



**Sacramento Regional County Sanitation District  
Sacramento Regional Wastewater Treatment Plant**

**Progress Report  
Method of Compliance Work Plan  
and Schedule for  
Ammonia, Nitrate plus Nitrite, and Disinfection By-Product  
Effluent Limitations  
and  
Title 22 or Equivalent Disinfection Requirements**

**Submitted: July 9, 2021**

## Contents

<b>1.0 Introduction.....</b>	<b>1</b>
<b>2.0 Overall Compliance Schedule.....</b>	<b>1</b>
<b>3.0 Progress towards Compliance.....</b>	<b>4</b>
3.1 Pilot Study Implementation .....	4
3.2 Design of Treatment Systems .....	4
3.3 Environmental Analysis.....	5
3.4 Construction Phase .....	5
3.5 Startup and Commissioning.....	5
3.6 Regional San Project Acceptance .....	5
3.7 Ammonia Pollution Prevention.....	6
3.8 Nitrate plus Nitrite Pollution Prevention .....	6
3.9 Disinfection Byproducts Pollution Prevention.....	7
3.10 Schedule.....	7

## Tables

Table 1. Compliance Schedule for Ammonia Final Effluent Limitations .....	1
Table 2. Compliance Schedule for Title 22 or Equivalent Treatment Requirements .....	2
Table 3. Time Schedule for Nitrate Plus Nitrite Requirements .....	2
Table 4. Time Schedule for Chlorodibromomethane and Dichlorobromomethane .....	3
Table 5. Major EchoWater Projects.....	5

## Appendices

- Appendix A. Status of Ammonia and Nitrate Reduction and Title 22 or Equivalent Projects
- Appendix B. Work Plan Schedule for Compliance

### **Sacramento Regional County Sanitation District Contact Information**

*For additional information on this work plan, please contact:*

Mike Crooks, Deputy Director of Operations  
Sacramento Regional County Sanitation District  
Email: [crooksm@sacsewer.com](mailto:crooksm@sacsewer.com)  
Phone: 916.875.9416

## 1.0 Introduction

On June 9, 2011, the Sacramento Regional County Sanitation District (Regional San) submitted a Method of Compliance Work Plan and Schedule for Ammonia Effluent Limitations and Title 22 or Equivalent Treatment Requirements (Work Plan). This submittal was required by the compliance schedule contained in the waste discharge requirements Order No. R5-2010-0114 (2010 NPDES Permit<sup>1</sup>) adopted by the Central Valley Regional Water Quality Control Board (Regional Board) on December 9, 2010 for the Sacramento Regional Wastewater Treatment Plant (SRWTP). The 2010 NPDES Permit imposed new final effluent limitations for ammonia and nitrate (requiring nutrient reduction facilities) and new requirements for Title 22 or equivalent disinfection requirements (requiring tertiary treatment facilities). The 2010 NPDES Permit required the submittal of annual progress reports following approval of the Work Plan. The Regional Board approved the Work Plan on July 8, 2011.

On April 21, 2016, the Regional Board adopted Order R5-2016-0020 (2016 NPDES Permit) for the SRWTP which rescinded and replaced the 2010 NPDES Permit. The 2016 NPDES Permit also required compliance with final effluent limitations for ammonia and nitrate and Title 22 or equivalent disinfection.

On December 4, 2020, the Regional Board adopted Time Schedule Order R5-2020-0904 for the SRWTP (2020 TSO). The 2020 TSO contains time schedules for compliance with the ammonia, nitrate plus nitrite, and chlorodibromomethane and dichlorobromomethane. The compliance dates provided in the 2020 TSO are also reflected in Tables 1, 3, and 4 below.

On April 22, 2021, the Regional Board adopted Order R5-2021-0019 (2021 NPDES Permit) for the SRWTP. The 2021 NPDES Permit continues the compliance schedule for Title 22 or equivalent disinfection requirements and imposes final effluent limitations for ammonia, nitrate plus nitrite, and chlorodibromomethane and dichlorobromomethane. The compliance dates provided in the 2021 NPDES Permit are included in Table 2 below.

## 2.0 Overall Compliance Schedule

The following compliance schedules for Ammonia Effluent Limitations and Title 22 or Equivalent treatment requirements are listed below in Table 1 and Table 2, respectively:

**Table 1. Time Schedule for Ammonia Final Effluent Limitations**

Task	Relevant Dates
i. Submit Method of Compliance Work Plan/Schedule	Due Date: 9 June 2011 Date Submitted: 9 June 2011 Date Approved: 8 July 2011 Status: Complete
ii. Submit and Implement Pollution Prevention Plan (PPP) for Ammonia <sup>1</sup>	Due Date: 9 December 2011 Date Submitted: 8 December 2011 Revised Plan Submitted: 15 November 2012 Date Approved: 17 May 2013

---

<sup>1</sup> The 2010 NPDES Permit was amended several times. All the amendments were incorporated into Regional Board Order No. R5-2010-0114-04

