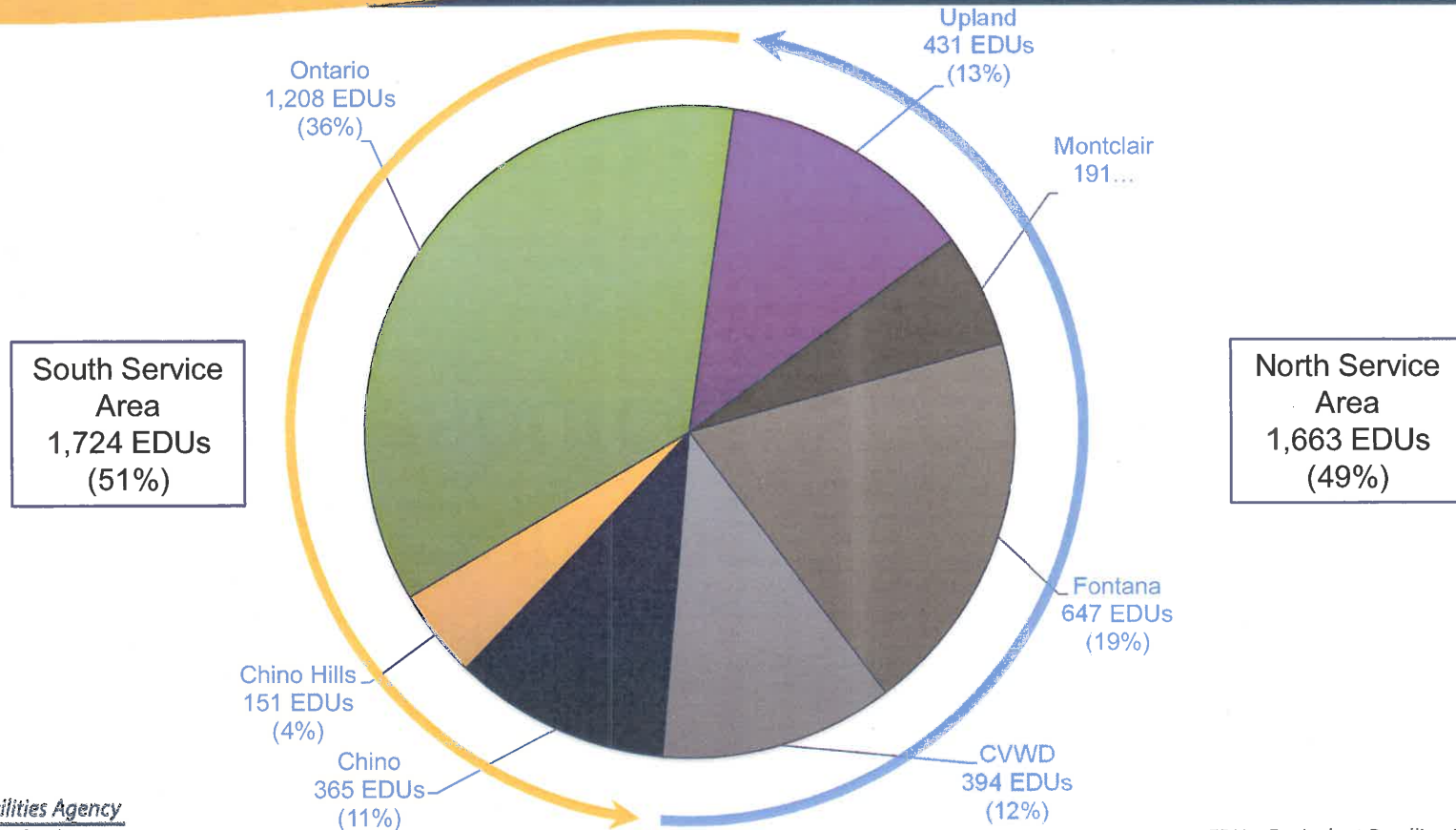
INFORMATION
ITEM
2A

1st Quarter Planning & Environmental Resources Update



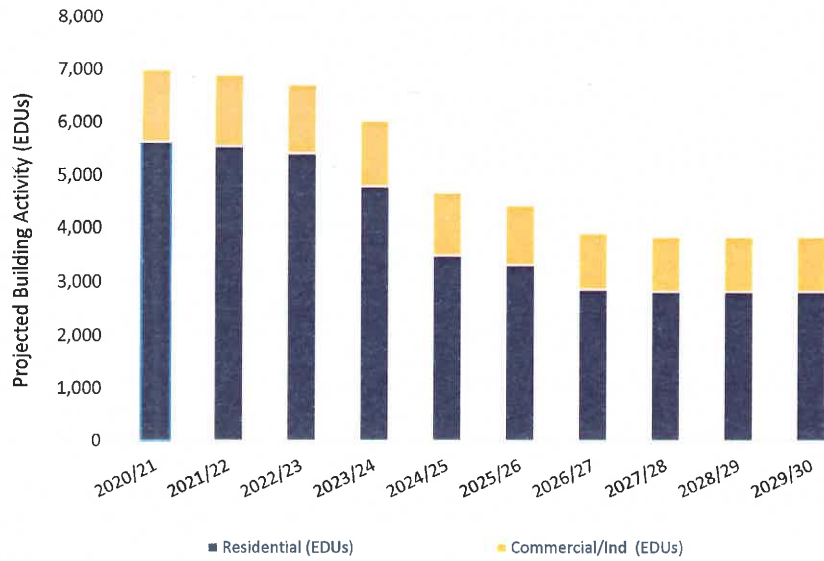
FY18/19 Building Activity

3,387 EDUs Resulted in \$22.4M Funding

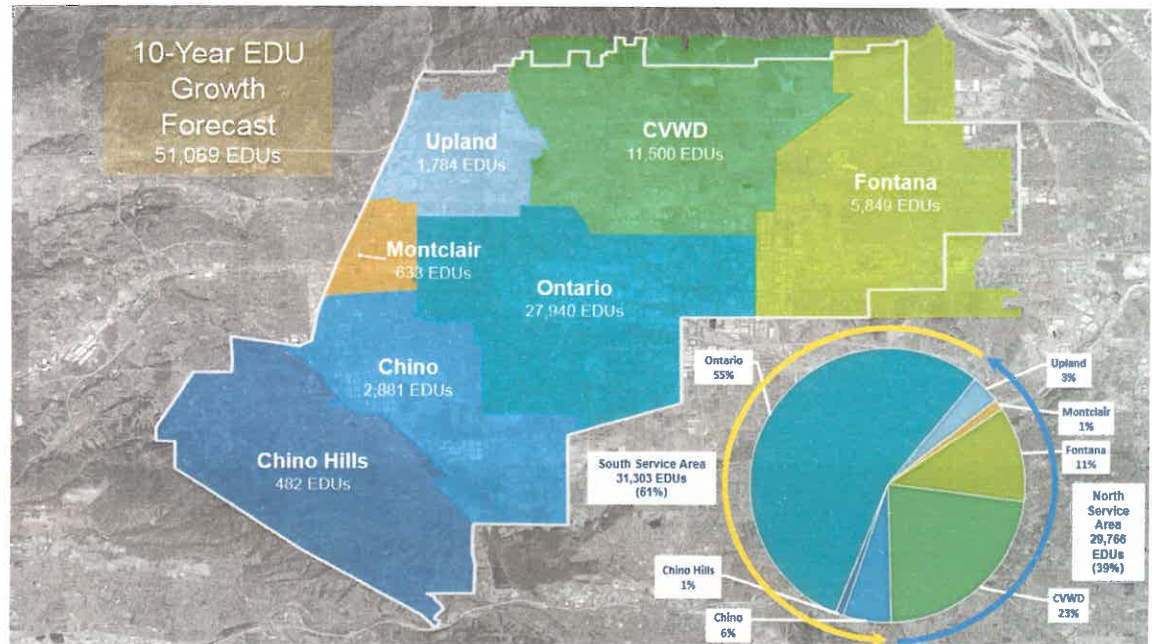


EDU = Equivalent Dwelling Unit
Partial EDU rounded to the nearest whole number

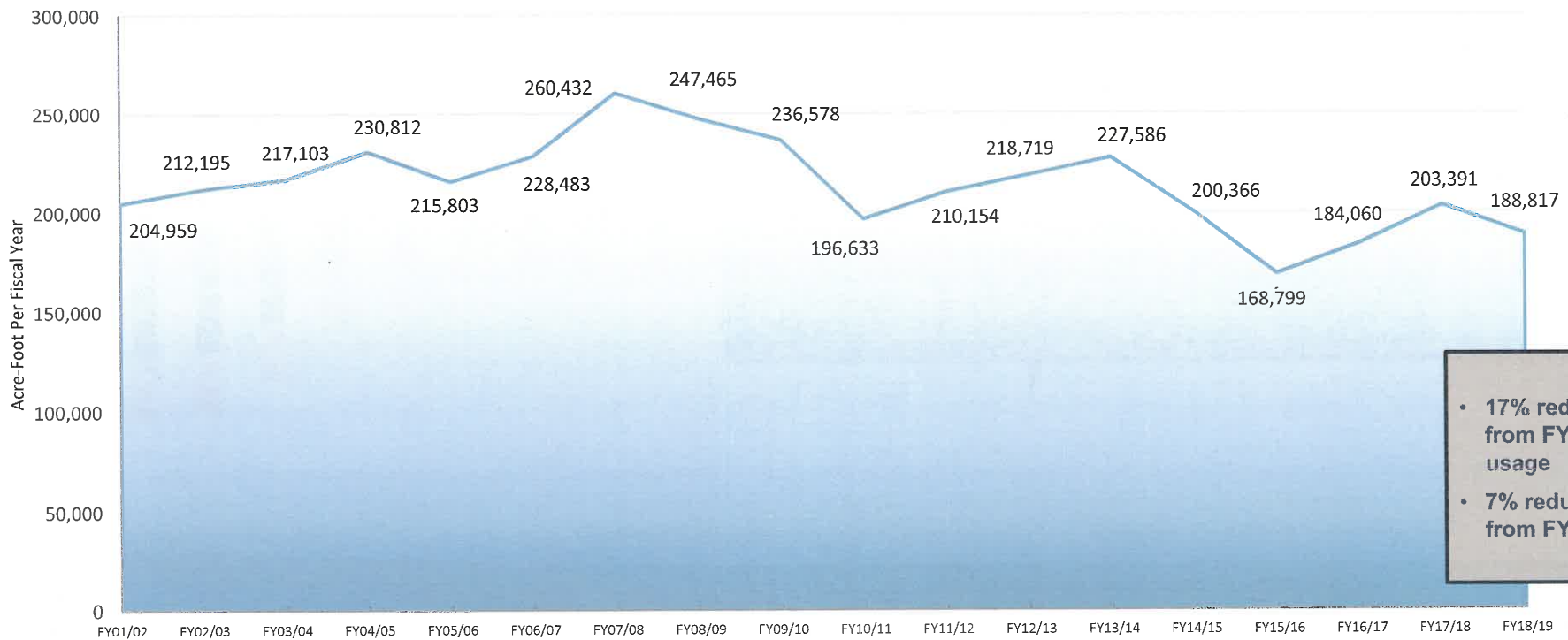
Regional Contracting Agencies EDU Projections



2019 Ten Year Growth Forecast: 52,795 EDU
2020 Ten Year Growth Forecast: 51,069 EDU



Regional Water Use Trend

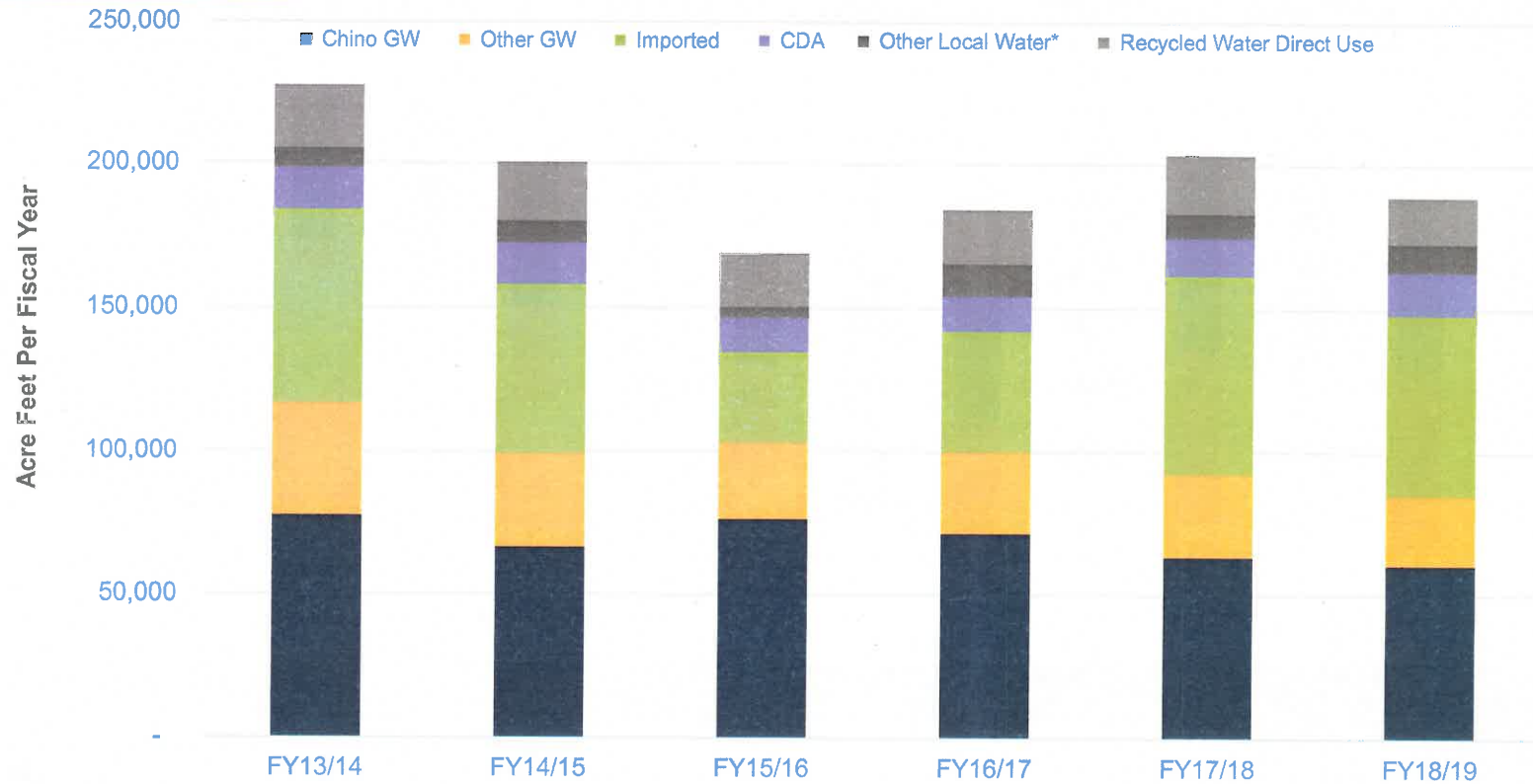


- 17% reduction from FY 13/14 usage
- 7% reduction from FY17/18

Note: Total Water Use Data includes imported water, surface water, groundwater, recycled and desalter production. Excludes IEUA groundwater recharge

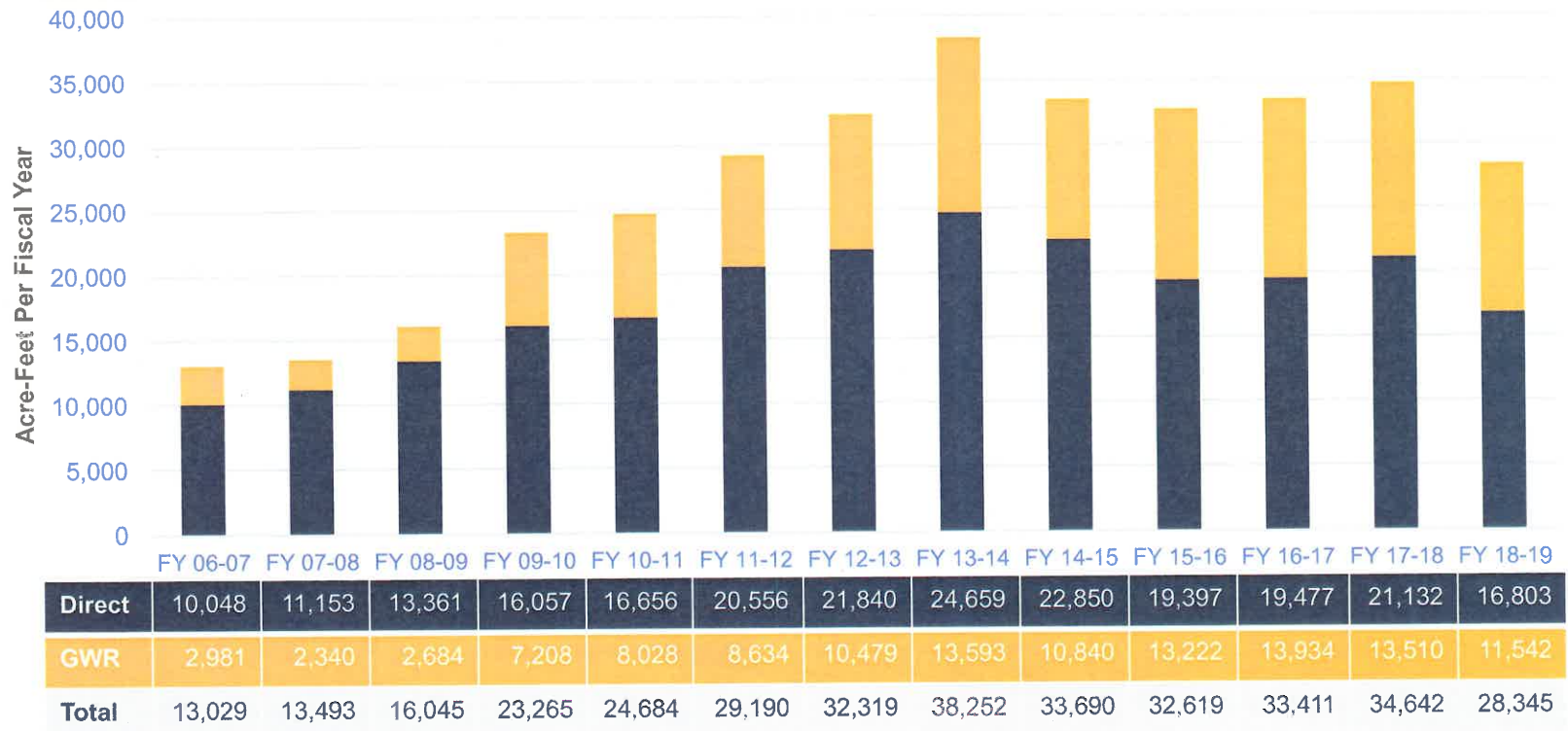


Regional Water Use Trend By Source

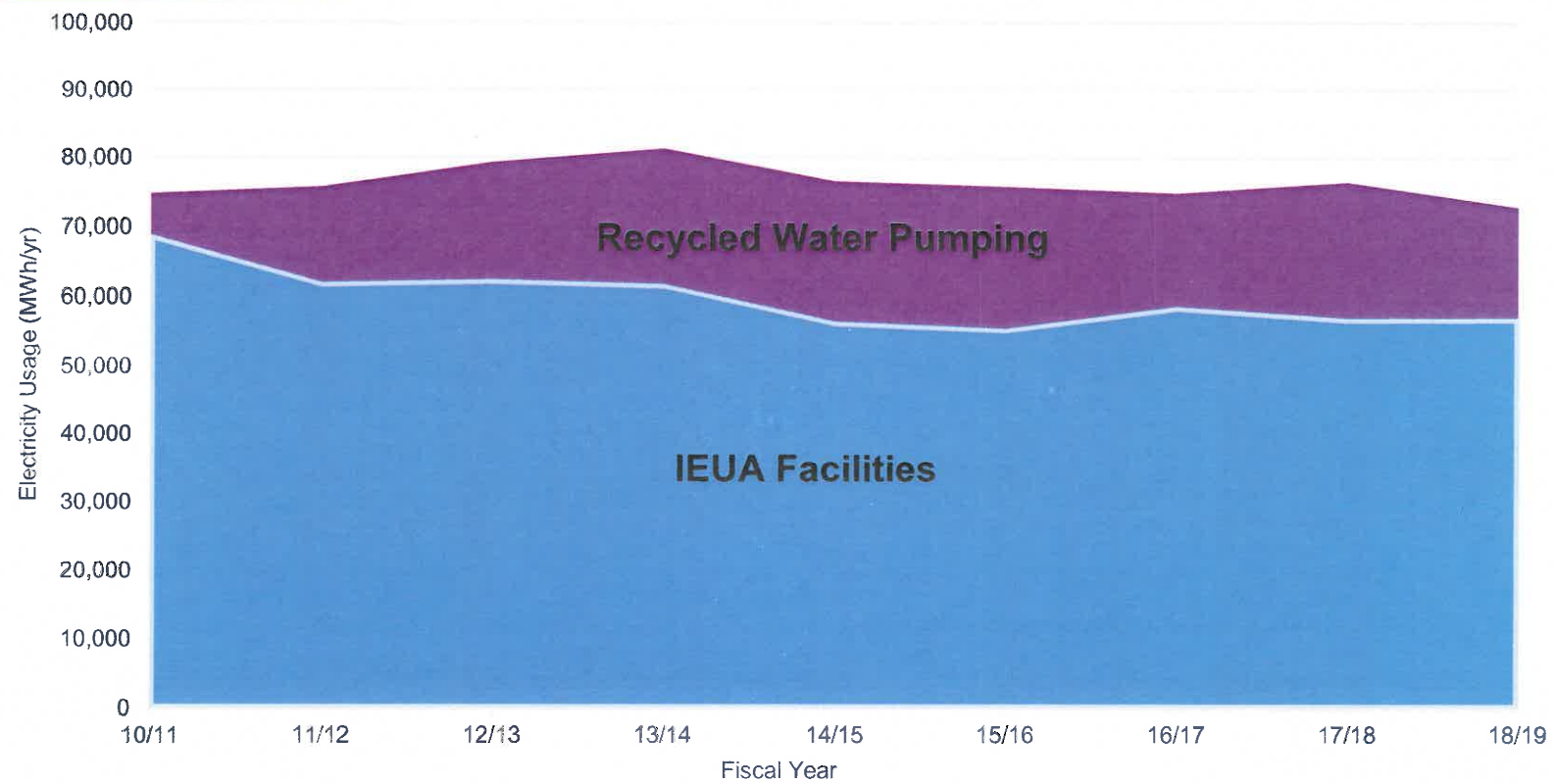


* Water purchased from other local water companies (such as SAWCo or WECWC) and surface flows

Recycled Water Deliveries



Electricity Usage



INFORMATION
ITEM
2B



Date: October 16, 2019

To: The Honorable Board of Directors

From: Shivaji Deshmukh, General Manager

Committee: Engineering, Operations & Water Resources

ASD
10/09/19

Executive Contact: Christiana Daisy, Executive Manager of Engineering/AGM

Subject: Planning & Environmental Resources Annual Reports (Water Use, Recycled Water, and Energy)

Executive Summary:

The Inland Empire Utilities Agency (IEUA) monitors and compiles water use data for the Annual Water Use Report. IEUA tracks overall water demands and sources of supply from each of its retail agencies. Total water consumption within IEUA's service area for FY 2018/19 was 188,817 AF, a 7% decrease from FY 2017/18.

IEUA's Recycled Water Annual Report provides annual delivery data by retail member agencies, by usage types, and by customers. Recycled water recharge was down 15% and direct use down 20%.

IEUA's energy consumption, renewable generation performance, and energy efficiency projects are reported in the Annual Energy Report. IEUA consumed 73,598 MWh of electricity, a decrease of 4% from FY 2017/18, of which 9% was generated by its renewable sources.

Staff's Recommendation:

This is an informational item for the Board of Directors to receive and file.

Budget Impact Budgeted (Y/N): Y Amendment (Y/N): N Amount for Requested Approval:

Account/Project Name:

N/A

Fiscal Impact (explain if not budgeted):

N/A

Prior Board Action:

N/A

Environmental Determination:

Not Applicable

Business Goal:

The Planning & Environmental Resources Annual Reports (Water Use, Recycled Water, and Energy) are consistent with the Agency's Business Goals of Business Practices and Environmental Stewardship by providing an evaluation of Agency activities and being committed to the responsible use and protection of the environment through conservation and sustainable practices.

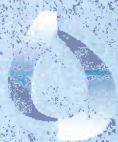
Attachments:

- Attachment 1 - IEUA FY 2018/19 Annual Water Use Report
- Attachment 2 - IEUA FY 2018/19 Annual Recycled Water Report
- Attachment 3 - IEUA FY 2018/19 Annual Energy Report

2019

IEUA FY 2018-2019 Annual Water Use Report:

Retail Agency Water Use and Five Year History



Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT



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Preface

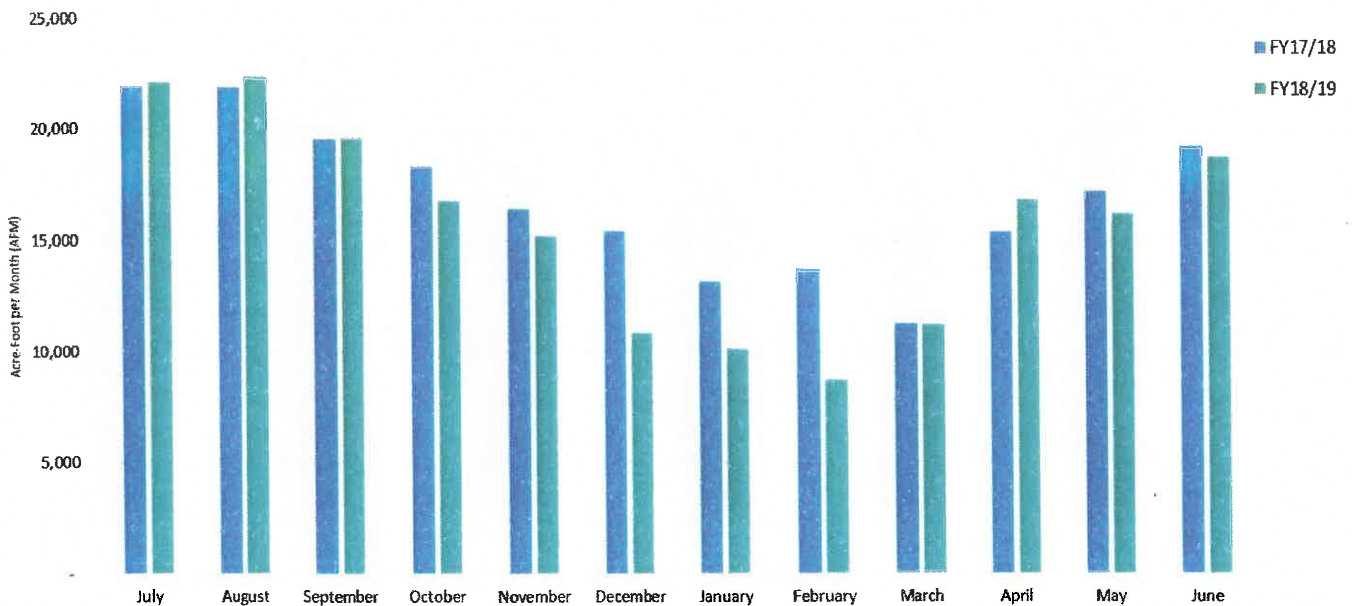
FY 2018-2019 Water Use Summary Report

Inland Empire Utilities Agency (IEUA) monitors and compiles water use data from each of its retail agencies to track overall water demands and sources of supply. Each year, this data is compiled into an Annual Water Use Report. Data includes monthly water use by member agency and by source of supply, a five-year history of water use, and retail agency water usage as a percentage of the total water used in the service area.

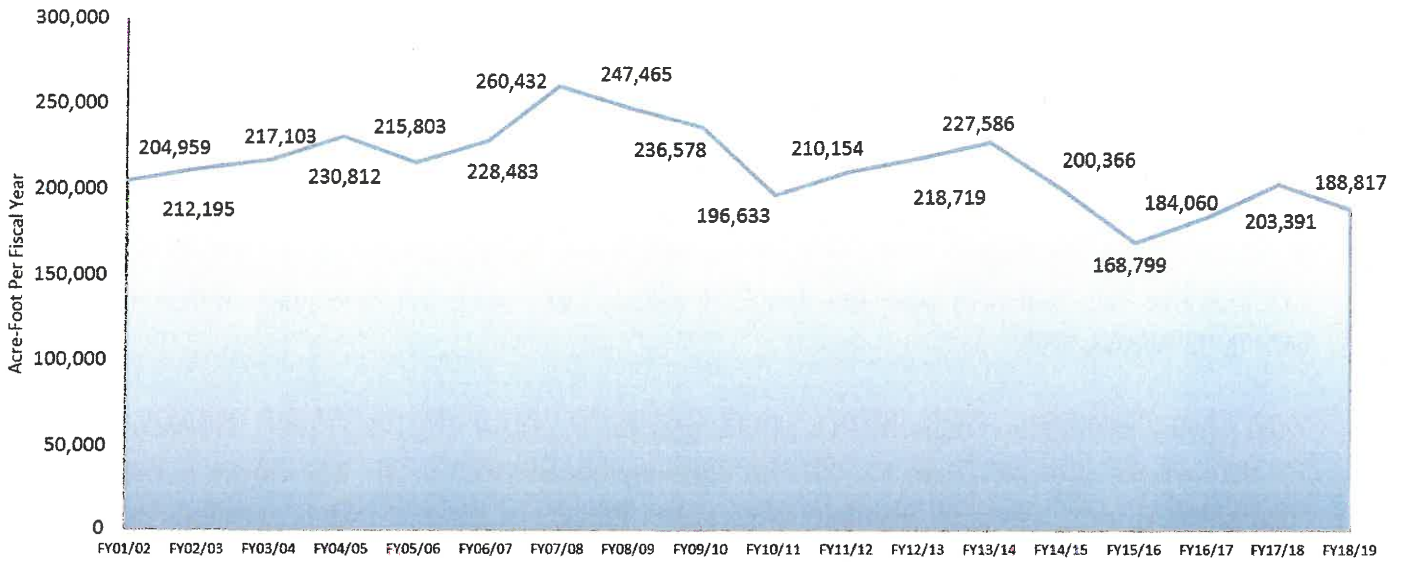
Total water consumption within IEUA's service area for FY 18/19 was 188,817 AF. This is roughly a 7% decrease (14,574 AF) from FY 2017/18 consumption of 203,391 AF. The region is now using approximately 17% less water than before the recent drought in FY 13/14 when consumption was at 227,586 AF. Usage is down across all water sources from FY17/18 to FY18/19 excluding purchases from other local water sources, such as San Antonio Water Company (SAWCo), West End Consolidated Water Company (WECWC), and Chino Basin Desalter Authority (CDA) water sources which saw minimal increases for the year.

IEUA anticipates a slight increase in FY19/20 water usage due to the continually growing population in the region and the general climate change trend of projected temperature increases. However, long-term demands are not expected to exceed the peak year of FY 07/08 and current water usage is below the low demand forecast outlined in IEUA's 2015 Integrated Resources Plan (IRP). This analysis came from demand modeling conducted as part of the IRP and Urban Water Management Plan (UWMP) which found that new developments in the region tend to be more

Total Regional Monthly Water Usage FY 18/19 Comparison to FY17/18



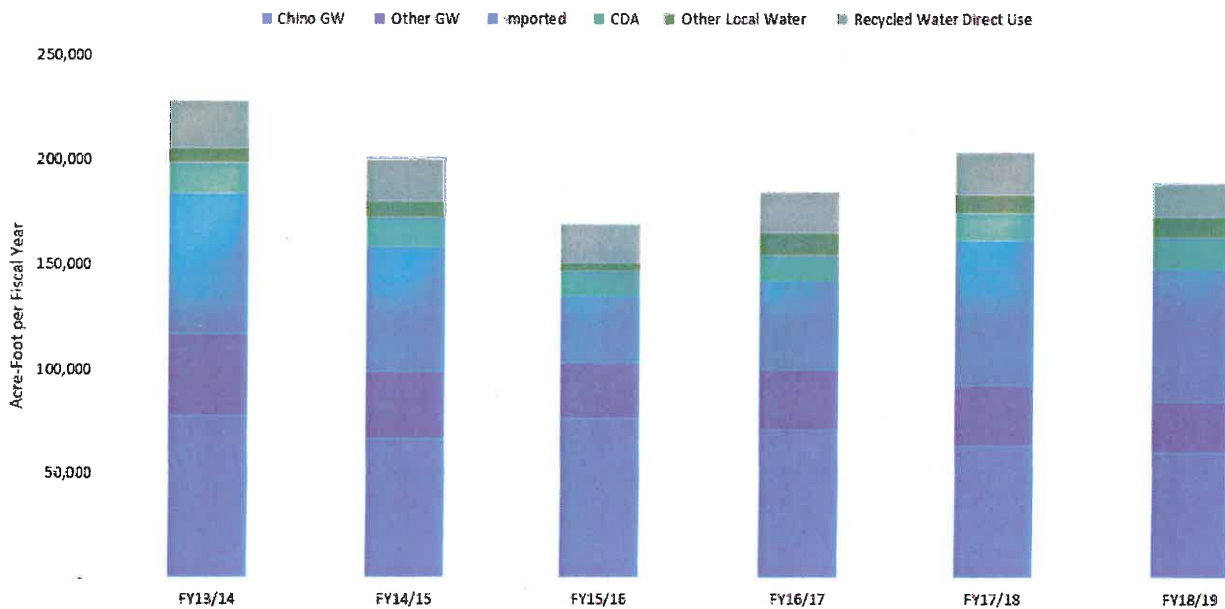
IEUA Member Agency Overall Total Water Use Trend



Note: Total Water Use Data includes imported water, surface water, groundwater, recycled and desalter production. Excludes IEUA groundwater recharge

water efficient due to changes in the plumbing code, higher density developments with less landscaping, and compliance with the existing model landscape ordinance requirements set forth in AB1881. FY18/19 usage is roughly 10% below the 2020 predicted usage found in the low demand IRP forecast. A continual focus on water use efficiency and per capita reductions, as required in SB X7-7, has lead to slower water usage growth demand.

Regional Water Trend Use by Source



*Other Local Water includes purchases from local water companies such as SAWCo and WECWC

In addition, the region is continuing to diversify and maximize local resource development including recycled water, expand water use efficiency programs, and increase groundwater storage as outline in the IRP. These efforts will continue to prepare the service area to cope with future dry years and increase regional resiliency in the face of climate change.

Below is a summary and update on the region's major water supply efforts and programs:

- *Water Use Efficiency (WUE)*: IEUA and its member agencies continue to offer water use efficiency programs outlined in the 2015-2020 Regional Water use Efficiency Business Plan. With outdoor irrigation accounting for 60% of total urban water demand, the recent focus has been to increase efficiency programs targeting outdoor irrigation. In July 2018, the Turf Removal program was reoffered with an increased rebate amount of \$3 per square foot. The new Smart Landscape Irrigation Tune Up pilot was fully subscribed as of April 2019 and IEUA is looking to extend the program into FY19/20 due to its popularity.
- *Chino Basin Project (CBP)*: IEUA received a conditional award of \$206.9M from Prop 1 funds in July 2018. Leveraging this funding, the CBP plans to increase local water security, improve water quality, and lower subsidence through the installation of an advanced water treatment facility (AWT), additional pipelines and pipeline interconnects, and wellhead improvements. The AWT will be able to treat and store 15,000 AF per year in the Chino Basin. The CBP will also add 50,000AF per year in additional groundwater treatment capabilities to help reduce salinity. The new water from the AWT will be exchanged towards ecosystem benefits north of the Delta for 25 years. Brown & Caldwell have been selected as the technical and environmental consultant who will work on a preliminary design and project feasibility study. Upon approval, the preliminary design report will be completed by March 2020. The CBP is aligned with the Optimum Basin Management Program's (OBMP) goal to enhance water quality and management of the Chino basin.
- *RP-5 Upgrade*: The addition of a new membrane bio-reactor to the RP-5 facility in Chino will allow for greater treatment and recycled water recovery. The RP-5 expansion project is in the final design phase and will be ready to bid in 2020. The upgraded facility will increase total liquid treatment to 30 million gallons per day and biosolids treatment to 40 million gallons per day while providing an additional 7.5 million gallons of recycled water per day (8,400 AF per year).
- *Chino Desalter Expansion Phase III*: After receiving \$7.2 million to support the expansion project, all three of the new wells are scheduled to be producing and feeding the Chino-II Desalter by FY 19/20. The new wells will increase production at Chino Desalter-II to a total of 40,000AF per year.
- *San Sevaine Basin Improvement*: This improvement project increased the amount of storm water and recycled water that can be used for ground water recharge at the San Sevaine Basin. The upgrade was completed in April 2019 and added approximately 600AF of storm water and 4,100AF of recycle water groundwater recharge capacity.

IEUA would like to thank its member agencies for their assistance in compiling the data contained in this report.

SECTION 1

Total Water Resources Data from FY 18/19

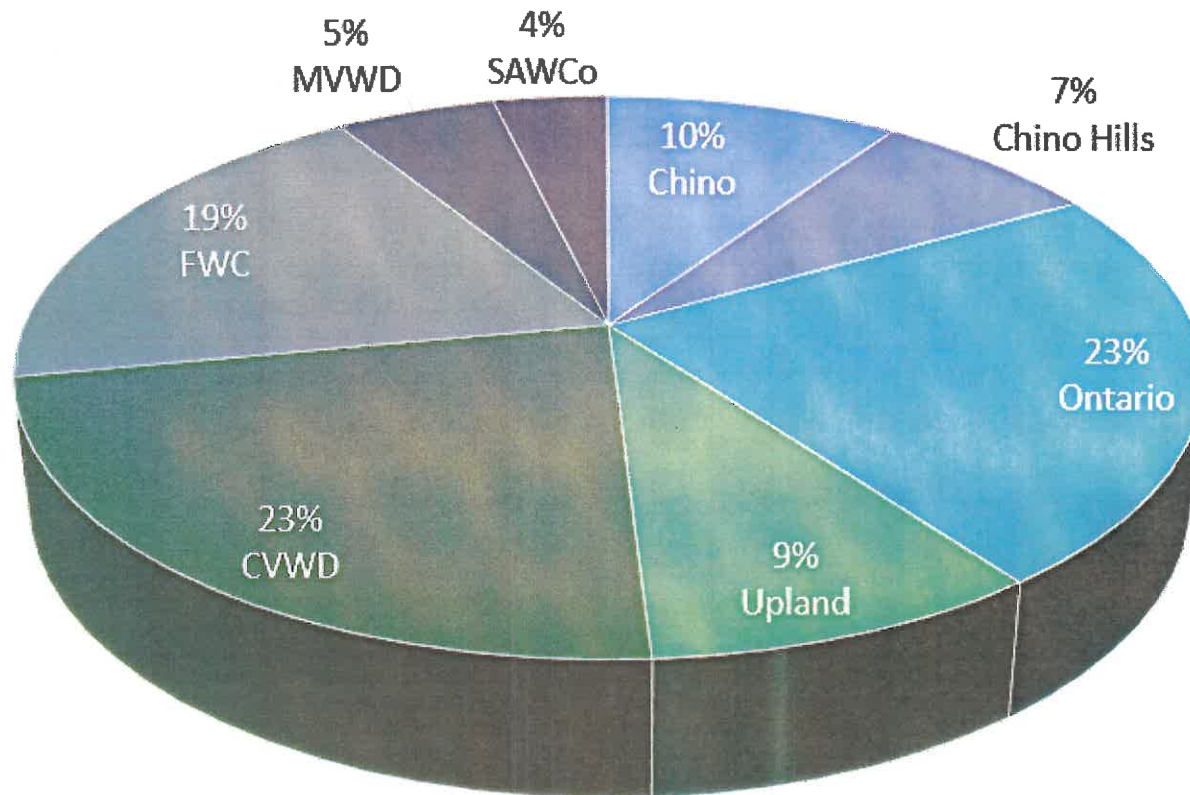
Total IEUA Service Area Water Use For FY 18/19

FY 18-19		Total IEUA Service Area Water Use by Retail Agency for FY 18-19 (AFY)								
		CHINO	CHINO HILLS	ONTARIO	UPLAND	CVWD	FWC	MVWD	SAWCo	TOTAL
Purchases from IEUA	Imported Water (MWD)	3,955	1,500	5,737	5,602	26,691	12,075	7,669	0	63,230
	Recycled (Direct Use)	4,759	1,548	7,512	709	996	143	289	0	15,956
Subtotal		8,715	3,048	13,249	6,311	27,687	12,219	7,958	0	79,186
Production	Chino Groundwater	4,220	1,609	24,079	2,381	9,624	9,961	8,167	376	60,417
	Other Groundwater	0	0	0	762	3,259	11,280	0	8,993	24,294
	Local Surface Water	0	0	0	0	2,871	2,503	0	5,701	11,075
Subtotal		4,220	1,609	24,079	3,142	15,754	23,743	8,167	15,070	95,786
Purchases from Other Agencies	CDA	5,018	4,270	5,722	0	0	0	0	0	15,010
	MVWD*	0	4,893	0	0	0	0	0	0	4,893
	SAWCo Water	0	0	403	6,376	0	0	0	0	6,778
	West End	0	0	0	1,596	0	0	0	0	1,596
	CVWD	0	0	0	0	0	0	0	0	0
Subtotal		5,018	9,162	6,125	7,972	0	0	0	0	28,277
Sales to Other Agencies*	Chino Hills**	0	0	0	0	0	0	-6,351	0	-6,351
	Ontario	0	0	0	0	0	0	0	-403	-403
	Upland	0	0	0	0	0	0	0	-7,225	-7,225
	MVWD	0	0	0	0	0	0	0	-454	-454
Subtotal		0	0	0	0	0	0	-6,351	-8,081	-14,432
Total		17,953	13,819	43,453	17,426	43,441	35,962	9,774	6,989	188,817

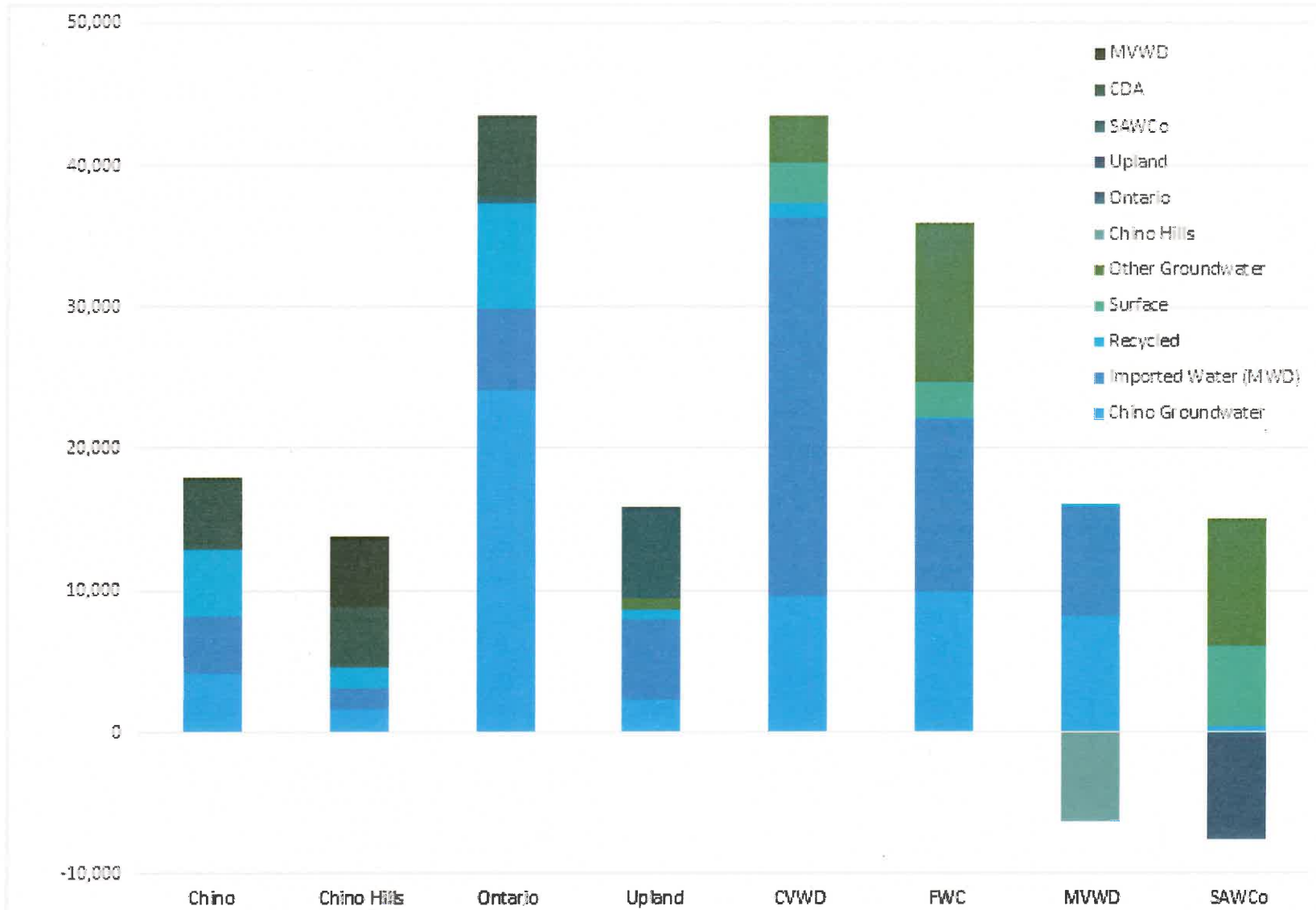
Note: All recycled water numbers in this report are based off IEUA operations data and are for direct use only.

