
Title 22 Engineering Report- **DRAFT**

City of El Centro Wastewater Treatment Plant

NOVEMBER 2025

Prepared for:



CITY OF EL CENTRO

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1 Introduction

El Centro (City) contracted Dudek to evaluate the City of El Centro Wastewater Treatment Plant (El Centro WWTP) and recommend improvements to produce disinfected tertiary recycled water and comply with California's Title 22 Water Recycling Criteria (Division 4, Chapter 3 of the California Code of Regulations). The El Centro WWTP is currently regulated under Regional Board Order R7-2024-0041 and produces unfiltered secondary effluent. The plant receives an average dry-weather flow of 4.68 million gallons per day (MGD) and is permitted for up to 8 MGD.

The remainder of this report is organized as follows. First, a high-level overview of the current processes at the El Centro WWTP and a summary of the current discharge permit are provided. Next, the addition of proposed treatment is evaluated with respect to the discharge permit and Title 22 requirements. Finally, the Title 22 requirements and results of this evaluation inform the recommendations for plant upgrades.

1.1 Project Need

The City of El Centro wastewater treatment plant (El Centro WWTP) is proposing to treat their effluent to a standard acceptable for use as disinfected tertiary recycled water accordance with Title 22 criteria. Before the El Centro WWTP can commit to providing recycled water to potential users, it is necessary to evaluate the El Centro WWTP's current treatment capabilities and identify the improvements necessary to meet Title 22 requirements for disinfected tertiary recycled water.

This Title 22 Engineering Report describes how tertiary treated effluent produced at the El Centro WWTP will comply with the Title 22 Water Recycling Criteria. The report demonstrates the El Centro WWTP's ability to satisfy the requirements of the California Code of Regulations, Title 22, Division 4, Chapter 3, "Regulations Related to Recycled Water."

Pursuant Title 22, Section 60323, an Engineering Report is required to be submitted to the RWQCB, CRWQCB, and the Division of Drinking Water (DDW) prior to completion of a recycled water project.

1.2 Scope of Study

The El Centro WWTP is currently a producer of secondary treatment level wastewater that, upon meeting Title 22 requirements, could potentially be provided for use by the local community as described in detail in Chapter 6. This report describes how the El Centro WWTP, as a producer and potential distributor, intends to comply with the latest Title 22 Regulation Related to Recycled Water, DHS Guidelines.

Title 22 Engineering Reports will be prepared separately as needed to describe how future recycled water user sites will comply with user requirements. Class 4 construction cost estimates are planned to be prepared in separate reports as needed to plan for the required upgrades. This report is intended to:

- Describe existing treatment water quality, permitting, and unit processes.
- Identify potential treatment processes that will produce disinfected Title 22 recycled water
- Identify how the El Centro WWTP, as the producer, will ensure recycled water quality and reliability
- Recommend upgrades required to meet Title 22 standards for disinfected tertiary recycled water

1.3 Site Overview

The El Centro WWTP is located in the Imperial Valley of Southern California, approximately 120 miles east of San Diego, and 10 miles north of the United States-Mexico border. A Vicinity Map is provided in **Figure 1**. The city has an area of 11.1 square miles and an elevation of 42 feet below sea level. The city is surrounded by agriculture on all four sides, and most irrigation is provided by the Imperial Irrigation District.



Figure 1. Vicinity Map

1.4 Existing Wastewater Treatment Overview

The El Centro WWTP currently receives an average wastewater flow of approximately 3.52 MGD and is permitted to treat up to 8 MGD. The treatment facility consists of a headworks facility (Removes screenings, but no grit), primary clarification, conventional activated sludge, secondary clarifiers and an ultraviolet (UV) disinfection system. The existing core treatment processes produce secondary effluent, which is discharged to the Central Main Drain, a drainage channel tributary to the Alamo River. The El Centro WWTP currently does not have tertiary treatment. Sludge from the plant is treated through a combination of thickening, anaerobic digestion, and dewatering. The dewatered sludge is then further dried in sludge drying beds.

The secondary effluent is in compliance with the discharge requirements of the Regional Water Quality Control Board (RWQCB) and NPDES Permit Order R7-2024-0041 - issued by the California Regional Water Quality Control Board, Colorado River Basin Region.

Figure 2 and Figure 3 show the existing El Centro WWTP and process flow diagram, respectively.