## Method of Compliance Work Plan For Ammonia

Task	Relevant Dates
	Status: Complete
iii. Progress Reports <sup>2</sup>	Progress report required by permit due 9 July, annually
iv. Begin CEQA process for Compliance Project	Due Date: 19 May 2015 Process Initiated: 22 August 2012 Date EIR Approved: 24 September 2014 Status: Complete
v. Begin Construction of Compliance Project	Due Date: 19 May 2018 Status: Complete; Biological Nutrient Removal Notice to Proceed-April 27, 2016
vi. Date on which the final effluent limitations become effective under the 2016 NPDES Permit	Due Date: 11 May 2021 <sup>3</sup>
vii. Date through which the interim effluent limitations under the 2020 TSO apply	31 May 2022

<sup>1</sup>The Discharger shall continue to implement the PPP.

<sup>2</sup>The progress reports shall detail the steps implemented towards achieving compliance with waste discharge requirements, including studies, construction progress, evaluation of measures implemented, and recommendations for additional measures as necessary to achieve full compliance by the final compliance date.

<sup>3</sup>Regional San notified the Regional Board on May 10, 2021, of compliance with the final effluent limitation for ammonia under the 2016 NPDES Permit.

**Table 2. Compliance Schedule for Title 22 or Equivalent Treatment Requirements**

Task	Relevant Dates
i. Submit Method of Compliance Work Plan/Schedule	Due Date: 9 June 2011 Date Submitted: 9 June 2011 Date Approved: 8 July 2011 Status: Complete
ii. Progress Reports <sup>1</sup>	Progress report required by permit due 9 July, annually
iii. Begin CEQA process for Compliance Project	Due Date: 16 May 2017 Process Initiated: 22 August 2012 Date EIR Approved: 24 September 2014 Status: Complete
iv. Begin Construction of Compliance Project	Due Date: 16 May 2020 Status: Complete; Tertiary Treatment Facility Notice to Proceed-April 11, 2018
v. Submit Seasonal Operations Plan <sup>2</sup>	Due Date: 9 April 2023
vi. Full Compliance	Due Date: 9 May 2023

<sup>1</sup> The progress reports shall detail the steps implemented towards achieving compliance with waste discharge requirements, including studies, construction progress, evaluation of measures implemented, and recommendations for additional measures as necessary to achieve full compliance by the final compliance date.

<sup>2</sup> The plan shall incorporate as a goal to reasonably limit the amount of unfiltered discharge and describe anticipated operations of the Facility when flows in excess of filter design capacity occur considering influent flows to the entire Facility, available storage, river flows, impending meteorological conditions, and any other relevant operational considerations. This plan will be periodically updated, as necessary, based on accumulated operating data experience.

**Table 3. Time Schedule for Nitrate Plus Nitrite Requirements**

Task	Relevant Dates
i. Submit and implement a PPP that meets the requirements specified in California Water Code Section 13263.3	Due Date: 9 July 2021
ii. Progress Reports <sup>1</sup>	Progress report required by permit due 9 July, annually
iii. Submit documentation that constructions and start-up of BNR Facilities has been completed.	Due Date: 1 June 2022
iv. Submit Final Report demonstrating compliance with the Final Effluent Limitations for nitrate plus nitrite	Due Date: 1 June 2022

<sup>1</sup> The progress reports shall document the steps taken to comply with the 2020 TSO, describe the completion of tasks, progress of construction, evaluation of the effectiveness of the implemented measures, and an assessment of whether additional measures are necessary to meet the final compliance date.

**Table 4. Time Schedule for Chlorodibromomethane and Dichlorobromomethane**

Task	Relevant Dates
i. Submit and implement a PPP that meets the requirements specified in California Water Code Section 13263.3	Due Date: 9 July 2021
ii. Submit evaluation of CO Tank conversion need, feasibility and efficacy	Due Date: 1 March 2022
iii. Submit documentation that construction and start-up of tertiary treatment facilities has been completed	Due Date: 1 June 2023
iv. If deemed necessary by CO Tank conversion evaluation, submit documentation that equalization basins (CO Tank conversion project) have been completed	Due Date: 1 November 2023
v. Progress Reports <sup>1</sup>	Progress report required by permit due 9 July, annually
vi. Submit Final Report demonstrating compliance with the Final Effluent Limitations for chlorodibromomethane and dichlorobromomethane	Due Date: 1 November 2023

<sup>1</sup> The progress reports shall document the steps taken to comply with the 2020 TSO, describe the completion of tasks, progress of construction, evaluation of the effectiveness of the implemented measures, and an assessment of whether additional measures are necessary to meet the final compliance date.