Recycled water used for groundwater recharge may be found in the Recycled Water Report.

Total IEUA Service Area Water Use For FY 18/19



Total IEUA Service Area Water Use For FY 18/19

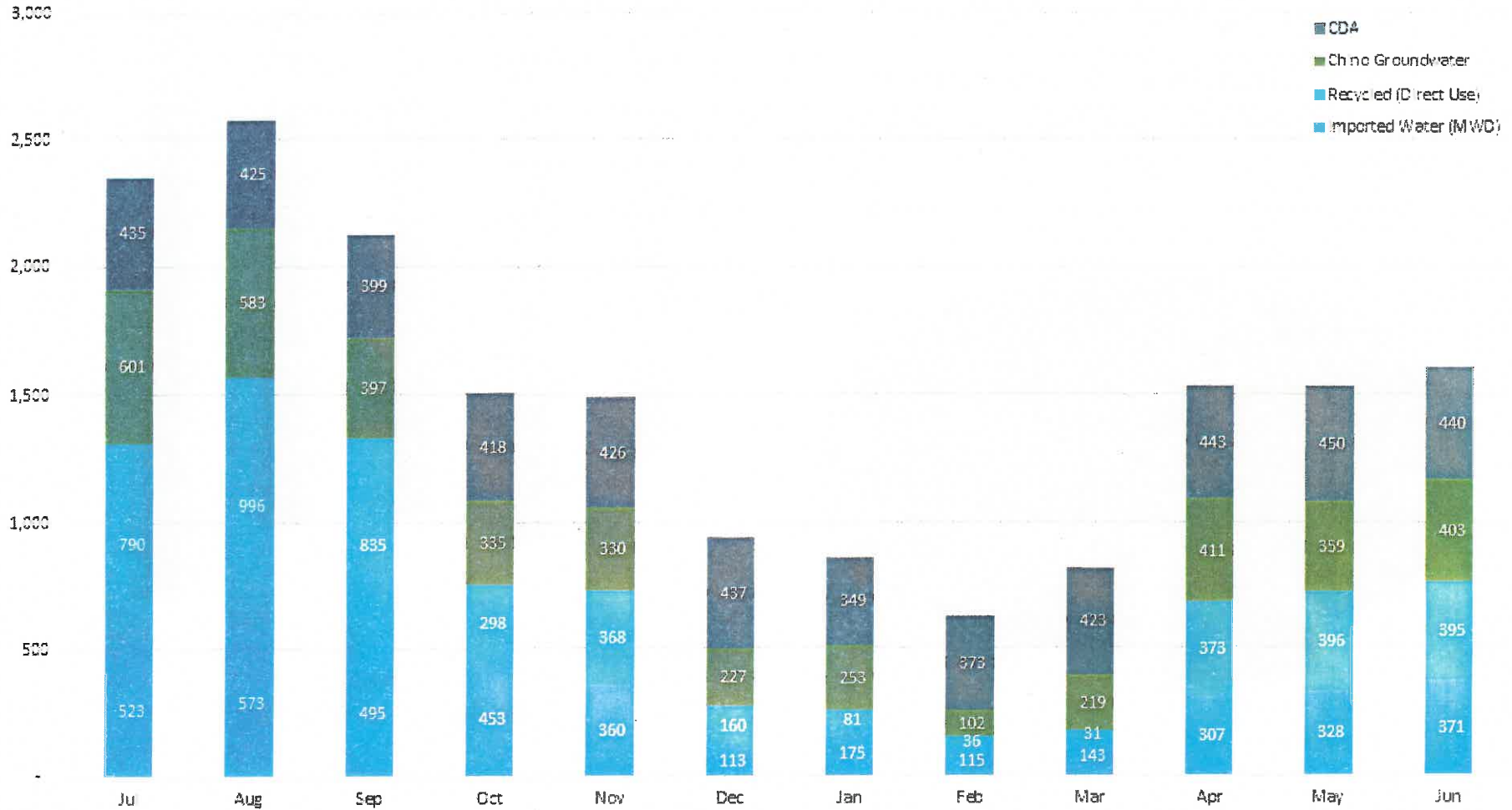


SECTION 2

Retail Water Use Data from FY 18/19 by Agency

FY 18/19 Water Use Report City of Chino

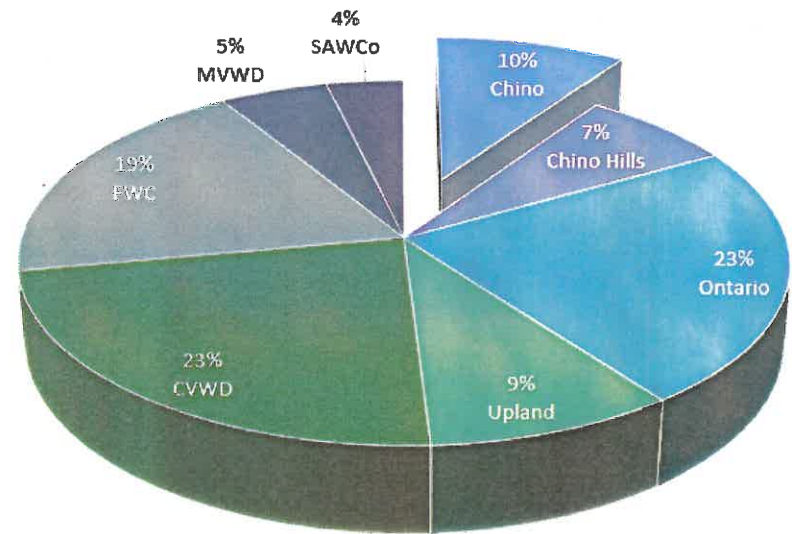
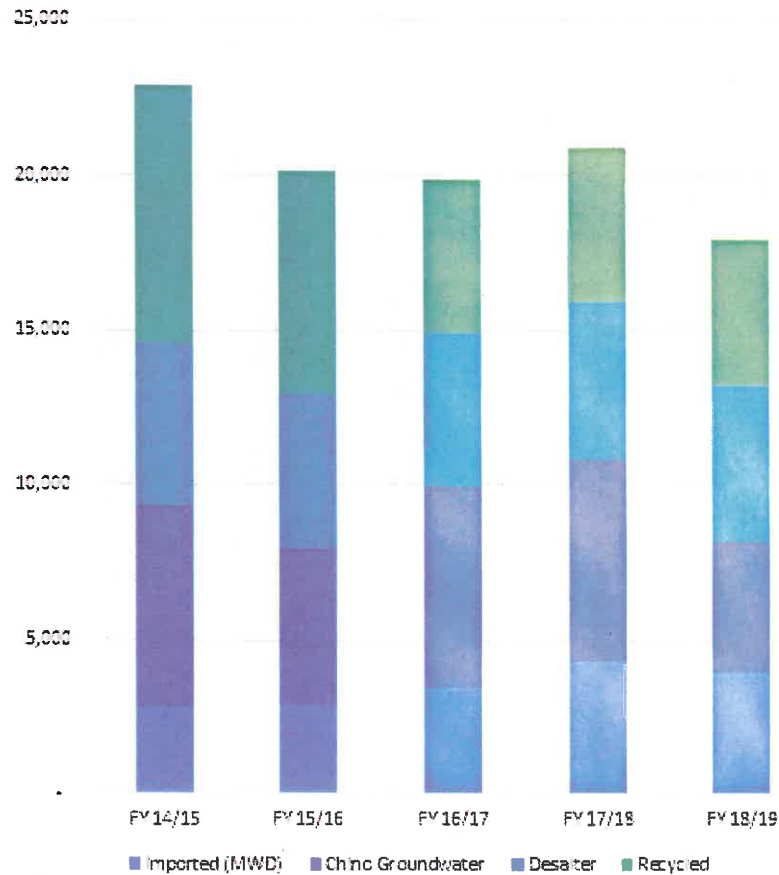
Chino



FY 18/19 Water Use Report

City of Chino

5 - Year Water Production Trend
Chino



In FY 2018/19, The City of Chino used 10% (17,953 AF) of 188,817 AF used in the IEUA service area.

FY 18/19 Water Use Report

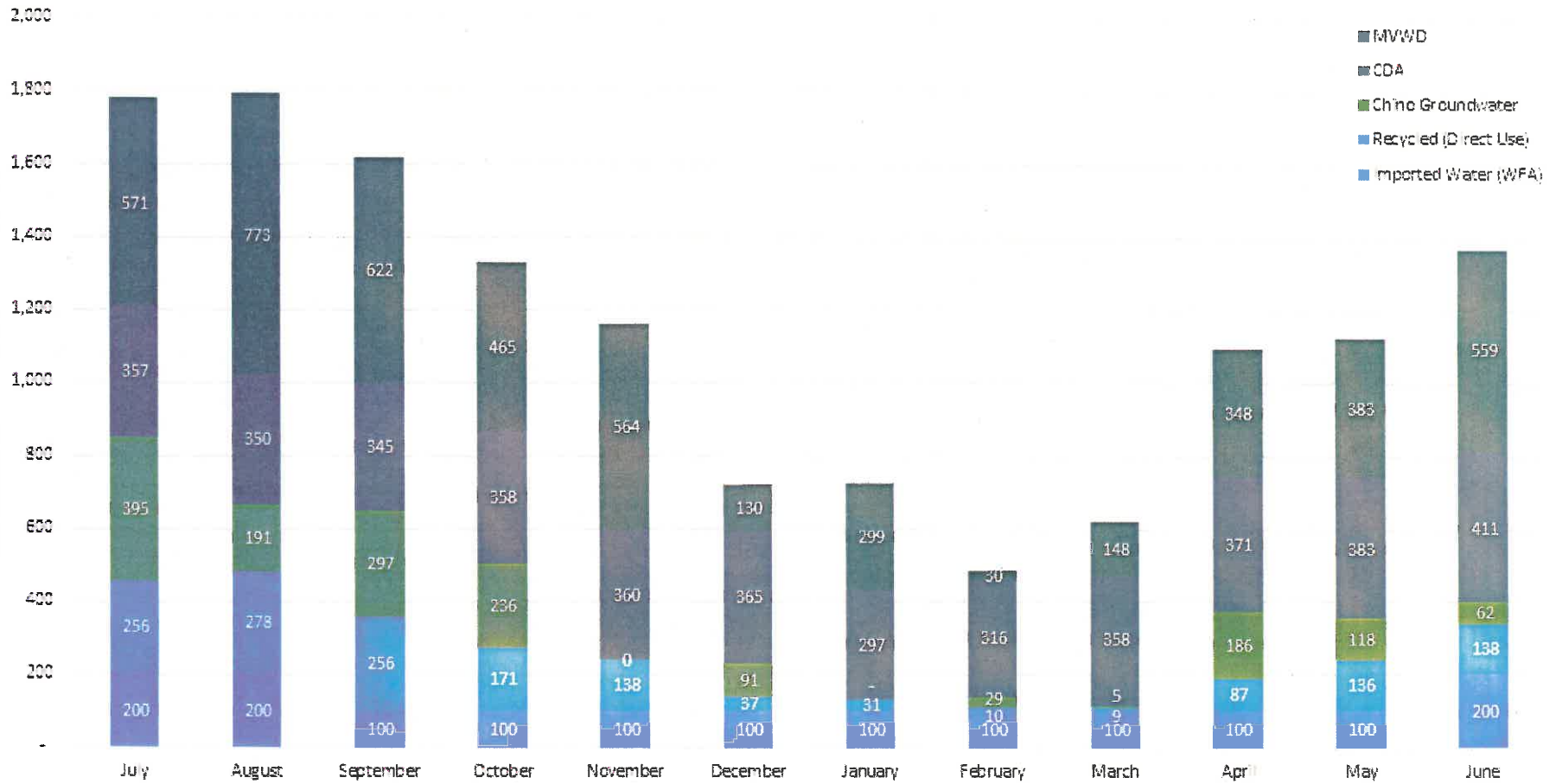
City of Chino

		Total IEUA Service Area Water Use By Agency for FY18-19 (AF)										City of Chino		
		July	August	September	October	November	December	January	February	March	April	May	June	Total
Purchases from IEUA	Imported Water (WFA)	523	573	495	453	360	113	175	115	143	307	328	371	3,955
	Recycle (Direct Use)	790	996	835	298	368	160	81	36	31	373	396	395	4,759
Subtotal		1,313	1,569	1,330	750	728	273	257	151	174	680	724	766	8,715
Production	Chino Groundwater	601	583	397	335	330	227	253	102	219	411	359	403	4,220
Subtotal		601	583	397	335	330	227	253	102	219	411	359	403	4,220
Agencies	CDA	435	425	399	418	426	437	349	373	423	443	450	440	5,018
Subtotal		435	425	399	418	426	437	349	373	423	443	450	440	5,018
Total		2,349	2,577	2,126	1,504	1,485	937	859	626	816	1,534	1,533	1,609	17,953

FY 18/19 Water Use Report

City of Chino Hills

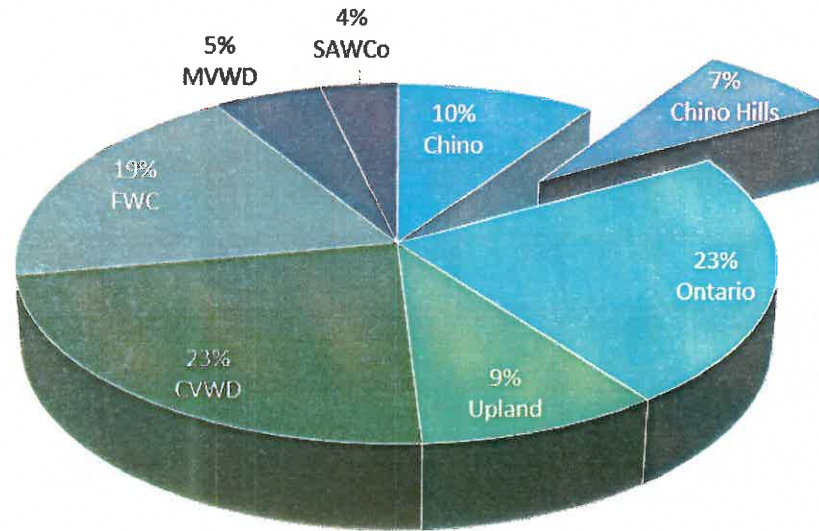
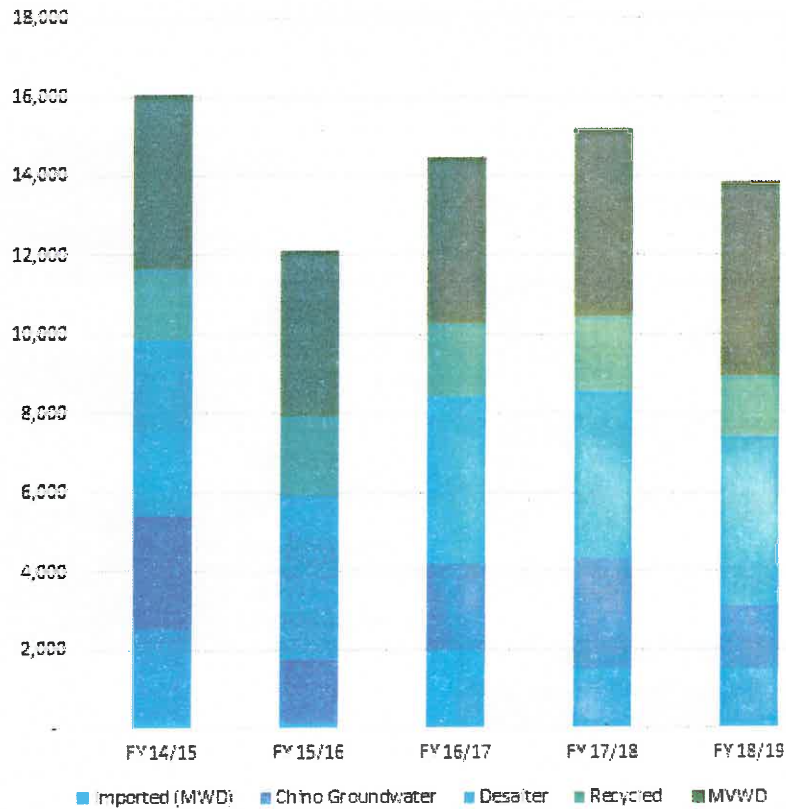
Chino Hills



FY 18/19 Water Use Report

City of Chino Hills

5 - Year Water Production Trend
Chino Hills



In FY 2018/19 The City of Chino Hills used 7% (13,819 AF) of 188,817 AF used in the IEUA service area.

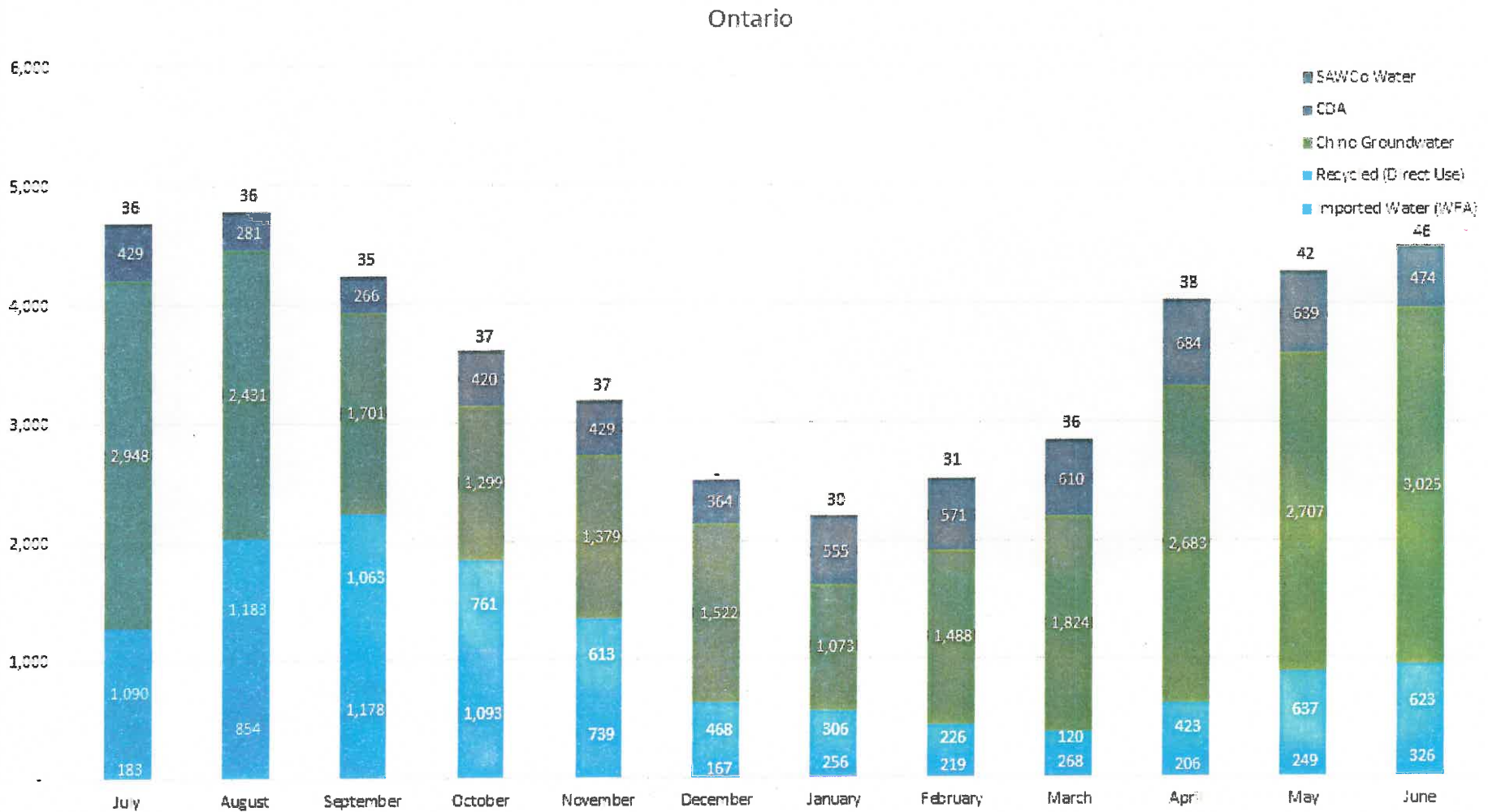
FY 18/19 Water Use Report

City of Chino Hills

		Total IEUA Service Area Water Use By Agency for FY18-19 (AF)										City of Chino Hills		
		July	August	September	October	November	December	January	February	March	April	May	June	Total
Purchases from IEUA	Imported Water (WFA)	200	200	100	100	100	100	100	100	100	100	100	200	1,500
	Recycle (Direct Use)	256	278	256	171	138	37	31	10	9	87	136	138	1,548
Subtotal		456	478	356	271	238	137	131	110	109	187	236	338	3,048
Production	Chino Groundwater	395	191	297	236	0	91	-	29	5	186	118	62	1,609
Subtotal		395	191	297	236	0	91	-	29	5	186	118	62	1,609
Purchase from other agencies	CDA	357	350	345	358	360	365	297	316	358	371	383	411	4,270
	MVWD	571	773	622	465	564	130	299	30	148	348	383	559	4,893
Subtotal		928	1,123	967	823	923	495	596	346	506	718	767	970	9,162
Total		1,779	1,792	1,619	1,330	1,161	722	727	485	620	1,092	1,121	1,370	13,819

FY 18/19 Water Use Report

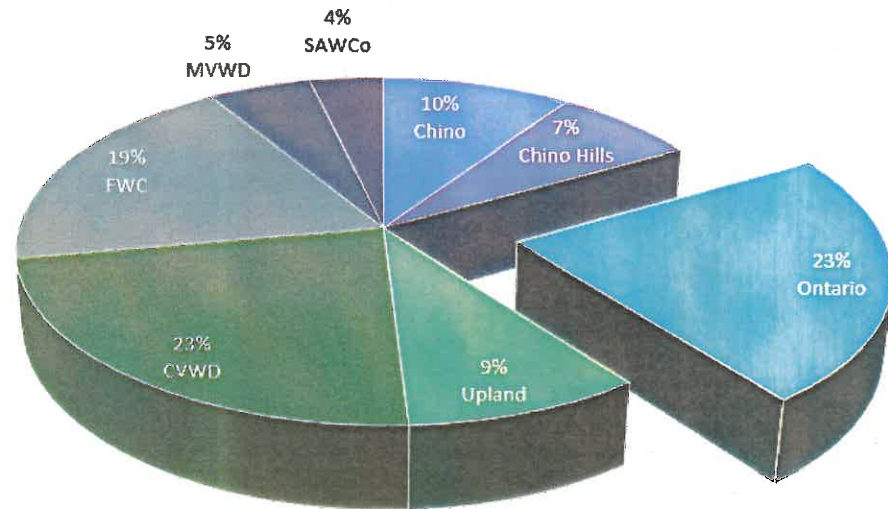
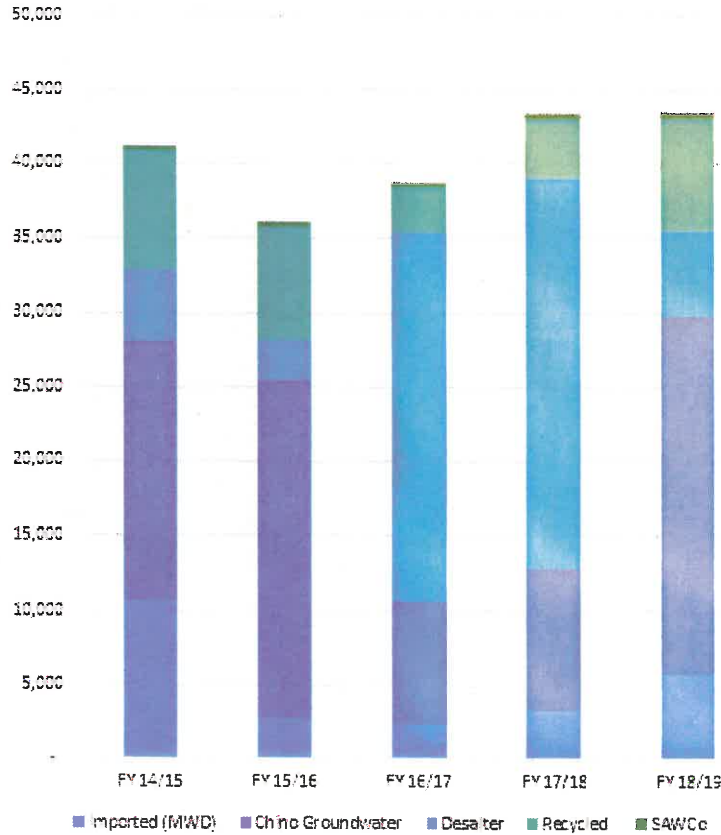
City of Ontario



FY 18/19 Water Use Report

City of Ontario

5 - Year Water Production Trend
Ontario



In FY 2018/19, The City of Ontario used 23% (43,453 AF) of 188,817 AF used in the IEUA service area.

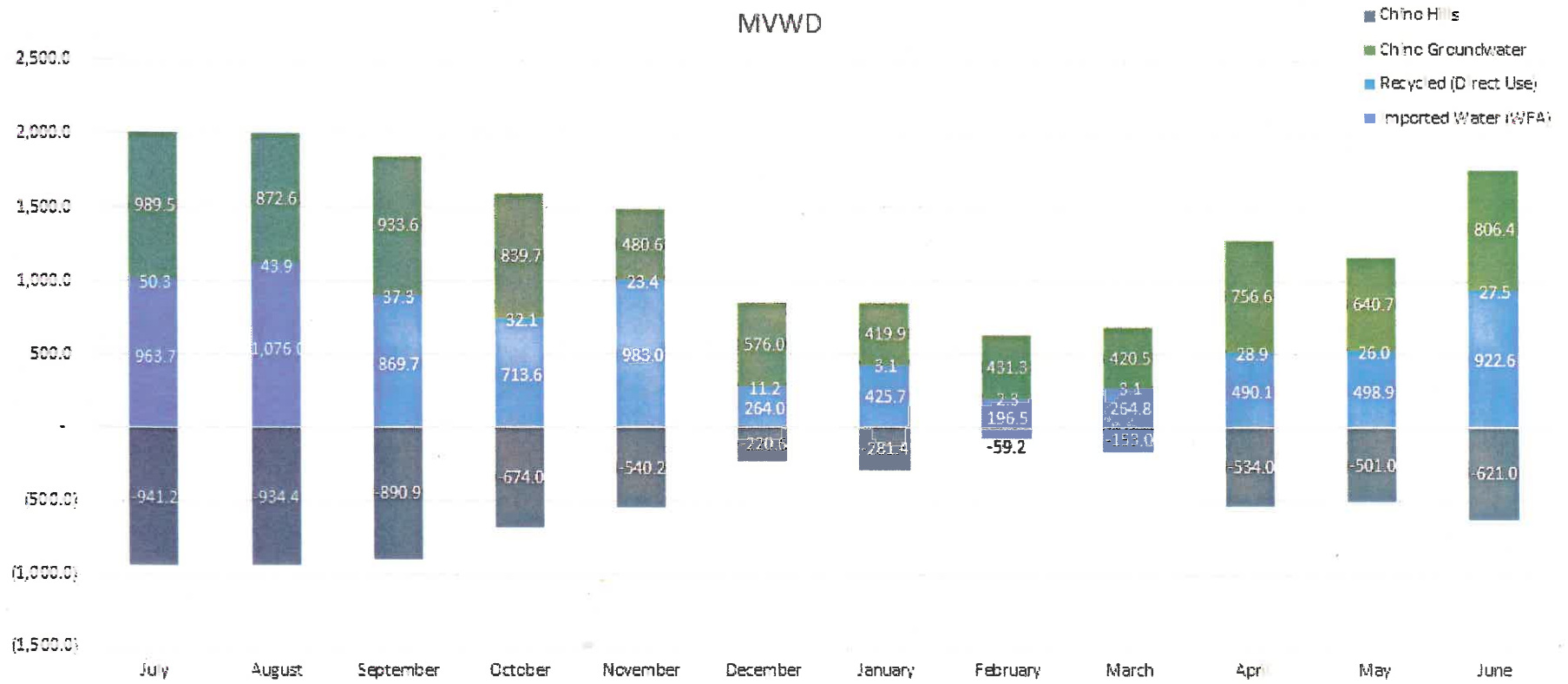
FY 18/19 Water Use Report

City of Ontario

		Total IEUA Service Area Water Use By Agency for FY18-19 (AF)										City of Ontario		
		July	August	September	October	November	December	January	February	March	April	May	June	Total
Purchases from IEUA	Imported Water (WFA)	183	854	1178	1093	739	167	256	219	268	206	249	326	5,737
	Recycle (Direct Use)	1090	1183	1063	761	613	468	306	226	120	423	637	623	7,512
Subtotal		1,272	2,036	2,241	1,855	1,352	634	563	445	388	629	885	950	13,249
Production	Chino Groundwater	2948	2431	1701	1299	1379	1522	1073	1488	1824	2683	2707	3025	24,079
Subtotal		2,948	2,431	1,701	1,299	1,379	1,522	1,073	1,488	1,824	2,683	2,707	3,025	24,079
Purchase from other agencies	CDA	429	281	266	420	429	364	555	571	610	684	639	474	5,722
	SAWCo Water	36	36	35	37	37	0	30	31	36	38	42	46	403
Subtotal		465	317	300	457	466	364	586	601	646	722	681	520	6,125
Total		4,685	4,784	4,242	3,611	3,196	2,521	2,221	2,534	2,858	4,034	4,273	4,494	43,453

FY 18/19 Water Use Report

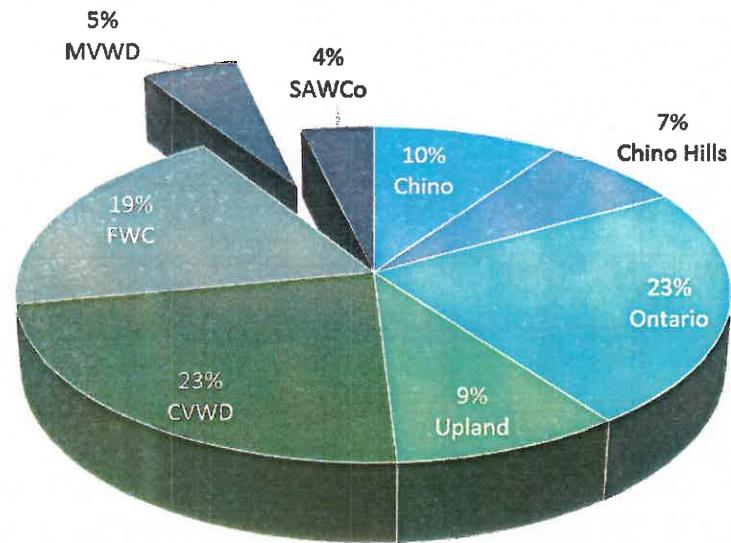
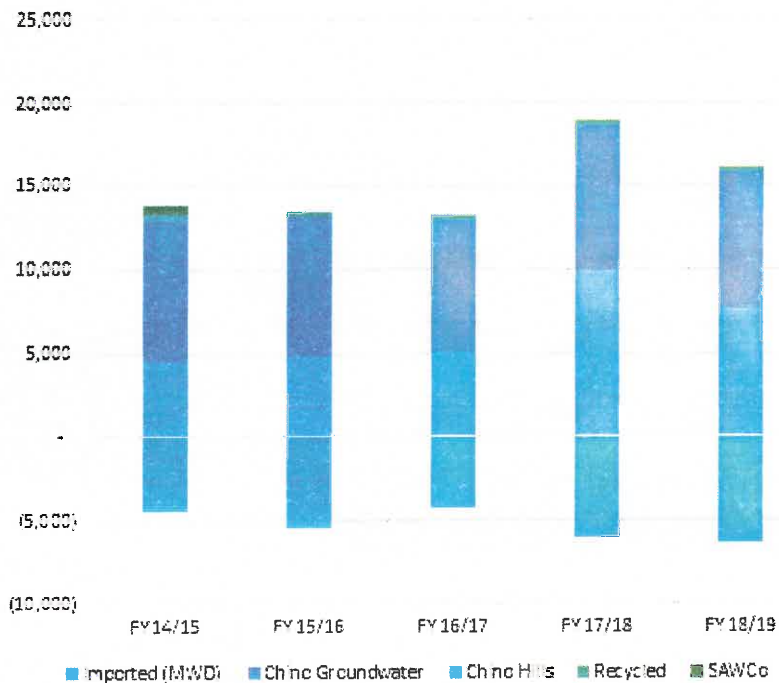
Monte Vista Water District



FY 18/19 Water Use Report

Monte Vista Water District

5 - Year Water Production Trend
MVWD



In FY 2018/19, Monte Vista Water District used 5% (9,774 AF) of 188,817 AF used in the IEUA service area.

FY 18/19 Water Use Report

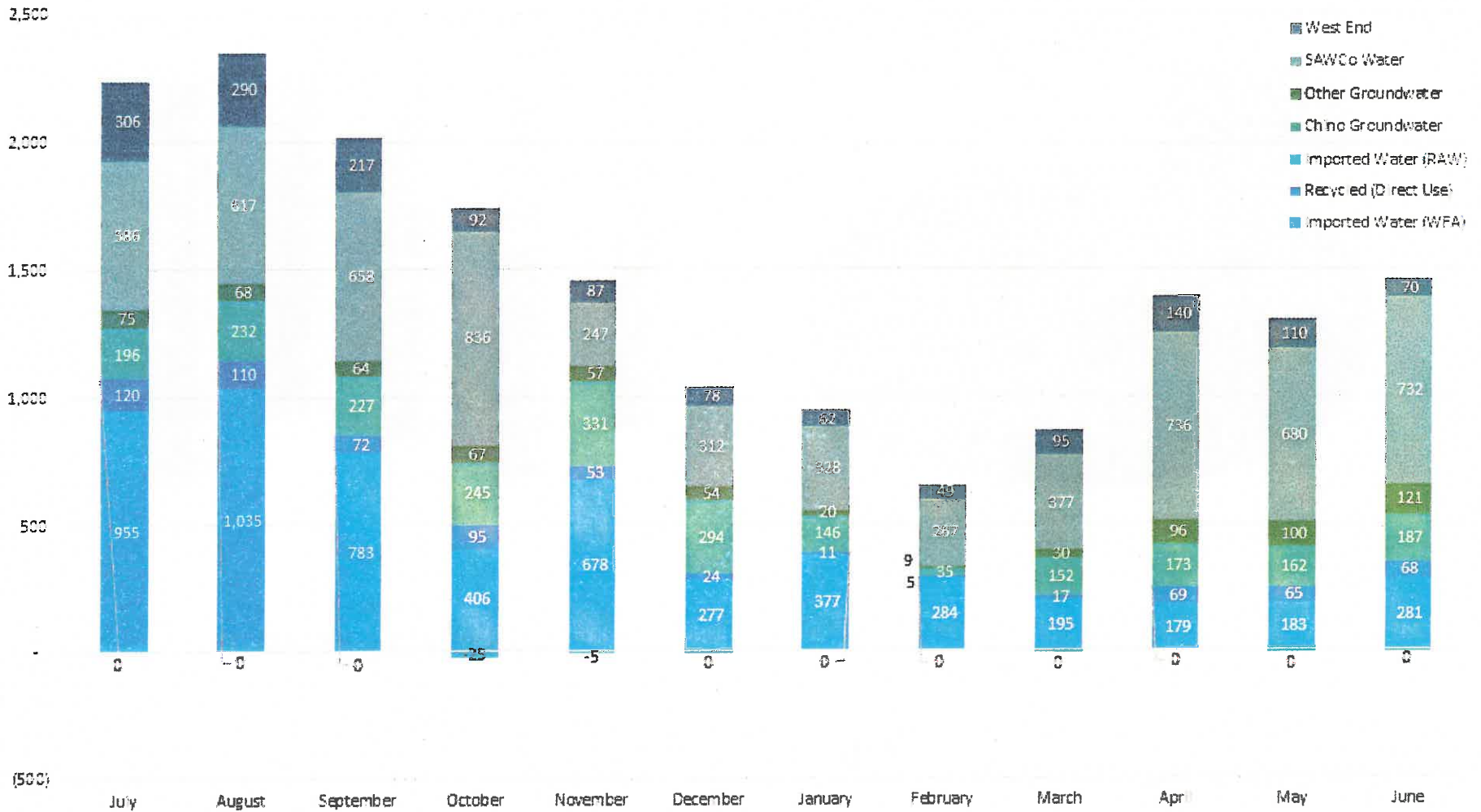
Monte Vista Water District

		Total IEUA Service Area Water Use By Agency for FY18-19 (AF)										MVWD		
		July	August	September	October	November	December	January	February	March	April	May	June	Total
Purchases from IEUA	Imported Water (WFA)	964	1,076	870	714	983	264	426	197	265	490	499	923	7,669
	Recycle (Direct Use)	50	44	37	32	23	11	3	2	3	29	26	28	289
Subtotal		1,014	1,120	907	746	1,006	275	429	199	268	519	525	950	7,958
Production	Chino Groundwater	990	873	934	840	481	576	420	431	420	757	641	806	8,167
Subtotal		990	873	934	840	481	576	420	431	420	757	641	806	8,167
Sales to other agencies	Chino Hills	-941	-934	-891	-674	-540	-221	-281	-59	-153	-534	-501	-621	-6,351
Subtotal		-941	-934	-891	-674	-540	-221	-281	-59	-153	-534	-501	-621	-6,351
Total		1,062	1,058	950	911	947	631	567	571	535	742	665	1,136	9,774

FY 18/19 Water Use Report

City of Upland

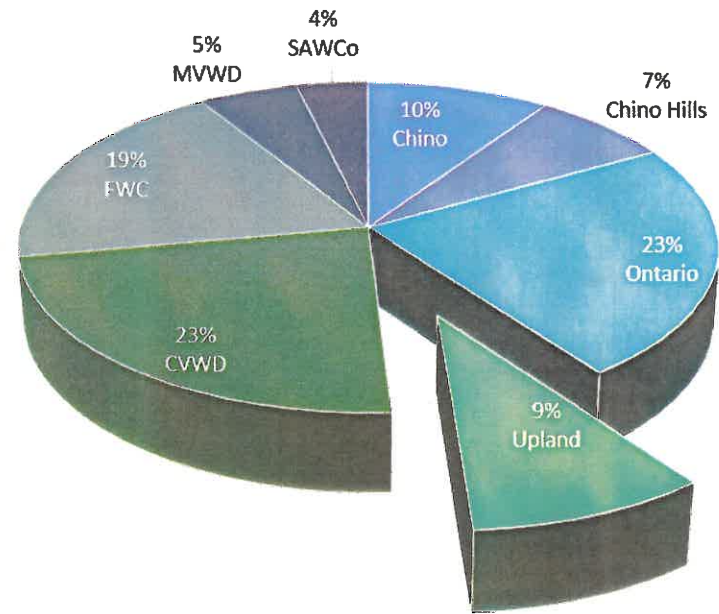
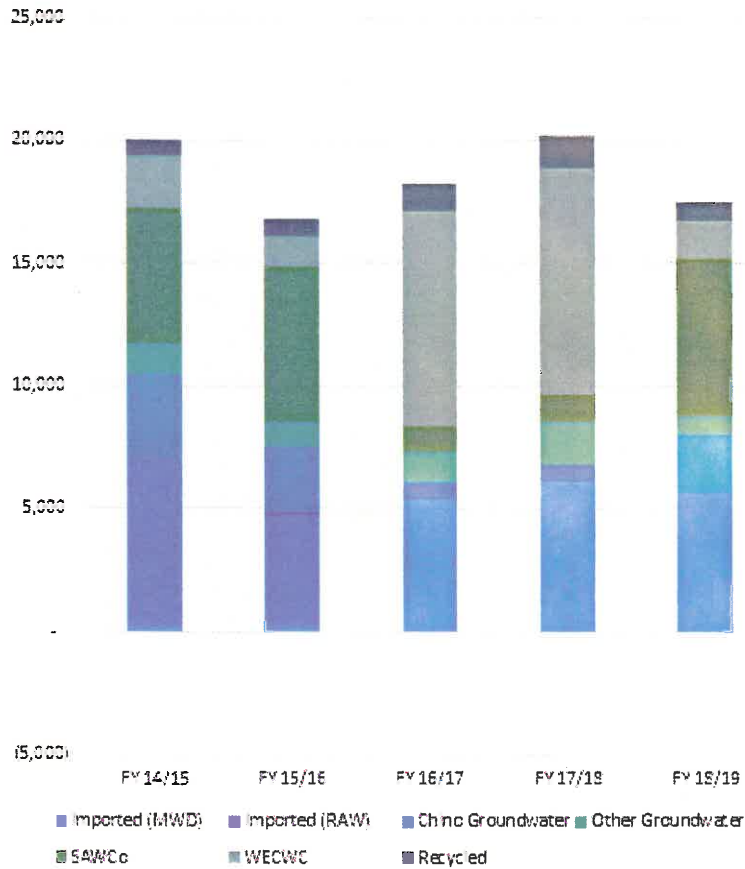
Upland



FY 18/19 Water Use Report

City of Upland

5 - Year Water Production Trend
Upland



In FY 2018/19, The City of Upland used 9% (17,426 AF) of 188,817 AF used in the IEUA service area.