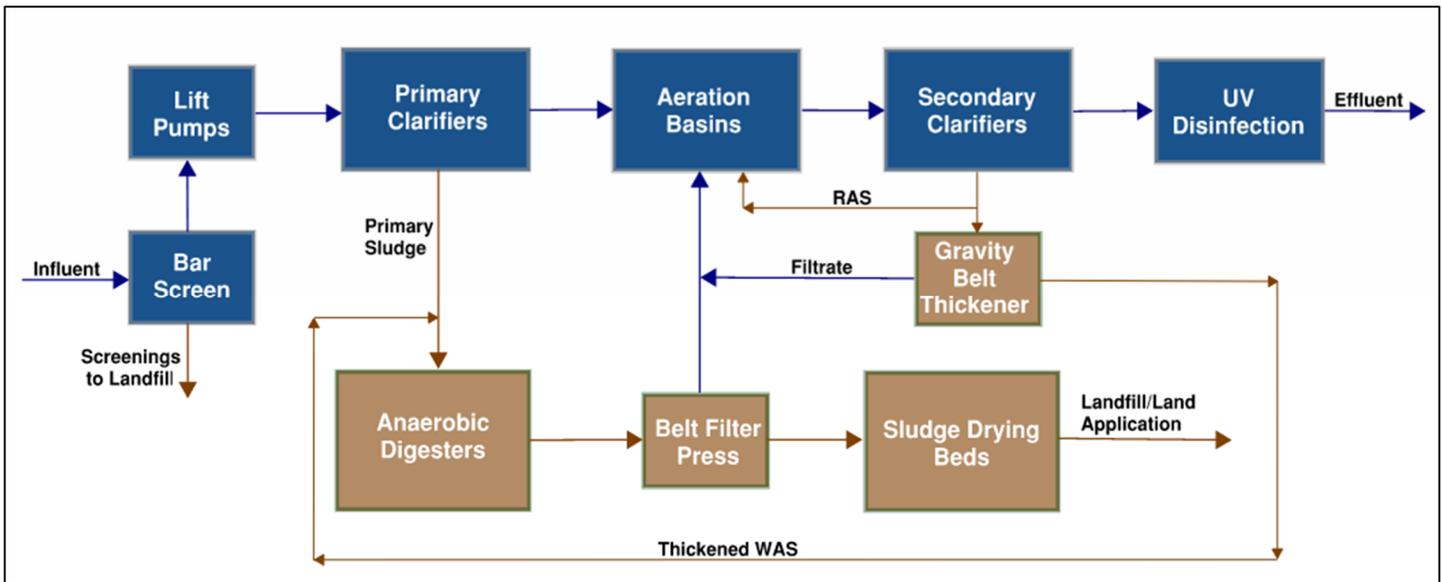


Figure 2. Process Flow Diagram of El Centro WWTP



Figure 3. Existing El Centro WWTP Layout

1.4.1 Wastewater Sources

There are currently no Industrial dischargers and no industrial wastewater constituents have been detected at the El Centro WWTP.

A detailed list of the El Centro WWTP's prohibited discharge standards, local limits, and pretreatment requirements is provided in **Appendix A**.

1.4.2 Flow Conditions

The El Centro WWTP is permitted for an annual average dry weather flow of 8 MGD. Typically, average daily flow rates are much lower. The average dry weather flow is 3.52 MGD. The existing maximum dry weather flow is 5.16 MGD. In 2045, the El Centro WWTP has a projected average dry weather flow of 4.68 MGD. These values are represented below in **Table 1**.

Table 1. El Centro WWTP Existing and Projected Flow Data

Parameter	Existing ADWF	Existing MDWF	Projected 2045 ADWF	Permitted Flow
Flow Rate (MGD)	3.52	5.16	4.68	8

Notes:

- 1) ADWF=Average Dry Weather Flow
- 2) MDWF=Maximum Dry Weather Flow
- 3) March 2025 Flow monitoring data used to estimate ADWF
- 4) Projected 2045 ADWF determined with a population multiplier

Figure 4 depicts the El Centro WWTP influent daily flow data between March 1 and March 31, 2025. Average day flow (ADF) represents the average total flow into the plant over a 24-hour period. Peak day flow (PDF) represents maximum flow recorded during the 24-hour period. The red dashed line at 3.52 MGD represents the average daily flow for the month of March 2025.