Installation of advanced treatment technologies is needed to meet the new discharge permit requirements. To construct the required treatment facilities, Regional San identified other major activities needed to achieve compliance with the NPDES Permit requirements, including:

- Treatment Technology Identification - Completed
- Pilot Study Implementation
  - ❖ Phase 1 - Treatment Technology Selection - Completed
  - ❖ Phase 2 - Design Criteria Optimization - Completed
  - ❖ Phase 3 - Process optimization and additional operator training - In planning (but not required to operate nutrient reduction or tertiary treatment facilities)
- Establishment of the Program Management Office (PMO) - Completed

- Select treatment technologies for environmental review, design, and implementation - Completed
- Design full-scale treatment systems - Completed
- Environmental Analysis - Completed
- Construction Phase - In progress (for nutrient reduction, Title 22 or equivalent, and related facilities)
- Startup and Commissioning - In planning for Title 22 or equivalent facilities. In progress for some related facilities (nutrient reduction and Flow Equalization facilities), and completed for other related facilities. See Appendix A for status of all the individual projects.

### 3.0 Progress towards Compliance

The following is a summary of the various activities associated with complying with the Ammonia Effluent Limitations and Title 22 or Equivalent requirements. The summary provided here is the information required as part of the permit requirements.

#### 3.1 Pilot Study Implementation

The Phase 2 Pilot System was completed in December 2014. A final report was completed in December 2015.

The goal of the Phase 3 Pilot Study is to further optimize the biological process and provide training to operators. This phase is not required to successfully commission the new facilities.

#### 3.2 Design of Treatment Systems

Designs for all of the projects except one have been completed, and the design for the remaining one is in progress. Table 3 lists the major projects required to meet nutrient-related (i.e., final ammonia and nitrate) limitations and Title 22 or Equivalent treatment requirements. Major design projects, as defined in the Partial Settlement Agreement, are those with a design contract in excess of \$1 million. Dates in bold are actual dates of accomplishment. Other dates are planned dates. Regional San has determined that construction completion will be designated as when nutrient reduction facilities and the Title 22 or Equivalent treatment facilities are commissioned as a combined system instead of separate facilities. Additional project information is included in Appendix A.

As discussed below, construction completion is not the equivalent of the date of compliance with final effluent limitations. Construction completion is a function of contracts, testing, and commissioning. As recognized in the 2020 TSO, there will be a period following the completion of Title 22 or Equivalent treatment facilities when Regional San will decommission former treatment processes, convert to the equalization basins, and optimize operations with all facilities to ensure compliance with all final effluent limitations by October 2023.

**Table 5. Major EchoWater Projects**

Major Project	Design Contract Award	Construction Contract Award	Construction Completion <sup>2</sup>
Biological Nutrient Removal (BNR)	24 Jan 2013	27 Apr 2016	31 Oct 2021 <sup>1</sup>
Flow Equalization	28 Aug 2013	25 Feb 2015	31 Dec 2021
RAS Pumping System	13 Nov 2013	25 May 2016	25 Jun 2020
Building Relocations	25 Sep 2013	19 Mar 2015	29 Feb 2016
Site Preparation	11 Dec 2013	25 Feb 2015	11 Nov 2016
Main Electrical Substation Expansion	In House Design	08 Jan 2016	30 Dec 2016
Disinfection Chemical Storage	11 Dec 2013	22 Jul 2015	16 Nov 2017
Nitrifying Sidestream Treatment	26 Mar 2014	13 Jan 2016	01 Oct 2019
Tertiary Treatment Facilities (TTF)	27 May 2015	11 April 2018	18 Nov 2022
Channel Air Blowers	11 Nov 2016	23 May 2018	26 Feb 2021

<sup>1</sup> Contractor’s submitted schedule. See Section 3.8 Schedule for additional information.

<sup>2</sup> Construction Completion date is not equivalent to the date for compliance with final effluent limitations.

### 3.3 Environmental Analysis

The CEQA process was initiated on August 22, 2012 and the Final Environmental Impact Report (EIR) was certified by the Regional San Board of Directors on September 24, 2014.

### 3.4 Construction Phase

Construction of major projects supporting the key ammonia and nitrate and Title 22 or Equivalent treatment facilities was initiated in February 2015. Seven major projects have been completed as of May 31, 2021. There are currently three major projects under construction. The key project needed to meet ammonia and nitrate treatment requirements is the Biological Nutrient Removal project with completion targeted prior to the 2021-22 wet weather season.. The key project needed to meet the Title 22 or equivalent requirements is the Tertiary Treatment Facilities project which is also under construction.

### 3.5 Startup and Commissioning

Startup and commissioning for each project will occur as major treatment processes are completed and existing processes are cut over as required. Additional time is required to start up and commission the new facilities together (i.e., Biological Nutrient Removal and Tertiary Treatment) to ensure stable overall process operation. Regional San is defining full compliance of the Title 22 or Equivalent treatment facilities as completion of the last project (the Tertiary Treatment Facilities). This phase is anticipated to be accomplished by May 2023. Additional time will be necessary, as recognized in the 2020 TSO, to decommission former treatment processes and convert to the equalization basins to ensure compliance with all final effluent limitations by October 2023.

### 3.6 Regional San Project Acceptance

This milestone of the project is a contractual step to formally close out the construction project and is subject to Regional San Board action. Treatment facilities will have already been commissioned and will be fully operational. This date is subject to the nearest Board meeting after all contractual issues have been resolved and is not related to permit compliance.