FY 18/19 Water Use Report

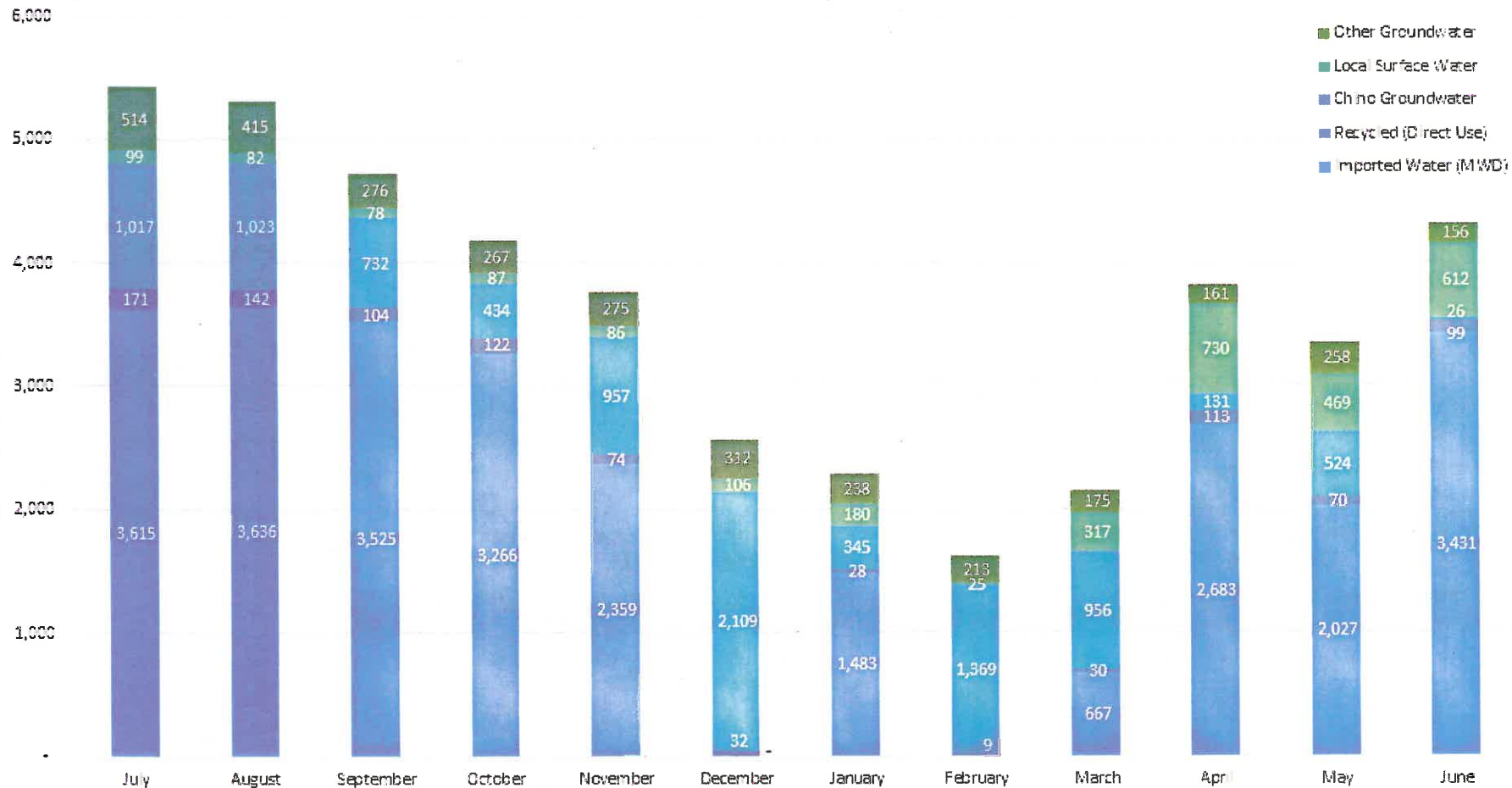
City of Upland

		Total IEUA Service Area Water Use By Agency for FY18-19 (AF)										City of Upland		
		July	August	September	October	November	December	January	February	March	April	May	June	Total
Purchases from IEUA	Imported Water (WFA)	955	1035	783	406	678	277	377	284	195	179	183	281	5,633
	Recycle (Direct Use)	120	110	72	95	53	24	11	5	17	69	65	68	709
	Imported Water (RAW)	0.00	0.00	0.00	-24.53	-5.28	-0.16	0.00	0.00	-0.25	0.00	-0.41	-0.31	-31
Subtotal		1,075	1,145	855	476	725	301	389	289	212	248	248	349	6,311
Production	Chino Groundwater	196	232	227	245	331	294	146	35	152	173	162	187	2,381
	Other Groundwater	75	68	64	67	57	54	20	9	30	96	100	121	762
Subtotal		271	299	291	312	388	348	166	44	183	269	262	308	3,142
Purchase from other agencies	SAWCo Water	586	617	658	836	247	312	328	267	377	736	680	732	6,376
	West End	306	290	217	92	87	78	62	49	95	140	110	70	1,596
Subtotal		892	906	876	928	333	391	390	316	472	876	790	803	7,972
Total		2,237	2,351	2,021	1,716	1,447	1,040	945	649	867	1,392	1,300	1,460	17,426

FY 18/19 Water Use Report

Cucamonga Valley Water District

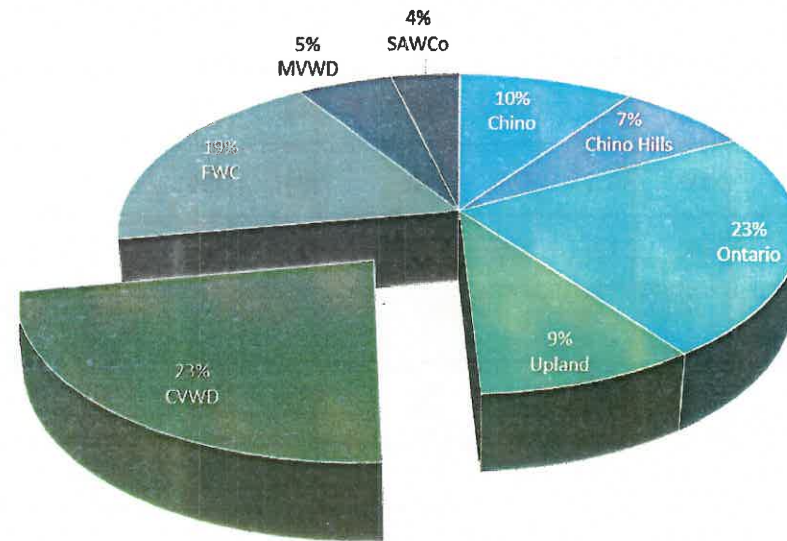
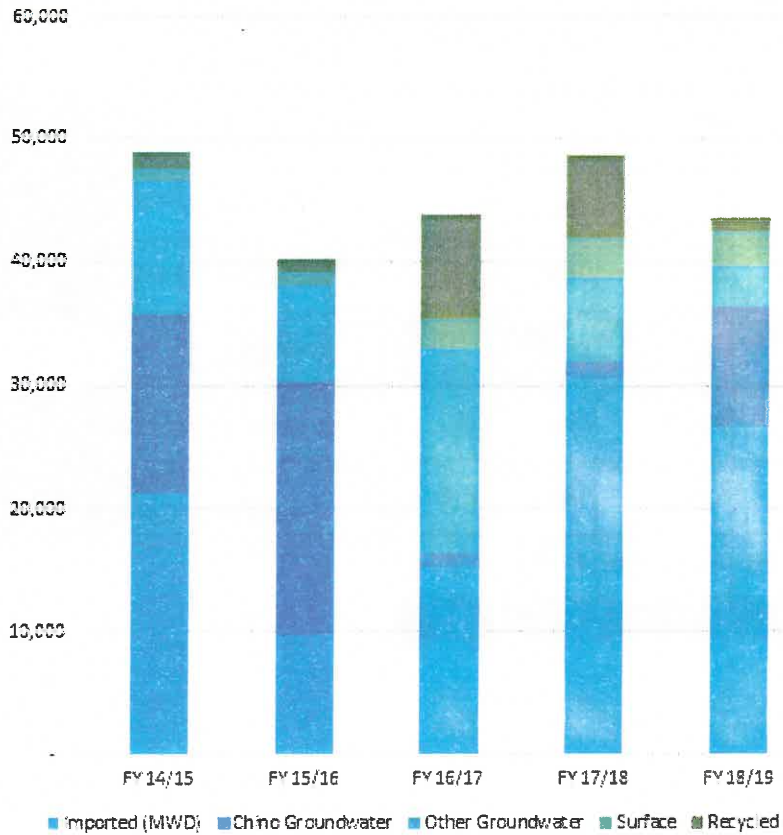
CVWD



FY 18/19 Water Use Report

Cucamonga Valley Water District

5 - Year Water Production Trend
CVWD



In FY 2018/19, Cucamonga Valley Water District used 23% (43,441) of 188,817 AF used in the IEUA service area.

FY 18/19 Water Use Report

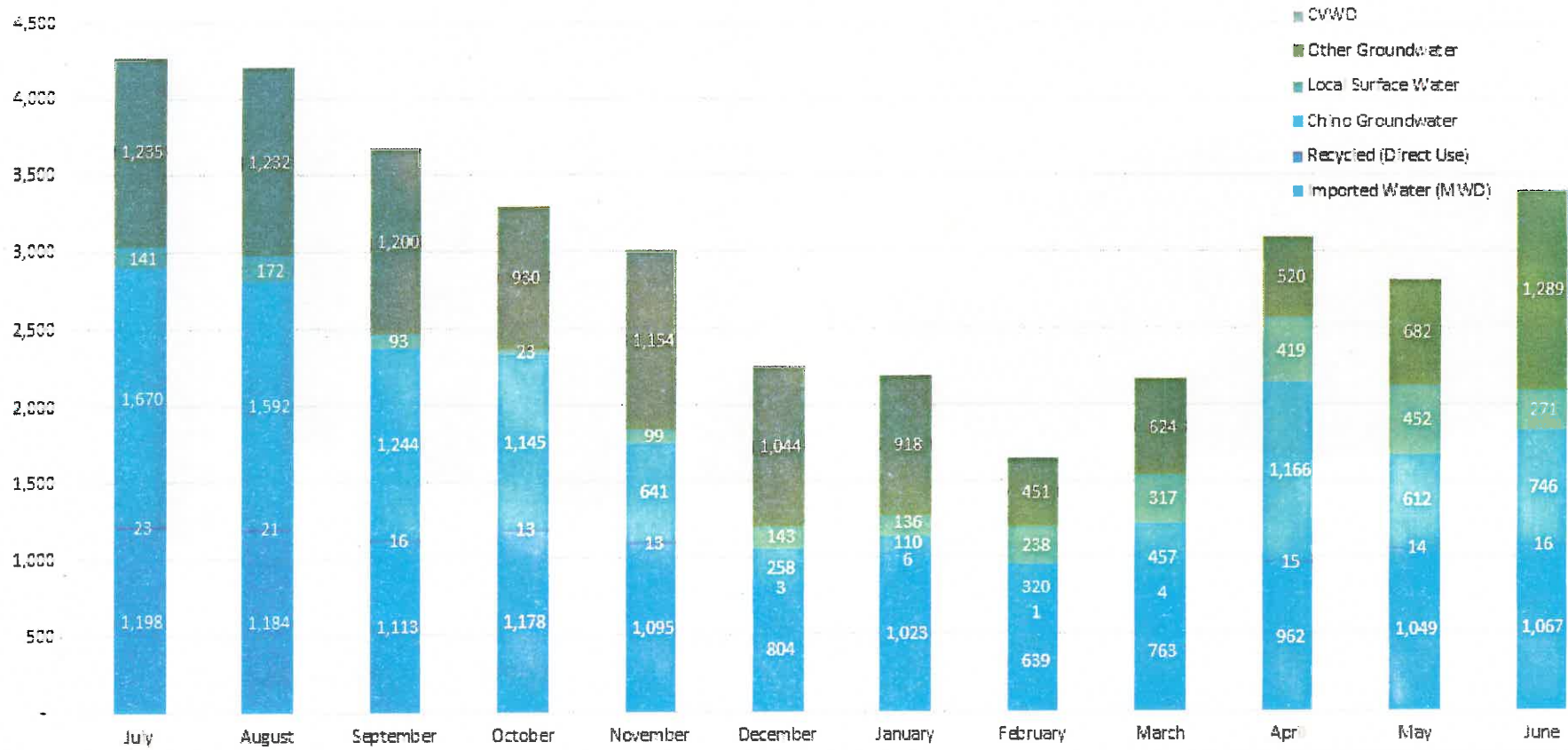
Cucamonga Valley Water District

		Total IEUA Service Area Water Use By Agency for FY18-19 (AF)										CVWD		
		July	August	September	October	November	December	January	February	March	April	May	June	Total
Purchases from IEUA	Imported Water (MWD)	3615	3636	3525	3266	2359	0	1483	0	667	2683	2027	3431	26,691
	Recycle (Direct Use)	171	142	104	122	74	32	28	9	30	113	70	99	996
Subtotal		3,786	3,778	3,629	3,388	2,433	32	1,512	9	696	2,796	2,097	3,530	27,687
Production	Chino Groundwater	1017	1023	732	434	957	2109	345	1369	956	131	524	26	9,624
	Local Surface Water	99	82	78	87	86	106	180	25	317	730	469	612	2,871
	Other Groundwater	514	415	276	267	275	312	238	213	175	161	258	156	3,259
Subtotal		1,630	1,520	1,086	788	1,319	2,526	762	1,607	1,447	1,022	1,252	794	15,754
Total		5,416	5,298	4,715	4,177	3,752	2,559	2,274	1,616	2,144	3,818	3,349	4,324	43,441

FY 18/19 Water Use Report

Fontana Water Company

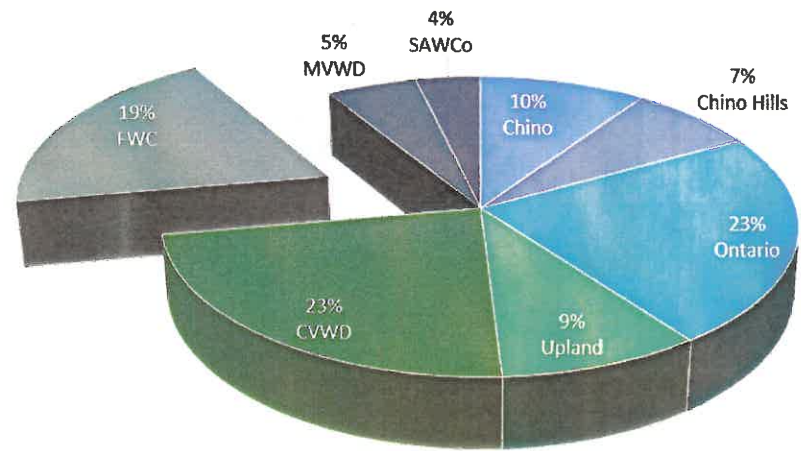
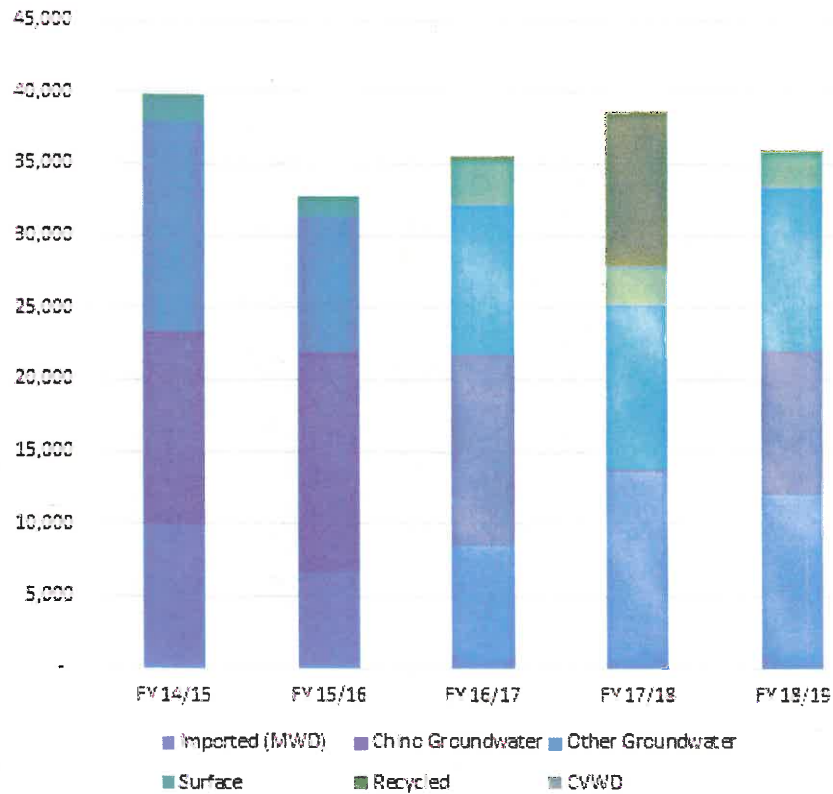
FWC



FY 18/19 Water Use Report

Fontana Water Company

5 - Year Water Production Trends
FWC



In FY 2018/19, Fontana Water Company used 19% (35,962 AF) of 188,817 AF used in the IEUA service area.

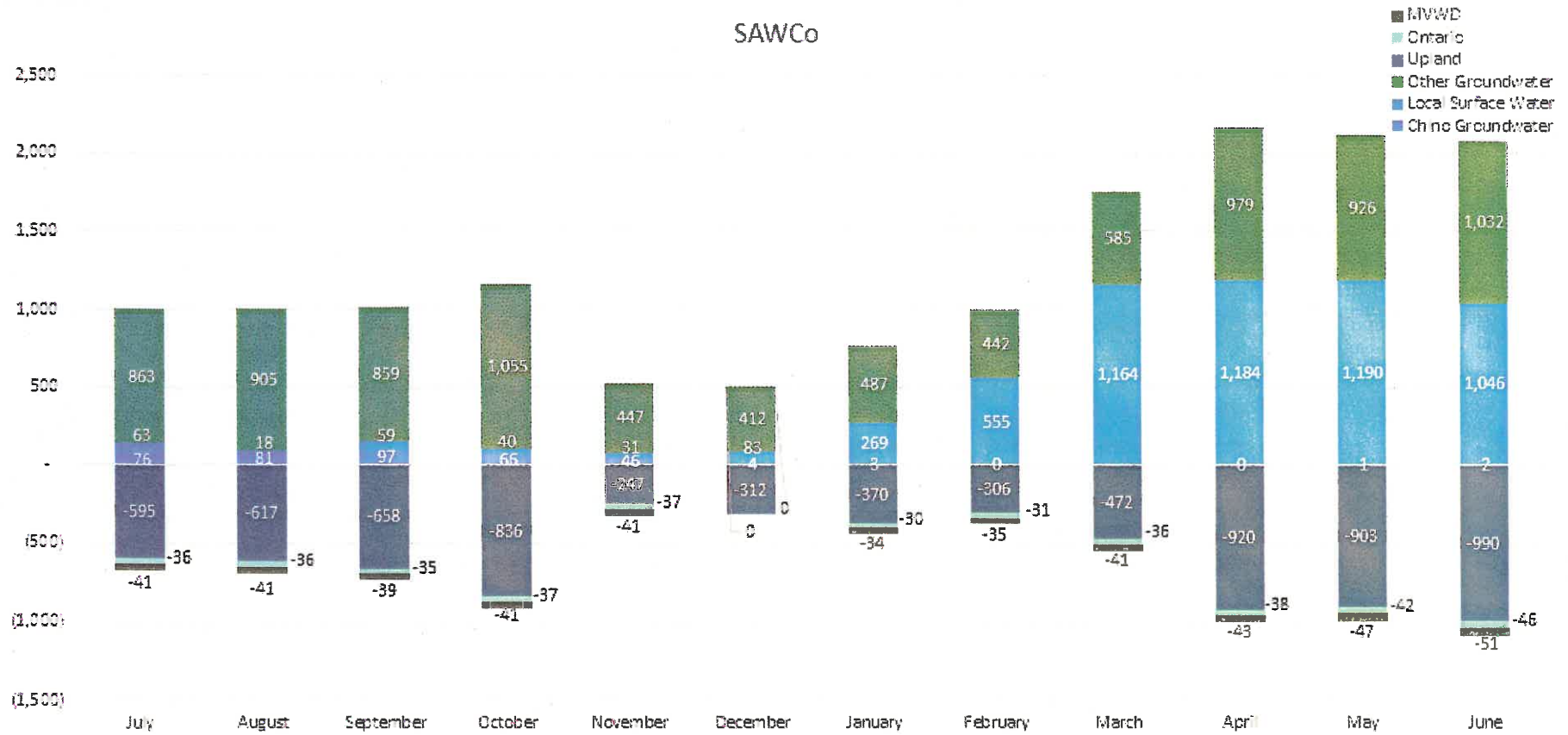
FY 18/19 Water Use Report

Fontana Water Company

		Total IEUA Service Area Water Use By Agency for FY18-19 (AF)											FWC	
		July	August	September	October	November	December	January	February	March	April	May	June	Total
Purchases from IEUA	Imported Water (MWD)	1198	1184	1113	1178	1095	804	1023	639	763	962	1049	1067	12,075
	Recycle (Direct Use)	23	21	16	13	13	3	6	1	4	15	14	16	143
Subtotal		1,221	1,205	1,129	1,191	1,108	806	1,029	640	767	977	1,063	1,083	12,219
Production	Chino Groundwater	1670	1592	1244	1145	641	258	110	320	457	1166	612	746	9,961
	Local Surface Water	141	172	93	23	99	143	136	238	317	419	452	271	2,503
	Other Groundwater	1235	1232	1200	930	1154	1044	918	451	624	520	682	1289	11,280
Subtotal		3,045	2,995	2,536	2,099	1,893	1,445	1,164	1,009	1,399	2,106	1,746	2,306	23,743
Purchase from other agencies	CVWD	0	0	0	0	0	0	0	0	0	0	0	0	-
Subtotal		-	-	-	-	-	-	-	-	-	-	-	-	-
Total		4,267	4,201	3,665	3,289	3,001	2,251	2,193	1,648	2,165	3,083	2,809	3,389	35,962

FY 18/19 Water Use Report

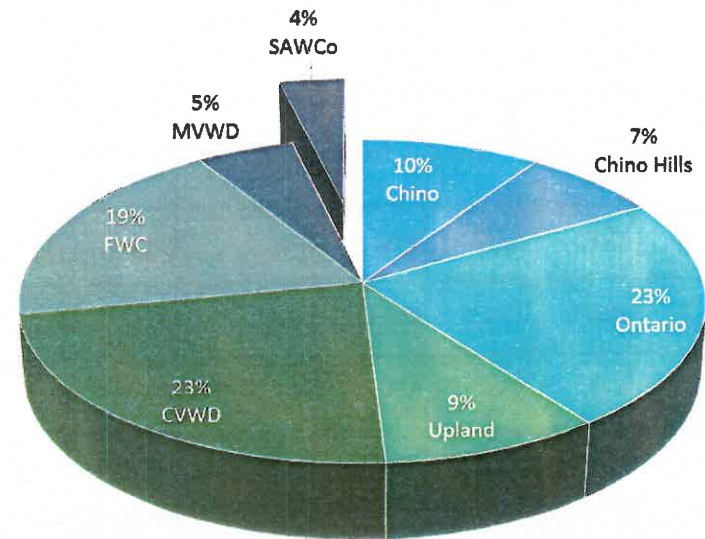
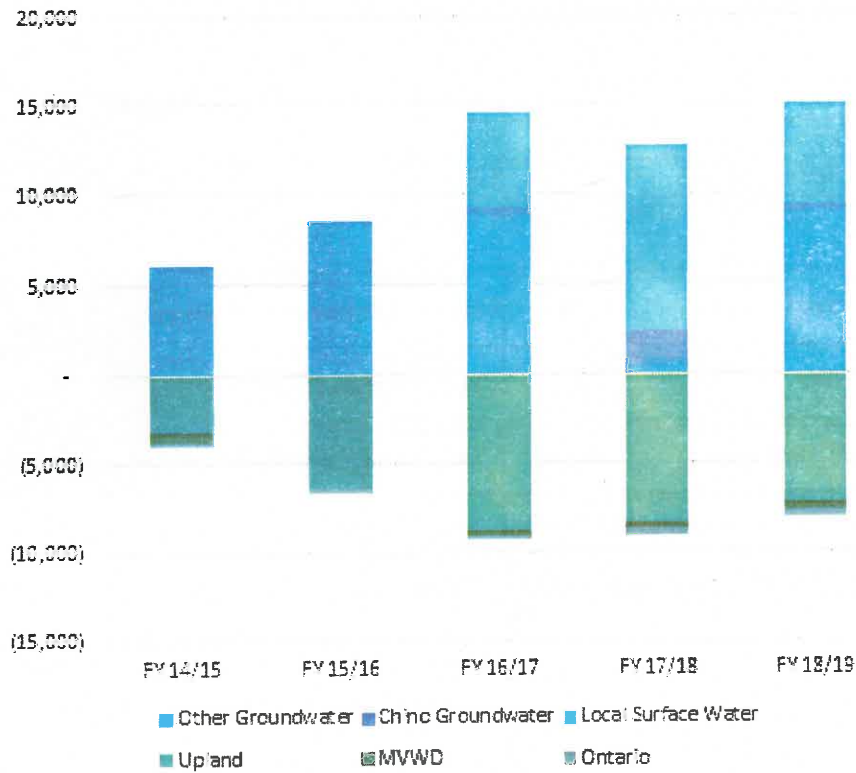
San Antonio Water Company



FY 18/19 Water Use Report

San Antonio Water Company

5 - Year Water Production Trends
SAWCo



In FY 2018/19, San Antonio Water Company used 4% (6,989AF) of 188,817 AF used in the IEUA service area.

FY 18/19 Water Use Report

San Antonio Water Company

		Total IEUA Service Area Water Use By Agency for FY18-19 (AF)										SAWCo		
		July	August	September	October	November	December	January	February	March	April	May	June	Total
Production	Chino Groundwater	76.3	80.9	97.2	65.7	46.0	3.6	3.1	0.0	0.0	0.5	0.6	1.9	376
	Local Surface Water	63	18	59	40	31	83	269	555	1164	1184	1190	1046	5,701
	Other Groundwater	863	905	859	1055	447	412	487	442	585	979	926	1032	8,993
Subtotal		1,002	1,004	1,015	1,161	524	498	760	997	1,749	2,164	2,116	2,080	15,070
Sales to other agencies	Upland	-595	-617	-658	-836	-247	-312	-370	-306	-472	-920	-903	-990	-7225
	Ontario	-36	-36	-35	-37	-37	0	-30	-31	-36	-38	-42	-46	-403
	MVWD	-41	-41	-39	-41	-41	0	-34	-35	-41	-43	-47	-51	-454
Subtotal		-672	-694	-732	-914	-324	-312	-434	-372	-549	-1001	-992	-1086	-8081
Total		331	310	283	248	199	186	326	625	1,200	1,163	1,125	994	6,989

APPENDIX A

Five year Historical Data Summary

FY 17-18		Total IEUA Service Area Water Use by Retail Agency for FY 17-18 (AFY)								
		CHINO	CHINO HILLS	ONTARIO	UPLAND	CVWD	FWC	MVWD	SAWCo	TOTAL
Purchases from IEUA	Imported Water (MWD)	4,292	1,500	3,211	6,073	30,559	13,642	9,935	0	69,212
	Recycled (Direct Use)	6,480	1,858	9,654	706	1,263	176	318	0	20,455
Subtotal		10,772	3,358	12,865	6,779	31,822	13,818	10,253	0	89,667
Production	Chino Groundwater	5,149	2,839	26,109	1,764	6,819	11,392	8,755	428	63,255
	Other Groundwater	0	0	0	1,112	6,737	10,725	0	10,245	28,819
	Local Surface Water	0	0	0	0	3,195	2,735	0	2,020	7,950
Subtotal		5,149	2,839	26,109	2,876	16,751	24,852	8,755	12,693	100,024
Purchases from Other Agencies	CDA	4,999	4,211	4,032	0	0	0	0	0	13,242
	MVWD*	0	4,763	0	0	0	0	0	0	4,763
	SAWCo Water	0	0	341	9,197	0	0	0	0	9,538
	West End	0	0	0	1,298	0	0	0	0	1,298
	CVWD	0	0	0	0	0	0	0	0	0
Subtotal		4,999	8,974	4,373	10,495	0	0	0	0	28,841
Sales to Other Agencies*	Chino Hills**	0	0	0	0	0	0	-6,064	0	-6,064
	Ontario	0	0	0	0	0	0	0	-232	-232
	Upland	0	0	0	0	0	0	0	-8,401	-8,401
	MVWD	0	0	0	0	0	0	0	-444	-444
Subtotal		0	0	0	0	0	0	-6,064	-9,077	-15,141
Total		20,920	15,171	43,347	20,150	48,573	38,670	12,944	3,616	203,391

FY 16-17		Total IEUA Service Area Water Use by Retail Agency for FY 16-17 (AFY)								
		CHINO	CHINO HILLS	ONTARIO	UPLAND	CVWD	FWC	MVWD	SAWCo	TOTAL
Purchases from IEUA	Imported Water (MWD)	3,469	1,954	2,364	5,406	15,288	8,510	5,105	0	42,096
	Recycled (Direct Use)	6,447	1,838	8,352	652	1,056	52	306	0	18,703
Subtotal		9,916	3,792	10,716	6,058	16,344	8,562	5,411	0	60,799
Production	Chino Groundwater	4,972	2,245	24,672	1,260	16,549	13,251	7,786	537	71,272
	Other Groundwater	0	0	0	1,026	8,386	10,338	0	8,739	28,490
	Local Surface Water	0	0	0	0	2,448	3,230	0	5,282	10,960
Subtotal		4,972	2,245	24,672	2,286	27,384	26,818	7,786	14,558	110,721
Purchases from Other Agencies	CDA	5,008	4,206	3,077	0	0	0	0	0	12,292
	MVWD*	0	4,237	0	0	0	0	0	0	4,237
	SAWCo Water	0	0	171	8,791	0	0	0	0	8,961
	West End	0	0	0	1,068	0	0	0	0	1,068
	CVWD	0	0	0	0	0	39	0	0	39
Subtotal		5,008	8,444	3,248	9,858	0	39	0	0	26,597
Sales to Other Agencies*	Chino Hills**	0	0	0	0	0	0	-4,818	0	-4,818
	Ontario	0	0	0	0	0	0	0	-171	-171
	Upland	0	0	0	0	0	0	0	-8,791	-8,791
	MVWD	0	0	0	0	0	0	0	-278	-278
Subtotal		0	0	0	0	0	0	-4,818	-9,240	-14,058
Total		19,896	14,481	38,636	18,203	43,728	35,419	8,379	5,318	184,060

FY 15-16		Total IEUA Service Area Water Use by Retail Agency for FY 15-16 (AFY)								
		CHINO	CHINO HILLS	ONTARIO	UPLAND	CVWD	FWC	MVWD	SAWCo	TOTAL
Purchases from IEUA	Imported Water (MWD)	2,843	110	2,755	4,890	9,712	6,613	4,799	0	31,722
	Recycled (Direct Use)	7,217	1,410	7,566	719	1,146	0	278	0	18,336
Subtotal		10,060	1,520	10,321	5,609	10,857	6,613	5,078	0	50,058
Production	Chino Groundwater	5,104	1,630	22,755	2,601	20,524	15,317	8,371	0	76,302
	Other Groundwater	0	0	0	1,054	7,783	9,253	0	8,517	26,607
	Local Surface Water	0	0	0	0	1,002	1,497	0	0	2,499
Subtotal		5,104	1,630	22,755	3,655	29,309	26,067	8,371	8,517	105,408
Purchases from Other Agencies	CDA	5,000	4,201	2,682	0	0	0	0	0	11,883
	MVWD	0	5,642	0	0	0	0	0	0	5,642
	SAWCo Water	0	0	338	6,297	0	0	0	0	6,635
	West End	0	0	0	1,246	0	0	0	0	1,246
Subtotal		5,000	9,843	3,020	7,543	0	0	0	0	25,406
Sales to Other Agencies*	Chino Hills	0	0	0	0	0	0	-5,437	0	-5,437
	Ontario	0	0	0	0	0	0	0	-338	-338
	Upland	0	0	0	0	0	0	0	-6,297	-6,297
Subtotal		0	0	0	0	0	0	-5,437	-6,635	-12,072
Total		20,163	12,993	36,096	16,807	40,166	32,681	8,012	1,882	168,000

FY 14-15

Total IEUA Service Area Water Use by Retail Agency for FY 14-15 (AFY)

		CHINO	CHINO HILLS	ONTARIO	UPLAND	CVWD	FWC	MVWD	SAWCo	TOTAL
Purchases from IEUA	Imported Water (MWD)	2,830	2,494	10,703	7,047	21,306	9,994	4,530	0	58,905
	Recycled (Direct Use)	8,324	1,827	8,018	636	1,400	0	308	0	20,513
Subtotal		11,154	4,321	18,721	7,684	22,705	9,994	4,838	0	79,418
Production	Chino Groundwater	6,497	2,904	17,426	3,416	14,490	13,344	8,407	0	66,485
	Other Groundwater	0	0	0	1,291	10,631	14,500	0	6,091	32,513
	Local Surface Water	0	0	0	0	1,076	1,969	0	0	3,044
Subtotal		6,497	2,904	17,426	4,708	26,196	29,813	8,407	6,091	102,042
Purchases from Other Agencies	CDA	5,232	4,426	4,827	0	0	0	0	0	14,485
	MVWD	0	4,436	0	0	0	0	0	0	4,436
	SAWCo Water	0	0	172	5,461	0	0	612	0	6,246
	West End	0	0	0	2,139	0	0	0	0	2,139
Subtotal		5,232	8,862	5,000	7,601	0	0	612	0	27,306
Sales to Other Agencies	Chino Hills	0	0	0	0	0	0	-4,439	0	-4,439
	MVWD	0	0	0	0	0	0	0	-612	-612
	Ontario	0	0	0	0	0	0	0	-172	-172
	Upland	0	0	0	0	0	0	0	-3,177	-3,177
Subtotal		0	0	0	0	0	0	-4,439	-3,961	-8,400
Total		22,884	16,087	41,147	19,992	48,902	39,807	9,419	2,129	200,366

FY 13-14

		Total IEUA Service Area Water Use by Retail Agency for FY 13-14 (AFY)								
		CHINO	CHINO HILLS	ONTARIO	UPLAND	CVWD	FWC	MVWD	SAWCo	TOTAL
Purchases from IEUA	Imported Water (MVWD)	4,342	962	9,904	7,265	28,825	9,792	5,965	0	67,055
	Recycled (Direct Use)	8,916	2,002	8,428	869	1,652	0	339	0	22,205
Subtotal		13,258	2,964	18,332	8,134	30,477	9,792	6,304	0	89,261
Production	Chino Groundwater	6,725	2,138	21,723	2,822	16,122	15,378	12,522	0	77,430
	Other Groundwater	0	0	0	704	8,324	17,454	0	12,610	39,082
	Local Surface Water	0	0	0	0	1,254	2,405	0	0	3,658
Subtotal		6,725	2,138	21,723	3,526	25,700	35,236	12,522	12,610	120,180
Purchases from Other Agencies	CDA	5,198	4,396	5,141	0	0	0	0	0	14,735
	CVWD	0	0	0	0	0	757	0	0	757
	MVWD	0	8,427	0	0	0	0	0	0	8,427
	SAWCo Water	0	0	0	9,662	0	0	400	0	10,063
	West End	0	0	0	2,653	0	0	0	0	2,653
Subtotal		5,198	12,824	5,141	12,316	0	757	400	0	36,636
Sales to Other Agencies	Chino Hills	0	0	0	0	0	0	-8,428	0	-8,428
	MVWD	0	0	0	0	0	0	0	-400	-400
	Upland	0	0	0	0	0	0	0	-9,662	-9,662
Subtotal		0	0	0	0	0	0	-8,428	-10,063	-18,490
Total		25,181	17,926	45,196	23,975	56,177	45,785	10,798	2,547	227,506

APPENDIX B

Definitions

Chino Basin Groundwater – Water pumped from the Chino Basin Aquifer and treated by retail water agencies for all potable uses within the IEUA service area.

Desalter Water – Water pumped from Chino Basin Desalter I owned and operated by the Chino Basin Desalter Authority (CDA). Groundwater, with high levels of dissolved solids, is treated and distributed to several retail agencies within the IEUA's service area for potable uses.

Imported Water (MWD) – Water from Northern California and supplied by the Metropolitan Water District of Southern California (MWD), and water transferred from other groundwater basins to retail water agencies operating within the IEUA service area. All Tier I and Tier II deliveries are included in this category.

Other Groundwater – Water produced from other local groundwater basins to retail water agencies operating within IEUA's service area.

Surface Water – Water collected by retail water agencies from mountain runoff and storm flows, which is collected and treated for potable use.

Recycled Water – Title 22 recycled water produced by the IEUA at its water recycling plants for distribution through separate pipelines to retail water agency customers for all non-potable uses.

WECWC– West End Consolidated Water Company supplies some water to the City of Upland.

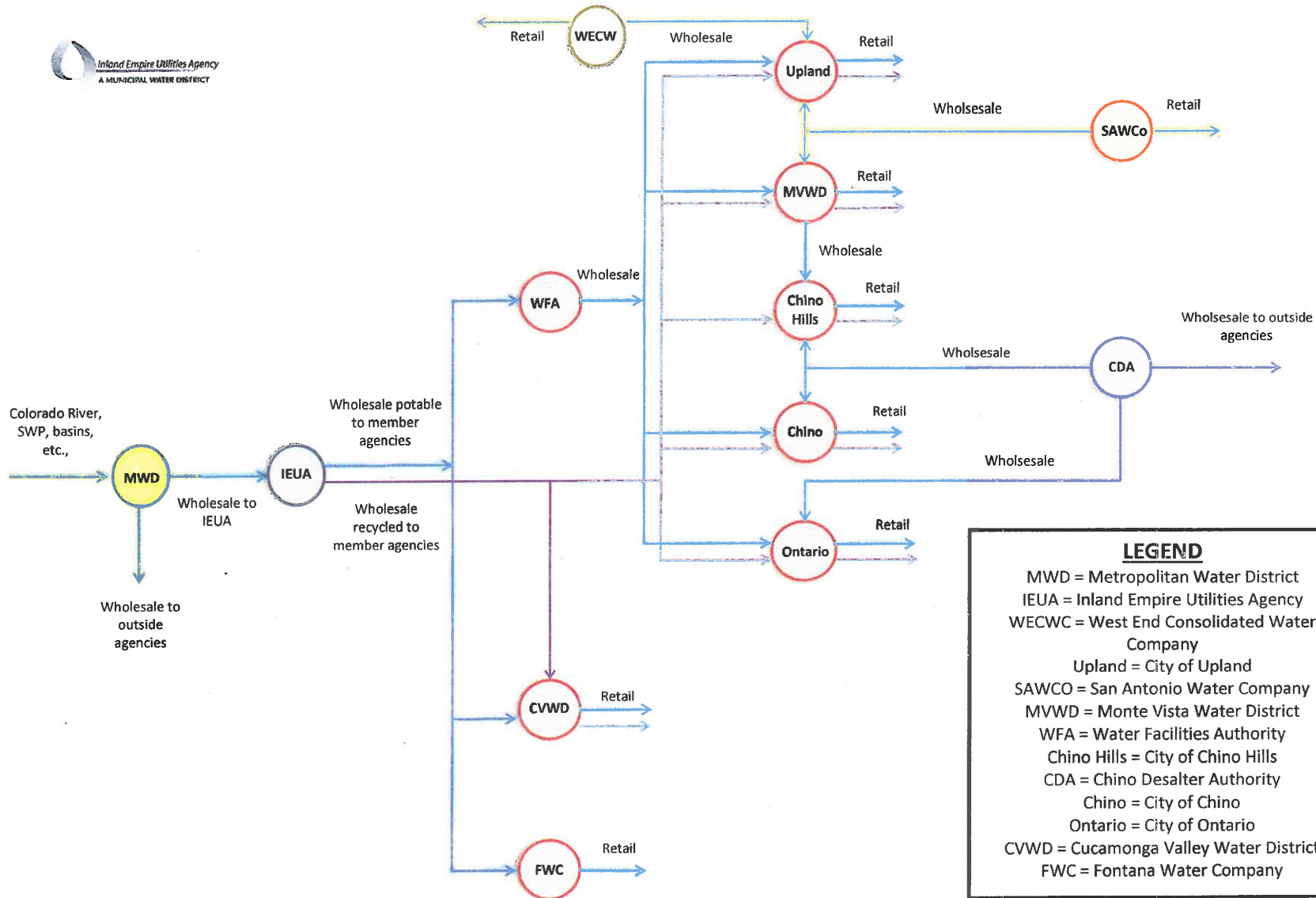
WVWD – West Valley Water District

Production – Amount of water Agencies produce from their groundwater, surface water, or other water supplies that they have rights or jurisdiction over.

Use – Amount of water used within a member agency's jurisdiction, as reported by them to IEUA.