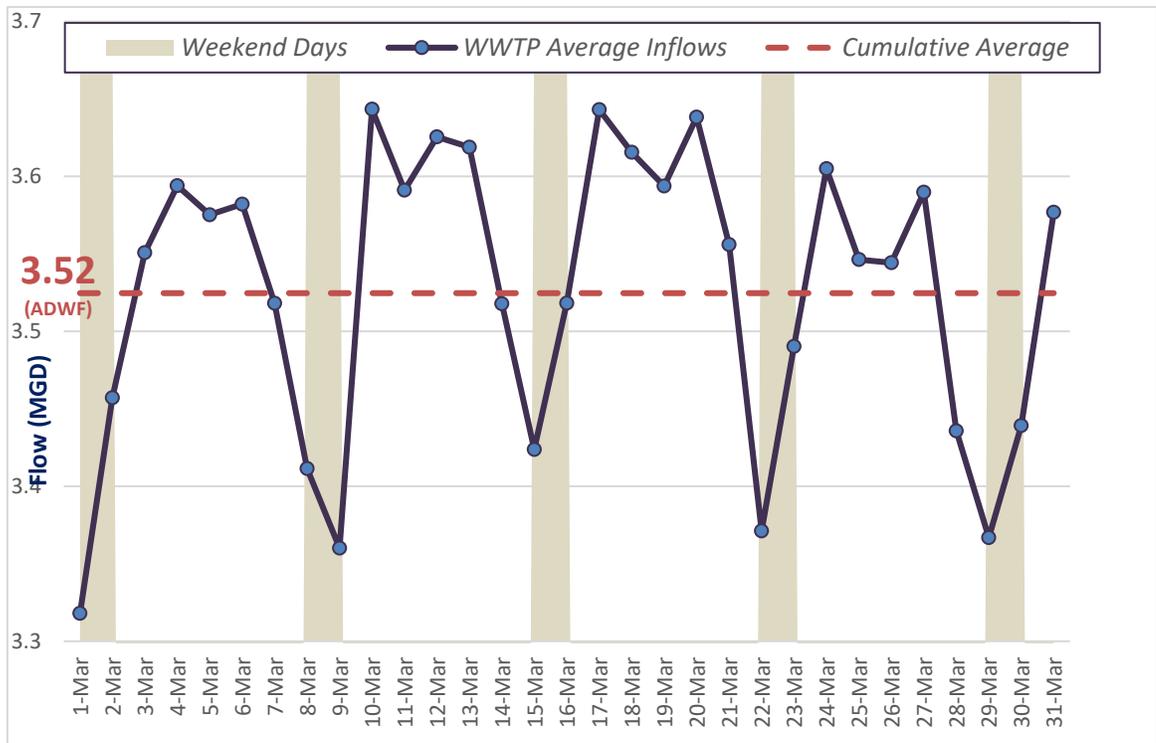


Figure 4. El Centro WWTP Flow Data

1.4.3 Influent Water Quality

Influent water quality from 2020 to 2025 is summarized in **Table 2**.

Table 2. El Centro WWTP Influent Characteristics from 2020 to 2025

Parameter	Unit	2020	2021	2022	2023	2024	2025
Annual Avg. BOD	mg/l	271	267	283	247	246	239
Annual Avg. TSS	mg/l	240	214	206	159	162	162

Notes:

¹⁾ BOD - Biochemical Oxygen Demand

²⁾ TSS - Total Suspended Solids

1.4.4 Current Effluent Water Quality

Effluent water quality is summarized in **Table 3**.

Table 3. El Centro WWTP Effluent Characteristics for 2023

Parameter	Units	Maximum Daily	Average Daily	Limit	
				Average Weekly	Average Monthly
Suspended Solids, Total (TSS)	mg/l	66.8	13.97	30	45
Total Dissolved Solids (TDS)	mg/l	2,707	2,522	4,000 (annual)	4,500
Biochemical Oxygen Demand (BOD ₅)	mg/l	36.3	15.2	30	45
Ammonia	mg-N/l	27	14.8	---	---
Nitrate + Nitrite	Mg-N/l	20 + 2.1	4.7 + 0.98	---	---
Total Kjeldahl Nitrogen (TKN)	Mg-N/l	26	16.3	---	---
Phosphorus	mg-P/l	8.3	5.7	---	---
Orthophosphate	mg-P/l	6.5	5.5	---	---
Dissolved Oxygen	mg/l	6.7	5.2	---	---
Oil and Grease	mg/l	ND	ND	25 (daily)	---
Escherichia coli (E. coli)	MPN/100 ml	1,600	145.7	320 (max daily)	100
Fecal Coliform	MPN/100 ml	1,600	147.6	---	---
pH	s.u.	7 - 7.7	—	6 - 9	---
Temperature, Winter - Summer	°C	29 - 36	24 - 32	---	---

Notes:

¹⁾ Additional Effluent limitations in **Appendix A**.