### **3.7 Ammonia Pollution Prevention**

As stated in the November 2012 revised Ammonia PPP, domestic waste contributes the majority of ammonia in the treatment plant influent. Most of the ammonia found in domestic waste is derived from urea, which breaks down rapidly to ammonia in the wastewater conveyance system. Therefore, the primary source of ammonia to the sewer system is considered uncontrollable.

The first phase of the Biological Nutrient Removal (BNR) process started commissioning September 15, 2020, and, as of April 19, 2021, BNR has been treating 100% of the influent flow. From April 20 to May 31, 2021, the average daily influent ammonia concentration was 32 milligrams per liter (mg/L). The daily effluent ammonia concentration during the same period was either not detected or detected, but not quantified at a reporting limit (RL) of 0.5 mg/L, down from an average of 21 mg/L reported in the last Progress Report. As of May 31, 2021, Regional San is in compliance with the interim maximum daily, average weekly, and average monthly effluent limitations, as well as the final average weekly and average monthly effluent limitations for ammonia.

Ammonia removal takes place through two different treatment processes, the Nitrifying Sidestream Treatment (NST) and the BNR. Final acceptance for NST was issued on May 13, 2020. NST reduces ammonia from the solids storage basin and biosolids recycling facility return flows prior to their discharge into the plant influent. Although treating 100% of the influent flow, the BNR process is still in construction with completion targeted prior to the 2021-22 wet weather season.

Industrial point sources remain a relatively insignificant source of ammonia, contributing about 1% of the influent load. Potential influent ammonia concentration reduction from source control of industrial users would be negligible. Until BNR is fully commissioned, Regional San will continue to identify and screen potential new significant ammonia point source dischargers.

### **3.8 Nitrate plus Nitrite Pollution Prevention**

As stated in the July 2021 Nitrate plus Nitrite PPP, the primary source of nitrate plus nitrite in the treatment plant influent is treated effluent from the NST process that is returned to the influent upstream of the influent sampling location. Source reduction activities targeting users in the Regional San service area would have a negligible impact on the level of nitrate plus nitrite in the treatment plant effluent.

From January 1 to May 31, 2021, the average daily influent nitrate plus nitrite concentration was 4.1 mg/L, and the average daily effluent nitrate plus nitrite concentration was 6.0 mg/L. As of May 31, 2021, Regional San is in compliance with the interim average monthly effluent limitation for nitrate plus nitrite, as well as the final average monthly and average weekly effluent limitations.

The NST process is critical for the treatment plant to comply with ammonia removal requirements because the NST minimizes potential large fluctuations in influent ammonia



concentrations from return flows that are high in ammonia. Therefore, reducing influent nitrate plus nitrite contributions by removing or modifying NST processes is not recommended. Once it is fully operational, the BNR process is expected to consistently meet the final effluent limitations for nitrate plus nitrite.

### **3.9 Disinfection Byproducts Pollution Prevention**

As stated in the July 2021 Chlorodibromomethane (CDBM) and Dichlorobromomethane (DCBM) PPP, the primary source of CDBM and DCBM is chlorine disinfection of water and wastewater where ammonia is not present. Startup and optimization of EchoWater facility operations have the potential of creating elevated levels of CDBM and DCBM due to treatment changes to remove ammonia and anticipated temporary longer chlorine contact time.

From January 1 to May 31, 2021, all influent CDBM results were non-detect and all DCBM results have been detected, but not quantified (J-flagged) at an RL of 0.5 µg/L. These are consistent with historical results and indicate that there are no significant industrial sources in the Regional San service area.

In the effluent, from January 1 to April 30, 2021, prior to all flow being treated by BNR, all effluent CDBM results were non-detect and DCBM results were detected, but not quantified at an RL of 0.5 µg/L, except for one result at 0.68 µg/L. In May 2021, the effluent CDBM result was 3 µg/L and DCBM result was 18 µg/L, both showing an increase due to 100% of influent flow being treated by BNR. As of May 31, 2021, Regional San is in compliance with both the interim and final average monthly and maximum daily effluent limitations. Further treatment plant changes are expected to attenuate the generation of DCBM and CDBM once they are in place.

As CDBM and DCBM are not detected at quantifiable levels in the treatment plant influent, and potential elevated levels will be due to treatment plant changes, source reduction activities targeting users in the Regional San service area would have a negligible impact on the level of both in the treatment plant effluent. However, until all EchoWater construction projects are commissioned and Regional San is in compliance with the final effluent limitations, should evidence of significant industrial sources become known, additional pollution prevention measures could be considered.

### **3.10 Schedule**

Regional San has been making good faith efforts to meet the compliance dates for ammonia and nitrate final effluent limitations, and for Title 22 or equivalent treatment requirements. Construction for all of the projects required to provide the necessary treatment facilities to meet the permit requirements is in progress or has been completed.