APPENDIX C

Member Agency Organizational Chart



LEGEND

MWD = Metropolitan Water District
 IEUA = Inland Empire Utilities Agency
 WECWC = West End Consolidated Water Company
 Upland = City of Upland
 SAWCO = San Antonio Water Company
 MVWD = Monte Vista Water District
 WFA = Water Facilities Authority
 Chino Hills = City of Chino Hills
 CDA = Chino Desalter Authority
 Chino = City of Chino
 Ontario = City of Ontario
 CVWD = Cucamonga Valley Water District
 FWC = Fontana Water Company

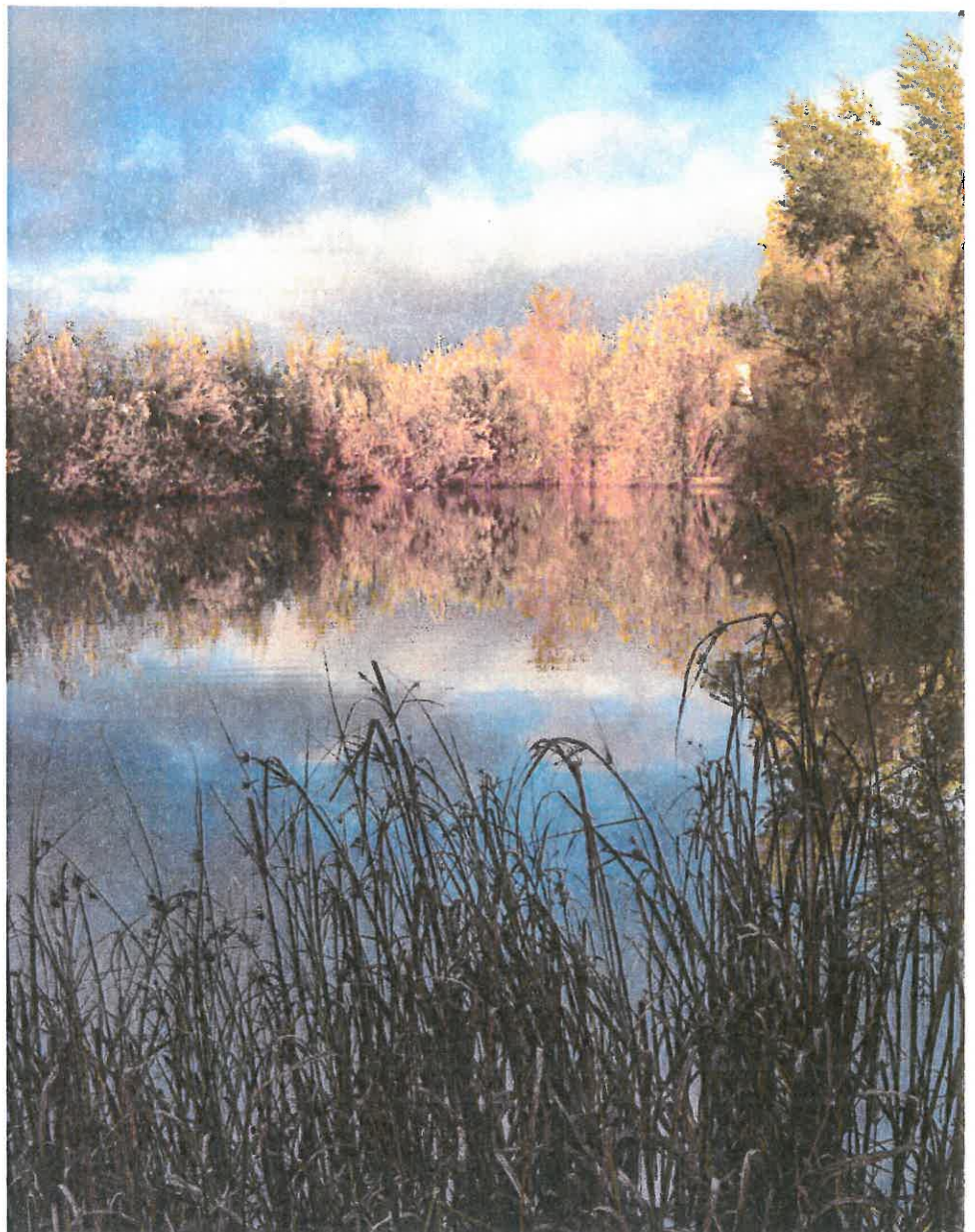
2019

IEUA FY 2018-2019 Recycled Water Annual Report

Water Smart
Thinking in Terms of Tomorrow



Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT





Inland Empire Utilities Agency

A MUNICIPAL WATER DISTRICT

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APPENDIX B Recycled Water Compliance Data for Calendar Year 2018

INTRODUCTION

The 2018/19 Recycled Water Annual Report for the Inland Empire Utilities Agency (IEUA) recycled water program provides annual delivery data by IEUA retail member agencies, by usage types, and by customers. The 2018/19 report is for IEUA’s fiscal year, which runs from July 2018 to June 2019. The report summarizes the program history, describes recent construction, and gives an overview of the IEUA treatment plants. IEUA provides wastewater treatment for its seven member agencies: the Cities of Chino, Chino Hills, Fontana, Montclair, Ontario, and Upland and Cucamonga Valley Water District. Recycled water from the treatment process is generated and delivered to its retail water agencies for use in the IEUA service area.

IEUA owns and operates five wastewater recycling facilities that serve over 875,000 people. **Figure 1** shows the IEUA service area, its member agencies, and the locations of IEUA’s treatment plants. Of the five plants, four produce tertiary-treated, Title 22-quality recycled water. Of the treatment plants, RP-2 does not have any liquid treatment processes, and as such does not produce any recycled water. The general layout and capacities of the water recycling plants are discussed in the last section of the report. **Appendices A** and **B** contain the recycled water effluent monitoring data and recycled water compliance data, respectively, for the 2018 calendar year for the four recycled water facilities.

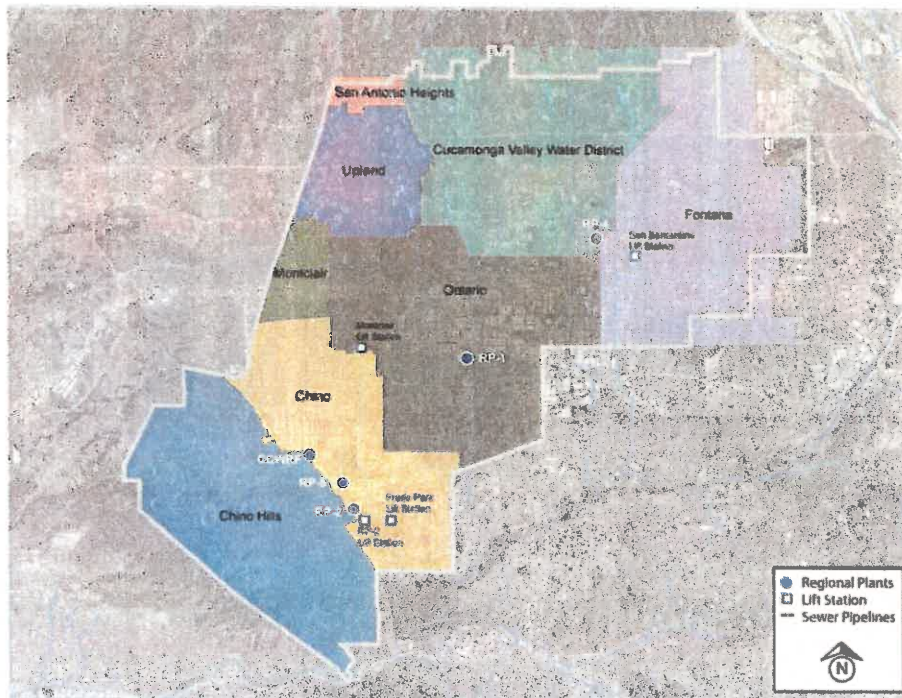


Figure 1 - IEUA Service Area

DEMANDS

During 2018/19, the average recycled water supply from IEUA's facilities was approximately 49.7 million gallons per day (MGD), or 55,666 acre-feet per year (AFY). Recycled water groundwater recharge usage was 11,542 AFY and recycled water direct usage was 16,803 AFY. Total recycled water demands during 2018/19 were 28,345 acre-feet (AF), a decrease by 18% from the previous fiscal year. Recycled water recharge was down 15% and direct use was down 20%. The recycled water delivery volumes of direct use and groundwater recharge can vary seasonally and annually based on a variety of factors (e.g. the rainfall intensity, rainfall duration, and recharge basin maintenance activities). **Figure 2** shows IEUA's historical direct use and groundwater recharge of recycled water for the past 10 years.

Recycled water demands for the combined direct use and recharge purposes were approximately 51 percent of the available supply. During the peak demand summer months (July through September), the total recycled water demands were approximately 87 percent of the available supply.

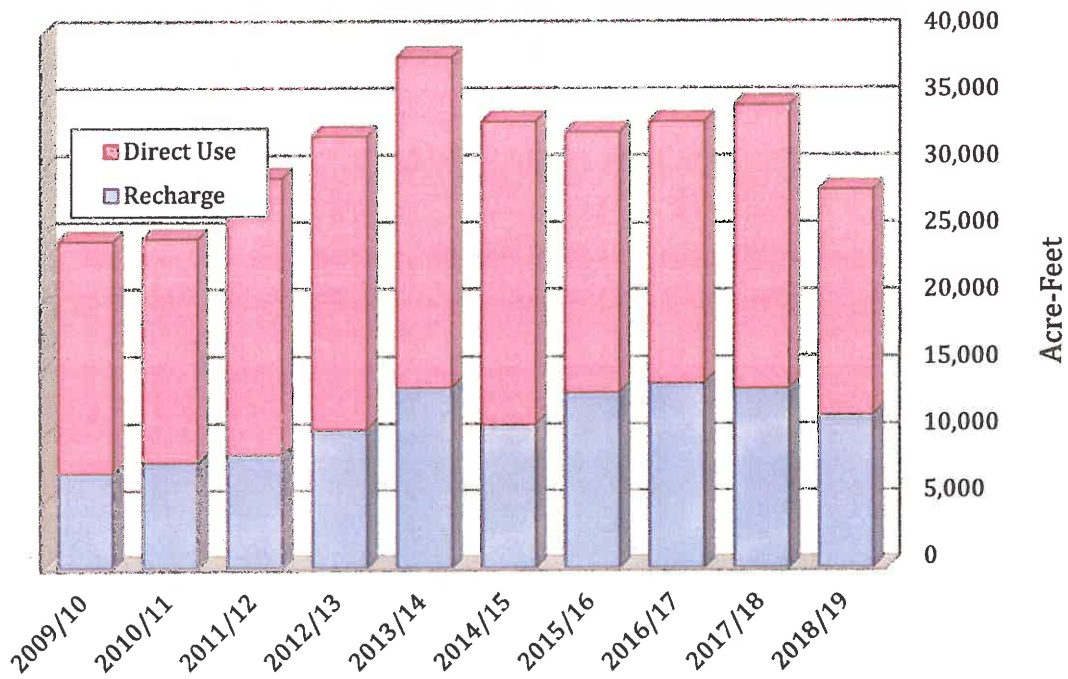


Figure 2 – Historical Recycled Water Direct Use and Groundwater Recharge

DEMANDS BY USE TYPE

Delivered recycled water was beneficially reused for a variety of applications including landscape irrigation, agricultural irrigation, industrial process water, construction, and groundwater recharge. **Table 1** and **Figure 3** show the 2018/19 recycled water demand by use type.

Table 1 – Recycled Water Demand by Use Type for 2018/19

Type of Use	Demand (AF)	Percent of Demand
Recharge	11,542	41%
Agriculture	5,850	21%
Landscape	9,469	33%
Industrial	1,078	4%
Construction	406	1%
Total Demand	28,345	100%

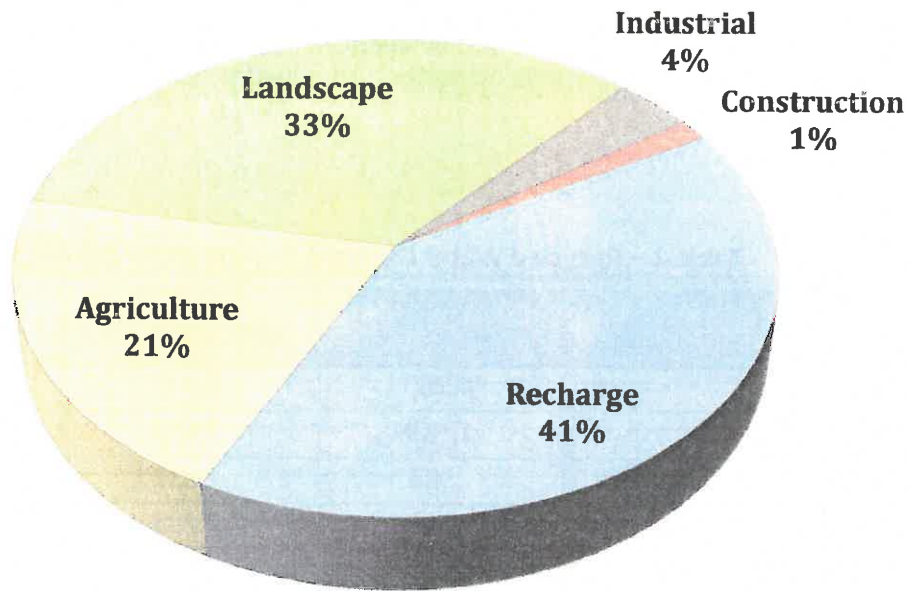


Figure 3 – Recycled Water Demand by Use Type for 2018/19

RETAIL DEMANDS

IEUA is the wholesale recycled water provider to its member agencies, which in turn are retail agencies that directly serve their customers. IEUA member agencies which served recycled water in 2018/19 include:

- City of Chino,
- City of Chino Hills,
- City of Ontario,
- Cucamonga Valley Water District (CVWD),
- Montclair (through MVWD),
- Fontana (through FWC), and
- City of Upland

Monte Vista Water District (MVWD) and Fontana Water Company (FWC) are the water retailers in the Cities of Montclair and Fontana, respectively, but are not IEUA member agencies. MVWD and FWC retail recycled water obtained from their overlying cities which are IEUA member agencies. San Bernardino County is currently a direct use customer of IEUA based on long standing historical contracts.

Table 2 shows the recycled water demand by agency. Each agency's total includes its direct use and its allocation from IEUA for recycled water groundwater recharge based on IEUA's Regional Sewage Service Contract.

Table 2 – Recycled Water Demand by Agency for 2018/19

Retail Agency	Direct Use (AF)	Recharge Allocation (AF)	Agency Total (AF)
Chino	4,760	1,240	6,000
Chino Hills	1,548	1,018	2,566
CVWD	996	2,837	3,833
Fontana/FWC	143	2,233	2,377
Montclair/MVWD	289	495	784
Ontario	7,511	2,634	10,145
Upland	709	1,084	1,793
IEUA	685	0	685
San Bernardino County	162	0	162
Subtotal	16,803	11,542	28,345

CUSTOMERS DEMANDS

Table 3 lists the top ten largest direct reuse customer sites for the fiscal year (excluding groundwater recharge sites). During 2018/19, ninety-nine (99) new connections were made to the recycled water system with a total new demand estimated at 596 AFY. Connected new demand is the anticipated annual usage based on land size and previous potable water usage history.

Table 3 – Top 10 Recycled Water Customers for 2018/19

Customer	Use (AF)	Type of Use	Retailer
Cleveland Farm	2,203	Agricultural	Ontario
New Indy Ontario	907	Industrial	Ontario
Cal Poly Pomona	875	Agricultural	Chino
Murai Farm	596	Agricultural	Ontario
Whispering Lakes Golf Course	554	Landscape	Ontario
IEUA Headquarters	529	Landscape	IEUA
GH Dairy	485	Agricultural	Ontario
Superior Sod	448	Agricultural	Chino
Weststeyn Dairy	409	Agricultural	Chino
Los Serranos Golf Course	385	Landscape	Chino Hills
Subtotal	7,390		

ECONOMIC AND ENVIRONMENTAL IMPACTS

The 28,345 AF of recycled water used during the fiscal year is the equivalent of the water supply for roughly 56,690 homes. The use of recycled water reduces the need to pump State Water Project water over the Tehachapi Mountains, an equivalent net energy demand reduction of 1,940 kilowatt-hours (kWh) per AF, and an overall reduction of approximately 53 percent in carbon dioxide emissions.

IEUA's wholesale recycled water rate to its member agencies for 2018/19 was \$480/AF for direct usage and \$540/AF for recharge.

HISTORY

Early water recycling efforts in the 1970s by IEUA involved irrigation at the Whispering Lakes Golf Course adjacent to RP-1 in Ontario and at the El Prado Park and Golf Course in Chino. In the 1980s, recycled water continued to be an integral part of IEUA planning with implementation of the CCWRF and RP-4 recycling plants. These two recycling plants were sited specifically at higher elevations to reduce recycling plants water pumping costs. A backbone recycled water distribution system was installed in Chino and Chino Hills from CCWRF in 1997 and was initially operated by IEUA under Ordinance No. 63. This system was later turned over to the City of Chino and the City of Chino Hills and forms the core of the recycled water distribution network operated by these two cities.

The first major regional pipeline was constructed in 1995 and served the dual purpose of a regional recycled water distribution pipeline and an outfall allowing RP-4 effluent to be discharged with RP-1 effluent into Cucamonga Creek. The RP-4 outfall was designed as a pressurized system so that water could be pumped up from RP-1 to RP-4 as well as flow down in the opposite direction from RP-4 to RP-1 and the creek outfall.

In 1999, IEUA began groundwater recharge with recycled water at Ely Basin. The initial Ely Basin project was followed by the Chino Basin Watermaster's (CBWM) development of the Optimum Basin Management Program (OBMP) and the region's efforts (including IEUA's) to implement the OBMP. In 2000, the OBMP identified recycled water use as a critical component in drought-proofing and maintaining the region's economic growth. With imported water rates increasing and long-term supply reliability declining, the region committed to aggressively and proactively address regional impacts. The OBMP set the path for the development of a regional recycled water distribution system and a Recycled Water Implementation Plan.

The use of recycled water presented several advantages to IEUA and its member agencies: it is one of the most significant unused local water supplies; it is reliable during drought and climate change conditions; and it requires significantly less energy than imported water to deliver to customers and thus reduces greenhouse gas emissions. IEUA in partnership with its member agencies and CBWM invested approximately \$625 million since 2000 to increase the availability of local water supplies through water recycling, conservation, recharge improvements, the MWD groundwater storage and recovery project, the Chino Desalter, and other water management programs.

In 2002, IEUA Board of Directors adopted Ordinance No. 75, the Mandatory Use Ordinance, to establish incentives and encourage recycled water use from the regional distributions system. Also in 2002, the CBWM, Chino Basin Water Conservation District (CBWCD), San Bernardino

County Flood Control District (SBCFCD) and IEUA joined forces to greatly expand groundwater recharge capacity through the Chino Basin Facilities Improvement Program.

In 2005, IEUA was permitted by the Regional Water Quality Control Board (RWQCB) to operate its recycled water groundwater recharge programs at five additional recharge basins (Banana, Hickory, Etiwanda Conservation Ponds, Declerz, RP3, and Turner basins). In 2007, IEUA was permitted to operate its recycled water groundwater recharge program at seven more recharge sites (Brooks, 8th Street, Victoria, Lower Day, San Sevaine, Etiwanda Spreading Grounds (later reconfigured as the Etiwanda Debris Basin) and Ely Basins. The 2007 permit was amended in 2009 to modify how IEUA tracks diluent water and recycled water blending, which effectively increased IEUA's ability to recharge using recycled water.

In November 2007, IEUA and its member agencies unanimously adopted the Three Year Recycled Water Business Plan. IEUA and its member agencies committed to implementing the plan, which laid out a focused and cost-effective approach to rapidly increase the availability and use of recycled water within IEUA's service area.

Based on the series of regional decisions since 2000, over \$350 million was invested into the implementation of a robust Recycled Water Program. The region has achieved program success by leveraging heavily on grant funding and loans. With unanimous regional support, annual recycled water use grew from approximately 5,000 AF in 2004/05 to 38,251 AF in FY 2013/14. Over the past five fiscal years, recycled water demand has fallen slightly, which has been primarily driven by land use conversion from agriculture to urban.

TREATMENT PLANTS

IEUA owns and operates five regional water recycling facilities: RP-1, RP-2, RP-4, RP-5, and CCWRF. Of the treatment plants, RP-2 does not have any liquid treatment processes, and as such does not produce any recycled water. The combined treatment capacity of the remaining four plants is approximately 85 MGD. With the planned plant expansion of RP-5 over the coming years, an additional 15 MGD average capacity will be achieved, which will increase the combined treatment capacity to approximately 100 MGD.

APPENDIX A
RECYCLED WATER
EFFLUENT MONITORING DATA
FOR CALENDAR YEAR 2018

Inland Empire Utilities Agency
Regional Plant Nos. 1, 4, 5, & Carbon Canyon Water Recycling Facility, 2018 NPDES Annual Report

RP-1 (M-001A* & M-001B) Effluent Monitoring Data

Table No. 3a

Date	Flow			EC			pH			BOD ₅				TSS				TOC			TDS			TIN			TN			NH ₃ -N (grab)					
	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg Dis	Avg	Min	Max	Avg Dis	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
Limit>>	MGD			µmhos/cm			unit			mg/L				mg/L				mg/L			mg/L			mg/L			mg/L			mg/L			mg/L		
							6.5-8.5			20				15				20			15												4.5		
Jan-18	4.7	0.0	6.0	783	672	1003	6.9	6.7	7.3	<2	<2	2	0.5	<2	<2	<2	0.5	5.7	5.2	6.3	487	428	514	6.0	3.4	8.7	7.1	5.7	8.7	<0.1	<0.1	<0.1			
Feb-18	5.9	3.8	7.0	839	682	912	7.0	6.7	7.1	<2	<2	<2	0.5	<2	<2	<2	0.5	5.4	4.5	6.0	513	504	526	5.1	2.9	6.7	5.9	4.5	6.6	<0.1	<0.1	<0.1			
Mar-18	5.0	3.3	6.0	853	801	929	6.9	6.7	7.1	<2	<2	<2	0.5	<2	<2	<2	0.4	5.9	5.2	6.6	529	514	552	4.4	2.6	6.0	5.4	4.4	6.4	<0.1	<0.1	<0.1			
Apr-18	6.0	5.9	6.1	839	682	912	7.1	6.6	7.2	<2	<2	2	0.4	<2	<2	<2	0.5	6.1	5.4	6.8	508	490	530	4.2	3.4	5.3	5.0	4.1	5.3	<0.1	<0.1	<0.1			
May-18	3.0	0.0	6.0	894	849	951	7.0	6.6	7.1	<2	<2	2	0.4	<2	<2	<2	0.5	6.6	5.9	7.6	532	508	554	4.1	3.0	5.4	5.3	5.0	6.1	<0.1	<0.1	0.2			
Jun-18	2.0	0.0	3.1	907	866	939	7.1	6.9	7.2	<2	<2	2	0.5	<2	<2	<2	0.5	6.4	5.6	9.5	538	508	566	4.1	2.7	6.0	5.1	4.3	6.5	<0.1	<0.1	<0.1			
Jul-18	3.0	0.5	4.2	880	844	943	7.2	6.8	8.1	<2	<2	<2	0.4	<2	<2	<2	0.4	6.2	5.7	6.6	518	504	536	4.6	3.1	6.5	5.2	4.5	6.2	<0.1	<0.1	<0.1			
Aug-18	3.9	3.0	6.0	865	825	896	7.1	6.9	7.2	<2	<2	<2	0.5	<2	<2	<2	0.5	5.9	5.6	6.3	510	504	524	4.4	3.1	5.3	5.4	5.0	5.9	<0.1	<0.1	<0.1			
Sep-18	3.9	2.0	6.8	880	843	921	7.0	6.9	7.2	<2	<2	<2	0.5	<2	<2	<2	0.5	5.7	5.1	6.4	511	494	522	4.9	4.3	5.6	5.8	5.5	6.1	<0.1	<0.1	<0.1			
Oct-18	3.2	0.9	5.1	935	884	1044	7.0	6.8	7.2	<2	<2	<2	0.6	<2	<2	<2	0.5	5.9	5.4	6.3	529	512	554	4.3	3.0	6.0	6.0	5.3	6.8	<0.1	<0.1	<0.1			
Nov-18	2.8	1.8	4.1	928	889	966	7.1	6.9	7.3	<2	<2	<2	0.7	<2	<2	<2	0.5	5.9	5.5	6.5	536	526	550	5.2	4.8	5.6	6.0	5.6	6.3	<0.1	<0.1	0.1			
Dec-18	0.9	0.0	3.5	900	873	923	7.1	6.9	7.3	<2	<2	<2	0.5	<2	<2	<2	0.5	5.8	5.2	6.4	519	506	532	4.6	3.5	5.5	5.5	4.3	6.5	<0.1	<0.1	<0.1			
Avg	3.7	1.8	5.3	875	809	945	7.0	6.8	7.3	<2	<2	<2	0.5	<2	<2	<2	0.5	6.0	5.4	6.8	519	500	538	4.7	3.3	6.0	5.6	4.9	6.5	<0.1	<0.1	<0.1			
Min	0.9	0.0	3.1	783	672	896	6.9	6.6	7.1	<2	<2	<2	0.4	<2	<2	<2	0.4	5.4	4.5	6.0	487	428	514	4.1	2.6	5.3	5.0	4.1	5.3	<0.1	<0.1	<0.1			
Max	6.0	5.9	7.0	935	889	1044	7.2	6.9	8.1	<2	<2	2	0.7	<2	<2	<2	0.5	6.6	5.9	9.5	538	526	566	6.0	4.8	8.7	7.1	5.7	8.7	<0.1	<0.1	0.2			

*M-001A is the compliance point for continuous monitoring parameters, TDS, and toxicity.

RP-1/RP-4 (M-002A) Effluent Monitoring Data

Table No. 3b

Date	Flow			EC			pH			BOD ₅				TSS				TOC			TDS			TIN			TN			NH ₃ -N (grab)					
	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg Dis	Avg	Min	Max	Avg Dis	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
Limit>>	MGD			µmhos/cm			unit			mg/L				mg/L				mg/L			mg/L			mg/L			mg/L			mg/L			mg/L		
							6.5-8.5			20				15				20			15												4.5		
Jan-18	19.6	6.2	33.5	636	571	702	7.1	6.6	7.6	<2	<2	2	0.5	<2	<2	2	0.5	5.5	5.1	6.3	464	452	476	5.2	3.4	8.1	5.9	5.9	5.9	<0.1	<0.1	<0.1			
Feb-18	8.7	0.6	24.3	722	671	834	6.8	6.7	7.0	<2	<2	<2	0.5	<2	<2	<2	0.5	5.3	4.8	6.0	493	480	508	4.9	3.1	6.9	6.5	6.5	6.5	<0.1	<0.1	<0.1			
Mar-18	23.1	4.4	31.2	695	651	750	6.8	6.6	7.0	<2	<2	<2	0.5	<2	<2	<2	0.5	5.8	4.1	6.2	496	482	510	3.7	2.2	5.4	6.0	6.0	6.0	<0.1	<0.1	0.1			
Apr-18	3.2	0.3	6.8	706	662	772	6.9	6.6	7.2	<2	<2	4	0.5	<2	<2	<2	0.5	5.9	5.2	6.8	497	476	520	4.4	3.3	6.1	5.8	5.8	5.8	<0.1	<0.1	<0.1			
May-18	4.1	0.2	10.5	700	657	860	6.9	6.6	7.2	<2	<2	2	0.4	<2	<2	<2	0.5	6.4	5.2	8.0	501	492	512	4.1	2.6	5.5	6.2	6.2	6.2	<0.1	<0.1	0.1			
Jun-18	2.7	0.1	10.1	694	628	863	6.9	6.7	7.2	<2	<2	<2	0.5	<2	<2	3	0.5	6.0	5.3	6.7	511	496	548	3.9	2.6	5.3	4.6	4.6	4.6	<0.1	<0.1	<0.1			
Jul-18	0.8	0.1	2.6	662	631	718	6.8	6.5	7.0	<2	<2	2	0.5	<2	<2	<2	0.5	6.0	5.5	6.9	510	492	522	4.4	3.0	5.8	6.3	6.3	6.3	<0.1	<0.1	<0.1			
Aug-18	1.8	0.1	5.2	683	635	833	6.9	6.6	7.1	<2	<2	<2	0.6	<2	<2	<2	0.5	5.6	5.2	6.0	499	484	518	4.0	3.1	5.1	4.7	4.7	4.7	<0.1	<0.1	<0.1			
Sep-18	4.0	0.3	9.1	825	738	925	6.9	6.6	7.1	<2	<2	<2	0.5	<2	<2	<2	0.5	5.4	4.9	6.0	493	470	510	4.6	3.4	5.6	5.9	5.9	5.9	<0.1	<0.1	<0.1			
Oct-18	14.9	6.2	28.1	826	713	905	6.8	6.6	6.9	<2	<2	<2	0.6	<2	<2	<2	0.5	5.6	5.0	6.2	502	490	516	4.1	2.9	5.3	6.9	6.9	6.9	<0.1	<0.1	<0.1			
Nov-18	11.5	2.0	32.5	876	779	985	6.8	6.6	7.1	<2	<2	2	0.6	<2	<2	<2	0.5	5.8	5.2	7.8	501	480	520	6.0	6.0	6.0	6.8	6.8	6.8	<0.1	<0.1	0.1			
Dec-18	21.1	6.8	37.7	728	655	806	6.9	6.7	7.0	<2	<2	<2	0.5	<2	<2	<2	0.5	5.6	5.1	6.3	477	448	498	4.1	4.1	4.1	4.9	4.9	4.9	<0.1	<0.1	<0.1			
Avg	9.6	2.3	19.3	729	666	829	6.9	6.6	7.1	<2	<2	<2	0.5	<2	<2	<2	0.5	5.7	5.1	6.6	495	479	513	4.4	3.3	5.8	5.9	5.9	5.9	<0.1	<0.1	<0.1			
Min	0.8	0.1	2.6	636	571	702	6.8	6.5	6.9	<2	<2	<2	0.4	<2	<2	<2	0.5	5.3	4.1	6.0	464	448	476	3.7	2.2	4.1	4.6	4.6	4.6	<0.1	<0.1	<0.1			
Max	23.1	6.8	37.7	876	779	985	7.1	6.7	7.6	<2	<2	4	0.6	<2	<2	3	0.5	6.4	5.5	8.0	511	496	548	6.0	6.0	8.1	6.9	6.9	6.9	<0.1	<0.1	0.1			

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RP-5 (M-003) Effluent Monitoring Data

Table No. 3c

Date	Flow			EC			pH			BOD ₅				TSS				TOC			TDS			TIN			TN			NH ₃ -N (grab)					
	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg Dis	Avg	Min	Max	Avg Dis	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
Limit>>>	MGD			µmhos/cm			unit			mg/L				mg/L				mg/L			mg/L			mg/L			mg/L			mg/L			4.5		
Jan-18	5.2	3.5	8.8	1058	994	1119	6.8	6.5	6.9	<2	<2	<2	0.5	<2	<2	2	0.5	5.0	4.4	5.6	499	452	550	5.3	3.0	6.5	5.8	5.8	5.8	<0.1	<0.1	0.1			
Feb-18	3.4	1.4	4.5	1111	1068	1178	6.8	6.6	6.9	<2	<2	<2	0.6	<2	<2	<2	0.6	5.3	5.0	5.5	520	496	532	6.6	5.0	7.9	6.6	6.6	6.6	<0.1	<0.1	<0.1			
Mar-18	4.6	2.8	6.4	933	835	1098	6.8	6.6	6.9	<2	<2	2	0.6	<2	<2	5	0.7	5.5	5.0	6.2	524	510	540	7.6	6.3	9.7	7.1	7.1	7.1	<0.1	<0.1	<0.1			
Apr-18	2.9	1.7	4.4	941	907	1028	6.9	6.6	7.1	<2	<2	<2	0.5	<2	<2	2	0.6	5.2	4.6	6.0	536	518	550	7.5	6.5	8.8	7.2	7.2	7.2	<0.1	<0.1	<0.1			
May-18	2.2	1.2	4.1	949	916	1002	6.9	6.6	7.1	<2	<2	<2	0.5	<2	<2	2	0.6	5.1	3.9	6.8	544	520	562	7.0	5.7	8.9	6.3	6.3	6.3	<0.1	<0.1	<0.1			
Jun-18	1.9	0.0	4.6	993	942	1031	6.9	6.6	7.2	<2	<2	<2	0.4	<2	<2	<2	0.5	4.9	4.4	5.2	561	544	574	6.3	4.8	7.5	6.2	6.2	6.2	<0.1	<0.1	<0.1			
Jul-18	0.0	0.0	0.0	994	950	1029	7.1	6.9	7.4	<2	<2	<2	0.5	<2	<2	<2	0.6	4.8	4.2	6.4				7.3	6.1	9.0	7.4	7.4	7.4						
Aug-18	0.0	0.0	0.0	984	959	1009	6.9	6.8	7.1	<2	<2	<2	0.8	<2	<2	<2	0.7	4.5	4.1	4.9				7.1	6.3	9.1	7.2	7.2	7.2						
Sep-18	2.3	0.0	4.7	992	957	1024	6.7	6.5	7.0	<2	<2	<2	0.6	<2	<2	<2	0.5	4.6	4.3	4.9	519	496	570	6.9	5.4	10.0	6.7	6.7	6.7	<0.1	<0.1	<0.1			
Oct-18	5.0	2.7	7.6	990	961	1012	6.8	6.5	7.0	<2	<2	<2	0.7	<2	<2	<2	0.6	4.8	4.5	5.4	537	516	546	6.7	5.5	8.1	6.8	6.8	6.8	<0.1	<0.1	<0.1			
Nov-18	4.1	2.5	6.0	969	915	1015	6.9	6.6	7.0	<2	<2	2	0.7	<2	<2	2	0.7	4.9	4.4	8.4	548	520	562	6.9	6.9	6.9	7.6	7.6	7.6	<0.1	<0.1	<0.1			
Dec-18	6.0	3.5	9.0	887	830	928	6.8	6.7	7.0	<2	<2	2	0.6	<2	<2	<2	0.7	5.0	4.5	9.3	537	530	550	7.2	7.2	7.2	7.8	7.8	7.8	<0.1	<0.1	<0.1			
Avg	3.1	1.6	5.0	984	936	1039	6.8	6.6	7.1	<2	<2	<2	0.6	<2	<2	<2	0.6	5.0	4.4	6.2	532	510	554	6.9	5.7	8.3	6.9	6.9	6.9	<0.1	<0.1	<0.1			
Min	0.0	0.0	0.0	887	830	928	6.7	6.5	6.9	<2	<2	<2	0.4	<2	<2	<2	0.5	4.5	3.9	4.9	499	452	532	5.3	3.0	6.5	5.8	5.8	5.8	<0.1	<0.1	<0.1			
Max	6.0	3.5	9.0	1111	1068	1178	7.1	6.9	7.4	<2	<2	2	0.8	<2	<2	5	0.7	5.5	5.0	9.3	561	544	574	7.6	7.2	10.0	7.8	7.8	7.8	<0.1	<0.1	0.1			

*Lab EC data used

CCWRF (M-004) Effluent Monitoring Data

Table No. 3d

Date	Flow			EC			pH			BOD ₅				TSS				TOC			TDS			TIN			TN			NH ₃ -N (grab)				
	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg Dis	Avg	Min	Max	Avg Dis	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min
Limit>>>	MGD			µmhos/cm			unit			mg/L				mg/L				mg/L			mg/L			mg/L			mg/L			4.5				
Jan-18	3.2	1.0	8.1	841	750	898	6.8	6.6	7.1	<2	<2	<2	0.4	<2	<2	<2	0.4	6.5	5.8	7.4	490	456	522	5.0	3.8	6.3	5.4	5.4	5.4	<0.1	<0.1	<0.1		
Feb-18	1.1	0.9	2.9	907	868	933	6.8	6.6	7.0	<2	<2	2	0.5	<2	<2	<2	0.5	7.3	6.9	7.8	534	518	548	5.2	3.7	6.0	5.9	5.9	5.9	<0.1	<0.1	<0.1		
Mar-18	4.8	1.5	7.9	921	889	947	6.8	6.6	7.0	<2	<2	<2	0.4	<2	<2	<2	0.5	6.9	6.0	7.6	536	516	552	5.0	3.7	6.4	6.6	6.6	6.6	<0.1	<0.1	<0.1		
Apr-18	2.0	0.9	8.0	946	910	990	6.9	6.6	7.1	<2	<2	<2	0.4	<2	<2	<2	0.6	6.0	5.0	6.5	556	522	648	4.9	3.5	6.1	4.7	4.7	4.7	<0.1	<0.1	<0.1		
May-18	1.2	0.0	4.5	931	881	985	6.8	6.5	7.8	<2	<2	<2	0.5	<2	<2	2	0.6	5.6	4.8	6.2	548	532	572	5.2	4.1	6.6	5.9	5.9	5.9	<0.1	<0.1	<0.1		
Jun-18	0.0	0.0	0.0	874	833	899	7.1	7.0	7.2	<2	<2	<2	0.5	<2	<2	<2	0.7	5.9	5.2	6.7				5.1	3.9	5.7	6.4	6.4	6.4					
Jul-18	0.0	0.0	0.0	893	869	912	7.1	7.0	7.2	<2	<2	<2	0.5	<2	<2	<2	0.7	6.0	5.1	6.8				4.8	3.8	5.9	6.7	6.7	6.7					
Aug-18	0.0	0.0	0.0	888	864	905	7.1	7.0	7.3	<2	<2	<2	0.6	<2	<2	<2	0.6	6.3	5.9	6.8				5.0	3.1	5.8	6.6	6.6	6.6					
Sep-18	0.0	0.0	0.0	860	834	887	7.1	7.0	7.3	<2	<2	<2	0.5	<2	<2	<2	0.6	5.7	5.1	6.4				5.1	3.9	5.8	6.7	6.7	6.7					
Oct-18	0.0	0.0	0.0	884	843	925	7.1	7.0	7.3	<2	<2	<2	1.0	<2	<2	<2	0.7	5.6	5.2	6.1				4.8	4.2	5.4	6.4	6.4	6.4					
Nov-18	2.1	0.0	8.0	975	926	1020	6.9	6.6	7.2	<2	<2	<2	0.7	<2	<2	4	0.7	5.5	5.0	6.3	557	548	570	4.8	4.8	4.8	5.6	5.6	5.6	<0.1	<0.1	<0.1		
Dec-18	6.5	3.6	9.3	922	849	963	6.8	6.7	7.0	<2	<2	<2	0.6	<2	<2	<2	0.6	5.5	4.8	6.2	517	492	532	5.9	5.9	5.9	6.8	6.8	6.8	0.2	0.1	0.2		
Avg	1.7	0.7	4.1	904	860	938	7.0	6.8	7.2	<2	<2	<2	0.6	<2	<2	<2	0.6	6.1	5.4	6.7	534	512	563	5.0	4.0	5.9	6.1	6.1	6.1	<0.1	<0.1	<0.1		
Min	0.0	0.0	0.0	841	750	887	6.8	6.5	7.0	<2	<2	<2	0.4	<2	<2	<2	0.4	5.5	4.8	6.1	490	456	522	4.8	3.1	4.8	4.7	4.7	4.7	<0.1	<0.1	<0.1		
Max	6.5	3.6	9.3	975	926	1020	7.1	7.0	7.8	<2	<2	2	1.0	<2	<2	4	0.7	7.3	6.9	7.8	557	548	648	5.9	5.9	6.6	6.8	6.8	6.8	0.2	0.1	0.2		

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RP-1 (M-001A) Effluent Monthly Toxicity Data

Table No. 4a

CHRONIC TOXICITY - SURVIVAL (Ceriodaphnia Dubia)					CHRONIC TOXICITY - REPRODUCTION (Ceriodaphnia dubia)				
START DATE		END DATE	NOEC	TUc	2-Mo Median TUc	NOEC	TUc	2-Mo Median TUc	IC ₂₅
01/06/18	thru	01/12/18	100	1.0	1.0	70	1.4	1.2	92.4
01/20/18	thru	01/26/18	100	1.0	1.0	<60	>1.7	1.4	81.4
02/03/18	thru	02/09/18	100	1.0	1.0	100	1.0	1.4	100
02/05/18	thru	02/09/18	100	1.0	1.0	100	1.0	1.2	100
02/17/18*	thru	02/23/18	100	1.0	1.0	100	1.0	1.0	100
03/03/18	thru	03/09/18	100	1.0	1.0	70	1.4	1.0	85.3
03/17/18	thru	03/23/18	100	1.0	1.0	90	1.1	1.1	100
03/31/18	thru	04/06/18	100	1.0	1.0	70	1.4	1.4	100
04/14/18	thru	04/20/18	100	1.0	1.0	100	1.0	1.3	100
04/28/18	thru	05/04/18	100	1.0	1.0	100	1.0	1.0	100
06/09/18	thru	06/15/18	100	1.0	1.0	80	1.3	1.1	100
06/23/18	thru	06/29/18	100	1.0	1.0	100	1.0	1.0	100
07/07/18	thru	07/13/18	100	1.0	1.0	100	1.0	1.0	100
08/04/18	thru	08/10/18	100	1.0	1.0	60	1.7	1.3	95
08/18/18	thru	08/24/18	100	1.0	1.0	100	1.0	1.0	100
09/01/18	thru	09/07/18	100	1.0	1.0	90	1.1	1.1	100
09/15/18	thru	09/21/18	100	1.0	1.0	70	1.4	1.3	98
09/29/18	thru	10/05/18	100	1.0	1.0	90	1.1	1.1	100
10/13/18	thru	10/19/18	100	1.0	1.0	100	1.0	1.1	100
11/12/18*	thru	11/16/18	100	1.0	1.0	100	1.0	1.0	100
12/10/18*	thru	12/14/18	100	1.0	1.0	100	1.0	1.0	100

RP-1 (M-002A) Effluent Monthly Toxicity Data

Table No. 4b

CHRONIC TOXICITY - SURVIVAL (Ceriodaphnia Dubia)					CHRONIC TOXICITY - REPRODUCTION (Ceriodaphnia dubia)				
START DATE		END DATE	NOEC	TUc	2-Mo Median TUc	NOEC	TUc	2-Mo Median TUc	IC ₂₅
12/30/17	thru	01/05/18	100	1.0	1.0	100	1.0	1.0	100
02/03/18	thru	02/09/18	100	1.0	1.0	100	1.0	1.0	100
03/24/18	thru	03/30/18	100	1.0	1.0	100	1.0	1.0	100
04/07/18	thru	04/13/18	100	1.0	1.0	100	1.0	1.0	100
05/12/18	thru	05/18/18	100	1.0	1.0	100	1.0	1.0	100
06/02/18	thru	06/08/18	100	1.0	1.0	100	1.0	1.0	100
06/30/18	thru	07/06/18	100	1.0	1.0	100	1.0	1.0	100
08/04/18	thru	08/10/18	100	1.0	1.0	100	1.0	1.0	100
09/01/18	thru	09/07/18	100	1.0	1.0	100	1.0	1.0	100
09/29/18	thru	10/05/18	100	1.0	1.0	100	1.0	1.0	100
11/12/18*	thru	11/16/18	100	1.0	1.0	100	1.0	1.0	100
12/10/18*	thru	12/14/18	100	1.0	1.0	100	1.0	1.0	100

* MBC Laboratory

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RP-5 (M-003) Effluent Monthly Toxicity Data

Table No. 4c

CHRONIC TOXICITY - SURVIVAL (Ceriodaphnia Dubia)						CHRONIC TOXICITY - REPRODUCTION (Ceriodaphnia dubia)				
START DATE	END DATE	NOEC	TUc	2-Mo Median TUc	NOEC	TUc	2-Mo Median TUc	IC ₂₅		
12/30/17	thru 01/05/18	100	1.0	1.0	100	1.0	1.0	100		
02/17/18	thru 02/23/18	100	1.0	1.0	80	1.3	1.1	100		
03/03/18	thru 03/09/18	100	1.0	1.0	100	1.0	1.1	100		
03/17/18	thru 03/23/18	100	1.0	1.0	100	1.0	1.0	100		
04/21/18	thru 04/27/18	100	1.0	1.0	100	1.0	1.0	100		
05/05/18	thru 05/10/18	100	1.0	1.0	100	1.0	1.0	100		
06/02/18	thru 06/08/18	100	1.0	1.0	100	1.0	1.0	100		
No Discharge During July 2018										
No Discharge During August 2018										
09/08/18	thru 09/14/18	100	1.0	1.0	80	1.3	1.1	100		
09/22/18	thru 09/28/18	100	1.0	1.0	80	1.3	1.3	97		
10/06/18	thru 10/12/18	100	1.0	1.0	100	1.0	1.3	100		
10/13/18	thru 10/19/18	100	1.0	1.0	100	1.0	1.1	100		
11/12/18*	thru 11/16/18	100	1.0	1.0	100	1.0	1.0	100		
12/10/18*	thru 12/14/18	100	1.0	1.0	100	1.0	1.0	100		

CWRF (M-004) Effluent Monthly Toxicity Data

Table No. 4d

CHRONIC TOXICITY - SURVIVAL (Ceriodaphnia Dubia)					CHRONIC TOXICITY - REPRODUCTION (Ceriodaphnia dubia)				
START DATE	END DATE	NOEC	TUc	2-Mo Median TUc	NOEC	TUc	2-Mo Median TUc	IC ₂₅	
01/13/18	thru 01/19/18	100	1.0	1.0	90	1.1	1.1	100	
01/27/18	thru 02/02/18	100	1.0	1.0	100	1.0	1.0	100	
02/10/18	thru 02/16/18	100	1.0	1.0	100	1.0	1.0	100	
03/10/18	thru 03/16/18	100	1.0	1.0	100	1.0	1.0	100	
04/07/18	thru 04/13/18	100	1.0	1.0	100	1.0	1.0	100	
05/12/18	thru 05/17/18	100	1.0	1.0	100	1.0	1.0	100	
No Discharge During June 2018									
No Discharge During July 2018									
No Discharge During August 2018									
No Discharge During September 2018									
No Discharge During October 2018									
No Toxicity Test Results for November 2018**									
12/10/18*	thru 12/14/18	100	1.0	1.0	100	1.0	1.0	100	

* MBC Laboratory

** Two toxicity tests will be run in January 2019.

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RP-1 (M-001A & M-001B) & RP-1/RP-4 (M-002A) Effluent Monitoring and Coliform Data

Table No. 5a

Date	001 Turbidity		002 Turbidity		001 Temp		002 Temp		001 Daily Coliform		001 7-day Median		002 Daily Coliform*		002 7-day Median		001 FLR	001 DT	001 CT	002 FLR	002 DT	002 CT						
	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Max	Min	Min	Max	Min	Min						
	NTU		NTU		°C		°C		MPN / 100 mL														gpm/ft ²	min	mg-min/L	gpm/ft ³	min	Min
Jan-18	0.6	0.8	0.5	0.7	23.7	24.4	19.8	22.2	<1	1.0	<1	<1	<1	1.0	<1	<1	3	165	849	3	173	818						
Feb-18	0.5	0.6	0.4	0.6	23.5	24.2	22.3	23.0	<1	1.0	<1	1.0	<1	1.0	<1	1.0	3	167	565	3	165	630						
Mar-18	0.5	0.6	0.4	1.0	23.5	24.6	22.7	23.9	<1	1.0	<1	<1	<1	1.0	<1	<1	3	166	884	3	152	775						
Apr-18	0.6	1.0	0.5	1.0	25.1	25.9	24.3	25.0	<1	1.0	<1	1	<1	1.0	<1	1.0	3	171	796	3	149	733						
May-18	0.7	0.9	0.6	0.9	25.7	26.5	25.4	25.9	<1	2.0	<1	<1	<1	2.0	<1	<1	4	132	758	4	136	664						
Jun-18	0.9	1.0	0.7	1.0	27.5	28.3	27.1	28.5	<1	<1	<1	<1	<1	<1	<1	<1	4	142	747	4	146	542						
Jul-18	0.8	1.1	0.7	1.1	29.7	30.7	29.7	30.2	<1	1.0	<1	<1	<1	1.0	<1	<1	4	143	623	4	165	771						
Aug-18	0.7	1.0	0.6	0.8	30.4	30.9	30.1	30.4	<1	1.0	<1	<1	<1	1.0	<1	<1	3	146	587	3	145	533						
Sep-18	0.6	0.7	0.5	0.7	29.3	30.0	29.1	30.0	<1	1.0	<1	<1	<1	1.0	<1	<1	4	141	656	4	138	586						
Oct-18	0.5	0.6	0.5	0.6	27.7	28.9	24.8	27.6	<8	204.6	<1	1.0	<8	204.6	<1	1.0	3	144	673	3	143	593						
Nov-18	0.6	0.8	0.5	0.7	25.5	27.3	26.1	27.3	<10	261.3	<1	<1.0	<10	261.3	<1	<1.0	3	151	701	3	154	705						
Dec-18	0.6	0.8	0.6	0.8	23.5	24.3	23.6	24.2	<1	15.6	<1	1.0	<1	15.6	<1	1.0	4	147	681	4	155	818						
Avg	0.6	0.8	0.5	0.8	26.2	27.2	25.4	26.5	<2	41	<1	<1	<2	41	<1	<1	3	151	718	3	152	681						
Min	0.5	0.6	0.4	0.6	23.5	24.2	19.8	22.2	<1	<1	<1	<1	<1	<1	<1	<1	3	132	565	3	136	533						
Max	0.9	1.1	0.7	1.1	30.4	30.9	30.1	30.4	<10	261	<1	1	<10	261	<1	1	4	171	884	4	173	818						

Requirements for disinfected tertiary-treated recycled water Title 22 Compliance: Min: 450 mg/L-min CT & 90 min DT
*Beginning August 2009, 002 effluent coliform compliance point at M-001B (splitter box).