²⁾ Maximum daily limit for E.coli is a single sample maximum value (STV), average monthly limit is a geometric mean

1.4.5 Current Final Effluent Limitations

The effluent limitations for the El Centro WWTP are established in National Pollutant Discharge Elimination System (NPDES) Permit Order R7-2024-0041, issued by the California Regional Water Quality Control Board, Colorado River Basin Region. The permit sets secondary treatment requirements limiting final effluent biochemical oxygen demand (BOD₅) and total suspended solids (TSS) to 30 mg/l (monthly average) and 45 mg/l (weekly average), respectively.

2 Existing Treatment Processes

The following sections describe the existing El Centro WWTP processes and proposed modifications needed to comply with Title 22 requirements. A summary of the El Centro WWTP major process areas and assets is provided in **Table 4**. The design criteria for the El Centro WWTP is included in **Appendix B**.

Table 4. Unit Process and Major Equipment Summary

Process Area	Description	Typical Equipment
Influent Sewer	Conveys raw untreated wastewater to the wastewater treatment plant.	<ul style="list-style-type: none"> Influent force main
Headworks	Removes rags, debris, and other large materials from the influent wastewater.	<ul style="list-style-type: none"> Screening System Influent Flow Meter Influent Distribution Structure
Primary Treatment	Removes settleable solids and floatable materials from raw wastewater through gravity separation.	<ul style="list-style-type: none"> Primary Pump Station Primary Clarifiers Primary Sludge Pumps
Secondary Treatment (Biological)	Removes BOD and TSS from the wastewater utilizing a conventional activated sludge process.	<ul style="list-style-type: none"> Aeration basins Air Diffusers Blowers Secondary Clarifiers RAS Pumps WAS Pumps
Disinfection	Neutralizes pathogens and bacteria in the effluent using ultraviolet light.	<ul style="list-style-type: none"> UV disinfection system Effluent Flow Meter
Solids Handling	Accepts and thickens sludge from primary clarifiers before entering digesters. Dewatering produces a material suitable for offsite disposal and lowers hauling costs.	<ul style="list-style-type: none"> Gravity Belt Thickeners Anaerobic Digesters Sludge Pumps Belt Filter Presses Sludge Drying Beds
Gas Handling	Safely combust excess biogas or off-gas from the treatment process	<ul style="list-style-type: none"> Waste Gas Burner

2.1 Headworks

The headworks facility at the El Centro WWTP site consists of a bar screen structure upstream of Lift Station No. 3 which screens approximately 20% of the influent (gravity flow) into the facility. Most of the influent (approximately 80%) is screened at the Main Lift Station (offsite) and pumped through a force main directly into the Influent Distribution structure. This section covers only the bar screen at the WWTP.

2.1.1 Screening

The bar screen structure is equipped with a mechanical bar screen to remove solids and a washer/compactor to clean and reduce the volume of screenings. The compacted screenings are collected in a portable waste container that is emptied and hauled to a private landfill. Screened wastewater flows by gravity to Lift Station No. 3, is pumped, and combines with screened wastewater from the Main Lift Station in a 24-inch influent force main that flows to the influent distribution structure.

Process Title 22 Limitation

The current facility relies on coarse screening as the primary methods for removing debris from the influent. Grit removal and fine screening are not currently included in the headworks process. With the planned Secondary Treatment Improvements needed for Title 22 compliance, grit removal and fine screening will be implemented.

2.1.2 Influent Distribution Structure

The influent distribution structure divides flow between the two primary clarifiers before it is conveyed to the aeration basins. For coagulation and flocculation purposes, ferric chloride and polymer are added into the influent.

Process Title 22 Compliance

Title 22, section 60349 – Coagulation, requires facilities to have standby feeders, adequate chemical storage and conveyance, adequate reserve chemical supply, and automatic dosage control. It also requires there to be a redundant coagulation process unit OR a standby process unit. All of these requirements are currently being met by the El Centro WWTP.

2.2 Primary Treatment

Screened and settled flows enter primary treatment, where solids settle to the bottom and scum is removed from the surface. This step reduces the amount of material entering downstream biological processes and improves overall treatment efficiency.

2.2.1 Primary Clarifiers

There are currently two circular primary clarifiers that receive screened and settled flows from the influent diversion structure. Solids and grit sink to the bottom and clarified water flows out the top. The settled sludge is pumped to digester. The clarified water then flows to the secondary treatment process where biological treatment begins.