The schedule provided by the BNR contractor in June 2020 shows BNR construction completion by October 31, 2021. Notably, the contractor's schedule and BNR construction completion pertains specifically to "facility completion," which is not reflective of Regional San's date of compliance with the final ammonia and nitrate effluent limits as contained in the NPDES permit, and compliance with the interim limits under the 2020 TSO. Regional San is

complying with ammonia and nitrate removal requirements during the summer dry weather conditions and anticipates complying during all weather conditions as final facilities are commissioned into service. Regional San staff continues to closely monitor construction activities and is providing as much assistance as possible for commissioning activities and will continue to work closely with the contractor to identify and evaluate means by which compliance can be met without unacceptable risks or costs.

The construction contractor for the treatment facilities needed to meet the Title 22 or equivalent requirements (Tertiary Treatment Facilities) was issued a notice to proceed on April 30, 2018. The contractor continues to make good progress. Concrete placement is essentially complete, and significant process has been made on the installation of mechanical and electrical systems. The contractor's schedule currently shows a completion date that will allow Regional San to meet the May 9, 2023 compliance date for Title 22 or equivalent requirements. Additional time, as recognized in the 2020 TSO, will be necessary to decommission former treatment processes and convert existing basins to operate as equalization basins to ensure compliance with all final effluent limitations by October 2023.

A Program schedule is included in Appendix B showing the major projects as well as other projects and work efforts required to comply with the final effluent limitations for ammonia and nitrate limitations and for Title 22 or equivalent requirements. The high level schedule shown in Table 5 may reflect more recent updates to key project milestones.

## Appendices

- A. Status of Ammonia and Nitrate Reduction and Title 22 or Equivalent Projects
- B. Work Plan Schedule for Compliance

## Appendix A

### Status of Ammonia and Nitrate Reduction and Title 22 or Equivalent Projects

# Status of Ammonia and Nitrate Reduction and Title 22 or Equivalent Projects

## Biological Nutrient Removal

A construction contract was awarded on April 27, 2016 and Notice to Proceed was issued on May 27, 2016. Construction continues to progress and a detailed commissioning schedule has been developed and integrated into the construction schedule. This effort shows that the contractor will not complete all construction by May 11, 2021. The latest contractor's schedule shows commissioning of all facilities being completed by October 31, 2021. Six of the facility's eight basins are in service and currently treat 100% of plant dry weather flows. Additional time will be necessary, as recognized by the 2020 TSO, to optimize operation of all new facilities under variable weather-related flow conditions and during final decommissioning and CO tank conversion. See Section 3.8 Schedule for additional information about the schedule for construction.

## Tertiary Treatment Facilities

The contract was awarded on April 11, 2018. Notice to Proceed was issued on April 30, 2018. Concrete placement is essentially complete, and significant process has been made on the installation of mechanical and electrical systems. The contractor's schedule shows construction complete by November 18, 2022. The project is on schedule to meet this date but due to the complex construction activities, there is very little to no float in the construction schedule.

As noted above, construction completion is not the equivalent of the date of compliance with final effluent limitations. Construction completion is a function of contracts, testing, and commissioning. The 2020 TSO recognizes there will be a period following the completion of Title 22 or Equivalent treatment facilities when Regional San will decommission former treatment processes, convert to the equalization basins, and optimize operations with all facilities to ensure compliance with all final effluent limitations by October 2023.

## Nitrifying Sidestream Treatment

The contract was awarded on January 13, 2016 and Notice to Proceed was issued on February 19, 2016. Construction was completed in October 2019. All commissioning activities have been completed and final acceptance was issued on May 13, 2020.

## Channel Air Blowers

The contract was awarded on May 23, 2018 and Notice to Proceed was issued on September 4, 2018. The new blower systems have been successfully commissioned and are in operation. Demolition of the existing blower systems is complete. Final acceptance was issued on March 10, 2021.

## Flow Equalization

A construction contract was awarded on February 25, 2015 and Notice to Proceed was issued on March 4, 2015. The contractor is experiencing delays from the wash-down system vendor who defaulted on his contract. The prime contractor has assumed control of the remaining work and is making progress to complete the automated wash-down system. However the basins can be used without the automated wash-down system. Construction and commissioning is expected to be completed by December 31, 2021.

## RAS Pumping System

A construction contract was awarded on May 25, 2016 and Notice to Proceed was issued on June 15, 2016. Commissioning was completed on December 31, 2019 and the system is in operation. Final acceptance was issued on July 22, 2020.

## Building Relocations

Construction was completed on February 29, 2016 and final acceptance was issued on July 13, 2016.

## Site Preparation

Construction was completed on November 11, 2016 and final acceptance issued on October 11, 2017.

## Main Electrical Substation Expansion

Construction was completed on December 30, 2016 and final acceptance was issued on February 22, 2017.

## Disinfection Chemical Storage

Construction was completed on November 16, 2017 and final acceptance was issued on September 12, 2018.