RP-5 (M-003) & CCWRF (M-004) Effluent Monitoring and Coliform Data

Table No. 5b

Date	003 Turbidity		004 Turbidity		003 Temp		004 Temp		003 Daily Coliform		003 7-day Median		004 Daily Coliform		004 7-day Median		003 FLR	003 DT	003 CT	004 FLR	004 DT	004 CT						
	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Max	Min	Min	Max	Min	Min						
	NTU		NTU		°C		°C		MPN / 100 mL														gpm/ft ²	min	mg-min/L	gpm/ft ³	min	mg-min/L
Jan-18	0.7	1.0	0.7	1.0	23.2	23.9	22.0	23.6	<1	1.0	<1	<1	<1	2.0	<1	<1	3	152	478	2	135	480						
Feb-18	0.7	1.1	0.7	0.9	22.4	23.2	22.0	23.3	<1	2.0	<1	<1	<1	2.0	<1	<1	4	149	496	2	120	484						
Mar-18	0.8	1.0	0.7	0.8	24.5	26.7	22.6	23.8	<1	1.0	<1	<1	<1	2.0	<1	<1	3	159	474	2	118	516						
Apr-18	0.8	1.0	0.5	0.7	25.7	26.9	22.7	24.2	<1	1.0	<1	<1	<1	2.0	<1	<1	4	153	476	2	131	508						
May-18	0.7	0.9	0.5	0.8	24.4	25.7	25.5	27.2	<1	1.0	<1	<1	<1	1.0	<1	<1	4	154	508	1	160	532						
Jun-18	0.6	0.8	0.6	0.7	25.8	26.0			<1	<1	<1	<1	<1	<1	<1	<1	4	160	561	1	151	497						
Jul-18	0.7	0.9	0.5	0.6					<1	1.0	<1	<1	<1	1.0	<1	<1	3	189	515	2	127	610						
Aug-18	0.8	0.9	0.6	0.8					<1	<1	<1	<1	<1	13.5	<1	<1	3	199	497	2	116	492						
Sep-18	0.7	1.0	0.5	0.8	29.1	31.4			<1	1.0	<1	<1	<1	1.0	<1	<1	3	135	526	2	116	519						
Oct-18	0.8	1.0	0.5	0.6	26.8	27.9			<1	2.0	<1	<1	<1	1.0	<1	<1	3	140	475	2	148	679						
Nov-18	0.5	0.7	0.5	0.8	24.2	24.9	24.7	26.0	<1	1.0	<1	<1	<1	1.0	<1	<1	4	131	492	2	120	609						
Dec-18	0.6	0.8	0.5	0.8	20.0	23.5	23.8	24.3	<1	1.0	<1	<1	<1	1.0	<1	<1	4	128	478	3	114	526						
Avg	0.7	0.9	0.6	0.8	24.6	26.0	23.3	24.6	<1	1	<1	<1	<1	2	<1	<1	3	154	496	2	130	538						
Min	0.5	0.7	0.5	0.6	20.0	23.2	22.0	23.3	<1	<1	<1	<1	<1	<1	<1	<1	3	128	474	1	114	480						
Max	0.8	1.1	0.7	1.0	29.1	31.4	25.5	27.2	<1	2	<1	<1	<1	14	<1	<1	4	199	561	3	160	679						

Requirements for disinfected tertiary-treated recycled water Title 22 Compliance: Min: 450 mg/L-min CT & 90 min DT

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RP-1 (M-001A) & RP-1/RP-4 (M-002A) Effluent and Receiving Water (R-002U & R-002D) Data

Table No. 6a

Date	M-001A Cl ₂ Residual*				M-002A Cl ₂ Residual*				Upstream Cucamonga Creek (R-002U)								Downstream Cucamonga Creek (R-002D)							
	DO		Temp		pH		TDS	TIN	Total Hardness	TSS	DO		Temp		pH		Total Hardness	TSS						
	Avg	Max	Avg	Max	Avg	Min	Avg	Max	Min	Max	Avg	Avg	Avg	Avg	Avg	Min	Max	Min	Max	Avg	Avg			
	mg/L				mg/L				°C				unit				mg/L				mg/L			
Jan-18	0.0	0.0	0.0	0.0	13.0	12.6	11.9	13.3	9.5	9.6	488	3.3	187	<2	10.6	9.8	20.9	22.7	8.0	8.7	145	<2		
Feb-18	0.0	0.0	0.0	0.0	12.2	12.0	11.7	12.9	9.3	11.4	310	0.5			10.8	10.4	18.1	19.0	8.6	10.5				
Mar-18	0.0	0.0	0.0	0.0	13.9	12.5	12.0	16.5	9.2	10.0	336	1.5			12.2	9.5	20.4	21.6	7.7	8.9				
Apr-18	0.0	0.0	0.0	0.0	12.4	10.8	16.6	19.4	9.2	10.3	262	<0.2	110	3	12.8	10.9	19.9	22.9	8.8	9.2	143	6		
May-18	0.0	0.0	0.0	0.0	11.1	10.1	17.8	20.1	9.1	9.5	466	5.7			12.5	10.8	19.3	21.3	8.5	9.2				
Jun-18	0.0	0.0	0.0	0.0	10.9	10.5	21.0	21.8	9.2	9.6	1210	1.3			9.9	8.6	22.1	23.1	8.4	9.0				
Jul-18	0.0	0.0	0.0	0.0	10.6	9.5	22.9	25.1	9.2	9.7	402		193	9	11.4	6.1	24.1	25.6	8.5	9.3	175	3		
Aug-18	0.0	0.0	0.0	0.0	9.2	8.6	21.9	23.3	9.0	9.3	408	1.2			9.5	7.5	23.6	24.8	8.3	9.9				
Sep-18	0.0	0.0	0.0	0.0	9.5	9.3	20.0	22.2	9.3	9.7	378	<0.2			9.6	8.6	23.1	25.0	8.1	8.9				
Oct-18	0.0	0.0	0.0	0.0	9.1	8.8	18.8	21.5	9.2	9.4	318	0.6	133	11	8.0	7.2	23.7	26.0	7.7	8.0	135	10		
Nov-18	0.0	0.0	0.0	0.0	9.8	9.1	14.9	17.5	9.0	10.9	708	<0.2			9.0	8.4	19.8	22.5	7.4	8.9				
Dec-18	0.0	0.0	0.0	0.0	10.5	9.4	11.7	13.6	9.2	11.1	306	1.0			10.2	8.5	20.6	23.5	7.6	8.6				
Avg	0.0	0.0	0.0	0.0	11.0	10.3	16.8	18.9	9.2	10.0	466	1.4	156	6	10.5	8.9	21.3	23.2	8.1	9.1	150	5		
Min	0.0	0.0	0.0	0.0	9.1	8.6	11.7	12.9	9.0	9.3	262	<0.2	110	<2	8.0	6.1	18.1	19.0	7.4	8.0	135	<2		
Max	0.0	0.0	0.0	0.0	13.9	12.6	22.9	25.1	9.5	11.4	1,210	5.7	193	11	12.8	10.9	24.1	26.0	8.8	10.5	175	10		

RP-5 (M-003) & CCWRF (M-004) Effluent and Receiving Water (R-003U, R-003D, & R-004U) Data

Table No. 6b

Date	M-003 Cl ₂ Residual*				M-004 Cl ₂ Residual*				Upstream Chino Creek (R-003U)								Downstream Chino Creek (R-003D)								Upstream Chino Creek (R-004U)								
	DO		Temp		pH		TDS	TIN	Total Hardness	TSS	DO		Temp		pH		Total Hardness	TSS	DO		Temp		pH		TDS	TIN	Total Hardness	TSS					
	Avg	Max	Avg	Max	Avg	Min	Avg	Max	Min	Max	Avg	Avg	Avg	Avg	Avg	Min	Max	Min	Max	Avg	Avg	Avg	Min	Max	Min	Max	Avg	Avg	Avg	Avg			
	mg/L				mg/L				°C				unit				mg/L				mg/L				mg/L				mg/L				
Jan-18	0.0	0.0	0.0	0.0	10.6	9.2	23.0	24.4	7.0	7.6	456	5.5	135	<2	7.6	6.5	19.3	20.0	7.1	7.4	233	6	15.1	11.8	19.4	23.3	8.2	9.4	690	1.8	381	<2	
Feb-18	0.0	0.0	0.0	0.0	13.7	11.0	22.1	24.6	7.7	8.8	550	6.5			7.7	7.0	19.2	20.5	7.5	7.6			13.1	11.1	21.0	25.7	8.8	10.5	748	1.0			
Mar-18	0.0	0.0	0.0	0.0	12.0	9.2	23.2	24.8	7.5	7.9	558	3.4			7.6	7.0	21.5	24.1	7.6	7.8			12.3	7.6	23.0	26.3	7.7	10.8	778	0.2			
Apr-18	0.0	0.0	0.0	0.0	12.5	7.5	23.4	26.3	7.2	9.8	566	6.1	157	9	6.5	6.1	20.8	22.0	7.5	7.8	262	6	10.9	9.8	20.9	28.8	7.5	9.2	828	<0.2	443	8	
May-18	0.0	0.0	0.0	0.0	12.0	8.5	25.2	25.9	7.5	8.6	552	6.1			7.4	6.7	21.9	23.4	7.5	8.6			10.4	9.9	28.3	32.7	8.9	10.2	310	5.6			
Jun-18	0.0	0.0													8.3	7.1	26.0	26.4	7.7	8.0													
Jul-18																																	
Aug-18																																	
Sep-18	0.0	0.0													6.9	6.7	23.5	23.9	7.6	7.6													
Oct-18	0.0	0.0										1.6	134	11	6.3	5.8	24.8	25.8	5.6	7.6	274	15							1.6	336	6		
Nov-18	0.0	0.0	0.0	0.0	11.5	8.1	22.4	24.8	8.0	8.5	718	2.3		4	7.3	6.8	21.1	22.0	5.6	6.4	250		16.2	14.4	16.7	20.3	9.1	9.8	340	2.2		7	
Dec-18	0.0	0.0	0.0	0.0	9.1	7.4	23.8	25.0	6.7	8.5	556	5.5			7.5	7.1	20.3	20.7	5.2	7.0			16.0	11.9	17.0	23.1	7.3	10.2	730	1.9			
Avg	0.0	0.0	0.0	0.0	11.6	8.7	23.3	25.1	7.4	8.5	565	4.6	142	7	7.3	6.7	21.8	22.9	6.9	7.6	255	9	13.4	10.9	20.9	25.7	8.2	10.0	632	1.8	387	6	
Min	0.0	0.0	0.0	0.0	9.1	7.4	22.1	24.4	6.7	7.6	456	1.6	134	<2	6.3	5.8	19.2	20.0	5.2	6.4	233	6	10.4	7.6	16.7	20.3	7.3	9.2	310	<0.2	336	<2	
Max	0.0	0.0	0.0	0.0	13.7	11.0	25.2	26.3	8.0	9.8	718	6.5	157	11	8.3	7.1	26.0	26.4	7.7	8.6	274	15	16.2	14.4	28.3	32.7	9.1	10.8	828	5.6	443	8	

* A chlorine residual of 0.0 mg/L signifies a positive sodium bisulfite residual and a negative chlorine residual.

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RP-1 (REC-001) & RP-4 (REC-002) Recycled Water Data

Table No. 7a

Date	REC-001											REC-002										
	Flow	pH	Turbidity	CT	Daily Coliform		7-day Median		BOD	TSS	TDS	Flow	pH	Turbidity	CT	Daily Coliform		7-day Median		BOD	TSS	TDS
	Avg	Avg	Avg	Min	Avg	Max	Avg	Max	Avg	Avg	Avg	Avg	Avg	Avg	Min	Avg	Max	Avg	Max	Avg	Avg	Avg
	mgd	unit	NTU	mg-min/L	MPN / 100 mL				mg/L			mgd	unit	NTU	mg-min/L	MPN / 100 mL				mg/L		
Jan-18	4.9	6.9	0.6	849	<1	1.0	<1	<1	<2	<2	453	8.5	6.8	0.4	606	<1	1.0	<1	<1	<2	<2	422
Feb-18	13.0	7.0	0.5	565	<1	1.0	<1	1.0	<2	<2	473	9.2	6.8	0.4	848	<1	1.0	<1	<1	<2	<2	447
Mar-18	2.7	6.9	0.5	884	<1	1.0	<1	<1	<2	<2	482	4.5	6.8	0.5	737	<1	1.0	<1	<1	<2	<2	471
Apr-18	18.0	7.1	0.6	796	<1	1.0	<1	1	<2	<2	469	9.0	6.8	0.7	868	<1	1.0	<1	<1	<2	<2	444
May-18	18.1	7.0	0.7	758	<1	2.0	<1	<1	<2	<2	478	9.1	6.8	0.6	946	<7	155.3	<1	<1	<2	<2	476
Jun-18	20.8	7.1	0.9	747	<1	<1	<1	<1	<2	<2	476	9.2	6.8	0.5	1067	<1	<1	<1	<1	<2	<2	464
Jul-18	23.1	7.2	0.8	623	<1	1.0	<1	<1	<2	<2	469	8.7	6.9	0.4	693	<1	<1	<1	<1	<2	<2	464
Aug-18	22.6	7.1	0.7	587	<1	1.0	<1	<1	<2	<2	467	9.1	6.9	0.5	873	<1	<1	<1	<1	<2	<2	445
Sep-18	19.2	7.0	0.6	656	<1	1.0	<1	<1	<2	<2	461	8.9	6.8	0.5	926	<1	<1	<1	<1	<2	<2	419
Oct-18	9.5	7.0	0.5	673	<8	204.6	<1	1.0	<2	<2	477	7.5	6.8	0.5	885	<1	<1	<1	<1	<2	<2	457
Nov-18	12.4	7.1	0.6	701	<10	261.3	<1	<1.0	<2	<2	482	7.2	6.8	0.6	910	<1	3	<1	<1	<2	<2	457
Dec-18	3.3	7.1	0.6	681	<1	15.6	<1	1.0	<2	<2	459	7.3	6.8	0.6	982	<1	9.7	<1	<1	<2	<2	448
Avg	14.0	7.0	0.6	715	<2	41	<1	<1	<2	<2	470	8.2	6.8	0.5	856	<2	15	<1	<1	<2	<2	451
Min	2.7	6.9	0.5	565	<1	<1	<1	<1	<2	<2	453	4.5	6.8	0.4	606	<1	<1	<1	<1	<2	<2	419
Max	23.1	7.2	0.9	884	<10	261	<1	1	<2	<2	482	9.2	6.9	0.7	1067	<7	155	<1	<1	<2	<2	476

RP-5 (REC-003) & CCWRF (REC-004) Recycled Water Data

Table No. 7b

Date	REC-003											REC-004										
	Flow	pH	Turbidity	CT	Daily Coliform		7-day Median		BOD	TSS	TDS	Flow	pH	Turbidity	CT	Daily Coliform		7-day Median		BOD	TSS	TDS
	Avg	Avg	Avg	Min	Avg	Max	Avg	Max	Avg	Avg	Avg	Avg	Avg	Avg	Min	Avg	Max	Avg	Max	Avg	Avg	Avg
	mgd	unit	NTU	mg-min/L	MPN / 100 mL				mg/L			mgd	unit	NTU	mg-min/L	MPN / 100 mL				mg/L		
Jan-18	0.4	6.8	0.7	478	<1	1	<1	<1	<2	<2	482	3.4	6.8	0.7	480	<1	2	<1	<1	<2	<2	469
Feb-18	0.2	6.8	0.7	496	<1	2	<1	<1	<2	<2	512	5.6	6.8	0.7	484	<1	2	<1	<1	<2	<2	523
Mar-18	0.4	6.8	0.8	474	<1	1	<1	<1	<2	<2	519	1.9	6.8	0.7	516	<1	2	<1	<1	<2	<2	518
Apr-18	0.7	6.9	0.8	476	<1	1	<1	<1	<2	<2	521	4.7	6.9	0.5	508	<1	2	<1	<1	<2	<2	520
May-18	3.7	6.9	0.7	508	<1	1	<1	<1	<2	<2	526	6.0	6.8	0.5	532	<1	1	<1	<1	<2	<2	510
Jun-18	4.3	6.9	0.6	561	<1	<1	<1	<1	<2	<2	530	6.4	7.1	0.6	497	<1	<1	<1	<1	<2	<2	501
Jul-18	4.8	7.1	0.7	515	<1	1	<1	<1	<2	<2	531	7.0	7.1	0.5	610	<1	1	<1	<1	<2	<2	510
Aug-18	3.9	6.9	0.8	497	<1	<1	<1	<1	<2	<2	509	8.0	7.1	0.6	492	<1	14	<1	<1	<2	<2	512
Sep-18	3.5	6.7	0.7	526	<1	1	<1	<1	<2	<2	497	6.9	7.1	0.5	519	<1	1	<1	<1	<2	<2	474
Oct-18	2.5	6.8	0.8	475	<1	2	<1	<1	<2	<2	511	6.2	7.1	0.5	679	<1	1	<1	<1	<2	<2	504
Nov-18	3.7	6.9	0.5	492	<1	1	<1	<1	<2	<2	530	5.1	6.9	0.5	609	<1	1	<1	<1	<2	<2	517
Dec-18	3.5	6.8	0.6	478	<1	1	<1	<1	<2	<2	503	1.4	6.8	0.5	526	<1	1	<1	<1	<2	<2	502
Avg	2.6	6.8	0.7	495	<1	1	<1	<1	<2	<2	514	5.2	7.0	0.6	539	<1	2	<1	<1	<2	<2	505
Min	0.2	6.7	0.5	474	<1	<1	<1	<1	<2	<2	482	1.4	6.8	0.5	480	<1	<1	<1	<1	<2	<2	469
Max	4.8	7.1	0.8	561	<1	2	<1	<1	<2	<2	531	8.0	7.1	0.7	679	<1	14	<1	<1	<2	<2	523

Inland Empire Utilities Agency
Regional Plant Nos. 1, 4, 5, & Carbon Canyon Water Recycling Facility, 2018 NPDES Annual Report

RP-1 (M-001B) Effluent Monthly Inorganic & Organic Data

Table No. 8a

	Total Hardness	HCO ₃ ²⁻	B	Ca	CO ₃ ²⁻	Cl	F	Mg	Na	SO ₄	Cd, TR	Cr, Total	Cu, TR	Pb, TR	Hg, TR	Se, TR	Ag, TR	Zn, TR	Chlorodi-bromomethane	Bromodi-chloromethane	2,3,7,8-TCDD
Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pg/L
Limits																					
Jan-18	141	133	0.2	42	0	97	0.2	8	88	43	<0.25	<0.5	4	<0.5	<0.05	<2	<0.25	23	4	13	
Feb-18	140	136	0.2	43	0	104	0.2	9	97	46	<0.25	<0.5	4	<0.5	<0.05	<2	<0.25	27			
Mar-18	138	139	0.3	39	0	115	0.2	10	100	50	<0.25	0.8	6	<0.5	<0.05	<2	<0.25	33			
Apr-18	148	142	0.2	43	0	108	0.1	10	94	49	<0.25	<0.5	4	<0.5	<0.05	<2	<0.25	34	2	12	
May-18	147	146	0.3	43	0	114	0.2	10	97	50	<0.25	<0.5	4	<0.5	<0.05	<2	<0.25	35			
Jun-18	145	150	0.3	44	0	118	0.2	9	95	52	<0.25	<0.5	5	<0.5	<0.05	<2	<0.25	38			
Jul-18	142	144	0.2	43	0	113	0.2	9	88	47	<0.25	<0.5	4	<0.5	<0.05	<2	<0.25	37	3	15	0.0
Aug-18	153	150	0.3	46	0	111	0.2	9	98	45	<0.25	<0.5	4	<0.5	<0.05	<2	<0.25	37			
Sep-18	139	127	0.3	39	0	118	0.2	10	95	48	<0.25	0.6	4	<0.5	<0.025	<2	<0.25	32			
Oct-18	134	132	0.3	36	0	118	0.2	11	102	50	<0.25	0.5	4	<0.5	<0.025	<2	<0.25	35	9	31	
Nov-18	140			38				11			<0.5		<2	<0.5				34			
Dec-18	150	150		42	0	121	0.2	11		44	<0.5		<2	<0.5				28			
Avg	143	141	0.2	41	0	112	0.2	10	95	48	<0.29	<0.5	4	<0.5	<0.05	<2	<0.25	33	4	18	0.0
Min	134	127	0.2	36	0	97	0.1	8	88	43	<0.25	<0.5	<2	<0.5	<0.03	<2	<0.25	23	2	12	0.0
Max	153	150	0.3	46	0	121	0.2	11	102	52	<0.50	0.8	6	<0.5	<0.05	<2	<0.25	38	9	31	0.0

RP-1/RP-4 (M-002A) Effluent Monthly Inorganic & Organic Data

Table No. 8b

	Total Hardness	HCO ₃ ²⁻	B	Ca	CO ₃ ²⁻	Cl	F	Mg	Na	SO ₄	Cd, TR	Cr, Total	Cu, TR	Pb, TR	Hg, TR	Se, TR	Ag, TR	Zn, TR	Chlorodi-bromomethane	Bromodi-chloromethane	2,3,7,8-TCDD
Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pg/L
Limits											1 mo avg; 2 max daily		14 mo avg; 20 max daily	8 mo avg; 15 max daily				120 mo avg; 150 max daily			
Jan-18	139	133	0.2	42	0	99	0.2	9	91	57	<0.25	<0.5	4	<0.5	<0.05	<2	<0.25	23	3	13	
Feb-18	144	129	0.2	43	0	108	0.2	9	102	64	<0.25	<0.5	4	<0.5	<0.05	<2	<0.25	27			
Mar-18	140	131	0.3	40	0	117	0.2	10	110	71	<0.25	<0.5	6	<0.5	<0.05	<2	<0.25	31			
Apr-18	149	132	0.2	43	0	111	0.2	10	100	67	<0.25	<0.5	4	<0.5	<0.05	<2	<0.25	36	2	11	
May-18	148	134	0.3	42	0	119	0.2	10	110	66	<0.25	<0.5	5	<0.5	<0.05	<2	<0.25	35			
Jun-18	146	145	0.3	44	0	119	0.2	9	100	69	<0.25	<0.5	4	<0.5	<0.05	<2	<0.25	34			
Jul-18	142	131	0.2	43	0	112	0.2	8	97	79	<0.25	<0.5	4	<0.5	<0.05	<2	<0.25	35	<2	16	0.047
Aug-18	153	145	0.3	46	0	112	0.2	9	103	67	<0.25	<0.5	4	<0.5	<0.05	<2	<0.25	35			
Sep-18	138	120	0.3	39	0	122	0.2	10	102	70	<0.25	0.6	4	<0.5	<0.025	<2	<0.25	31			
Oct-18	131	122	0.3	36	0	124	0.2	10	110	72	<0.25	<0.5	4	<0.5	<0.025	<2	<0.25	35	5	22	
Nov-18	140			39		135		11			<0.5		<2	<0.5				34			
Dec-18	140	142		39	0	108	0.2	10		63	<0.5		<2	<0.5				26			
Avg	142	133	0.2	41	0	115	0.2	10	103	68	<0.29	<0.5	4	<0.5	<0.05	<2	<0.25	32	3	15	0.047
Min	131	120	0.2	36	0	99	0.2	8	91	57	<0.25	<0.5	<2	<0.5	<0.03	<2	<0.25	23	2	11	0.047
Max	153	145	0.3	46	0	135	0.2	11	110	79	<0.50	0.6	6	<0.5	<0.05	<2	<0.25	36	5	22	0.047

*Free Cyanide is analyzed using ASTM-D7237 for analysis of free cyanide in accordance with R8-2016-0036

Inland Empire Utilities Agency
Regional Plant Nos. 1, 4, 5, & Carbon Canyon Water Recycling Facility, 2018 NPDES Annual Report

RP-5 (M-003) Effluent Monthly Inorganic Data

Table No. 8c

Date	Total Hardness	HCO ₃ ²⁻	B	Ca	CO ₃ ²⁻	Cl	F	Mg	Na	SO ₄	Cd, TR	Cr, Total	Cu, TR	Pb, TR	Hg, TR	Se, TR	Ag, TR	Zn, TR	Chlorodi-bromomethane	Bromodi-chloromethane	2,3,7,8-TCDD
Limits	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pg/L
Jan-18	152	108	0.2	44	0	128	0.1	10	93	63	<0.25	<0.5	6	<0.5	<0.05	<2	<0.25	53	<1	12	0.0
Feb-18	177	115	0.2	51	0	145	0.1	12	103	59	<0.25	<0.5	6	<0.5	<0.05	<2	<0.25	41	2	17	0.0
Mar-18	164	110	0.2	46	0	145	<0.1	12	101	59	<0.25	<0.5	7	<0.5	<0.05	<2	<0.25	45	2	17	0.0
Apr-18	169	108	0.3	49	0	141	0.1	11	101	59	<0.25	<0.5	6	<0.5	<0.05	<2	<0.25	48	1	9	0.0
May-18	188	114	0.3	54	0	152	0.1	13	102	63	<0.25	<0.5	6	<0.5	<0.05	<2	<0.25	44	4	26	0.0
Jun-18	170	111	0.3	50	0	150	0.1	11	102	75	<0.25	<0.5	6	<0.5	<0.05	<2	<0.25	38	3	17	0.0
Jul-18	172	127	0.2	50	0	153	0.1	11	89	38	<0.25	<0.5	5	<0.5	<0.05	<2	<0.25	36			0.0
Aug-18	186	117	0.3	53	0	153	0.1	13	96	40	<0.25	<0.5	6	<0.5	<0.05	<2	<0.25	39			0.0
Sep-18	181	114	0.3	52	0	149	<0.1	12	100	62	<0.25	<0.5	6	<0.5	<0.025	<2	<0.25	36	3	16	0.0
Oct-18	183	126	0.3	52	0	153	0.1	13	107	63	<0.25	<0.5	6	<0.5	<0.025	<2	<0.25	47	3	13	0.0
Nov-18	192			54				14			<0.5		3	<0.5				42	5	20	0.0
Dec-18	180	118		53	0	158	0.1	13		57	<0.5		3	<0.5				50			0.0
Avg	176	115	0.3	51	0	148	0.1	12	100	58	<0.29	<0.5	5	<0.5	<0.05	<2	<0.25	43	3	16	0.0
Min	152	108	0.2	44	0	128	0.1	10	89	38	<0.25	<0.5	3	<0.5	<0.03	<2	<0.25	36	<1	9	0.0
Max	192	127	0.3	54	0	158	0.1	14	107	75	<0.50	<0.5	7	<0.5	<0.05	<2	<0.25	53	5	26	0.0

CCWRF (M-004) Effluent Monthly Inorganic Data

Table No. 8d

Date	Total Hardness	HCO ₃ ²⁻	B	Ca	CO ₃ ²⁻	Cl	F	Mg	Na	SO ₄	Cd, TR	Cr, Total	Cu, TR	Pb, TR	Hg, TR	Se, TR	Ag, TR	Zn, TR	Chlorodi-bromomethane	Bromodi-chloromethane	2,3,7,8-TCDD
Limits	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pg/L
Jan-18	140	117	0.2	41	0	124	0.1	9	108	70	<0.25	<0.5	7	<0.5	<0.05	<2	<0.25	45	4	17	0.0
Feb-18	139	101	0.3	37	0	149	0.1	11	120	76	<0.25	<0.5	7	<0.5	<0.05	<2	<0.25	49	5	27	
Mar-18	143	102	0.3	38	0	154	<0.1	12	121	76	<0.25	<0.5	7	<0.5	<0.05	<2	<0.25	58	6	28	
Apr-18	153	114	0.3	42	0	148	0.1	11	113	70	<0.25	<0.5	7	<0.5	<0.05	<2	<0.25	51	6	21	0.0
May-18	155	110	0.2	45	0	142	0.1	11	107	86	<0.25	<0.5	7	<0.5	<0.05	<2	<0.25	59	4	20	
Jun-18	145	117	0.3	41	0	144	0.1	11	106	62	<0.25	<0.5	6	<0.5	<0.05	<2	<0.25	53			
Jul-18	133	106	0.3	36	0	149	0.1	10	100	60	<0.25	<0.5	6	<0.5	<0.05	<2	<0.25	45			No Discharge
Aug-18	145	117	0.3	39	0	131	0.2	13	110	55	<0.25	<0.5	5	<0.5	<0.025	<2	<0.25	44			
Sep-18	145	117	0.3	39	0	131	0.2	13	110	55	<0.25	<0.5	5	<0.5	<0.025	<2	<0.25	44			
Oct-18	145	117	0.3	39	0	131	0.2	13	110	55	<0.25	<0.5	5	<0.5	<0.025	<2	<0.25	44			
Nov-18						168					<0.5	<1	5	<0.5	<0.2	<5	<0.5	57	8	28	
Dec-18	140	106		38	0	163	0.1	11		74	<0.5		4	<0.5				60			0.0
Avg	144	111	0.3	40	0	144	0.1	11	110	67	<0.29	<0.5	6	<0.5	<0.06	<2	<0.27	51	6	23	0.0
Min	133	101	0.2	36	0	124	0.1	9	100	55	<0.25	<0.5	4	<0.5	<0.03	<2	<0.25	44	4	17	0.0
Max	155	117	0.3	45	0	168	0.2	13	121	86	<0.50	<1.0	7	<0.5	<0.20	<5	<0.50	60	8	28	0.0

*Free Cyanide is analyzed using ASTM-D7237 for analysis of free cyanide in accordance with R8-2015-0036

Inland Empire Utilities Agency
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RP-1 (M-001B) Effluent Quarterly Data

Table No. 9a

RP-1/RP-4 (M-002A) Effluent Quarterly Data

Table No. 9b

	Al, TR	Sb, TR	As, TR	Ba, TR	Co, TR	Ni, TR		Al, TR	Sb, TR	As, TR	Ba, TR	Co, TR	Ni, TR
Date	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Jan-18	117	<1	<2	12	<1	3		116	<1	<2	12	<1	3
Feb-18	124	<1	<2	14	<1	3		136	<1	<2	14	<1	3
Mar-18	91	<1	<2	12	<1	3		101	<1	<2	12	<1	3
Apr-18	59	<1	<2	13	<1	3		93	<1	<2	13	<1	3
May-18	<25	<1	<2	16	<1	3		29	<1	<2	16	<1	3
Jun-18	118	<1	<2	18	<1	4		111	<1	<2	17	<1	3
Jul-18	99	<1	<2	14	<1	4		96	<1	<2	14	<1	4
Aug-18	28	<1	<2	20	<1	3		34	<1	<2	19	<1	3
Sep-18	68	<1	<2	12	<1	4		73	<1	<2	12	<1	4
Oct-18	99	<1	<2	12	<1	4		74	<1	<2	12	<1	4
Nov-18													
Dec-18													
Avg	83	<1	<2	14	<1	3		86	<1	<2	14	<1	3
Min	<25	<1	<2	12	<1	3		29	<1	<2	12	<1	3
Max	124	<1	<2	20	<1	4		136	<1	<2	19	<1	4

RP-5 (M-003) Effluent Quarterly Data

Table No. 9c

CCWRF (M-004) Effluent Quarterly Data

Table No. 9d

	Al, TR	Sb, TR	As, TR	Ba, TR	Co, TR	Ni, TR		Al, TR	Sb, TR	As, TR	Ba, TR	Co, TR	Ni, TR
Date	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Jan-18	<25	<1	<2	17	<1	3		90	<1	<2	11	<1	3
Feb-18	<25	<1	<2	21	<1	3		115	<1	<2	9	<1	3
Mar-18	<25	<1	<2	17	<1	3		99	<1	<2	9	<1	3
Apr-18	<25	<1	<2	26	<1	3		153	<1	<2	10	<1	3
May-18	37	<1	<2	25	<1	3		97	<1	<2	12	<1	3
Jun-18	<25	<1	<2	30	<1	3		72	<1	<2	10	<1	3
Jul-18	<25	<1	<2	23	<1	3		59	<1	<2	8	<1	3
Aug-18	<25	<1	<2	22	<1	3		92	<1	<2	9	<1	3
Sep-18	<25	<1	<2	24	<1	3		58	<1	<2	7	<1	3
Oct-18	<25	<1	<2	24	<1	3		43	<1	<2	7	<1	3
Nov-18									<1	1			<5
Dec-18													
Avg	<26	<1	<2	23	<1	3		88	<1	<2	9	<1	3
Min	<25	<1	<2	17	<1	3		43	<1	1	7	<1	3
Max	37	<1	<2	30	<1	3		153	<1	<2	12	<1	3

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Table No. 10

Mo-Yr	Flow				TIN								Agency-wide TIN				
	DP 001	DP 002	DP 003	DP 004	M-001B		M-002A		RP5		CC		Discharge		Limit		12-MRA
	MGD				mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	flow wt.	total	flow wt.	total	flow-wt.
					mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L
Jan-18	4.7	19.6	5.2	3.2	6.0	240	5.2	840	5.3	230	5.0	130	5.3	1,440	8	5,338	6.0
Feb-18	5.9	8.7	3.4	1.1	5.1	250	4.9	360	6.6	190	5.2	50	5.3	850	8	5,338	5.9
Mar-18	5.0	23.1	4.6	4.8	4.4	180	3.7	710	7.6	290	5.0	200	4.4	1,380	8	5,338	5.8
Apr-18	6.0	3.2	2.9	2.0	4.2	210	4.4	120	7.5	180	4.9	80	5.0	590	8	5,338	5.8
May-18	3.0	4.1	2.2	1.2	4.1	100	4.1	140	7.0	130	5.2	50	4.8	420	8	5,338	5.7
Jun-18	2.0	2.7	1.9	0.0	4.1	70	3.9	90	6.3	100	NA	0	4.7	260	8	5,338	5.6
Jul-18	3.0	0.8	0.0	0.0	4.6	110	4.4	30	NA	0	NA	0	4.6	140	8	5,338	5.4
Aug-18	3.9	1.8	0.0	0.0	4.4	140	4.0	60	NA	0	NA	0	4.3	200	8	5,338	5.3
Sep-18	3.9	4.0	2.3	0.0	4.9	160	4.6	150	6.9	130	NA	0	5.2	440	8	5,338	5.3
Oct-18	3.2	14.9	5.0	0.0	4.3	120	4.1	510	6.7	280	NA	0	4.7	910	8	5,338	5.1
Nov-18	2.8	11.5	4.1	2.1	5.2	120	6.0	570	6.9	240	4.8	80	5.9	1,010	8	5,338	5.1
Dec-18	0.9	21.1	6.0	6.5	4.6	40	4.1	710	7.2	360	5.9	320	5.0	1,430	8	5,338	4.9
12-Mo Avg	3.7	9.6	3.1	1.7	4.7	150	4.4	360	6.8	180	5.1	80	4.9	760	8	5,338	5.5
Min	0.9	0.8	0.0	0.0	4.1	40	3.7	30	5.3	0	4.8	0	4.3	140	8	5,338	4.9
Max	6.0	23.1	6.0	6.5	6.0	250	6.0	840	7.6	360	5.9	320	5.9	1,440	8	5,338	6.0

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Agency-wide TDS 12-Month Running Averages

Table No. 11

Mo-Yr	Flows									Total Dissolved Solids (TDS)							Agency-wide TDS						
	RP-1		RP-4		RP-5		CC			RP-1		RP-4		RP-5			CC		Discharge		Limit		12-MRA
	001 ¹	RW	002	RW	RP-5	RW	CC	RW	001	RW ²	002	RW	RP-5	RW ²	CC	RW ²	flow wt. mg/L	total lbs/day	flow wt. mg/L	total lbs/day	flow wt. mg/L		
Jan-18	4.7	4.9	19.6	8.5	5.2	0.4	3.2	3.4	487	453	464	422	499	482	490	469	464	180,180	550	366,960	456		
Feb-18	5.9	13.0	8.7	9.2	3.4	0.2	1.1	5.6	513	473	493	447	520	512	534	523	488	186,770	550	366,960	456		
Mar-18	5.0	2.7	23.1	4.5	4.6	0.4	4.8	2.1	529	482	496	471	524	519	536	518	504	176,930	550	366,960	459		
Apr-18	6.0	18.0	3.2	9.0	2.9	0.7	2.0	5.2	508	469	497	444	536	521	556	520	485	181,430	550	366,960	460		
May-18	3.0	18.1	4.1	9.1	2.2	3.7	1.2	6.0	532	478	501	476	544	526	548	510	495	190,410	550	366,960	463		
Jun-18	2.0	20.8	2.7	9.2	1.9	4.3	0.0	6.4	538	476	511	464	561	530	NA	501	490	193,300	550	366,960	465		
Jul-18	3.0	23.1	0.8	8.7	0.0	4.8	0.0	7.0	518	469	510	464	NA	531	NA	510	484	191,360	550	366,960	468		
Aug-18	3.9	22.6	1.8	9.1	0.0	3.9	0.0	8.0	510	467	499	445	NA	509	NA	512	478	196,780	550	366,960	471		
Sep-18	3.9	19.2	4.0	8.9	2.3	3.5	0.0	6.9	511	461	493	419	519	497	NA	474	467	190,030	550	366,960	473		
Oct-18	3.2	9.5	14.9	7.5	5.0	2.5	0.0	6.2	529	477	502	457	537	511	NA	504	496	202,660	550	366,960	479		
Nov-18	2.8	12.4	11.5	7.2	4.1	3.7	2.1	5.1	536	482	501	479	548	530	557	517	505	206,290	550	366,960	483		
Dec-18	0.9	3.3	21.1	7.3	6.0	3.5	6.5	1.4	519	459	477	448	537	503	517	502	487	202,880	550	366,960	487		
Avg	3.7	14.0	9.6	8.2	3.1	2.6	1.7	5.3	519	470	495	453	532	514	534	505	487	191,590	550	366,960	469		
Min	0.9	2.7	0.8	4.5	0.0	0.2	0.0	1.4	487	453	464	419	499	482	490	469	464	176,930	550	366,960	456		
Max	6.0	23.1	23.1	9.2	6.0	4.8	6.5	8.0	538	482	511	479	561	531	557	523	505	206,290	550	366,960	487		

NOTES: ¹ Prior to April 2010, 001 effluent flow included recycled water flow.