Process Title 22 Compliance

Title 22, Section 60343 – Primary Treatment, requires facilities to have multiple primary treatment units. This requirement is currently being met by the El Centro WWTP.

2.3 Secondary Treatment

Secondary treatment is accomplished through a biological treatment process followed by a solids removal process. stage of wastewater where microorganisms break down and remove dissolved and suspended organic material. This process reduces biochemical oxygen demand (BOD) and total suspended solids (TSS). Aeration basins are designed to remove BOD and TSS.

2.3.1 Biological Treatment Facilities

The Aeration Process consists of six rectangular aeration basins configured to operate in series. The aeration basins are fed primary effluent and utilize air and microorganisms to reduce BOD and TSS concentrations. Air is supplied to the aeration basins by fine-bubble diffusers located at the basin floors. Three blowers (2 duty, 1 standby), each supply dissolved oxygen to the activated sludge microorganisms. Mixed liquor is conveyed via. mixed liquor channel to the secondary clarifiers.

Process Title 22 Limitation

Title 22, Section 60345 – Biological Treatment, requires multiple biological treatment units capable of producing oxidized wastewater with one unit not in operation. These requirements can also be met through the facility having automatically short-term retention and standby replacement equipment. This requirement is currently being met by the El Centro WWTP.

2.3.2 Secondary Clarifiers

The secondary clarification process consists of four secondary clarifiers. The secondary clarifiers have a diameter of 80 ft, an average SWD of 9.95 ft, and provide a total volume of 200,057 ft³ or 1.5 MG. During the summer months, the El Centro WWTP typically operates four clarifiers and three clarifiers during winter. Secondary clarifiers are designed to separate activated sludge flocs from treated wastewater. Settled secondary sludge is returned to the aeration basins (return activated sludge, RAS). A

measured portion of settled secondary sludge is wasted (waste activated sludge, WAS) to a dissolved air flotation thickener for sludge thickening. Secondary effluent is pumped to the downstream to the UV disinfection system before discharge to the Central Main Drain.

Process Title 22 Limitation

Title 22, Section 60347 – Secondary Sedimentation, requires multiple sedimentation units (clarifiers) which are capable of treating the entire flow with one unit not in operation. During the winter months, the El Centro WWTP runs all 4 secondary clarifiers and therefore does not comply with Section 60347.

Improvements to the Secondary Treatment process to bring it into compliance with Title 22 RW requirements are discussed in Section 3. Proposed El Centro WWTP Upgrades.

2.4 UV Disinfection System

The El Centro WWTP converted from their chlorination system to a UV disinfection system in 1997 and added a second channel in 2009. The city is currently in the process of replacing the existing UV units with a new Trojan Signa UV system. The new Signa UV system has 2 channels, 3 banks per channel, and 8 lamps per bank for a total of 48 lamps. The new Signa UV system can treat 16 MGD to secondary quality with both banks online to meet current secondary permit requirements. The existing system has available space within the channels to be expanded.

The El Centro WWTP is currently upgrading their existing UV Disinfection system. The existing UV units are being replaced with new Trojan UV Signa systems. The project also includes the addition of two prefabricated buildings to house electrical and control equipment.

Process Title 22 Limitation

The new Signa UV system under construction will need to be further upgraded with additional UV lights in order to meet Title 22 requirements. The proposed upgrade design includes 2 channels, 4 duty banks and 1 redundant bank per channel, and 8 lamps per bank. This represents an addition of 2 banks per channel for a total of 32 additional lamps. The upgrade will meet effluent and redundancy requirements for disinfection after a membrane filtration process at 65% UV Transmission and an 80 millijoules/cm² dose rate.

2.5 Sludge Thickening

Pumped sludge from the primary and secondary clarifiers is thickened prior to digestion to increase the solids content and to decrease the volume sent to the digesters.

2.5.1 Gravity Belt Thickeners

Primary Sludge (PS) and Waste Activated Sludge (WAS) is pumped from the primary clarifiers and secondary clarifiers, respectively. Two gravity belt thickeners (one duty, one standby) process the sludge and provide improved thickening via the addition of polymer, producing sludge at approximately 4% solids. The thickened sludge is then pumped to the anaerobic digesters.

2.6 Anaerobic Digestion

Anaerobic digestion reduces waste sludge mass by biologically destroying volatile solids. Methane is generated from the digestion process and is flared.