## Appendix B

### Work Plan Schedule for Compliance

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	2012												2013												2014												2015												2016												2017												2018												2019												2020												2021												2022												2023											
						Q1				Q2				Q3				Q4				Q1				Q2				Q3				Q4				Q1				Q2				Q3				Q4				Q1				Q2				Q3				Q4				Q1				Q2				Q3				Q4				Q1				Q2				Q3				Q4																																																			
						Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4																																																																																								
<b>Sacramento Regional County Sanitation District</b>						[Summary Bar]																																																																																																																																															
<b>ECHO WATER PROJECT</b>						[Summary Bar]																																																																																																																																															
<b>CEQA Clearance (CEQA)</b>						[Summary Bar]																																																																																																																																															
<b>Design &amp; Construction of Projects</b>						[Summary Bar]																																																																																																																																															
<b>Dwight Road Extension (DRE)</b>						[Summary Bar]																																																																																																																																															
Dwight Road Extension Planning						[Summary Bar]																																																																																																																																															
Dwight Road Extension Design						[Summary Bar]																																																																																																																																															
Bid and Award						[Summary Bar]																																																																																																																																															
Dwight Road Extension Construction						[Summary Bar]																																																																																																																																															
Dwight Road Extension Acceptance & Closeout						[Summary Bar]																																																																																																																																															
<b>Bldg Relocation-PMO/CMID Building (PMO)</b>						[Summary Bar]																																																																																																																																															
PMO/CMID Bldg Planning						[Summary Bar]																																																																																																																																															
PMO/CMID Bldg Design						[Summary Bar]																																																																																																																																															
PMO/CMID Bldg Bid and Award						[Summary Bar]																																																																																																																																															
PMO/CMID Bldg Construction						[Summary Bar]																																																																																																																																															
PMO/CMID Bldg Commissioning						[Summary Bar]																																																																																																																																															
PMO/CMID Bldg Acceptance & Closeout						[Summary Bar]																																																																																																																																															
<b>Bldg Relocation-Harvest Crew, Bufferlands Bldgs (BHC)</b>						[Summary Bar]																																																																																																																																															
Harvest Crew, Bufferlands Bldgs Planning						[Summary Bar]																																																																																																																																															
Harvest Crew, Bufferlands Bldgs Design						[Summary Bar]																																																																																																																																															
Bufferlands Bldg Bid and Award						[Summary Bar]																																																																																																																																															
Bufferlands Bldg Construction						[Summary Bar]																																																																																																																																															
Bufferlands Bldg Commissioning						[Summary Bar]																																																																																																																																															
Bufferlands Bldg Closeout						[Summary Bar]																																																																																																																																															
<b>Bldg Relocation-Heavy Equip Maintenance (HEMB)</b>						[Summary Bar]																																																																																																																																															
Bldg Relocation-Heavy Equip Maint Planning						[Summary Bar]																																																																																																																																															
Bldg Relocation- Heavy Equip Maint Design						[Summary Bar]																																																																																																																																															
Bldg Relocation- Heavy Equip Maint Bid and Award						[Summary Bar]																																																																																																																																															
Bldg Relocation- Heavy Equip Maint Construction						[Summary Bar]																																																																																																																																															
Bldg Relocation- Heavy Equip Maint Commissioning						[Summary Bar]																																																																																																																																															
Bldg Relocation- Heavy Equip Maint Closeout						[Summary Bar]																																																																																																																																															
<b>SM-Grit Landfill Clean Closure (GLC) (Plan &amp; Design Only)</b>						[Summary Bar]																																																																																																																																															
SM-Grit Landfill Clean Closure Planning						[Summary Bar]																																																																																																																																															
SM-Grit Landfill Clean Closure Design						[Summary Bar]																																																																																																																																															
<b>SM-Main Electrical Substation Expansion Project (MESE)</b>						[Summary Bar]																																																																																																																																															
SM-Main Electrical Substation Expansion Planning B.3.2.2						[Summary Bar]																																																																																																																																															
SM-Main Electrical Substation Expansion Design						[Summary Bar]																																																																																																																																															
SM-Main Electrical Substation Expansion Bid and Award						[Summary Bar]																																																																																																																																															
SM-Main Electrical Substation Expansion Construction						[Summary Bar]																																																																																																																																															
SM-Main Electrical Substation Expansion Commissioning						[Summary Bar]																																																																																																																																															
SM-Main Electrical Substation Expansion Acceptance & Closeout						[Summary Bar]																																																																																																																																															
<b>SM-Site Preparation (SP)</b>						[Summary Bar]																																																																																																																																															
SM-Site Preparation Planning						[Summary Bar]																																																																																																																																															
Site Preparation Design						[Summary Bar]																																																																																																																																															
SM-Site Preparation Bid and Award						[Summary Bar]																																																																																																																																															
SM-Site Preparation Construction						[Summary Bar]																																																																																																																																															
SM-Site Preparation Commissioning						[Summary Bar]																																																																																																																																															
SM-Site Preparation Closeout						[Summary Bar]																																																																																																																																															
<b>Fiber Optic Network Replacement (FOR)</b>						[Summary Bar]																																																																																																																																															
Fiber Optic Network Replacement Design						[Summary Bar]																																																																																																																																															
Fiber Optic Network Replacement Bid & Award						[Summary Bar]																																																																																																																																															
Fiber Optic Network Replacement Construction						[Summary Bar]																																																																																																																																															