² Flow and TDS added to flow-weight for RP-1, RP-5, and CCWRF recycled water (May 2010)

NA: Not Analyzed, due to no discharge

APPENDIX B
RECYCLED WATER
COMPLIANCE DATA
FOR CALENDAR YEAR 2018

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RP-5 (M-INF 3C) RP-2 Recycle Flow Remaining Priority Pollutants

Table 15a

RP-5 (M-INF 3C) RP-2 Recycle Flow Remaining Priority Pollutant Metals & CN, mg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
Antimony (Sb)	<0.02			<0.02			<0.02			<0.02			<0.02
Arsenic (As)	<0.01			<0.01			<0.01			<0.01			<0.01
Beryllium (Be)	<0.01			<0.01			<0.01			<0.01			<0.01
Cadmium (Cd)	<0.01			<0.01			<0.01			<0.01			<0.01
Chromium (Cr)	0.01			<0.01			<0.01			<0.01			0.01
Copper (Cu)	0.16			0.03			0.04			0.07			0.16
Lead (Pb)	<0.02			<0.02			<0.02			<0.02			<0.02
Mercury (Hg)	0.0020				<0.0005		<0.0005			<0.0005			0.0020
Nickel (Ni)	0.01			<0.01			<0.01			<0.01			0.01
Selenium (Se)	<0.02			<0.02			<0.02			<0.02			<0.02
Silver (Ag)	<0.01			<0.01			<0.01			<0.01			<0.01
Thallium (Tl)	<0.05			<0.05			<0.05			<0.05			<0.05
Zinc (Zn)	0.59			0.11			0.13			0.17			0.59
CN, Aquatic Free	6			3			4						6

RP-5 (M-INF 3C) RP-2 Recycle Flow Volatile Organics (EPA Methods 624, 601/602), µg/L

1,1,1-Trichloroethane							<5						<5
1,1,2,2-Tetrachloroethane							<2.5						<2.5
1,1,2-Trichloroethane							<5						<5
1,1-Dichloroethane							<2.5						<2.5
1,1-Dichloroethene							<5						<5
1,2-Dichlorobenzene							<5						<5
1,2-Dichloroethane							<2.5						<2.5
1,2-Dichloropropane							<2.5						<2.5
1,3-Dichlorobenzene							<5						<5
1,4-Dichlorobenzene							<5						<5
2-Chloroethyl vinyl ether							<5						<5
Benzene							<5						<5
Bromodichloromethane	<5			<5			<5			<5			<5
Bromoform	<5			<5			<5			<5			<5
Bromomethane							<5						<5
Carbon tetrachloride							<2.5						<2.5
Chlorobenzene							<5						<5
Chloroethane							<5						<5
Chloroform	16			<5			<5			14			16
Chloromethane							<5						<5
cis-1,3-Dichloropropene							<2.5						<2.5
Dibromochloromethane	<5			<5			<5			<5			<5
Ethylbenzene							<5						<5
Methylene chloride							<5						<5
Tetrachloroethene							<5						<5
Toluene							<5						<5
trans-1,2-Dichloroethene							<2.5						<2.5
trans-1,3-Dichloropropene							<2.5						<2.5
Trichloroethene							<5						<5
Trichlorofluoromethane							<10						<10
Vinyl chloride							<2.5						<2.5
Acrolein								<10					<10
Acrylonitrile								<1.25					<1.25

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RP-5 (M-INF 3C) RP-2 Recycle Flow Remaining Priority Pollutants

Table 15b

RP-5 (M-INF 3C) RP-2 Recycle Flow Base/Neutral and Acid Extractibles (EPA Method 625), µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
1,2,4-Trichlorobenzene							<10						<10
1,2-Dichlorobenzene							<10						<10
1,3-Dichlorobenzene							<10						<10
1,4-Dichlorobenzene							<10						<10
2,4,6-Trichlorophenol							<10						<10
2,4-Dichlorophenol							<20						<20
2,4-Dimethylphenol							<10						<10
2,4-Dinitrophenol							<30						<30
2,4-Dinitrotoluene							<10						<10
2,6-Dinitrotoluene							<20						<20
2-Chloronaphthalene							<10						<10
2-Chlorophenol							<10						<10
2-Methyl-4,6-dinitrophenol							<20						<20
2-Nitrophenol							<10						<10
3,3-Dichlorobenzidine							<50						<50
4-Bromophenyl phenyl ether							<10						<10
4-Chloro-3-methylphenol							<10						<10
4-Chlorophenyl phenyl ether							<10						<10
4-Nitrophenol							<30						<30
Acenaphthene							<10						<10
Acenaphthylene							<10						<10
Anthracene							<10						<10
Azobenzene							<10						<10
Benzidine							<50						<50
Benzo(a)anthracene							<50						<50
Benzo(a)pyrene							<10						<10
Benzo(b)fluoranthene							<10						<10
Benzo(g,h,i)perylene							<20						<20
Benzo(k)fluoranthene							<10						<10
Bis(2-chloroethoxy)methane							<20						<20
Bis(2-chloroethyl)ether							<10						<10
Bis(2-chloroisopropyl)ether							<10						<10
Bis(2-ethylhexyl)phthalate	<15			<15			<15			<15			<15
Butyl benzyl phthalate							<7.5						<7.5
Chrysene							<10						<10
Dibenzo(a,h)anthracene							<10						<10
Diethyl phthalate							<15						<15
Dimethyl phthalate							<10						<10
Di-n-butyl phthalate							<10						<10
Di-n-octyl phthalate							<10						<10
Fluoranthene							<10						<10
Fluorene							<10						<10
Hexachlorobenzene							<10						<10
Hexachlorobutadiene							<10						<10
Hexachlorocyclopentadiene							<50						<50
Hexachloroethane							<10						<10
Indeno(1,2,3-cd)pyrene							<20						<20
Isophorone							<10						<10
Naphthalene							<10						<10
Nitrobenzene							<10						<10
N-Nitrosodimethylamine							<10						<10
N-Nitroso-di-n-propylamine							<10						<10
N-Nitrosodiphenylamine							<10						<10
Pentachlorophenol							<20						<20
Phenanthrene							<10						<10
Phenol							<10						<10
Pyrene							<10						<10

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RP-5 (M-INF 3C) RP-2 Recycle Flow Remaining Priority Pollutants

Table 15c

RP-5 (M-INF 3C) RP-2 Recycle Flow Pesticides (EPA Method 608), µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
4,4-DDD							<0.06						<0.06
4,4-DDE							<0.06						<0.06
4,4-DDT							<0.08						<0.08
Aldrin							<0.04						<0.04
Alpha-BHC							<0.08						<0.08
Beta-BHC							<0.05						<0.05
Delta-BHC							<0.07						<0.07
Dieldrin							<0.06						<0.06
Endosulfan I							<0.1						<0.1
Endosulfan II							<0.07						<0.07
Endosulfan Sulfate							<0.09						<0.09
Endrin							<0.09						<0.09
Endrin aldehyde							<0.06						<0.06
Gamma-BHC							<0.1						<0.1
Heptachlor							<0.06						<0.06
Heptachlor epoxide							<0.07						<0.07
Chlordane							<1						<1
PCB-1016							<5						<5
PCB-1221							<5						<5
PCB-1232							<5						<5
PCB-1242							<5						<5
PCB-1248							<5						<5
PCB-1254							<5						<5
PCB-1260							<5						<5
Toxaphene							<5						<5

RP-5 (M-INF 3C) RP-2 Recycle Flow Dioxins & Furans, pg/L (reported values based on detection limit)

PCDD/PCDF Congeners*							0.015						0.015
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*TEQ is calculated based on congener concentrations below the reporting limit (RL) set to zero

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RP-5 (M-INF 3D) RP-2 Lift Station Remaining Priority Pollutants

Table 16a

RP-5 (M-INF 3D) RP-2 Lift Station Remaining Priority Pollutant Metals & CN, mg/L													Annual Max.
Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Antimony (Sb)	<0.02			<0.02			<0.02			<0.02			<0.02
Arsenic (As)	<0.01			<0.01			<0.01			<0.01			<0.01
Beryllium (Be)	<0.01			<0.01			<0.01			<0.01			<0.01
Cadmium (Cd)	<0.01			<0.01			<0.01			<0.01			<0.01
Chromium (Cr)	0.01			<0.01			<0.01			<0.01			0.01
Copper (Cu)	0.16			0.04			0.05			0.08			0.16
Lead (Pb)	<0.02			<0.02			<0.02			<0.02			<0.02
Mercury (Hg)	0.0006				<0.0005		<0.0005			<0.0005			0.0006
Nickel (Ni)	0.01			<0.01			<0.01			<0.01			0.01
Selenium (Se)	<0.02			<0.02			<0.02			<0.02			<0.02
Silver (Ag)	<0.01			<0.01			<0.01			<0.01			<0.01
Thallium (Tl)	<0.05			<0.05			<0.05			<0.05			<0.05
Zinc (Zn)	0.56			0.13			0.15			0.20			0.56
CN, Aquatic Free	9			<2			7						9

RP-5 (M-INF 3D) RP-2 Lift Station Volatile Organics (EPA Methods 624, 601/602), µg/L

1,1,1-Trichloroethane							<5						<5
1,1,2,2-Tetrachloroethane							<2.5						<2.5
1,1,2-Trichloroethane							<5						<5
1,1-Dichloroethane							<2.5						<2.5
1,1-Dichloroethene							<5						<5
1,2-Dichlorobenzene							<5						<5
1,2-Dichloroethane							<2.5						<2.5
1,2-Dichloropropane							<2.5						<2.5
1,3-Dichlorobenzene							<5						<5
1,4-Dichlorobenzene							<5						<5
2-Chloroethyl vinyl ether							<5						<5
Benzene							<5						<5
Bromodichloromethane	<5			<5			<5			<5			<5
Bromoform	<5			<5			<5			<5			<5
Bromomethane							<5						<5
Carbon tetrachloride							<2.5						<2.5
Chlorobenzene							<5						<5
Chloroethane							<5						<5
Chloroform	14			<5			<5			12			14
Chloromethane							<5						<5
cis-1,3-Dichloropropene							<2.5						<2.5
Dibromochloromethane	<5			<5			<5			<5			<5
Ethylbenzene							<5						<5
Methylene chloride							<5						<5
Tetrachloroethene							<5						<5
Toluene							<5						<5
trans-1,2-Dichloroethene							<2.5						<2.5
trans-1,3-Dichloropropene							<2.5						<2.5
Trichloroethene							<5						<5
Trichlorofluoromethane							<10						<10
Vinyl chloride							<2.5						<2.5
Acrolein								<10					<10
Acrylonitrile								<1.25					<1.25

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RP-5 (M-INF 3D) RP-2 Lift Station Remaining Priority Pollutants

Table 16b

RP-5 (M-INF 3D) RP-2 Lift Station Base/Neutral and Acid Extractibles (EPA Method 625), µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
1,2,4-Trichlorobenzene							<10						<10
1,2-Dichlorobenzene							<10						<10
1,3-Dichlorobenzene							<10						<10
1,4-Dichlorobenzene							<10						<10
2,4,6-Trichlorophenol							<10						<10
2,4-Dichlorophenol							<20						<20
2,4-Dimethylphenol							<10						<10
2,4-Dinitrophenol							<30						<30
2,4-Dinitrotoluene							<10						<10
2,6-Dinitrotoluene							<20						<20
2-Chloronaphthalene							<10						<10
2-Chlorophenol							<10						<10
2-Methyl-4,6-dinitrophenol							<20						<20
2-Nitrophenol							<10						<10
3,3-Dichlorobenzidine							<50						<50
4-Bromophenyl phenyl ether							<10						<10
4-Chloro-3-methylphenol							<10						<10
4-Chlorophenyl phenyl ether							<10						<10
4-Nitrophenol							<30						<30
Acenaphthene							<10						<10
Acenaphthylene							<10						<10
Anthracene							<10						<10
Azobenzene							<10						<10
Benzidine							<50						<50
Benzo(a)anthracene							<50						<50
Benzo(a)pyrene							<10						<10
Benzo(b)fluoranthene							<10						<10
Benzo(g,h,i)perylene							<20						<20
Benzo(k)fluoranthene							<10						<10
Bis(2-chloroethoxy)methane							<20						<20
Bis(2-chloroethyl)ether							<10						<10
Bis(2-chloroisopropyl)ether							<10						<10
Bis(2-ethylhexyl)phthalate	<15			<15			<15			<15			<15
Butyl benzyl phthalate							<7.5						<7.5
Chrysene							<10						<10
Dibenzo(a,h)anthracene							<10						<10
Diethyl phthalate							<15						<15
Dimethyl phthalate							<10						<10
Di-n-butyl phthalate							<10						<10
Di-n-octyl phthalate							<10						<10
Fluoranthene							<10						<10
Fluorene							<10						<10
Hexachlorobenzene							<10						<10
Hexachlorobutadiene							<10						<10
Hexachlorocyclopentadiene							<50						<50
Hexachloroethane							<10						<10
Indeno(1,2,3-cd)pyrene							<20						<20
Isophorone							<10						<10
Naphthalene							<10						<10
Nitrobenzene							<10						<10
N-Nitrosodimethylamine							<10						<10
N-Nitroso-di-n-propylamine							<10						<10
N-Nitrosodiphenylamine							<10						<10
Pentachlorophenol							<20						<20
Phenanthrene							<10						<10
Phenol							<10						<10
Pyrene							<10						<10

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RP-5 (M-INF 3D) RP-2 Lift Station Remaining Priority Pollutants

Table 16c

RP-5 (M-INF 3D) RP-2 Lift Station Pesticides (EPA Method 608), µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
4,4-DDD							<0.06						<0.06
4,4-DDE							<0.06						<0.06
4,4-DDT							<0.08						<0.08
Aldrin							<0.04						<0.04
Alpha-BHC							<0.08						<0.08
Beta-BHC							<0.05						<0.05
Delta-BHC							<0.07						<0.07
Dieldrin							<0.06						<0.06
Endosulfan I							<0.1						<0.1
Endosulfan II							<0.07						<0.07
Endosulfan Sulfate							<0.09						<0.09
Endrin							<0.09						<0.09
Endrin aldehyde							<0.06						<0.06
Gamma-BHC							<0.1						<0.1
Heptachlor							<0.06						<0.06
Heptachlor epoxide							<0.07						<0.07
Chlordane							<1						<1
PCB-1016							<5						<5
PCB-1221							<5						<5
PCB-1232							<5						<5
PCB-1242							<5						<5
PCB-1248							<5						<5
PCB-1254							<5						<5
PCB-1260							<5						<5
Toxaphene							<5						<5

RP-5 (M-INF 3D) RP-2 Lift Station Dioxins & Furans, pg/L (reported values based on detection limit)

PCDD/PCDF Congeners*	0.417	0.000	0.018	0.021	0.065	0.020	0.101	0.085	0.063	0.303	0.029	0.000	0.417
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*TEQ is calculated based on congener concentrations below the reporting limit (RL) set to zero

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RP-1 (M-001B) Effluent Remaining Priority Pollutants

Table 18a

RP-1 (M-001B) Effluent Remaining Priority Pollutant Metals & CN, µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
Antimony (Sb)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1			<1
Arsenic (As)	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2			<2
Beryllium (Be)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5
Cadmium (Cd)	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25		<0.25
Chromium (Cr)	<0.5	0.7	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	0.5			0.8
Copper (Cu)	3.6	4.3	5.5	3.9	4.4	4.7	4.1	3.8	4.0	4.1	<0.5		5.5
Lead (Pb)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5
Mercury (Hg)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05			<0.05
Nickel (Ni)	2.6	3.0	3.2	3.0	3.4	3.5	3.7	3.3	3.6	3.7			3.7
Selenium (Se)	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2			<2
Silver (Ag)	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25			<0.25
Thallium (Tl)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1			<1
Zinc (Zn)	23	27	33	34	35	38	37	37	32	35	34		38
CN, Free	<2			<2			2			<2			2

RP-1 (M-001B) Effluent Volatile Organics (EPA Methods 624, 601/602), µg/L

1,1,1-Trichloroethane							<1						<1
1,1,2,2-Tetrachloroethane							<0.5						<0.5
1,1,2-Trichloroethane							<1						<1
1,1-Dichloroethane							<0.5						<0.5
1,1-Dichloroethene							<1						<1
1,2-Dichlorobenzene							<1						<1
1,2-Dichloroethane							<0.5						<0.5
1,2-Dichloropropane							<0.5						<0.5
1,3-Dichlorobenzene							<1						<1
1,4-Dichlorobenzene							<1						<1
2-Chloroethyl vinyl ether							<1						<1
Benzene							<1						<1
Bromodichloromethane	13			12			15			31			31
Bromoform	<1			<1			<1			<1			<1
Bromomethane							<1						<1
Carbon tetrachloride							<0.5						<0.5
Chlorobenzene							<1						<1
Chloroethane							<1						<1
Chloroform	48			51			53			72			72
Chloromethane							<1						<1
cis-1,3-Dichloropropene							<0.5						<0.5
Dibromochloromethane	4			2			3			9			9
Ethylbenzene							<1						<1
Methylene chloride							<1						<1
Tetrachloroethene							<1						<1
Toluene							<1						<1
trans-1,2-Dichloroethene							<0.5						<0.5
trans-1,3-Dichloropropene							<0.5						<0.5
Trichloroethene							<1						<1
Trichlorofluoromethane							<2						<2
Vinyl chloride							<0.5						<0.5
Acrolein								<2					<2
Acrylonitrile								<0.25					<0.25

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RP-1 (M-001B) Effluent Remaining Priority Poilutants

Table 18b

RP-1 (M-001B) Effluent Base/Neutral and Acid Extractibles (EPA Method 625), µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
1,2,4-Trichlorobenzene							<1						<1
1,2-Dichlorobenzene							<1						<1
1,3-Dichlorobenzene							<1						<1
1,4-Dichlorobenzene							<1						<1
2,4,6-Trichlorophenol							<1						<1
2,4-Dichlorophenol							<2						<2
2,4-Dimethylphenol							<1						<1
2,4-Dinitrophenol							<3						<3
2,4-Dinitrotoluène							<1						<1
2,6-Dinitrotoluene							<2						<2
2-Chloronaphthalene							<1						<1
2-Chlorophenol							<1						<1
2-Methyl-4,6-dinitrophenol							<2						<2
2-Nitrophenol							<1						<1
3,3-Dichlorobenzidine							<5						<5
4-Bromophenyl phenyl ether							<1						<1
4-Chloro-3-methylphenol							<1						<1
4-Chlorophenyl phenyl ether							<1						<1
4-Nitrophenol							<3						<3
Acenaphthene							<1						<1
Acenaphthylene							<1						<1
Anthracene							<1						<1
Azobenzene							<1						<1
Benzidine							<5						<5
Benzo(a)anthracene							<5						<5
Benzo(a)pyrene							<1						<1
Benzo(b)fluoranthene							<1						<1
Benzo(g,h,i)perylene							<2						<2
Benzo(k)fluoranthene							<1						<1
Bis(2-chloroethoxy)methane							<2						<2
Bis(2-chloroethyl)ether							<1						<1
Bis(2-chloroisopropyl)ether							<1						<1
Bis(2-ethylhexyl)phthalate	<2			<2			<2			<2			<2
Butyl benzyl phthalate							<1						<1
Chrysene							<1						<1
Dibenzo(a,h)anthracene							<1						<1
Diethyl phthalate							<2						<2
Dimethyl phthalate							<1						<1
Di-n-butyl phthalate							<1						<1
Di-n-octyl phthalate							<1						<1
Fluoranthene							<1						<1
Fluorene							<1						<1
Hexachlorobenzene							<1						<1
Hexachlorobutadiene							<1						<1
Hexachlorocyclopentadiene							<5						<5
Hexachloroethane							<1						<1
Indeno(1,2,3-cd)pyrene							<2						<2
Isophorone							<1						<1
Naphthalene							<1						<1
Nitrobenzene							<1						<1
N-Nitrosodimethylamine							<1						<1
N-Nitroso-di-n-propylamine							<1						<1
N-Nitrosodiphenylamine							<1						<1
Pentachlorophenol							<2						<2
Phenanthrene							<1						<1
Phenol							<1						<1
Pyrene							<1						<1

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RP-1 (M-001B) Effluent Remaining Priority Pollutants

Table 18c

RP-1 (M-001B) Effluent Pesticides (EPA Method 608), µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
4,4-DDD							<0.006						<0.006
4,4-DDE							<0.006						<0.006
4,4-DDT							<0.008						<0.008
Aldrin							<0.004						<0.004
Alpha-BHC							<0.008						<0.008
Beta-BHC							<0.005						<0.005
Delta-BHC							<0.007						<0.007
Dieldrin							<0.006						<0.006
Endosulfan I							<0.01						<0.01
Endosulfan II							<0.007						<0.007
Endosulfan Sulfate							<0.009						<0.009
Endrin							<0.009						<0.009
Endrin aldehyde							<0.006						<0.006
Gamma-BHC							<0.01						<0.01
Heptachlor							<0.006						<0.006
Heptachlor epoxide							<0.007						<0.007
Chlordane							<0.1						<0.1
PCB-1016							<0.5						<0.5
PCB-1221							<0.5						<0.5
PCB-1232							<0.5						<0.5
PCB-1242							<0.5						<0.5
PCB-1248							<0.5						<0.5
PCB-1254							<0.5						<0.5
PCB-1260							<0.5						<0.5
Toxaphene							<0.5						<0.5

RP-1 (M-001B) Effluent Dioxins & Furans, pg/L (reported values based on detection limit)

PCDD/PCDF Congeners*							0.000						0.000
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*TEQ is calculated based on congener concentrations below the reporting limit (RL) set to zero

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RP-1/RP-4 (M-002A) Effluent Remaining Priority Pollutants

Table 19a

RP-1/RP-4 (M-002A) Effluent Remaining Priority Pollutant Metals & CN, µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
Antimony (Sb)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1			<1.0
Arsenic (As)	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2			<2
Beryllium (Be)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5
Cadmium (Cd)	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25		<0.25
Chromium (Cr)	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5			0.6
Copper (Cu)	4.3	4.3	5.6	4.2	4.6	4.2	4.3	4.1	4.2	4.2	<0.5		5.6
Lead (Pb)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5
Mercury (Hg)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05			<0.05
Nickel (Ni)	2.7	2.6	3.0	3.2	3.5	3.3	3.8	3.4	3.7	3.6			3.8
Selenium (Se)	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2			<2
Silver (Ag)	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25			<0.25
Thallium (Tl)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1			<1
Zinc (Zn)	23	27	31	36	35	34	35	35	31	35	34		36
CN, Free	<2			3			2			3			3

RP-1/RP-4 (M-002A) Effluent Volatile Organics (EPA Methods 624, 601/602), µg/L

1,1,1-Trichloroethane							<1						<1
1,1,2,2-Tetrachloroethane							<0.5						<0.5
1,1,2-Trichloroethane							<1						<1
1,1-Dichloroethane							<0.5						<0.5
1,1-Dichloroethene							<1						<1
1,2-Dichlorobenzene							<1						<1
1,2-Dichloroethane							<0.5						<0.5
1,2-Dichloropropane							<0.5						<0.5
1,3-Dichlorobenzene							<1						<1
1,4-Dichlorobenzene							<1						<1
2-Chloroethyl vinyl ether							<1						<1
Benzene							<1						<1
Bromodichloromethane	13			11			16			22			22
Bromoform	<1			<1			<1			<1			<1
Bromomethane							<1						<1
Carbon tetrachloride							<0.5						<0.5
Chlorobenzene							<1						<1
Chloroethane							<1						<1
Chloroform	66			45			64			57			66
Chloromethane							<1						<1
cis-1,3-Dichloropropene							<0.5						<0.5
Dibromochloromethane	3			2			2			5			5
Ethylbenzene							<1						<1
Methylene chloride							<1						<1
Tetrachloroethene							<1						<1
Toluene							<1						<1
trans-1,2-Dichloroethene							<0.5						<0.5
trans-1,3-Dichloropropene							<0.5						<0.5
Trichloroethene							<1						<1
Trichlorofluoromethane							<2						<2
Vinyl chloride							<0.5						<0.5
Acrolein								<2		<2			<2
Acrylonitrile								0.57		0.31			0.57

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RP-1/RP-4 (M-002A) Effluent Remaining Priority Pollutants

Table 19b

RP-1/RP-4 (M-002A) Effluent Base/Neutral and Acid Extractibles (EPA Method 625), µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
1,2,4-Trichlorobenzene							<1						<1
1,2-Dichlorobenzene							<1						<1
1,3-Dichlorobenzene							<1						<1
1,4-Dichlorobenzene							<1						<1
2,4,6-Trichlorophenol							<1						<1
2,4-Dichlorophenol							<2						<2
2,4-Dimethylphenol							<1						<1
2,4-Dinitrophenol							<3						<3
2,4-Dinitrotoluene							<1						<1
2,6-Dinitrotoluene							<2						<2
2-Chloronaphthalene							<1						<1
2-Chlorophenol							<1						<1
2-Methyl-4,6-dinitrophenol							<2						<2
2-Nitrophenol							<1						<1
3,3-Dichlorobenzidine							<5						<5
4-Bromophenyl phenyl ether							<1						<1
4-Chloro-3-methylphenol							<1						<1
4-Chlorophenyl phenyl ether							<1						<1
4-Nitrophenol							<3						<3
Acenaphthene							<1						<1
Acenaphthylene							<1						<1
Anthracene							<1						<1
Azobenzene							<1						<1
Benzidine							<5						<5
Benzo(a)anthracene							<5						<5
Benzo(a)pyrene							<1						<1
Benzo(b)fluoranthene							<1						<1
Benzo(g,h,i)perylene							<2						<2
Benzo(k)fluoranthene							<1						<1
Bis(2-chloroethoxy)methane							<2						<2
Bis(2-chloroethyl)ether							<1						<1
Bis(2-chloroisopropyl)ether							<1						<1
Bis(2-ethylhexyl)phthalate	<2			<2			<2			<2			<2
Butyl benzyl phthalate							<1						<1
Chrysene							<1						<1
Dibenzo(a,h)anthracene							<1						<1
Diethyl phthalate							<2						<2
Dimethyl phthalate							<1						<1
Di-n-butyl phthalate							<1						<1
Di-n-octyl phthalate							<1						<1
Fluoranthene							<1						<1
Fluorene							<1						<1
Hexachlorobenzene							<1						<1
Hexachlorobutadiene							<1						<1
Hexachlorocyclopentadiene							<5						<5
Hexachloroethane							<1						<1
Indeno(1,2,3-cd)pyrene							<2						<2
Isophorone							<1						<1
Naphthalene							<1						<1
Nitrobenzene							<1						<1
N-Nitrosodimethylamine							<1						<1
N-Nitroso-di-n-propylamine							<1						<1
N-Nitrosodiphenylamine							<1						<1
Pentachlorophenol							<2						<2
Phenanthrene							<1						<1
Phenol							<1						<1
Pyrene							<1						<1

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RP-1/RP-4 (M-002A) Effluent Remaining Priority Pollutants

Table 19c

RP-1/RP-4 (M-002A) Effluent Pesticides (EPA Method 608), µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
4,4-DDD							<0.006						<0.006
4,4-DDE							<0.006						<0.006
4,4-DDT							<0.008						<0.008
Aldrin							<0.004						<0.004
Alpha-BHC							<0.008						<0.008
Beta-BHC							<0.005						<0.005
Delta-BHC							<0.007						<0.007
Dieldrin							<0.006						<0.006
Endosulfan I							<0.01						<0.01
Endosulfan II							<0.007						<0.007
Endosulfan Sulfate							<0.009						<0.009
Endrin							<0.009						<0.009
Endrin aldehyde							<0.006						<0.006
Gamma-BHC							<0.01						<0.01
Heptachlor							<0.006						<0.006
Heptachlor epoxide							<0.007						<0.007
Chlordane							<0.1						<0.1
PCB-1016							<0.5						<0.5
PCB-1221							<0.5						<0.5
PCB-1232							<0.5						<0.5
PCB-1242							<0.5						<0.5
PCB-1248							<0.5						<0.5
PCB-1254							<0.5						<0.5
PCB-1260							<0.5						<0.5
Toxaphene							<0.5						<0.5

RP-1/RP-4 (M-002A) Effluent Dioxins & Furans, pg/L (reported values based on detection limit)

PCDD/PCDF Congeners*							0.047						0.047
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*TEQ is calculated based on congener concentrations below the reporting limit (RL) set to zero

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RP-5 (M-003) Effluent Remaining Priority Pollutants

Table 20a

RP-5 (M-003) Effluent Remaining Priority Pollutant Metals & CN, µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
Antimony (Sb)	<1	<1	<1	<1	<1	<1			<1	<1			<1.0
Arsenic (As)	<2	<2	<2	<2	<2	<2			<2	<2			<2
Beryllium (Be)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	<0.5			<0.5
Cadmium (Cd)	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25			<0.25	<0.25	<0.25		<0.25
Chromium (Cr)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	<0.5			<0.5
Copper (Cu)	5.9	5.8	7.1	6.1	6.3	5.9			5.5	6.1	3.0		7.1
Lead (Pb)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	<0.5	<0.5		<0.5
Mercury (Hg)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05			<0.05	<0.05			<0.05
Nickel (Ni)	2.5	2.6	3.0	2.6	3.1	3.1			3.2	3.1			3.2
Selenium (Se)	<2	<2	<2	<2	<2	<2			<2	<2			<2
Silver (Ag)	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25			<0.25	<0.25			<0.25
Thallium (Tl)	<1	<1	<1	<1	<1	<1			<1	<1			<1
Zinc (Zn)	53	41	45	48	44	38			36	47	42		53
CN, Free	<2			<2						<2			<2

RP-5 (M-003) Effluent Volatile Organics (EPA Methods 624, 601/602), µg/L

1,1,1-Trichloroethane									<1				<1
1,1,2,2-Tetrachloroethane									<0.5				<0.5
1,1,2-Trichloroethane									<1				<1
1,1-Dichloroethane									<0.5				<0.5
1,1-Dichloroethene									<1				<1
1,2-Dichlorobenzene									<1				<1
1,2-Dichloroethane									<0.5				<0.5
1,2-Dichloropropane									<0.5				<0.5
1,3-Dichlorobenzene									<1				<1
1,4-Dichlorobenzene									<1				<1
2-Chloroethyl vinyl ether									<1				<1
Benzene									<1				<1
Bromodichloromethane	12	17	17	9	26	17			16	13	20		26
Bromoform	<1	<1	<1	<1	<1	<1			<1	<1	<1		<1
Bromomethane									<1				<1
Carbon tetrachloride									<0.5				<0.5
Chlorobenzene									<1				<1
Chloroethane									<1				<1
Chloroform	62	74	55	30	83	59			46	34	54		83
Chloromethane									<1				<1
cis-1,3-Dichloropropene									<0.5				<0.5
Dibromochloromethane	<1	2	2	1	4	3			3	3	5		5
Ethylbenzene									<1				<1
Methylene chloride									<1				<1
Tetrachloroethene									<1				<1
Toluene									<1				<1
trans-1,2-Dichloroethene									<0.5				<0.5
trans-1,3-Dichloropropene									<0.5				<0.5
Trichloroethene									<1				<1
Trichlorofluoromethane									<2				<2
Vinyl chloride									<0.5				<0.5
Acrolein									<2				<2
Acrylonitrile									<0.25				<0.25

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RP-5 (M-003) Effluent Remaining Priority Pollutants

Table 20b

RP-5 (M-003) Effluent Base/Neutral and Acid Extractibles (EPA Method 625), µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
1,2,4-Trichlorobenzene									<1				<1
1,2-Dichlorobenzene									<1				<1
1,3-Dichlorobenzene									<1				<1
1,4-Dichlorobenzene									<1				<1
2,4,6-Trichlorophenol									<1				<1
2,4-Dichlorophenol									<2				<2
2,4-Dimethylphenol									<1				<1
2,4-Dinitrophenol									<3				<3
2,4-Dinitrotoluene									<1				<1
2,6-Dinitrotoluene									<2				<2
2-Chloronaphthalene									<1				<1
2-Chlorophenol									<1				<1
2-Methyl-4,6-dinitrophenol									<2				<2
2-Nitrophenol									<1				<1
3,3-Dichlorobenzidine									<5				<5
4-Bromophenyl phenyl ether									<1				<1
4-Chloro-3-methylphenol									<1				<1
4-Chlorophenyl phenyl ether									<1				<1
4-Nitrophenol									<3				<3
Acenaphthene									<1				<1
Acenaphthylene									<1				<1
Anthracene									<1				<1
Azobenzene									<1				<1
Benidine									<5				<5
Benzo(a)anthracene									<5				<5
Benzo(a)pyrene									<1				<1
Benzo(b)fluoranthene									<1				<1
Benzo(g,h,i)perylene									<2				<2
Benzo(k)fluoranthene									<1				<1
Bis(2-chloroethoxy)methane									<2				<2
Bis(2-chloroethyl)ether									<1				<1
Bis(2-chloroisopropyl)ether									<1				<1
Bis(2-ethylhexyl)phthalate	<2			<2					<2	<2			<2
Butyl benzyl phthalate									<1				<1
Chrysene									<1				<1
Dibenzo(a,h)anthracene									<1				<1
Diethyl phthalate									<2				<2
Dimethyl phthalate									<1				<1
Di-n-butyl phthalate									<1				<1
Di-n-octyl phthalate									<1				<1
Fluoranthene									<1				<1
Fluorene									<1				<1
Hexachlorobenzene									<1				<1
Hexachlorobutadiene									<1				<1
Hexachlorocyclopentadiene									<5				<5
Hexachloroethane									<1				<1
Indeno(1,2,3-cd)pyrene									<2				<2
Isophorone									<1				<1
Naphthalene									<1				<1
Nitrobenzene									<1				<1
N-Nitrosodimethylamine									<1				<1
N-Nitroso-di-n-propylamine									<1				<1
N-Nitrosodiphenylamine									<1				<1
Pentachlorophenol									<2				<2
Phenanthrene									<1				<1
Phenol									<1				<1
Pyrene									<1				<1

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RP-5 (M-003) Effluent Remaining Priority Pollutants

Table 20c

RP-5 (M-003) Effluent Pesticides (EPA Method 608), µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
4,4-DDD									<0.006				<0.006
4,4-DDE									<0.006				<0.006
4,4-DDT									<0.008				<0.008
Aldrin									<0.004				<0.004
Alpha-BHC									<0.008				<0.008
Beta-BHC									<0.005				<0.005
Delta-BHC									<0.007				<0.007
Dieldrin									<0.006				<0.006
Endosulfan I									<0.01				<0.01
Endosulfan II									<0.007				<0.007
Endosulfan Sulfate									<0.009				<0.009
Endrin									<0.009				<0.009
Endrin aldehyde									<0.006				<0.006
Gamma-BHC									<0.01				<0.01
Heptachlor									<0.006				<0.006
Heptachlor epoxide									<0.007				<0.007
Chlordane									<0.1				<0.1
PCB-1016									<0.5				<0.5
PCB-1221									<0.5				<0.5
PCB-1232									<0.5				<0.5
PCB-1242									<0.5				<0.5
PCB-1248									<0.5				<0.5
PCB-1254									<0.5				<0.5
PCB-1260									<0.5				<0.5
Toxaphene									<0.5				<0.5

RP-5 (M-003) Effluent Dioxins & Furans, pg/L (reported values based on detection limit)

PCDD/PCDF Congeners*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
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*TEQ is calculated based on congener concentrations below the reporting limit (RL) set to zero

ND: No Discharge

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CCWRF (M-004) Effluent Remaining Priority Pollutants

Table 21a

CCWRF (M-004) Effluent Remaining Priority Pollutant Metals & CN, µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
Antimony (Sb)	<1	<1	<1	<1	<1						<1		<1.0
Arsenic (As)	<2	<2	<2	<2	<2						1		<2
Beryllium (Be)	<0.5	<0.5	<0.5	<0.5	<0.5						<0.5		<0.5
Cadmium (Cd)	<0.25	<0.25	<0.25	<0.25	<0.25						<0.25		<0.25
Chromium (Cr)	<0.5	<0.5	<0.5	<0.5	<0.5						<0.5		<0.5
Copper (Cu)	6.7	7.0	7.4	6.7	6.8						4.5		7.4
Lead (Pb)	<0.5	<0.5	<0.5	<0.5	<0.5						<0.5		<0.5
Mercury (Hg)	<0.05	<0.05	<0.05	<0.05	<0.05						<0.05		<0.05
Nickel (Ni)	2.7	2.9	3.2	2.9	3.1						<1		3.2
Selenium (Se)	<2	<2	<2	<2	<2						<2		<2
Silver (Ag)	<0.25	<0.25	<0.25	<0.25	<0.25						<0.25		<0.25
Thallium (Tl)	<1	<1	<1	<1	<1						<1		<1
Zinc (Zn)	45	49	58	51	59						57		59
CN, Free	<2			<2									<2

CCWRF (M-004) Effluent Volatile Organics (EPA Methods 624, 601/602), µg/L

1,1,1-Trichloroethane											<1		<1
1,1,2,2-Tetrachloroethane											<0.5		<0.5
1,1,2-Trichloroethane											<1		<1
1,1-Dichloroethane											<0.5		<0.5
1,1-Dichloroethene											<1		<1
1,2-Dichlorobenzene											<1		<1
1,2-Dichloroethane											<0.5		<0.5
1,2-Dichloropropane											<0.5		<0.5
1,3-Dichlorobenzene											<1		<1
1,4-Dichlorobenzene											<1		<1
2-Chloroethyl vinyl ether											<1		<1
Benzene											<1		<1
Bromodichloromethane	17	27	28	21	20						28		28
Bromoform	<1	<1	<1	<1	<1						<1		<1
Bromomethane											<1		<1
Carbon tetrachloride											<0.5		<0.5
Chlorobenzene											<1		<1
Chloroethane											<1		<1
Chloroform	74	70	66	46	48						56		74
Chloromethane											<1		<1
cis-1,3-Dichloropropene											<0.5		<0.5
Dibromochloromethane	4	5	6	6	4						8		8
Ethylbenzene											<1		<1
Methylene chloride											<1		<1
Tetrachloroethene											<1		<1
Toluene											<1		<1
trans-1,2-Dichloroethene											<0.5		<0.5
trans-1,3-Dichloropropene											<0.5		<0.5
Trichloroethene											<1		<1
Trichlorofluoromethane											<2		<2
Vinyl chloride											<0.5		<0.5
Acrolein											<2		<2
Acrylonitrile											<0.25		<0.25

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CCWRF (M-004) Effluent Remaining Priority Pollutants

Table 21b

CCWRF (M-004) Effluent Base/Neutral and Acid Extractibles (EPA Method 625), µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
1,2,4-Trichlorobenzene											<1		<1
1,2-Dichlorobenzene											<1		<1
1,3-Dichlorobenzene											<1		<1
1,4-Dichlorobenzene											<1		<1
2,4,6-Trichlorophenol											<1		<1
2,4-Dichlorophenol											<2		<2
2,4-Dimethylphenol											<1		<1
2,4-Dinitrophenol											<3		<3
2,4-Dinitrotoluene											<1		<1
2,6-Dinitrotoluene											<2		<2
2-Chloronaphthalene											<1		<1
2-Chlorophenol											<1		<1
2-Methyl-4,6-dinitrophenol											<2		<2
2-Nitrophenol											<1		<1
3,3-Dichlorobenzidine											<5		<5
4-Bromophenyl phenyl ether											<1		<1
4-Chloro-3-methylphenol											<1		<1
4-Chlorophenyl phenyl ether											<1		<1
4-Nitrophenol											<3		<3
Acenaphthene											<1		<1
Acenaphthylene											<1		<1
Anthracene											<1		<1
Azobenzene											<1		<1
Benzidine											<5		<5
Benzo(a)anthracene											<5		<5
Benzo(a)pyrene											<1		<1
Benzo(b)fluoranthene											<1		<1
Benzo(g,h,i)perylene											<2		<2
Benzo(k)fluoranthene											<1		<1
Bis(2-chloroethoxy)methane											<2		<2
Bis(2-chloroethyl)ether											<1		<1
Bis(2-chloroisopropyl)ether											<1		<1
Bis(2-ethylhexyl)phthalate	<2			<2							<2		<2
Butyl benzyl phthalate											<1		<1
Chrysene											<1		<1
Dibenzo(a,h)anthracene											<1		<1
Diethyl phthalate											<2		<2
Dimethyl phthalate											<1		<1
Di-n-butyl phthalate											<1		<1
Di-n-octyl phthalate											<1		<1
Fluoranthene											<1		<1
Fluorene											<1		<1
Hexachlorobenzene											<1		<1
Hexachlorobutadiene											<1		<1
Hexachlorocyclopentadiene											<5		<5
Hexachloroethane											<1		<1
Indeno(1,2,3-cd)pyrene											<2		<2
Isophorone											<1		<1
Naphthalene											<1		<1
Nitrobenzene											<1		<1
N-Nitrosodimethylamine											<1		<1
N-Nitroso-di-n-propylamine											<1		<1
N-Nitrosodiphenylamine											<1		<1
Pentachlorophenol											1		1
Phenanthrene											<1		<1
Phenol											<1		<1
Pyrene											<1		<1

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CCWRF (M-004) Effluent Remaining Priority Pollutants

Table 21c

CCWRF (M-004) Effluent Pesticides (EPA Method 608), µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
4,4-DDD												<0.006	<0.006
4,4-DDE												<0.006	<0.006
4,4-DDT												<0.008	<0.008
Aldrin												<0.004	<0.004
Alpha-BHC												<0.008	<0.008
Beta-BHC												<0.005	<0.005
Delta-BHC												<0.007	<0.007
Dieldrin												<0.006	<0.006
Endosulfan I												0.045	0.045
Endosulfan II												<0.007	<0.007
Endosulfan Sulfate												<0.009	<0.009
Endrin												<0.009	<0.009
Endrin aldehyde												<0.006	<0.006
Gamma-BHC												<0.01	<0.01
Heptachlor												<0.006	<0.006
Heptachlor epoxide												<0.007	<0.007
Chlordane												<0.1	<0.1
PCB-1016												<0.5	<0.5
PCB-1221												<0.5	<0.5
PCB-1232												<0.5	<0.5
PCB-1242												<0.5	<0.5
PCB-1248												<0.5	<0.5
PCB-1254												<0.5	<0.5
PCB-1260												<0.5	<0.5
Toxaphene												<0.5	<0.5

CCWRF (M-004) Effluent Dioxins & Furans, pg/L (reported values based on detection limit)

PCDD/PCDF Congeners*	0.000			0.000								0.042	0.042
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*TEQ is calculated based on congener concentrations below the reporting limit (RL) set to zero

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Regional Plant Nos. 1, 4, 5, & Carbon Canyon Water Recycling Facility, 2018 NPDES Annual Report

RP-1 Cucamonga Creek Upstream (R-002U) Remaining Priority Pollutants

Table 22a

RP-1 Cucamonga Creek Upstream (R-002U) Remaining Priority Pollutant Metals & Cyanide, µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
Hg, Total Recoverable								<0.05					<0.05
Ag, Total Dissolved								1.33					1.33
As, Total Dissolved								<2					<2
Be, Total Dissolved								<0.5					<0.5
Cd, Total Dissolved								<0.25					<0.25
Cr, Total Dissolved								1.8					1.8
Cu, Total Dissolved								11.5					11.5
Ni, Total Dissolved								2					2
Pb, Total Dissolved								<0.5					<0.5
Sb, Total Dissolved								<1					<1
Se, Total Dissolved								<2					<2
Tl, Total Dissolved								<1					<1
Zn, Total Dissolved								10					10

Table 22b

RP-1 Cucamonga Creek Upstream (R-002U) Volatile Organics (EPA Methods 624, 601/602), µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
1,1,1-Trichloroethane								<1					<1
1,1,2,2-Tetrachloroethane								<0.5					<0.5
1,1,2-Trichloroethane								<1					<1
1,1-Dichloroethane								<0.5					<0.5
1,1-Dichloroethene								<1					<1
1,2-Dichlorobenzene								<1					<1
1,2-Dichloroethane								<1					<1
1,2-Dichloropropane								<0.5					<0.5
1,3-Dichlorobenzene								<1					<1
1,4-Dichlorobenzene								<1					<1
2-Chloroethyl vinyl ether								<1					<1
Benzene								<1					<1
Bromodichloromethane								<1					<1
Bromoform								<1					<1
Bromomethane								<1					<1
Carbon tetrachloride								<1					<1
Chlorobenzene								<1					<1
Chloroethane								<1					<1
Chloroform								<1					<1
Chloromethane								<1					<1
cis-1,3-Dichloropropene								<1					<1
Dibromochloromethane								<1					<1
Ethylbenzene								<1					<1
Methylene chloride								<1					<1
Tetrachloroethene								<1					<1
Toluene								<1					<1
trans-1,2-Dichloroethene								<0.5					<0.5
trans-1,3-Dichloropropene								<1					<1
Trichloroethene								<1					<1
Trichlorofluoromethane								<2					<2
Vinyl chloride								<1					<1
Acrolein								<2					<2
Acrylonitrile								<2					<2

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RP-1 Cucamonga Creek Upstream (R-002U) Remaining Priority Pollutants