2.6.1 Anaerobic Digesters

Anaerobic digestion is accomplished via three circular concrete digesters. Digester Tank No. 1 provides an approximate working volume of 590,000 gallons, whereas Digester No. 2 provides 200,000 gallons and Digester No. 3 provides another 190,000 gallons.

Process Title 22 Compliance

Anaerobic Digestion is not considered as part of the Title 22 Compliance verification.

2.7 Sludge Dewatering

Digested sludge is dewatered to decrease the mass and volume of sludge that is conveyed to the sludge drying beds.

2.7.1 Belt Press

Sludge dewatering is accomplished via two belt filter presses (1 duty, 1 standby). Anaerobically digested sludge is dosed with polymer and pumped to the belt filter presses where the press squeezes liquid from the solids and producing a drier sludge, typically above 12% solids.

Process Title 22 Compliance

Belt Presses are not considered as part of the Title 22 Compliance verification.

2.7.2 Sludge Drying Beds

The solids process and handling system includes one sludge drying bed. Dewatered sludge from the belt press is placed in the drying bed for additional drying and volume reduction.

Process Title 22 Compliance

Sludge drying beds are not considered as part of the Title 22 Compliance verification.

3 Proposed WWTP Upgrades

As outlined in the preceding sections, the existing El Centro WWTP requires several key upgrades to reliably produce Title 22-compliant recycled water. Major processes that require upgrades include:

- Headworks upgrades, including installation of grit removal and fine screening to protect downstream treatment and prevent membrane fouling.
- Secondary treatment upgrades, including construction of new aeration basins to improve biological treatment performance.
- Installation of an MBR system following the aeration basins, eliminating the need for separate tertiary filtration.
- Upgrades to the UV disinfection system to meet Title 22 disinfection requirements.

The following sections describe each of these proposed improvements in detail and outline how they will be integrated into the existing treatment process. A Process Flow Diagram with the additional membrane bioreactor process added is shown in **Figure 5**.

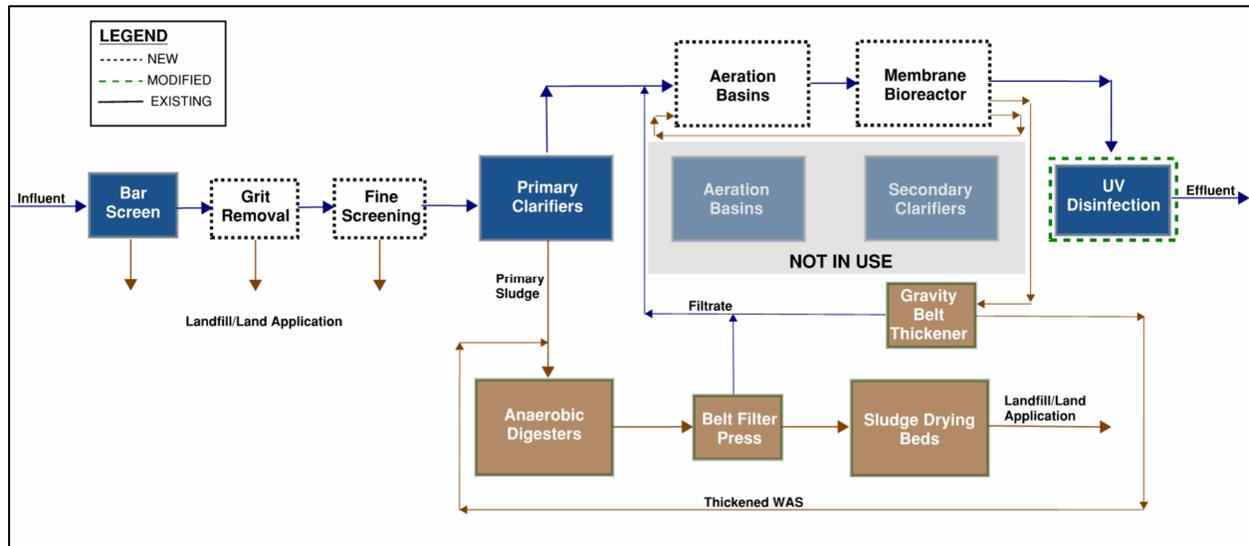


Figure 5. Proposed Process Diagram with Tertiary Treatment

Figure 5 illustrates the components and potential schematic layout of a WWTP using the conventional activated sludge (CAS) treatment process and MBR system to meet Title 22 requirements.