█ Remaining Level of Effort   
 █ Remaining Work   
 ◆ Milestone   
 ◆ Gates  
█ Actual Level of Effort   
 █ Critical Remaining Work   
◆ Gates  
█ Actual Work   
▬ Summary





Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Schedule																																															
						2012				2013				2014				2015				2016				2017				2018				2019				2020				2021				2022				2023			
						Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4								
	<b>Fiber Optic Network Replacement Commissioning</b>	144	0	07-Oct-15 A	29-Feb-16 A	▼ Fiber Optic Network Replacement Commissioning																																															
	<b>Fiber Optic Network Replacement Closeout</b>	3	0	29-Feb-16 A	02-Mar-16 A	▼ Fiber Optic Network Replacement Closeout																																															
	<b>Flow Equalization (FEQ)</b>	3697	578	16-Apr-12 A	31-Aug-22	▼ Flow Equalization (FEQ)																																															
	<b>Flow Equalization Planning</b>	556	0	16-Apr-12 A	23-Oct-13 A	▼ Flow Equalization Planning																																															
	<b>Flow Equalization Design</b>	450	0	28-Aug-13 A	20-Nov-14 A	▼ Flow Equalization Design																																															
	<b>Flow Equalization Contractor Prequalification Process</b>	231	0	23-Apr-14 A	09-Dec-14 A	▼ Flow Equalization Contractor Prequalification Process																																															
	<b>Flow Equalization Bid and Award</b>	78	0	10-Dec-14 A	25-Feb-15 A	▼ Flow Equalization Bid and Award																																															
	<b>Flow Equalization Construction</b>	2281	213	04-Mar-15 A	31-Aug-21	▼ Flow Equalization Construction																																															
	<b>Flow Equalization Commissioning</b>	1029	213	07-Aug-18 A	31-Aug-21	▼ Flow Equalization Commissioning																																															
	<b>Flow Equalization Closeout</b>	729	578	01-Jun-20 A	31-Aug-22	▼ Flow Equalization Closeout																																															
	<b>BNR (w PEPS Construction)</b>	3637	394	16-Mar-12 A	28-Feb-22	▼ BNR (w PEPS Construction)																																															
	<b>BNR Planning</b>	414	0	16-Mar-12 A	03-May-13 A	▼ BNR Planning																																															
	<b>BNR Design</b>	994	0	24-Jan-13 A	14-Oct-15 A	▼ BNR Design																																															
	<b>BNR/PEPS Bid and Award</b>	183	0	28-Oct-15 A	27-Apr-16 A	▼ BNR/PEPS Bid and Award																																															
	<b>BNR/PEPS Construction</b>	1998	274	13-May-16 A	31-Oct-21	▼ BNR/PEPS Construction																																															
	<b>BNR/PEPS Commissioning</b>	748	274	15-Oct-19 A	31-Oct-21	▼ BNR/PEPS Commissioning																																															
	<b>BNR/PEPS Closeout</b>	120	120	01-Nov-21	28-Feb-22	▼ BNR/PEPS Closeout																																															
	<b>Primary Effluent Pump Station (PEPS) (Plan &amp; Design Only)</b>	1249	0	14-May-12 A	14-Oct-15 A	▼ Primary Effluent Pump Station (PEPS) (Plan & Design Only)																																															
	<b>Primary Effluent PS Planning</b>	582	0	14-May-12 A	16-Dec-13 A	▼ Primary Effluent PS Planning																																															
	<b>Prim Effluent PS Design</b>	721	0	24-Oct-13 A	14-Oct-15 A	▼ Prim Effluent PS Design																																															
	<b>Return Activated Sludge Pump Station (RAS)</b>	3085	0	14-May-12 A	23-Oct-20 A	▼ Return Activated Sludge Pump Station (RAS)																																															
	<b>RAS PS Planning</b>	628	0	14-May-12 A	31-Jan-14 A	▼ RAS PS Planning																																															
	<b>RAS PS Design</b>	776	0	13-Nov-13 A	28-Dec-15 A	▼ RAS PS Design																																															
	<b>RAS PS Bid and Award</b>	134	0	13-Jan-16 A	25-May-16 A	▼ RAS PS Bid and Award																																															
	<b>RAS PS Construction</b>	1472	0	15-Jun-16 A	25-Jun-20 A	▼ RAS PS Construction																																															
	<b>RAS PS Commissioning</b>	843	0	11-Jul-17 A	31-Oct-19 A	▼ RAS PS Commissioning																																															
	<b>RAS PS Closeout</b>	120	0	26-Jun-20 A	23-Oct-20 A	▼ RAS PS Closeout																																															