Table 22c

RP-1 Cucamonga Creek Upstream (R-002U) Base/Neutral and Acid Extractibles (EPA Method 625), µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
1,2,4-Trichlorobenzene								<1					<1
1,2-Dichlorobenzene								<1					<1
1,3-Dichlorobenzene								<1					<1
1,4-Dichlorobenzene								<1					<1
2,4,6-Trichlorophenol								<1					<1
2,4-Dichlorophenol								<2					<2
2,4-Dimethylphenol								<1					<1
2,4-Dinitrophenol								<3					<3
2,4-Dinitrotoluene								<1					<1
2,6-Dinitrotoluene								<2					<2
2-Chloronaphthalene								<1					<1
2-Chlorophenol								<1					<1
2-Methyl-4,6-dinitrophenol								<2					<2
2-Nitrophenol								<1					<1
3,3-Dichlorobenzidine								<5					<5
4-Bromophenyl phenyl ether								<1					<1
4-Chloro-3-methylphenol								<1					<1
4-Chlorophenyl phenyl ether								<1					<1
4-Nitrophenol								<3					<3
Acenaphthene								<1					<1
Acenaphthylene								<1					<1
Anthracene								<1					<1
Azobenzene								<1					<1
Benidine								<5					<5
Benzo(a)anthracene								<5					<5
Benzo(a)pyrene								<1					<1
Benzo(b)fluoranthene								<1					<1
Benzo(g,h,i)perylene								<2					<2
Benzo(k)fluoranthene								<1					<1
Bis(2-chloroethoxy)methane								<2					<2
Bis(2-chloroethyl)ether								<1					<1
Bis(2-chloroisopropyl)ether								<1					<1
Bis(2-ethylhexyl)phthalate								<2					<2
Butyl benzyl phthalate								<1					<1
Chrysene								<1					<1
Dibenzo(a,h)anthracene								<1					<1
Diethyl phthalate								<2					<2
Dimethyl phthalate								<1					<1
Di-n-butyl phthalate								<1					<1
Di-n-octyl phthalate								<1					<1
Fluoranthene								<1					<1
Fluorene								<1					<1
Hexachlorobenzene								<1					<1
Hexachlorobutadiene								<1					<1
Hexachlorocyclopentadiene								<5					<5
Hexachloroethane								<1					<1
Indeno(1,2,3-cd)pyrene								<2					<2
Isophorone								<1					<1
Naphthalene								<1					<1
Nitrobenzene								<1					<1
N-Nitrosodimethylamine								<1					<1
N-Nitroso-di-n-propylamine								<1					<1
N-Nitrosodiphenylamine								<1					<1
Pentachlorophenol								<2					<2
Phenanthrene								<1					<1
Phenol								<1					<1
Pyrene								<1					<1
TCDD Scan								ND					ND

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RP-1 Cucamonga Creek Upstream (R-002U) Remaining Priority Pollutants

Table 22d

RP-1 Cucamonga Creek Upstream (R-002U) Pesticides (EPA Method 608), µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
4,4-DDD								<0.006					<0.006
4,4-DDE								<0.006					<0.006
4,4-DDT								<0.008					<0.008
Aldrin								<0.004					<0.004
Alpha-BHC								<0.008					<0.008
Beta-BHC								<0.005					<0.005
Delta-BHC								<0.007					<0.007
Dieldrin								<0.006					<0.006
Endosulfan I								<0.01					<0.01
Endosulfan II								<0.007					<0.007
Endosulfan Sulfate								<0.009					<0.009
Endrin								<0.009					<0.009
Endrin aldehyde								<0.006					<0.006
Gamma-BHC								<0.01					<0.01
Heptachlor								<0.006					<0.006
Heptachlor epoxide								<0.007					<0.007
Chlordane								<0.1					<0.1
PCB-1016								<0.5					<0.5
PCB-1221								<0.5					<0.5
PCB-1232								<0.5					<0.5
PCB-1242								<0.5					<0.5
PCB-1248								<0.5					<0.5
PCB-1254								<0.5					<0.5
PCB-1260								<0.5					<0.5
Toxaphene								<0.5					<0.5

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RP-1 Cucamonga Creek Downstream (R-002D) Remaining Priority Pollutants

Table 23a

RP-1 Cucamonga Creek Downstream (R-002D) Remaining Priority Pollutant Metals & Cyanide, µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
Hg, Total Recoverable								<0.05					<0.05
Ag, Total Dissolved								<0.25					<0.25
As, Total Dissolved								<2					<2
Be, Total Dissolved								<0.5					<0.5
Cd, Total Dissolved								<0.25					<0.25
Cr, Total Dissolved								1.1					1.1
Cu, Total Dissolved								7.3					7.3
Ni, Total Dissolved								3					3
Pb, Total Dissolved								<0.5					<0.5
Sb, Total Dissolved								<1					<1
Se, Total Dissolved								<2					<2
Tl, Total Dissolved								<1					<1
Zn, Total Dissolved								27					27

Table 23b

RP-1 Cucamonga Creek Downstream (R-002D) Volatile Organics (EPA Methods 624, 601/602), µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
1,1,1-Trichloroethane								<1					<1
1,1,2,2-Tetrachloroethane								<0.5					<0.5
1,1,2-Trichloroethane								<1					<1
1,1-Dichloroethane								<0.5					<0.5
1,1-Dichloroethene								<1					<1
1,2-Dichlorobenzene								<1					<1
1,2-Dichloroethane								<1					<1
1,2-Dichloropropane								<0.5					<0.5
1,3-Dichlorobenzene								<1					<1
1,4-Dichlorobenzene								<1					<1
2-Chloroethyl vinyl ether								<1					<1
Benzene								<1					<1
Bromodichloromethane								2					2
Bromoform								<1					<1
Bromomethane								<1					<1
Carbon tetrachloride								<1					<1
Chlorobenzene								<1					<1
Chloroethane								<1					<1
Chloroform								10					10
Chloromethane								<1					<1
cis-1,3-Dichloropropene								<1					<1
Dibromochloromethane								<1					<1
Ethylbenzene								<1					<1
Methylene chloride								<1					<1
Tetrachloroethene								<1					<1
Toluene								<1					<1
trans-1,2-Dichloroethene								<0.5					<0.5
trans-1,3-Dichloropropene								<1					<1
Trichloroethene								<1					<1
Trichlorofluoromethane								<2					<2
Vinyl chloride								<1					<1
Acrolein								<2					<2
Acrylonitrile								0.47					0.47

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RP-1 Cucamonga Creek Downstream (R-002D) Remaining Priority Pollutants

Table 23c

RP-1 Cucamonga Creek Downstream (R-002D) Base/Neutral and Acid Extractibles (EPA Method 625), µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
1,2,4-Trichlorobenzene								<1					<1
1,2-Dichlorobenzene								<1					<1
1,3-Dichlorobenzene								<1					<1
1,4-Dichlorobenzene								<1					<1
2,4,6-Trichlorophenol								<1					<1
2,4-Dichlorophenol								<2					<2
2,4-Dimethylphenol								<1					<1
2,4-Dinitrophenol								<3					<3
2,4-Dinitrotoluene								<1					<1
2,6-Dinitrotoluene								<2					<2
2-Chloronaphthalene								<1					<1
2-Chlorophenol								<1					<1
2-Methyl-4,6-dinitrophenol								<2					<2
2-Nitrophenol								<1					<1
3,3-Dichlorobenzidine								<5					<5
4-Bromophenyl phenyl ether								<1					<1
4-Chloro-3-methylphenol								<1					<1
4-Chlorophenyl phenyl ether								<1					<1
4-Nitrophenol								<3					<3
Acenaphthene								<1					<1
Acenaphthylene								<1					<1
Anthracene								<1					<1
Azobenzene								<1					<1
Benzidine								<5					<5
Benzo(a)anthracene								<5					<5
Benzo(a)pyrene								<1					<1
Benzo(b)fluoranthene								<1					<1
Benzo(g,h,i)perylene								<2					<2
Benzo(k)fluoranthene								<1					<1
Bis(2-chloroethoxy)methane								<2					<2
Bis(2-chloroethyl)ether								<1					<1
Bis(2-chloroisopropyl)ether								<1					<1
Bis(2-ethylhexyl)phthalate								<2					<2
Butyl benzyl phthalate								<1					<1
Chrysene								<1					<1
Dibenzo(a,h)anthracene								<1					<1
Diethyl phthalate								<2					<2
Dimethyl phthalate								<1					<1
Di-n-butyl phthalate								<1					<1
Di-n-octyl phthalate								<1					<1
Fluoranthene								<1					<1
Fluorene								<1					<1
Hexachlorobenzene								<1					<1
Hexachlorobutadiene								<1					<1
Hexachlorocyclopentadiene								<5					<5
Hexachloroethane								<1					<1
Indeno(1,2,3-cd)pyrene								<2					<2
Isophorone								<1					<1
Naphthalene								<1					<1
Nitrobenzene								<1					<1
N-Nitrosodimethylamine								<1					<1
N-Nitroso-di-n-propylamine								<1					<1
N-Nitrosodiphenylamine								<1					<1
Pentachlorophenol								<2					<2
Phenanthrene								<1					<1
Phenol								<1					<1
Pyrene								<1					<1
TCDD Scan								ND					ND

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RP-1 Cucamonga Creek Downstream (R-002D) Remaining Priority Pollutants

Table 23d

RP-1 Cucamonga Creek Downstream (R-002D) Pesticides (EPA Method 608), µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
4,4-DDD								<0.006					<0.006
4,4-DDE								<0.006					<0.006
4,4-DDT								<0.008					<0.008
Aldrin								<0.004					<0.004
Alpha-BHC								<0.008					<0.008
Beta-BHC								<0.005					<0.005
Delta-BHC								<0.007					<0.007
Dieldrin								<0.006					<0.006
Endosulfan I								<0.01					<0.01
Endosulfan II								<0.007					<0.007
Endosulfan Sulfate								<0.009					<0.009
Endrin								<0.009					<0.009
Endrin aldehyde								<0.006					<0.006
Gamma-BHC								<0.01					<0.01
Heptachlor								<0.006					<0.006
Heptachlor epoxide								<0.007					<0.007
Chlordane								<0.1					<0.1
PCB-1016								<0.5					<0.5
PCB-1221								<0.5					<0.5
PCB-1232								<0.5					<0.5
PCB-1242								<0.5					<0.5
PCB-1248								<0.5					<0.5
PCB-1254								<0.5					<0.5
PCB-1260								<0.5					<0.5
Toxaphene								<0.5					<0.5

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RP-5 Chino Creek Upstream (R-003U) Remaining Priority Pollutants

Table 24a

RP-5 Chino Creek Upstream (R-003U) Remaining Priority Pollutant Metals & Cyanide, µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
Hg, Total Recoverable											<0.05		<0.05
Ag, Total Dissolved											<0.25		<0.25
As, Total Dissolved											<2		<2
Be, Total Dissolved											<0.5		<0.5
Cd, Total Dissolved											<0.25		<0.25
Cr, Total Dissolved											<0.5		<0.5
Cu, Total Dissolved											4.4		4.4
Ni, Total Dissolved											<1		<1
Pb, Total Dissolved											<0.5		<0.5
Sb, Total Dissolved											<1		<1
Se, Total Dissolved											<2		<2
Tl, Total Dissolved											<1		<1
Zn, Total Dissolved											58		58

Table 24b

RP-5 Chino Creek Upstream (R-003U) Volatile Organics (EPA Methods 624, 601/602), µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
1,1,1-Trichloroethane											<1		<1
1,1,2,2-Tetrachloroethane											<0.5		<0.5
1,1,2-Trichloroethane											<1		<1
1,1-Dichloroethane											<0.5		<0.5
1,1-Dichloroethene											<1		<1
1,2-Dichlorobenzene											<1		<1
1,2-Dichloroethane											<1		<1
1,2-Dichloropropane											<0.5		<0.5
1,3-Dichlorobenzene											<1		<1
1,4-Dichlorobenzene											<1		<1
2-Chloroethyl vinyl ether											<1		<1
Benzene											<1		<1
Bromodichloromethane											15		15
Bromoform											<1		<1
Bromomethane											<1		<1
Carbon tetrachloride											<1		<1
Chlorobenzene											<1		<1
Chloroethane											<1		<1
Chloroform											44		44
Chloromethane											<1		<1
cis-1,3-Dichloropropene											<1		<1
Dibromochloromethane											5		5
Ethylbenzene											<1		<1
Methylene chloride											<1		<1
Tetrachloroethene											<1		<1
Toluene											<1		<1
trans-1,2-Dichloroethene											<0.5		<0.5
trans-1,3-Dichloropropene											<1		<1
Trichloroethene											<1		<1
Trichlorofluoromethane											<2		<2
Vinyl chloride											<1		<1
Acrolein											<2		<2
Acrylonitrile											<2		<2

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RP-5 Chino Creek Upstream (R-003U) Remaining Priority Pollutants

Table 24c

RP-5 Chino Creek Upstream (R-003U) Base/Neutral and Acid Extractibles (EPA Method 625), µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
1,2,4-Trichlorobenzene											<1		<1
1,2-Dichlorobenzene											<1		<1
1,3-Dichlorobenzene											<1		<1
1,4-Dichlorobenzene											<1		<1
2,4,6-Trichlorophenol											<1		<1
2,4-Dichlorophenol											<2		<2
2,4-Dimethylphenol											<1		<1
2,4-Dinitrophenol											<3		<3
2,4-Dinitrotoluene											<1		<1
2,6-Dinitrotoluene											<2		<2
2-Chloronaphthalene											<1		<1
2-Chlorophenol											<1		<1
2-Methyl-4,6-dinitrophenol											<2		<2
2-Nitrophenol											<1		<1
3,3-Dichlorobenzidine											<5		<5
4-Bromophenyl phenyl ether											<1		<1
4-Chloro-3-methylphenol											<1		<1
4-Chlorophenyl phenyl ether											<1		<1
4-Nitrophenol											<3		<3
Acenaphthene											<1		<1
Acenaphthylene											<1		<1
Anthracene											<1		<1
Azobenzene											<1		<1
Benzidine											<5		<5
Benzo(a)anthracene											<5		<5
Benzo(a)pyrene											<1		<1
Benzo(b)fluoranthene											<1		<1
Benzo(g,h,i)perylene											<2		<2
Benzo(k)fluoranthene											<1		<1
Bis(2-chloroethoxy)methane											<2		<2
Bis(2-chloroethyl)ether											<1		<1
Bis(2-chloroisopropyl)ether											<1		<1
Bis(2-ethylhexyl)phthalate											<2		<2
Butyl benzyl phthalate											<1		<1
Chrysene											<1		<1
Dibenzo(a,h)anthracene											<1		<1
Diethyl phthalate											<2		<2
Dimethyl phthalate											<1		<1
Di-n-butyl phthalate											<1		<1
Di-n-octyl phthalate											<1		<1
Fluoranthene											<1		<1
Fluorene											<1		<1
Hexachlorobenzene											<1		<1
Hexachlorobutadiene											<1		<1
Hexachlorocyclopentadiene											<5		<5
Hexachloroethane											<1		<1
Indeno(1,2,3-cd)pyrene											<2		<2
Isophorone											<1		<1
Naphthalene											<1		<1
Nitrobenzene											<1		<1
N-Nitrosodimethylamine											<1		<1
N-Nitroso-di-n-propylamine											<1		<1
N-Nitrosodiphenylamine											<1		<1
Pentachlorophenol											<2		<2
Phenanthrene											<1		<1
Phenol											<1		<1
Pyrene											<1		<1
TCDD Scan											ND		ND

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RP-5 Chino Creek Upstream (R-003U) Remaining Priority Pollutants

Table 24d

RP-5 Chino Creek Upstream (R-003U) Pesticides (EPA Method 608), µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
4,4-DDD												<0.006	<0.006
4,4-DDE												<0.006	<0.006
4,4-DDT												<0.008	<0.008
Aldrin												<0.004	<0.004
Alpha-BHC												<0.008	<0.008
Beta-BHC												<0.005	<0.005
Delta-BHC												<0.007	<0.007
Dieldrin												<0.006	<0.006
Endosulfan I												0.046	0.046
Endosulfan II												<0.007	<0.007
Endosulfan Sulfate												<0.009	<0.009
Endrin												<0.009	<0.009
Endrin aldehyde												<0.006	<0.006
Gamma-BHC												<0.01	<0.01
Heptachlor												<0.006	<0.006
Heptachlor epoxide												<0.007	<0.007
Chlordane												<0.1	<0.1
PCB-1016												<0.5	<0.5
PCB-1221												<0.5	<0.5
PCB-1232												<0.5	<0.5
PCB-1242												<0.5	<0.5
PCB-1248												<0.5	<0.5
PCB-1254												<0.5	<0.5
PCB-1260												<0.5	<0.5
Toxaphene												<0.5	<0.5

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RP-5 Chino Creek Downstream (R-003D) Remaining Priority Pollutants

Table 25a

RP-5 Chino Creek Downstream (R-003D) Remaining Priority Pollutant Metals & Cyanide, µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
Hg, Total Recoverable											<0.05		<0.05
Ag, Total Dissolved											<0.25		<0.25
As, Total Dissolved											1		1
Be, Total Dissolved											<0.5		<0.5
Cd, Total Dissolved											<0.25		<0.25
Cr, Total Dissolved											<0.5		<0.5
Cu, Total Dissolved											3.4		3.4
Ni, Total Dissolved											<1		<1
Pb, Total Dissolved											<0.5		<0.5
Sb, Total Dissolved											<1		<1
Se, Total Dissolved											<2		<2
Tl, Total Dissolved											<1		<1
Zn, Total Dissolved											34		34

Table 25b

RP-5 Chino Creek Downstream (R-003D) Volatile Organics (EPA Methods 624, 601/602), µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
1,1,1-Trichloroethane											<1		<1
1,1,1,2-Tetrachloroethane											<0.5		<0.5
1,1,2-Trichloroethane											<1		<1
1,1-Dichloroethane											<0.5		<0.5
1,1-Dichloroethene											<1		<1
1,2-Dichlorobenzene											<1		<1
1,2-Dichloroethane											<1		<1
1,2-Dichloropropane											<0.5		<0.5
1,3-Dichlorobenzene											<1		<1
1,4-Dichlorobenzene											<1		<1
2-Chloroethyl vinyl ether											<1		<1
Benzene											<1		<1
Bromodichloromethane											5		5
Bromoform											<1		<1
Bromomethane											<1		<1
Carbon tetrachloride											<1		<1
Chlorobenzene											<1		<1
Chloroethane											<1		<1
Chloroform											20		20
Chloromethane											<1		<1
cis-1,3-Dichloropropene											<1		<1
Dibromochloromethane											<1		<1
Ethylbenzene											<1		<1
Methylene chloride											<1		<1
Tetrachloroethene											<1		<1
Toluene											<1		<1
trans-1,2-Dichloroethene											<0.5		<0.5
trans-1,3-Dichloropropene											<1		<1
Trichloroethene											<1		<1
Trichlorofluoromethane											<2		<2
Vinyl chloride											<1		<1
Acrolein											<2		<2
Acrylonitrile											<2		<2

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RP-5 Chino Creek Downstream (R-003D) Remaining Priority Pollutants

Table 25c

RP-5 Chino Creek Downstream (R-003D) Base/Neutral and Acid Extractibles (EPA Method 625), µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
1,2,4-Trichlorobenzene											<1		<1
1,2-Dichlorobenzene											<1		<1
1,3-Dichlorobenzene											<1		<1
1,4-Dichlorobenzene											<1		<1
2,4,6-Trichlorophenol											<1		<1
2,4-Dichlorophenol											<2		<2
2,4-Dimethylphenol											<1		<1
2,4-Dinitrophenol											<3		<3
2,4-Dinitrotoluene											<1		<1
2,6-Dinitrotoluene											<2		<2
2-Chloronaphthalene											<1		<1
2-Chlorophenol											<1		<1
2-Methyl-4,6-dinitrophenol											<2		<2
2-Nitrophenol											<1		<1
3,3-Dichlorobenzidine											<5		<5
4-Bromophenyl phenyl ether											<1		<1
4-Chloro-3-methylphenol											<1		<1
4-Chlorophenyl phenyl ether											<1		<1
4-Nitrophenol											<3		<3
Acenaphthene											<1		<1
Acenaphthylene											<1		<1
Anthracene											<1		<1
Azobenzene											<1		<1
Benzidine											<5		<5
Benzo(a)anthracene											<5		<5
Benzo(a)pyrene											<1		<1
Benzo(b)fluoranthene											<1		<1
Benzo(g,h,i)perylene											<2		<2
Benzo(k)fluoranthene											<1		<1
Bis(2-chloroethoxy)methane											<2		<2
Bis(2-chloroethyl)ether											<1		<1
Bis(2-chloroisopropyl)ether											<1		<1
Bis(2-ethylhexyl)phthalate											<2		<2
Butyl benzyl phthalate											<1		<1
Chrysene											<1		<1
Dibenzo(a,h)anthracene											<1		<1
Diethyl phthalate											<2		<2
Dimethyl phthalate											<1		<1
Di-n-butyl phthalate											<1		<1
Di-n-octyl phthalate											<1		<1
Fluoranthene											<1		<1
Fluorene											<1		<1
Hexachlorobenzene											<1		<1
Hexachlorobutadiene											<1		<1
Hexachlorocyclopentadiene											<5		<5
Hexachloroethane											<1		<1
Indeno(1,2,3-cd)pyrene											<2		<2
Isophorone											<1		<1
Naphthalene											<1		<1
Nitrobenzene											<1		<1
N-Nitrosodimethylamine											<1		<1
N-Nitroso-di-n-propylamine											<1		<1
N-Nitrosodiphenylamine											<1		<1
Pentachlorophenol											<2		<2
Phenanthrene											<1		<1
Phenol											<1		<1
Pyrene											<1		<1
TCDD Scan											ND		ND

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RP-5 Chino Creek Downstream (R-003D) Remaining Priority Pollutants

Table 25d

RP-5 Chino Creek Downstream (R-003D) Pesticides (EPA Method 608), µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
4,4-DDD												<0.006	<0.006
4,4-DDE												<0.006	<0.006
4,4-DDT												<0.008	<0.008
Aldrin												<0.004	<0.004
Alpha-BHC												<0.008	<0.008
Beta-BHC												<0.005	<0.005
Delta-BHC												<0.007	<0.007
Dieldrin												<0.006	<0.006
Endosulfan I												0.022	0.022
Endosulfan II												<0.007	<0.007
Endosulfan Sulfate												<0.009	<0.009
Endrin												<0.009	<0.009
Endrin aldehyde												<0.006	<0.006
Gamma-BHC												<0.01	<0.01
Heptachlor												<0.006	<0.006
Heptachlor epoxide												<0.007	<0.007
Chlordane												<0.1	<0.1
PCB-1016												<0.5	<0.5
PCB-1221												<0.5	<0.5
PCB-1232												<0.5	<0.5
PCB-1242												<0.5	<0.5
PCB-1248												<0.5	<0.5
PCB-1254												<0.5	<0.5
PCB-1260												<0.5	<0.5
Toxaphene												<0.5	<0.5

INLAND EMPIRE UTILITIES AGENCY

Regional Plant Nos. 1, 4, 5, & Carbon Canyon Water Recycling Facility, 2018 NPDES Annual Report
 CCWRF Chino Creek Upstream (R-004U) Remaining Priority Pollutants

Table 26a

CCWRF Chino Creek Upstream (R-004U) Remaining Priority Pollutant Metals & Cyanide, µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
Hg, Total Recoverable											<0.05		<0.05
Ag, Total Dissolved											<0.25		<0.25
As, Total Dissolved											1		1
Be, Total Dissolved											<0.5		<0.5
Cd, Total Dissolved											<0.25		<0.25
Cr, Total Dissolved											<0.5		<0.5
Cu, Total Dissolved											6.1		6.1
Ni, Total Dissolved											<1		<1
Pb, Total Dissolved											0.5		0.5
Sb, Total Dissolved											<1		<1
Se, Total Dissolved											<2		<2
Tl, Total Dissolved											<1		<1
Zn, Total Dissolved											26		26

INLAND EMPIRE UTILITIES AGENCY

Regional Plant Nos. 1, 4, 5, & Carbon Canyon Water Recycling Facility, 2018 NPDES Annual Report

CCWRF Chino Creek Upstream (R-004U) Remaining Priority Pollutants

Table 26b

CCWRF Chino Creek Upstream (R-004U) Volatile Organics (EPA Methods 624, 601/602), µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
1,1,1-Trichloroethane											<1		<1
1,1,2,2-Tetrachloroethane											<0.5		<0.5
1,1,2-Trichloroethane											<1		<1
1,1-Dichloroethane											<0.5		<0.5
1,1-Dichloroethene											<1		<1
1,2-Dichlorobenzene											<1		<1
1,2-Dichloroethane											<1		<1
1,2-Dichloropropane											<0.5		<0.5
1,3-Dichlorobenzene											<1		<1
1,4-Dichlorobenzene											<1		<1
2-Chloroethyl vinyl ether											<1		<1
Benzene											<1		<1
Bromodichloromethane											<1		<1
Bromoform											<1		<1
Bromomethane											<1		<1
Carbon tetrachloride											<1		<1
Chlorobenzene											<1		<1
Chloroethane											<1		<1
Chloroform											<1		<1
Chloromethane											<1		<1
cis-1,3-Dichloropropene											<1		<1
Dibromochloromethane											<1		<1
Ethylbenzene											<1		<1
Methylene chloride											<1		<1
Tetrachloroethene											<1		<1
Toluene											<1		<1
trans-1,2-Dichloroethene											<0.5		<0.5
trans-1,3-Dichloropropene											<1		<1
Trichloroethene											<1		<1
Trichlorofluoromethane											<2		<2
Vinyl chloride											<1		<1
Acrolein											<2		<2
Acrylonitrile											<2		<2

INLAND EMPIRE UTILITIES AGENCY

Regional Plant Nos. 1, 4, 5, & Carbon Canyon Water Recycling Facility, 2018 NPDES Annual Report

CCWRF Chino Creek Upstream (R-004U) Remaining Priority Pollutants

Table 26c

CCWRF Chino Creek Upstream (R-004U) Base/Neutral and Acid Extractibles (EPA Method 625), µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
1,2,4-Trichlorobenzene											<1		<1
1,2-Dichlorobenzene											<1		<1
1,3-Dichlorobenzene											<1		<1
1,4-Dichlorobenzene											<1		<1
2,4,6-Trichlorophenol											<1		<1
2,4-Dichlorophenol											<2		<2
2,4-Dimethylphenol											<1		<1
2,4-Dinitrophenol											<3		<3
2,4-Dinitrotoluene											<1		<1
2,6-Dinitrotoluene											<2		<2
2-Chloronaphthalene											<1		<1
2-Chlorophenol											<1		<1
2-Methyl-4,6-dinitrophenol											<2		<2
2-Nitrophenol											<1		<1
3,3-Dichlorobenzidine											<5		<5
4-Bromophenyl phenyl ether											<1		<1
4-Chloro-3-methylphenol											<1		<1
4-Chlorophenyl phenyl ether											<1		<1
4-Nitrophenol											<3		<3
Acenaphthene											<1		<1
Acenaphthylene											<1		<1
Anthracene											<1		<1
Azobenzene											<1		<1
Benzidine											<5		<5
Benzo(a)anthracene											<5		<5
Benzo(a)pyrene											<1		<1
Benzo(b)fluoranthene											<1		<1
Benzo(g,h,i)perylene											<2		<2
Benzo(k)fluoranthene											<1		<1
Bis(2-chloroethoxy)methane											<2		<2
Bis(2-chloroethyl)ether											<1		<1
Bis(2-chloroisopropyl)ether											<1		<1
Bis(2-ethylhexyl)phthalate											<2		<2
Butyl benzyl phthalate											<1		<1
Chrysene											<1		<1
Dibenzo(a,h)anthracene											<1		<1
Diethyl phthalate											<2		<2
Dimethyl phthalate											<1		<1
Di-n-butyl phthalate											<1		<1
Di-n-octyl phthalate											<1		<1
Fluoranthene											<1		<1
Fluorene											<1		<1
Hexachlorobenzene											<1		<1
Hexachlorobutadiene											<1		<1
Hexachlorocyclopentadiene											<5		<5
Hexachloroethane											<1		<1
Indeno(1,2,3-cd)pyrene											<2		<2
Isophorone											<1		<1
Naphthalene											<1		<1
Nitrobenzene											<1		<1
N-Nitrosodimethylamine											<1		<1
N-Nitroso-di-n-propylamine											<1		<1
N-Nitrosodiphenylamine											<1		<1
Pentachlorophenol											<2		<2
Phenanthrene											<1		<1
Phenol											<1		<1
Pyrene											<1		<1
TCDD Scan											ND		ND

INLAND EMPIRE UTILITIES AGENCY

Regional Plant Nos. 1, 4, 5, & Carbon Canyon Water Recycling Facility, 2018 NPDES Annual Report

CCWRF Chino Creek Upstream (R-004U) Remaining Priority Pollutants

Table 26d

CCWRF Chino Creek Upstream (R-004U) Pesticides (EPA Method 608), µg/L

Constituent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Max.
4,4-DDD												<0.006	<0.006
4,4-DDE												<0.006	<0.006
4,4-DDT												<0.008	<0.008
Aldrin												<0.004	<0.004
Alpha-BHC												<0.008	<0.008
Beta-BHC												<0.005	<0.005
Delta-BHC												<0.007	<0.007
Dieldrin												<0.006	<0.006
Endosulfan I												<0.01	<0.01
Endosulfan II												<0.007	<0.007
Endosulfan Sulfate												<0.009	<0.009
Endrin												<0.009	<0.009
Endrin aldehyde												<0.006	<0.006
Gamma-BHC												<0.01	<0.01
Heptachlor												<0.006	<0.006
Heptachlor epoxide												<0.007	<0.007
Chlordane												<0.1	<0.1
PCB-1016												<0.5	<0.5
PCB-1221												<0.5	<0.5
PCB-1232												<0.5	<0.5
PCB-1242												<0.5	<0.5
PCB-1248												<0.5	<0.5
PCB-1254												<0.5	<0.5
PCB-1260												<0.5	<0.5
Toxaphene												<0.5	<0.5



IEUA FY 2018-2019 Annual Energy Report

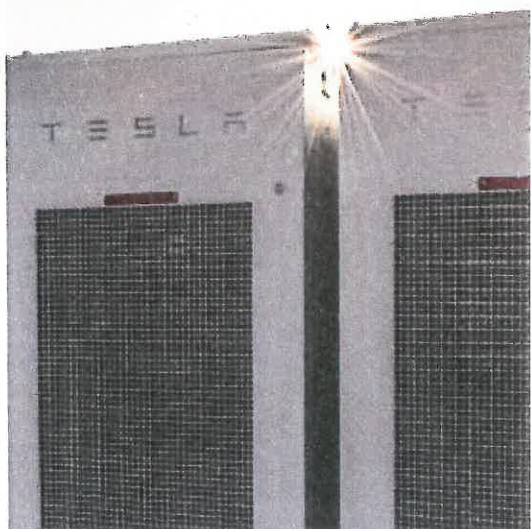
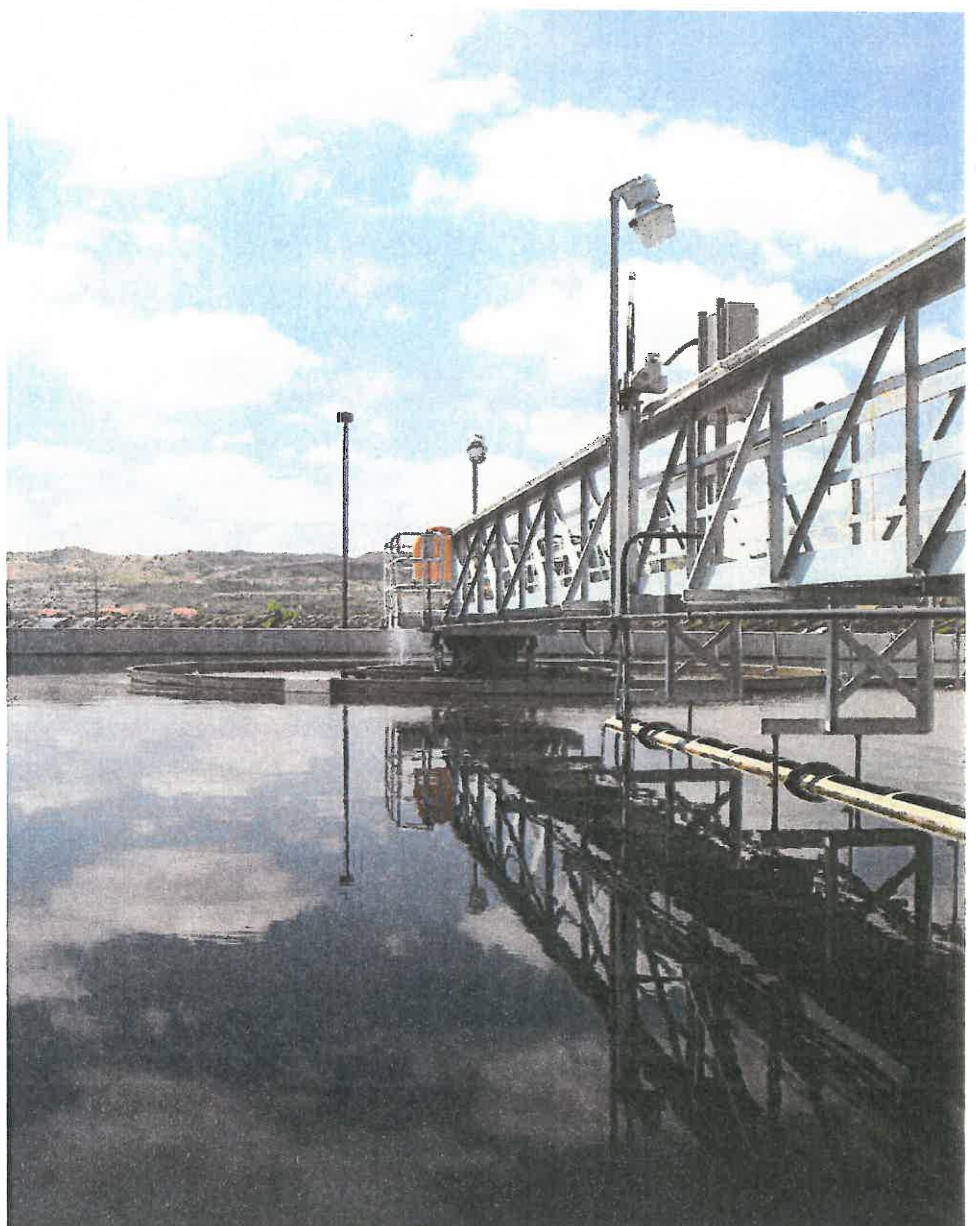
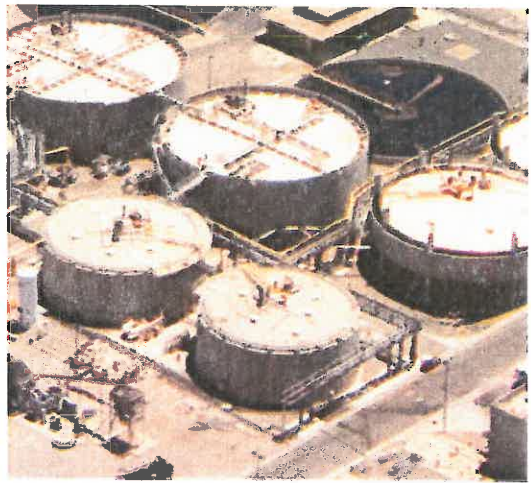


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IEUA is committed to optimizing facility energy use and effectively managing renewable resources to achieve peak power independence and contain future energy costs.

Introduction

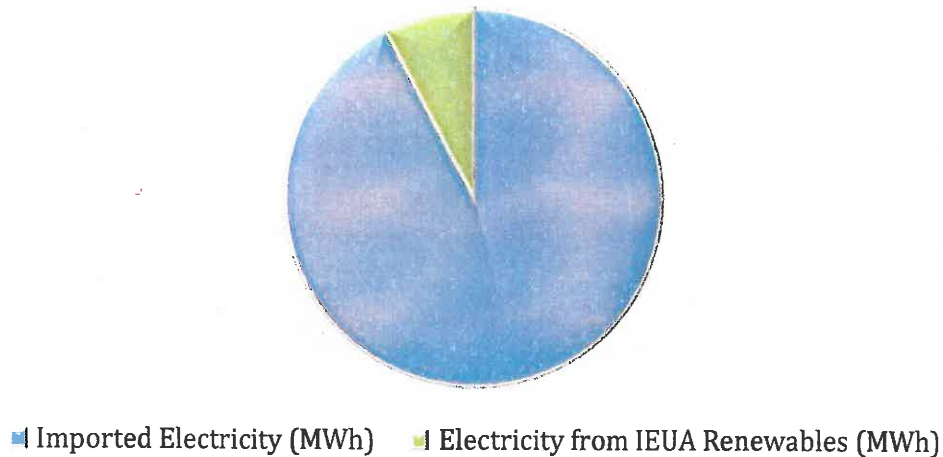
The 2018/19 Energy Report tracks IEUA's energy consumption, renewable generation performance and savings, and energy efficiency projects for the fiscal year. The report includes a brief description of upcoming projects and initiatives that will be implemented over the next few years.

Summary

In 2018/19, IEUA:

- Consumed 73,598 MWh of electricity (Figure 1).
- Generated 9% of the electricity consumed from renewable energy (Figure 1) resulting in \$58,000 in savings for the fiscal year. Savings to date since 2008 is approximately \$1,080,000.
- Spent \$8.3 million for utilities, that includes imported electricity, renewable energy and natural gas.
- Completed the following energy efficiency projects:
 - 1.5 MW Battery Storage Installation (RP-4)
 - 1.5 MW Solar Installation (IERCF)
 - Process Optimization (RP-1)

Figure 1: IEUA Electricity Source for 2018/19



Did you know?

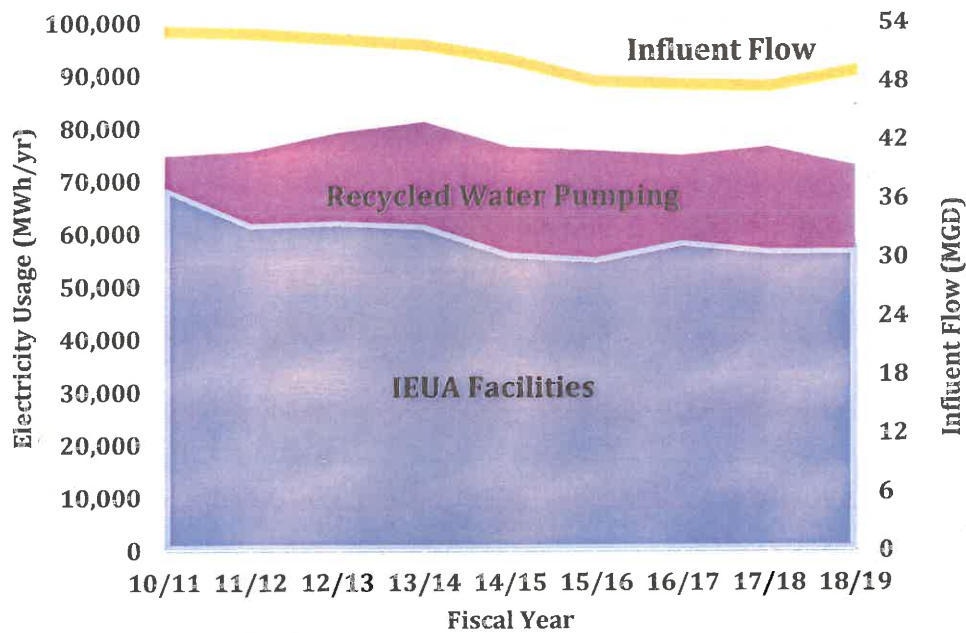
** In 2017 a typical U.S. household used 11,764 kWh (U.S. Energy Information Administration).*

** The renewable energy generated by IEUA would be able to provide electricity to at least 544 homes.*

Flow and Energy Consumption

- In 2018/19, the annual average influent flow to the regional water recycling plants was 49.1 MGD which was an increase of 3.4% as compared to the previous fiscal year of 47.5 MGD (Figure 2). The increase is likely due to population growth, and inflow and infiltration of stormwater and groundwater into the sanitary sewer system during the heavy rainy season.
- In 2018/19, IEUA facilities which include the regional water recycling plants, composting facility, and recycled water pumping used approximately 73,598 MWh of electricity (Figure 2). The electricity consumption for 2018/19 decreased by 3.8% as compared to the previous fiscal year of 76,527 MWh. This was due to the decreased recycled water pumping because of the heavy rain during the wintertime. In parallel, the increase in influent flows resulted in a 0.5% increase of electricity use at the regional water recycling plants.

Figure 2: IEUA Electricity Use and Regional Influent Flows



Power Demand

- During the fiscal year, agency-wide demand ranged from 7,600 kW during the winter months to 10,400 kW during the summer months (Figure 4 and 5). The large seasonal variation in the power demand is attributed to the recycled water demand and the related recycle water pumping.

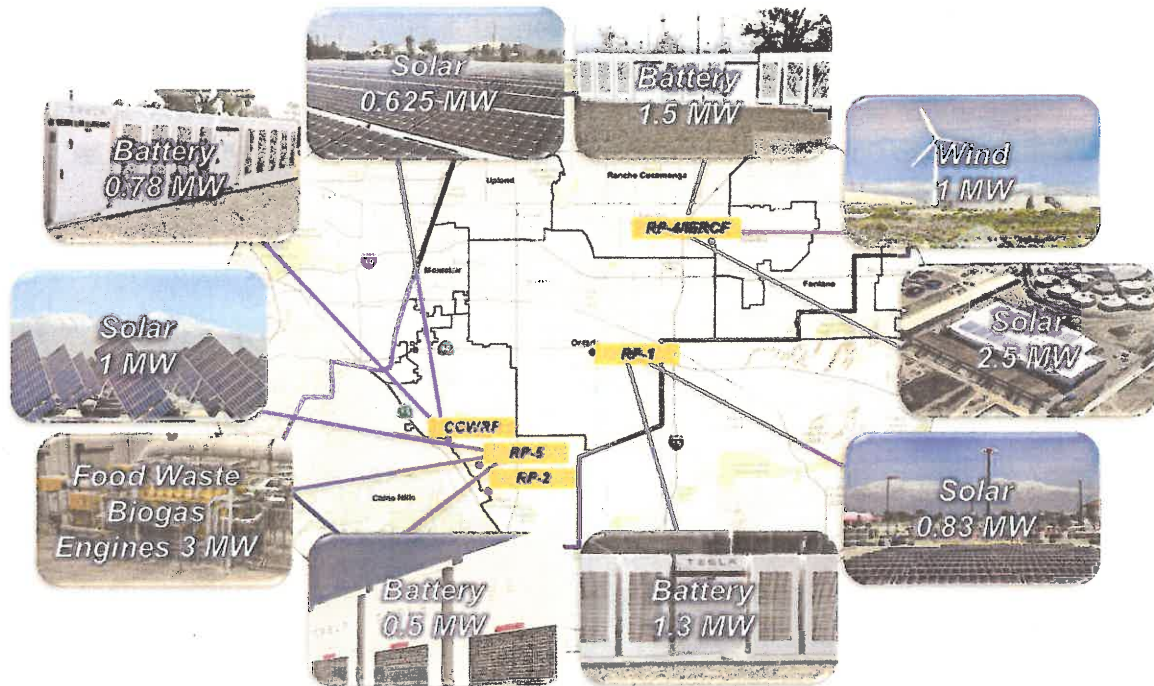
Expenditure

- The cost of electricity remains the highest non-labor operations and maintenance (O&M) expenditure for IEUA. In 2018/19, the annual cost for electricity was \$8.3 million which was a decrease of 5% as compared to the previous fiscal year of \$8.7 million due to the decrease in energy consumption. IEUA diversified energy procurement approach, that includes on-site generation Power Purchase Agreements (PPA), electricity purchase from Southern California Edison, and direct access contract with Shell Energy North America, continues to provide rate stabilization and cost effectiveness.