The wastewater first flows through the existing influent screens before entering the new grit removal system. The screened wastewater is then pumped to the existing primary clarifiers and subsequently enters the new aeration basins and MBR system, where the majority of BOD, TSS, and nitrogen removal occurs. The high-quality effluent produced by the MBR allows for ultraviolet (UV) disinfection without the need for additional tertiary filtration, as the MBR provides the required level of filtration. Chemical storage, blowers, and electrical facilities continue to be required for this option. MBR systems produce high-quality filtered water that meets Title 22 unrestricted-reuse recycled water standards when adequately disinfected.

The water quality limitations for tertiary disinfected recycled water are provided in **Table 5**.

Table 5. Disinfected Tertiary Recycled Water Quality Limitations

Parameter	Units	Effluent Limitations				
		Annual Avg.	Monthly Avg.	Weekly Avg.	Daily Avg.	Weekly Median
Biochemical Oxygen Demand	mg/l	--	20	30	---	---
Total Suspended Solids	mg/l	--	20	30	---	---
Total Inorganic Nitrogen	mg/l	10	--	---	---	---
Turbidity	NTU	--	--	---	0.2	--
Coliform	MPN/ 100 ml	--	--	---	---	2.2

3.1 New Screenings System

The proposed improvements aim to upgrade the headworks to protect the downstream equipment, specifically the newly implemented secondary treatment process. Grit removal and fine screening are proposed. Grit removal eliminates heavy inorganic particles like sand and gravel to prevent unwanted accumulation in process tanks and improving the performance of the primary clarifiers. Fine screening removes small debris including rags, hair, and plastics, to safeguard downstream equipment. Following the bar screens, influent flows enter through the grit removal system then pass through the fine screening system. This is implemented before the primary clarifiers.

3.2 New Aeration System

The El Centro WWTP currently operates a conventional activated sludge (CAS) process, where microorganisms consume oxygen and organic material in aerated basins.

Dudek proposes a new Modified Ludzack–Ettinger (MLE) process with dedicated anoxic and aerobic zones to provide nitrification and denitrification. The aerobic zones convert ammonia to nitrate, and the anoxic zones convert nitrate to nitrogen gas, enabling more consistent removal of nitrogen and other pollutants to meet Title 22 water recycling standards.

The proposed aeration system followed by the membrane bioreactor, discussed below, will consistently produce an effluent with low Total Nitrogen such that the measured TN will not exceed 10 mg/l at any time. This is in compliance with Title 22, Section 60320.110 – Nitrogen Compounds Control. Existing aeration basins will remain in place but will not be used for the upgraded process and may be repurposed in the future. Integrating the MLE process with the MBR and UV disinfection will allow the plant to reliably produce disinfected tertiary recycled water in compliance with Title 22 standards for unrestricted reuse. No tertiary filtration will be required.

3.3 Upgraded Secondary Treatment System (MBR)

Dudek proposes an upgraded secondary treatment system based around a Membrane Bioreactor (MBR) process to meet Title 22 RW requirements. The MBR process will downstream the aeration process. The MBR process consists of suspended growth biological reactor tanks integrated with a membrane filtration system. The membrane filtration system replaces the existing secondary clarifiers and eliminates the need for tertiary sand filters to lower turbidity. The system will also be sized for redundancy, addressing the current requirement bottleneck associated with the existing secondary clarifiers.