	<b>Tertiary Treatment Facilities (TTF) (Filtration, FIPS, DCB)</b>	4007	830	21-May-12 A	10-May-23	▼ Tertiary Treatment Facilities (TTF) (Filtration, FIPS, DCB)																																															
	<b>Tertiary Treatment Facilities Planning (TTF)</b>	1145	0	21-May-12 A	09-Jul-15 A	▼ Tertiary Treatment Facilities Planning (TTF)																																															
	<b>Tertiary Treatment Facilities (TTF) Design</b>	955	0	27-May-15 A	05-Jan-18 A	▼ Tertiary Treatment Facilities (TTF) Design																																															
	<b>Tertiary Treatment Facilities (TTF) Bid and Award</b>	97	0	05-Jan-18 A	11-Apr-18 A	▼ Tertiary Treatment Facilities (TTF) Bid and Award																																															
	<b>Tertiary Treatment Facilities (TTF) Construction</b>	1663	657	01-May-18 A	18-Nov-22	▼ Tertiary Treatment Facilities (TTF) Construction																																															
	<b>Tertiary Treatment Facilities (TTF) Commissioning</b>	567	567	01-May-21	18-Nov-22	▼ Tertiary Treatment Facilities (TTF) Commissioning																																															
	<b>Tertiary Treatment Facilities (TTF) Closeout</b>	173	173	19-Nov-22	10-May-23	▼ Tertiary Treatment Facilities (TTF) Closeout																																															
	<b>Effluent Disinfection - Ph1 Chemical Storage (DCS)</b>	2243	0	09-Jul-12 A	29-Aug-18 A	▼ Effluent Disinfection - Ph1 Chemical Storage (DCS)																																															
	<b>Disinfection - Ph1 Chemical Storage Planning</b>	579	0	09-Jul-12 A	07-Feb-14 A	▼ Disinfection - Ph1 Chemical Storage Planning																																															
	<b>Disinfection - Ph1 Chemical Storage Design</b>	500	0	11-Dec-13 A	24-Apr-15 A	▼ Disinfection - Ph1 Chemical Storage Design																																															
	<b>Disinfection - Ph1 Chemical Storage Bid and Award</b>	71	0	13-May-15 A	22-Jul-15 A	▼ Disinfection - Ph1 Chemical Storage Bid and Award																																															
	<b>Disinfection - Ph1 Chemical Storage Construction</b>	820	0	20-Aug-15 A	16-Nov-17 A	▼ Disinfection - Ph1 Chemical Storage Construction																																															
	<b>Disinfection - Ph1 Chemical Storage Commissioning</b>	578	0	18-Apr-16 A	16-Nov-17 A	▼ Disinfection - Ph1 Chemical Storage Commissioning																																															
	<b>Disinfection - Ph1 Chemical Storage Closeout</b>	286	0	17-Nov-17 A	29-Aug-18 A	▼ Disinfection - Ph1 Chemical Storage Closeout																																															
	<b>Nitrifying Sidestream Treatment (NST)</b>	2644	0	06-May-13 A	31-Jul-20 A	▼ Nitrifying Sidestream Treatment (NST)																																															
	<b>Nitrifying Sidestream Planning</b>	374	0	06-May-13 A	14-May-14 A	▼ Nitrifying Sidestream Planning																																															
	<b>Nitrifying Sidestream Design</b>	447	0	26-Mar-14 A	15-Jun-15 A	▼ Nitrifying Sidestream Design																																															
	<b>Nitrifying Sidestream Bid and Award</b>	113	0	23-Sep-15 A	13-Jan-16 A	▼ Nitrifying Sidestream Bid and Award																																															
	<b>Nitrifying Sidestream Construction</b>	1321	0	19-Feb-16 A	01-Oct-19 A	▼ Nitrifying Sidestream Construction																																															
	<b>Nitrifying Sidestream Commissioning</b>	394	0	04-Mar-19 A	31-Mar-20 A	▼ Nitrifying Sidestream Commissioning																																															
	<b>Nitrifying Sidestream Closeout</b>	122	0	01-Apr-20 A	31-Jul-20 A	▼ Nitrifying Sidestream Closeout																																															
	<b>Channel Air Blower System (CAB)</b>	1601	0	11-Nov-16 A	30-Mar-21 A	▼ Channel Air Blower System (CAB)																																															
	<b>CAB Planning</b>	167	0	11-Nov-16 A	26-Apr-17 A	▼ CAB Planning																																															
	<b>CAB Design</b>	460	0	11-Nov-16 A	13-Feb-18 A	▼ CAB Design																																															
	<b>CAB Bid and Award</b>	71	0	14-Mar-18 A	23-May-18 A	▼ CAB Bid and Award																																															
	<b>CAB Construction</b>	907	0	04-Sep-18 A	26-Feb-21 A	▼ CAB Construction																																															

■ Remaining Level of Effort   
 ■ Remaining Work   
 ◆ Milestone   
 ◆ Gates  
■ Actual Level of Effort   
 ■ Critical Remaining Work   
▶ Summary  
■ Actual Work