Renewable Energy Production and Storage

- IEUA's diverse renewable portfolio consists of 5.0 MW solar, 1.0 MW of wind, 3.0 MW of engines, and 4.0 MW battery (Figure 3). If fully operational, onsite generation would provide approximately 86% of the electricity needed to satisfy agency-wide demand during peak hours (Figure 4); current output is approximately 33% of the summer peak demand with the Renewable Energy Efficiency Project (REEP) Engines offline (Figure 5). It should be noted that the battery storage optimizes energy management by charging from the grid during off-peak periods and discharging during on-peak periods, therefore it is not considered as onsite generation. In order to move closer to the goal of peak power independence by 2030, IEUA plans to complete the installation of the necessary emissions control required by South Coast Air Quality Management District to have the REEP engines operating. This would allow IEUA to be able to operate completely off the grid during peak energy usage periods.

Figure 3: IEUA's Diverse Renewable Portfolio



- IEUA's renewable portfolio generated 9% of the electricity used in 2018/19. Of the electricity consumed by IEUA;
 - 8.5% was produced by the solar across IEUA facilities; and
 - 0.3% was produced by the wind turbine at RP-4.
- In 2018/19, 6,402 MWh of electricity was generated on site, 1.7% less than 2017/18. Although an increase in generation was expected because of the installation of the 1.5 MW of additional solar at Inland Empire Regional Composting Facility (IERCF) in December 2018, the decrease was caused by several onsite energy sources being offline.
- Despite PPA average rates were typically higher than the average grid price in 2018/19, renewable energy projects provided overall \$58,000 in savings, as a result of lower standby charges compared to the facility demand charge rate.
- Generated solar electricity varies throughout the year due to the different number of sunlight hours, solar generation is usually higher in March and lower in December (Figure 5). In addition, CCWRF solar was inoperable during the second half of the fiscal year. SunPower is currently in the process of repairing the existing solar facility which is expected to go online October 2019.
- As a requirement by Southern California Edison (SCE) during the installation of the new solar at IERCF, the wind turbine had to be put offline in December 2018 until the proper protections were put in place to prevent impact to the transmission line.

Typically, the wind turbine produces more in the winter time, but this fiscal year, more generation was experienced in the fall (Figure 5).

- The REEP engine has been offline since August 2017 due to Inland BioEnergy, LLC (IBE) permitting issues with the Santa Ana Watershed Project Authority (SAWPA). IBE, the lessee and operator of the RP-5 Solids Handling Facility (SHF), ceased operation and terminated their existing agreement with IEUA. Previously, IBE received food waste, produced biogas, and generated electricity to be used at RP-5.
- In 2015, IEUA partnered with Advanced Microgrid Solutions (AMS) through an energy management services (EMS) agreement to install 4 MW of battery storage and 1.5 MW of solar to optimize energy management and achieve cost savings through strategic procurement. The battery storage spread across four facilities have been in operation since July 2017 with commercial operation began November 2018.

Figure 4: Connected Renewables' Capacities vs. Agency-Wide Power Demand

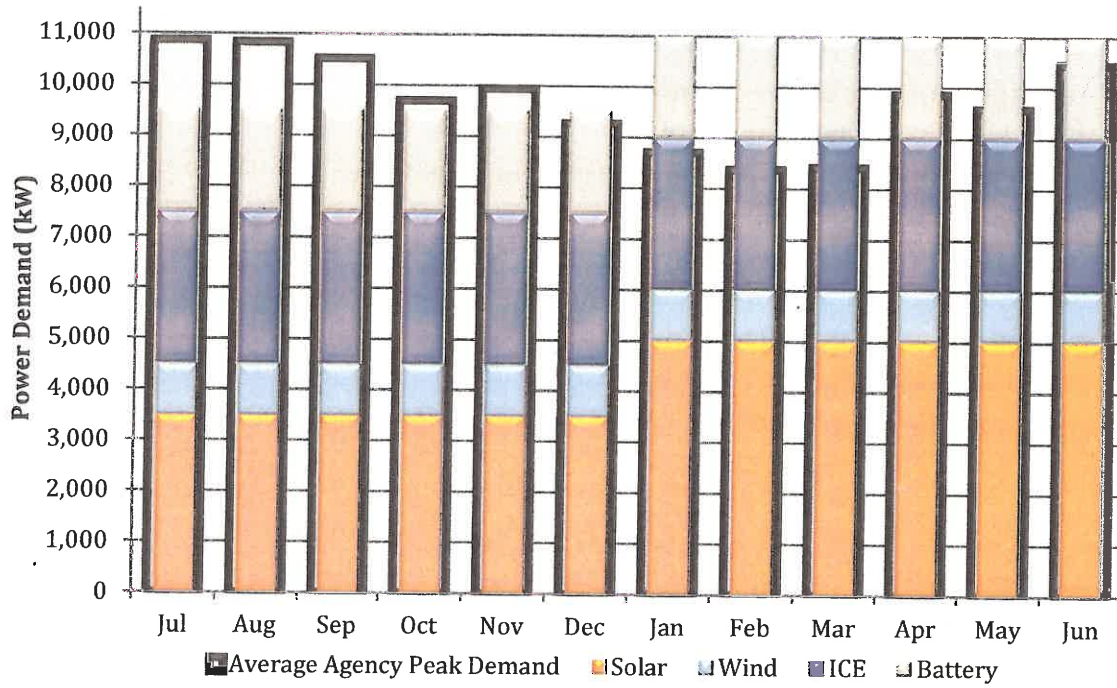
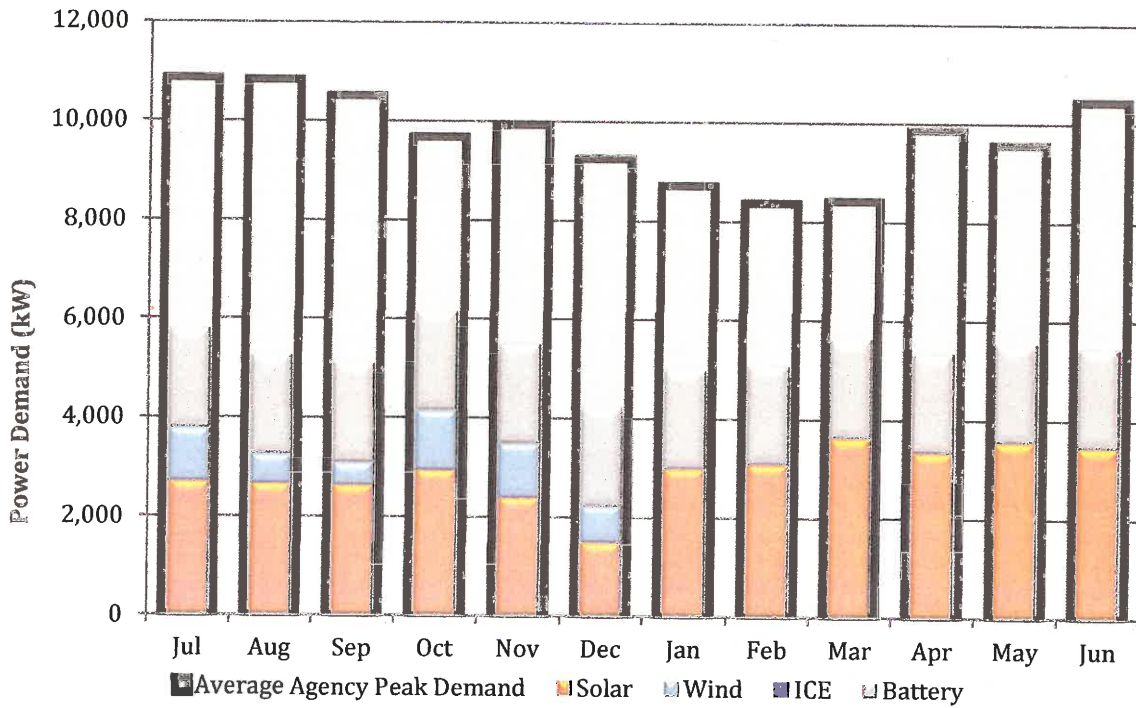
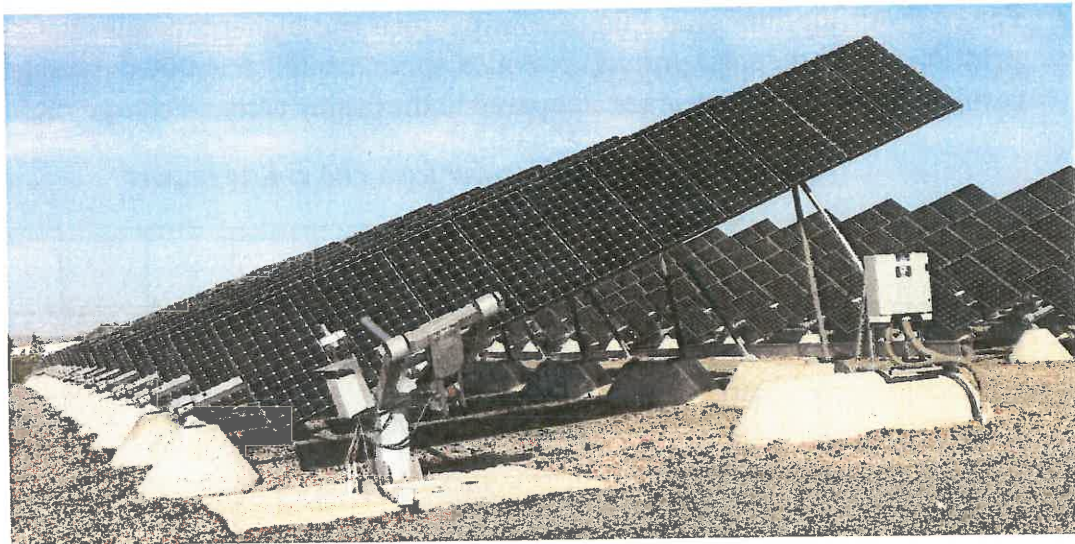


Figure 5: Actual Renewables' Output



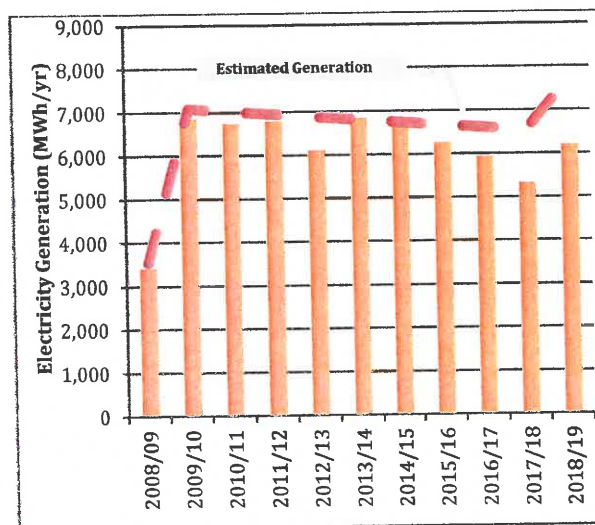
Solar



Solar Performance

- Solar across IEUA facilities generated 6,207 MWh of renewable energy, 16.6% more than 2017/18. The increased output was due to the 1.5 MW addition of solar at IERCF, which was put online in the end of December 2019. It should be noted that the existing 3.5 MW of solar is through a PPA with SunPower and the new solar is through an EMS contract with AMS.

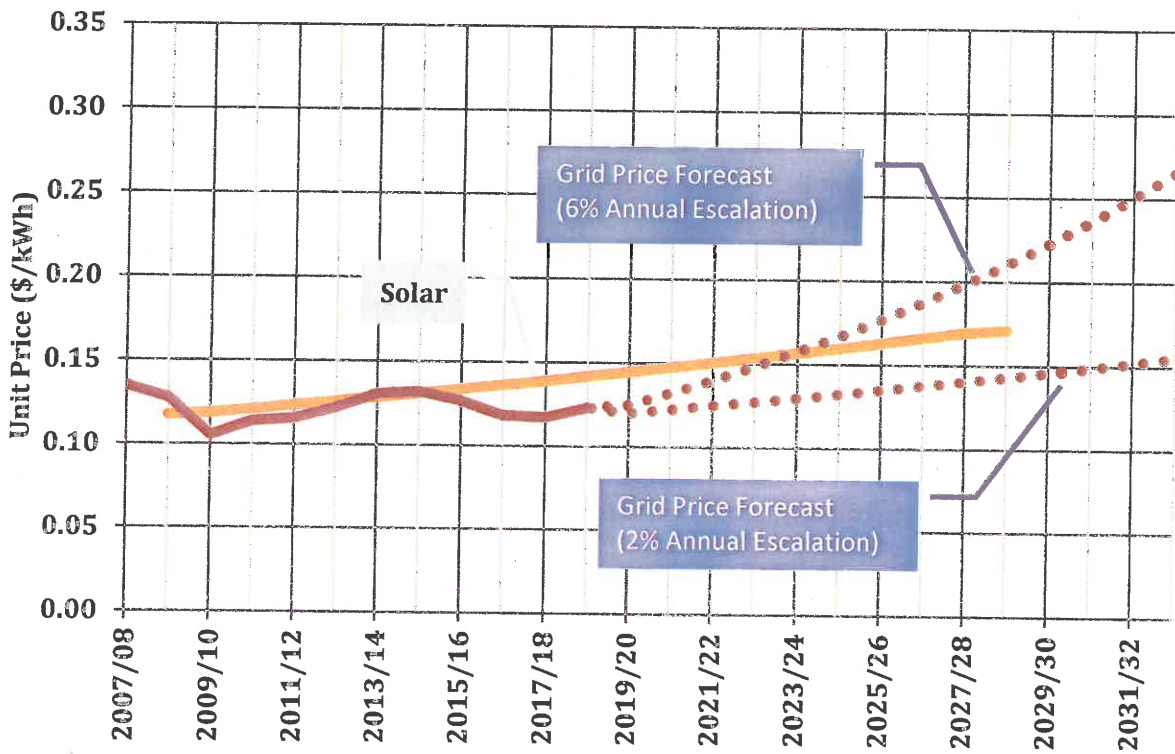
Figure 6: Solar Electricity Generation



Solar Cost

- For 2018/19, the SunPower PPA rate for the solar was higher than the average grid price. However, the solar projects provided approximately \$54,000 in savings, as a result of lower standby charges compared to the facility demand charge rate.

Figure 7: Cost of Solar Power from PPA vs Grid Import

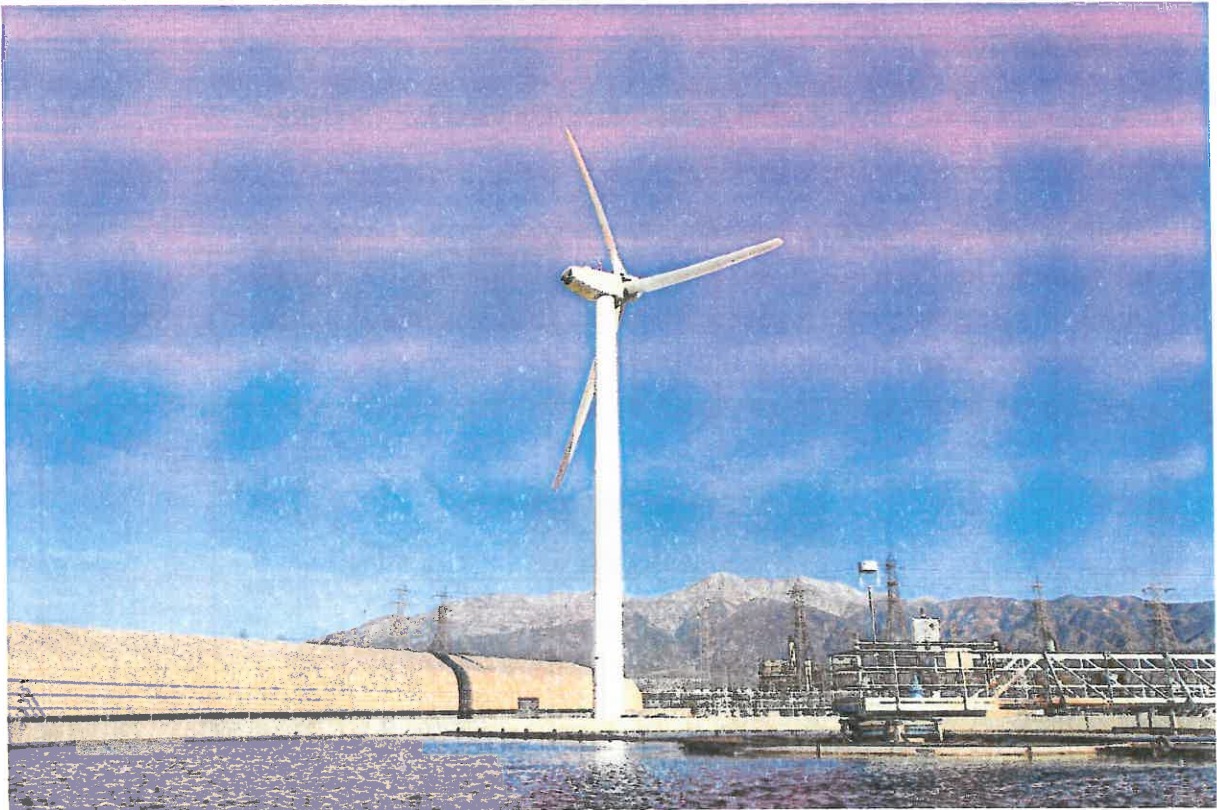


- Solar generated \$293,000 from 2008/09 to 2018/19.

Table 1: Savings from Solar Power PPA

Savings FY 08/09 – FY 18/19	\$293,000
Range of Savings PPA Term (FY 08/09 – FY 28/29)	\$661,000 (2% Esc) \$2,741,000 (6% Esc)

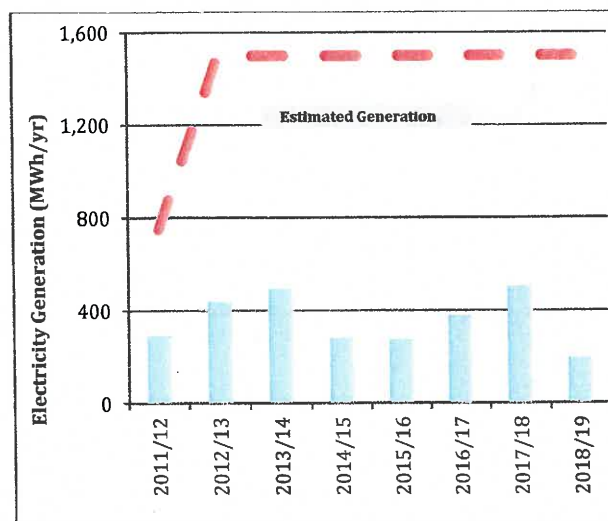
Wind



Wind Performance

- In FY 2018/19 the wind turbine at RP-4 generated 195 MWh of renewable energy, 61% lower than 2017/18 due to the system being offline since December 2018.

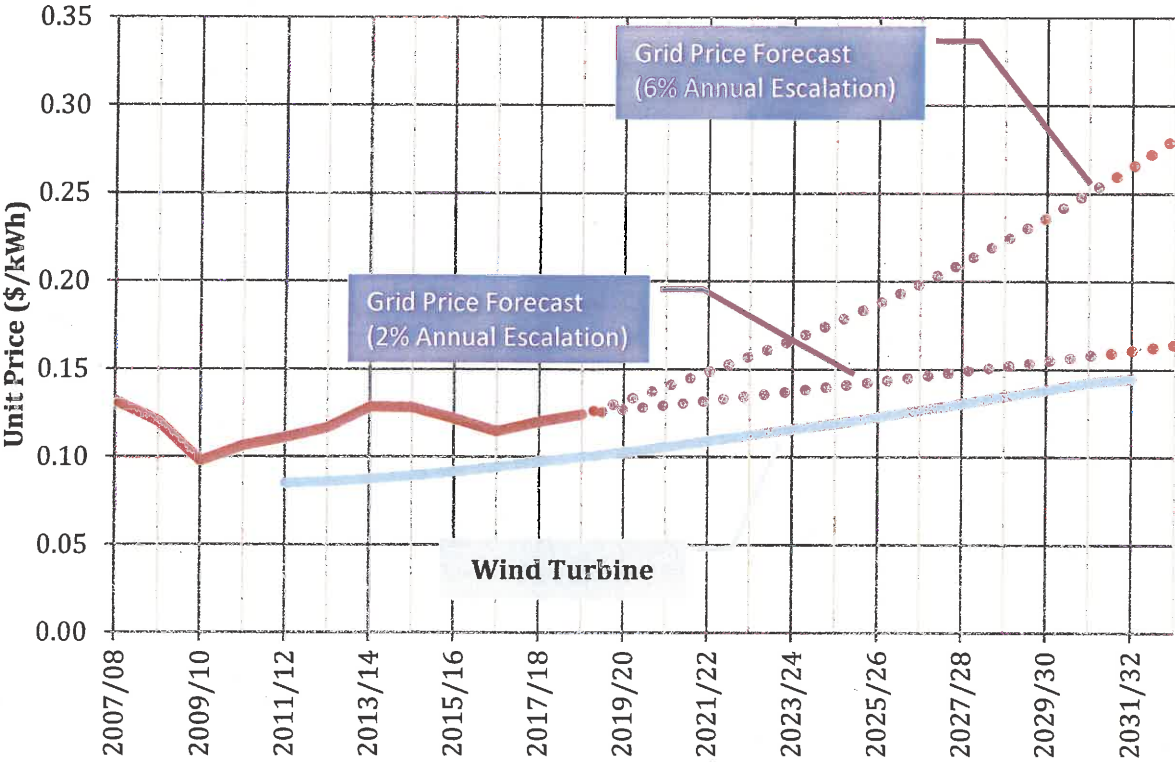
Figure 8: Wind Electricity Generation



Wind Cost

- For 2018/19, the PPA rate for the wind turbine was 20% lower than the average grid price.

Figure 9: Cost of Wind Power vs Grid Import

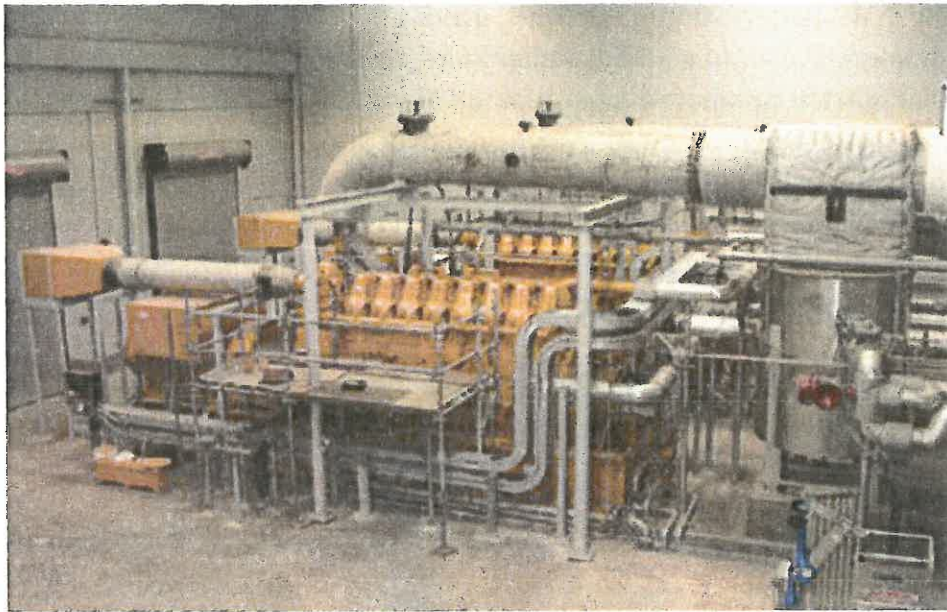


- Wind generated \$78,000 in savings from 2011/12 to 2018/19.

Table 2: Savings from Wind Power

Savings FY 11/12 – FY 17/18	\$78,000
Range of Savings PPA Term (FY 11/12 – FY 31/32)	\$181,000 (2% Esc) \$434,000 (6% Esc)

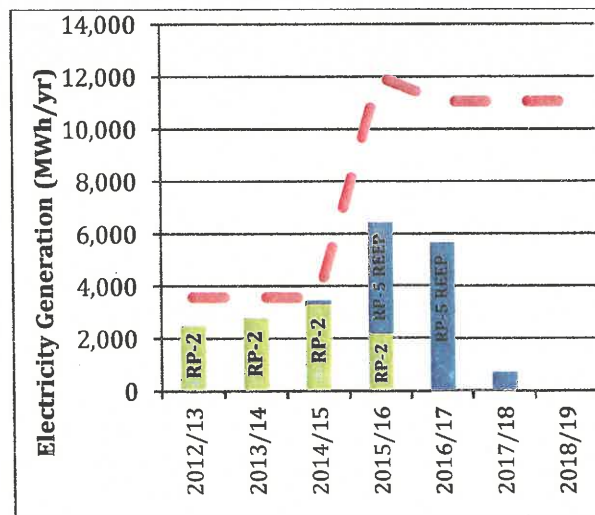
Engine



Engine Performance

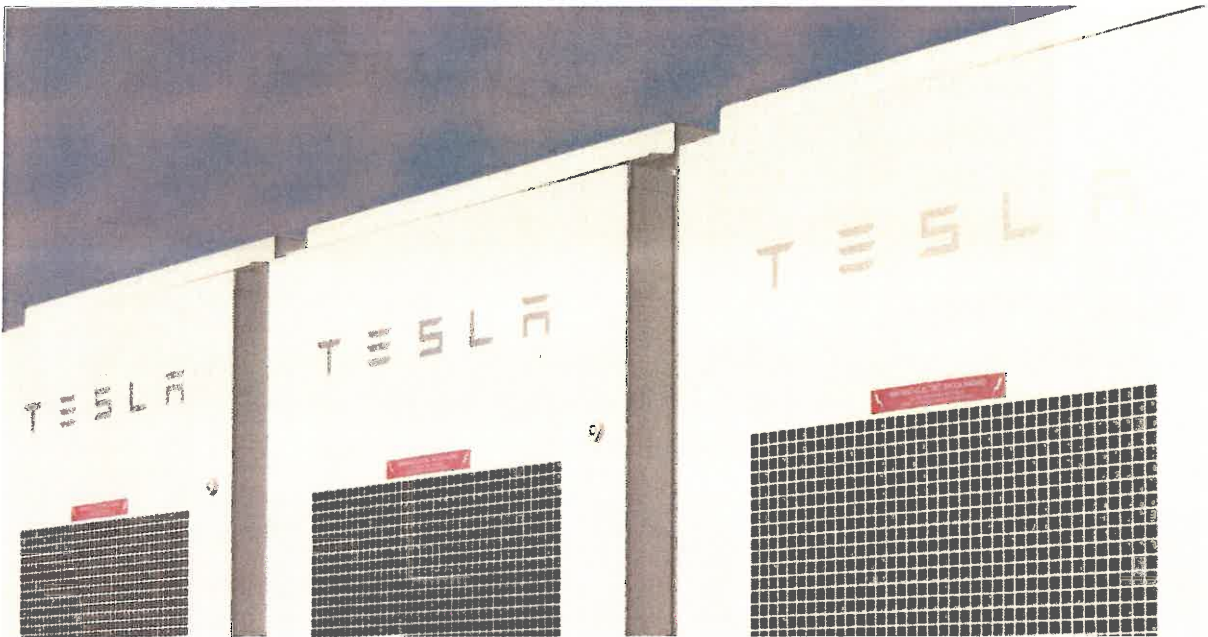
- Renewable energy was not generated by the REEP engines since they did not operate the entire fiscal year. The REEP engines at RP-5 were put offline in August 2017 due to permitting issues with SAWPA.

Figure 10: Engine(s) Electricity Generation



Battery Storage + Solar

- The AMS battery storage at RP-1, RP-5 and CCWRF (2.5 MW combined) started commercial operation in November 2018, the 1.5 MW battery storage and 1.5 MW of solar started commercial operation on March 2019. In the first month of operation, the system at IERCF and RP-4 achieved over \$16,000 in energy cost savings and was able to incur a 1,500-kilowatt peak reduction from the electric utility; however, since the EMS contract has a set annual minimum guaranteed savings for the Agency, a comprehensive evaluation of the energy storage performance will be available at the end of the first year of operation.



Energy Efficiency Projects

- IEUA continues to work with Southern California Edison (SCE) and Southern California Regional Energy Network (SoCalREN) to conduct comprehensive energy audits and to implement projects to reduce electricity consumption throughout its facilities and operations. In FY 18/19, the following process optimization project was completed:

Process Optimization

- This project replaced the grit blowers at RP-1 with energy efficient blowers.
- Completed: June 2019
- Expected annual savings: 288,266 kWh and \$30,552
- Avoided power usage: 18 kW

RP-4 Battery Storage and IERCF Rooftop Solar

- AMS installed 1.5 MW of battery storage at RP-4 and 1.5 MW of solar at IERCF. The new solar is integrated with the battery and the onsite renewable sources. Through an EMS contract, the battery and solar system will improve energy load management and provide cost savings by shifting electricity use from the grid during peak periods.
- Completed: December 2018



The new 1.5 MW solar panels at IERCF installed by AMS.

Upcoming Projects

Process Optimization

- This project will install automated ammonia controls at RP-1. The project was completed August 2019.

Pumping Project

- This project will replace 4 recycled water pumps at RP-1. The project is expected to be completed in August 2020.

Greenhouse Gas Emissions Annual Reporting

- IEUA will continue to voluntarily report its greenhouse gas emissions to The Climate Registry.

Beneficial Use of Biogas

- IEUA is evaluating opportunities to beneficially use the biogas generated at RP-1 in addition to on-site use for digesters heating.

UCR Energy Demand Management

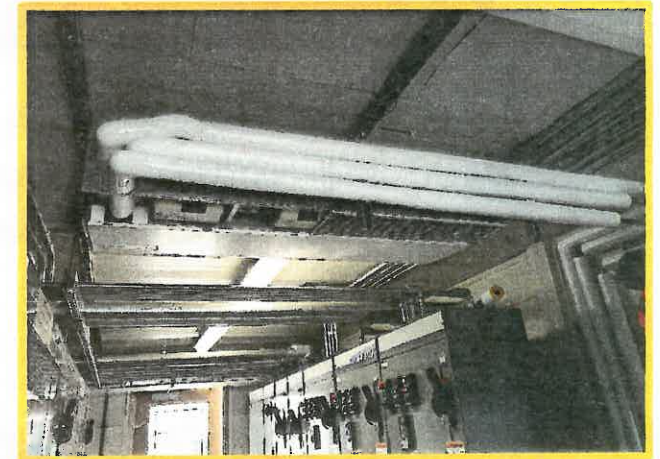
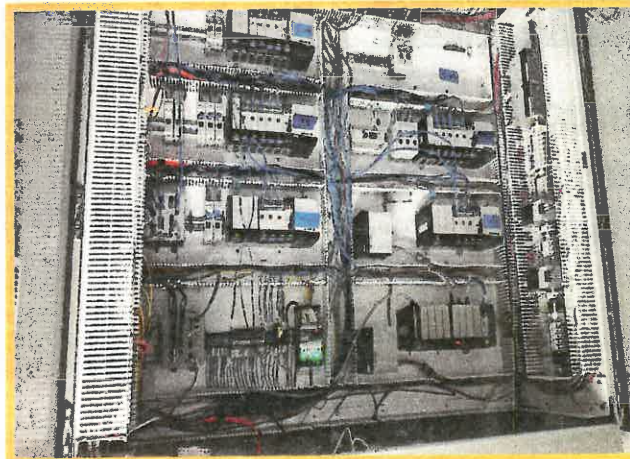
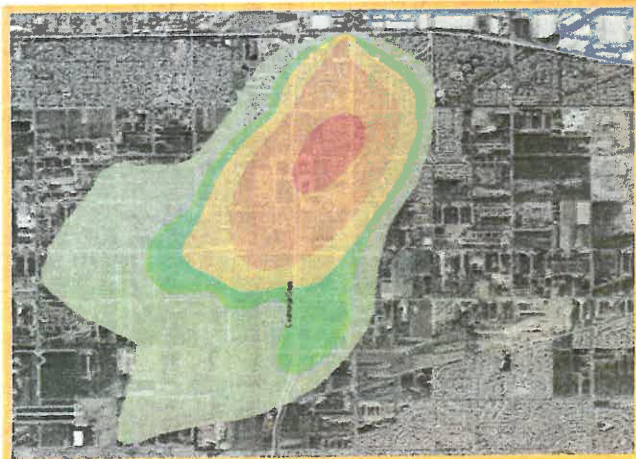
- IEUA will continue to work with University of California, Riverside (UCR) to demonstrate and deploy energy management, data acquisition, and supervisory control strategies to improve efficiency and reduce both peak loads and electricity costs at CCWRF.

In-Conduit Hydroelectric Power Generation

- IEUA has issued a Request For Information (RFI) for recommendations for feasible and cost-effective in-conduit hydropower technology projects. The proposal received is being evaluated.

INFORMATION
ITEM
2C

Engineering and Construction Management Project Updates



SCADA Enterprise System - (RP-1 P&ID's)

Project Goal: Improve SCADA Migration Delivery



RP-1 SCADA MCC

Total Project Budget: \$300 K
Project Completion: September 2019
Construction Percent Complete: 100%

Phase	Consultant/ Contractor	Current Contract	Amendments/ Change Orders
Pre-design	Arcadis	\$246 K	0%
Construction	N/A	N/A	N/A

SCADA Enterprise System (RP4 SCADA Migration)

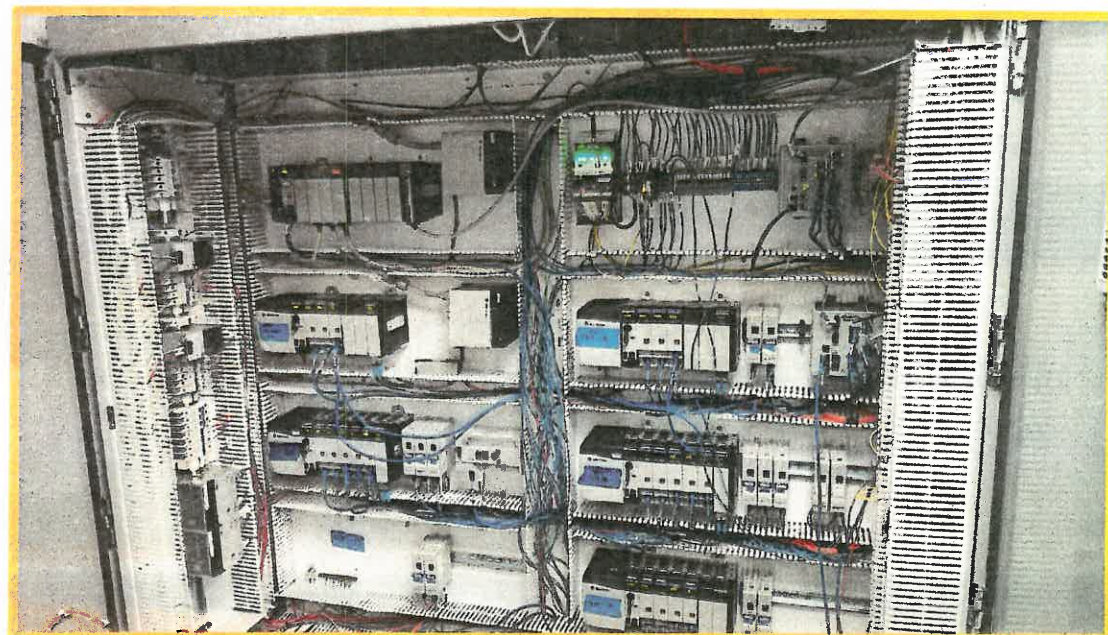
Project Goal: Enhance Reliability

Total Project Budget: \$4.8 M

Project Completion: November 2019

Overall Percent Complete: 80%

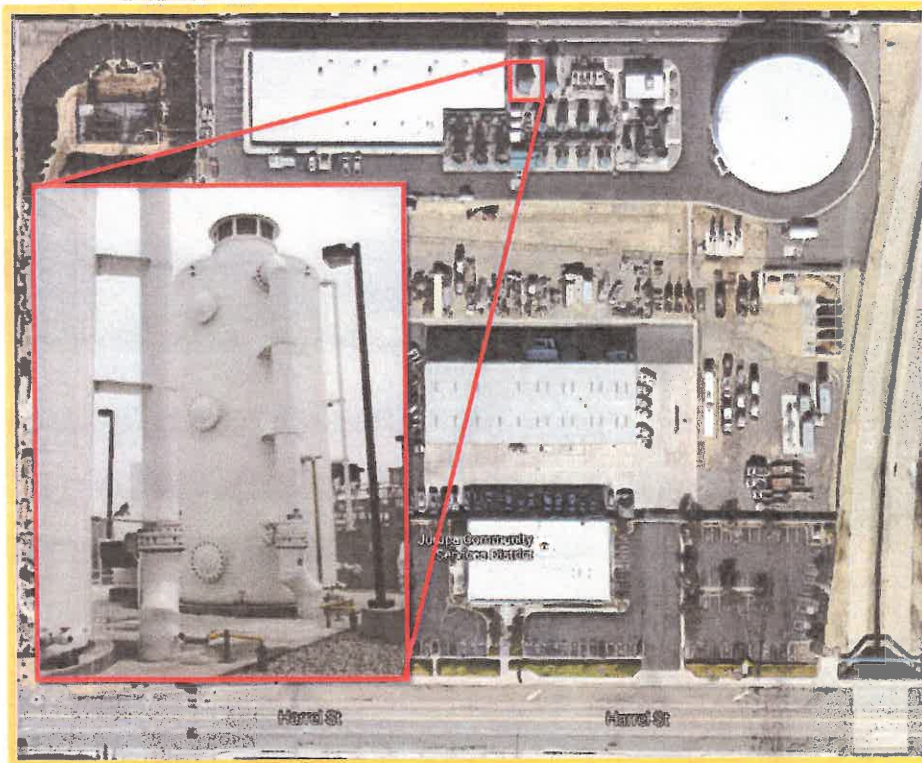
Phase	Consultant/ Contractor	Current Contract	Amendments/ Change Orders
Pre-design	Westin	\$423 K	52%
Design/Build	CDM Constructors	\$3.2 M	15%



RP-4 SCADA Main Control Panel

TCE Plume Cleanup

Project Goal: Clean Up Groundwater



Chino II Desalter Existing Decarbonation Tower

Total Project Budget: \$21.3 M
Project Completion: March 2021
Percent Complete: 60%

Phase	Consultant/ Contractor	Current Contract	Amendments/ Change Orders
Design	Multiple	\$2,105,717	0%
Monitoring Well Construction	Yellow Jacket	\$462,270	0%
Well II-12 Construction	TBD	TBD	0%
Chino II Decarbonator Construction	TBD	TBD	0%
Phase I Pipeline Construction	Gwinco	\$1.4 M	0%
Phase II Pipeline Construction	TBD	TBD	0%

System Cathodic Protection Improvements

Project Goal: Increase Asset Life

Total Project Budget: \$3.5 M

Project Completion: September 2019

Construction Percent Complete: 100%

Phase	Consultant/ Contractor	Current Contract	Amendments/ Change Orders
Design	Corrpro	\$199 K	0%
Construction (Current)	Corrpro	\$561 K	19.64%



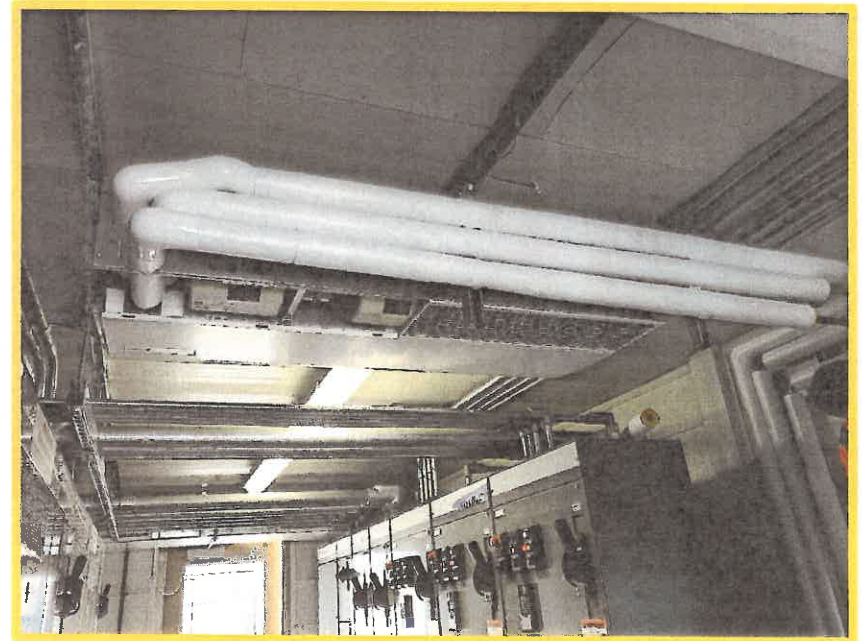
3. 24" CMLC Recoating

CCWRF RW Pump Station Control Bldg HVAC Modifications

Increase Asset Life

Total Project Budget: \$70 K
Project Completion: September 2019
Design Percent Complete: 100%

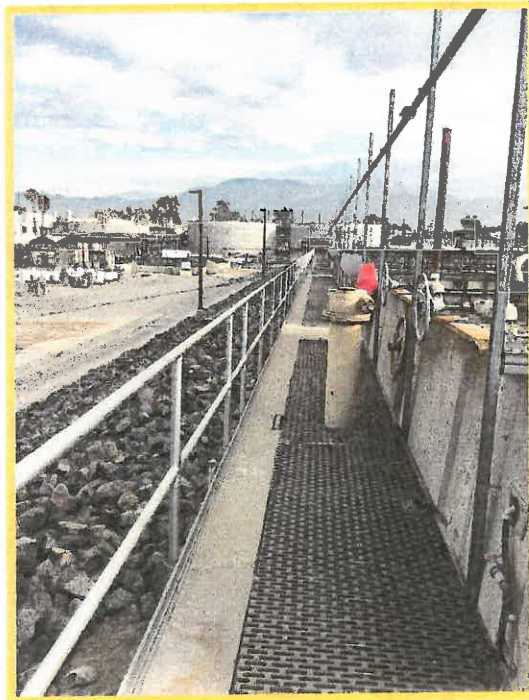
Phase	Consultant/ Contractor	Current Contract	Amendments/ Change Orders
Design	GHD	\$20,995	59.2%
Construction	Allison Mechanical	\$42,000	7.7%



New Ductless Fan Coil with Insulated Electrical Conduits

RP-1 Aeration Basin Catwalk Safety Railing

Project Goal: Improve Safety



Aeration Basin Railing Installed

Total Project Budget: \$155,000
Project Completion: July 2019
Construction Percent Complete: 100%

Phase	Consultant/ Contractor	Current Contract	Amendments/ Change Orders
Construction	AToM Engineering Construction	\$117,000	0%