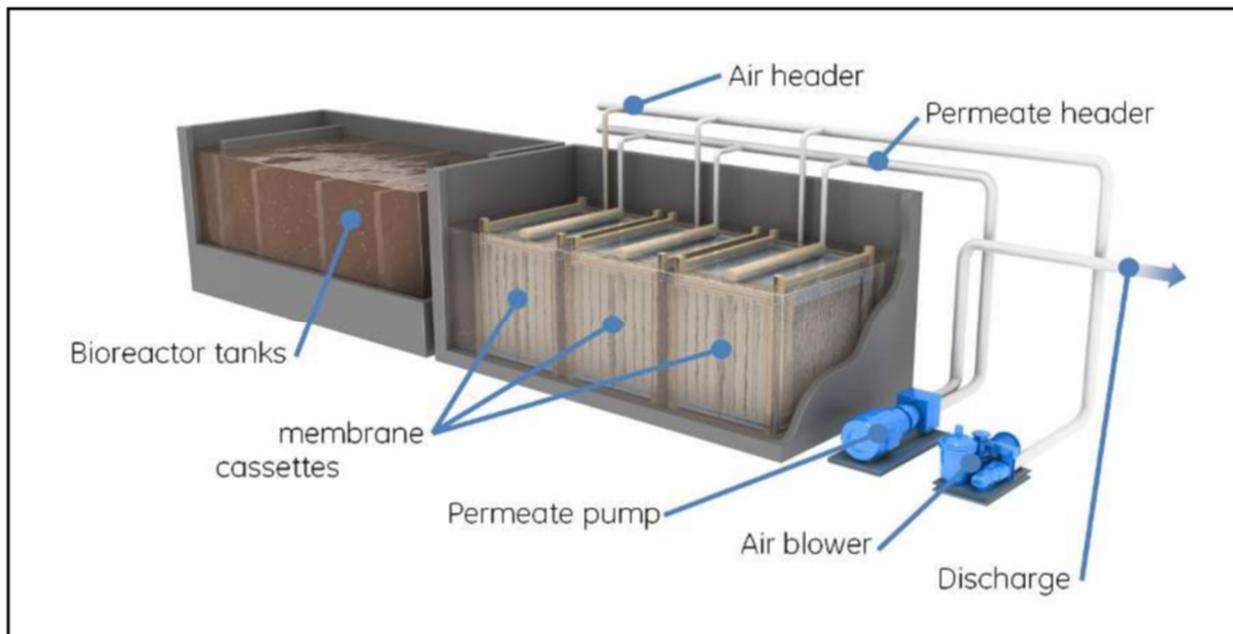


Figure 6. Proposed MBR System

The system can produce filtered wastewater as defined by Title 22, Section 60301.320, producing oxidized wastewater that has been passed through a microfiltration, ultrafiltration, nanofiltration, or reverse osmosis membrane (proposed) so that the turbidity of the filtered wastewater does not exceed 0.2 NTU more than 5 percent of the time within a 24-hour period; and 0.5 NTU at any time.

The turbidity will be monitored continuously at the plant. Capacity of the secondary treatment process is limited to the membrane capacity with 1 train offline.

The proposed MBR will consistently produce an effluent with low coliform such that the measured coliform after UV disinfection will not exceed 2.2 MPN/ 100 ml. This is in compliance with Title 22, Section 60301.230 – Disinfected Tertiary Recycled Water.

A conceptual plan of the screening and MBR treatment are included in **Appendix C**.

3.4 UV Modifications

The new UV currently under construction will need to be further upgraded with additional UV lights in order to meet Title 22 requirements. The proposed upgrade design includes adding 2 UV light banks per channel for a total of 32 additional lamps. The upgrade will meet effluent and redundancy requirements for disinfection after a membrane filtration process at 65% UV Transmission and an 80 millijoules/cm² dose rate.

The proposed UV system will comply with Title 22, Section 60301.230.(a).2 which requires a disinfection process that, when combined with the filtration process, has been demonstrated to inactivate and/or remove 99.999 percent of the plaque forming units of F-specific bacteriophage MS2, or polio virus in the wastewater. A conceptual plan of the UV upgrade is included in **Appendix D**.

3.5 Emergency Diversion and Disposal Methods

The El Centro WWTP currently has an emergency standby basin to provide emergency diversion. This process is discussed in section 4.10.

It is intended that the existing secondary clarifiers will be repurposed as equalization prior to the MBR. These facilities will be abandoned in place, it is typical to provide a small degree of equalization prior to the MBR as they are sensitive to upsets from high flows. Equalization aids in consistent performance, ensuring Title 22 compliance is consistently met.

4 Title 22 Key Requirements

The WWTP is manned 365 days a year. The hours of operation vary depending on staffing and holidays. An on-call staff member is available 365 days a year for all hours during which plants are unmanned. In the event of any system alert or alarm, the designated on-call staff member is promptly notified to ensure timely response and maintain operational reliability. A summary of the WWTP reliability features is provided in **Appendix E**.

The requirements of Articles 8, 9, and 10 of Chapter 3: Water Recycling Criteria, Title 22 of the California Health Laws Related to Recycled Water are addressed in the following sections.

4.1 Bypass - Article 7, §60331

There will be no bypassing of untreated or partially treated wastewater from the reclamation plant or any intermediate unit processes to the point of use.

4.2 Alarms - Article 8, §60335

The requirements of Section 60335 require alarm devices required for various unit processes, that alarm devices are independent from the normal power supply to the plant, and that those alarms provide warning of:

- Loss of power from the normal power supply.
- Failure of a biological treatment process.
- Failure of a disinfection process.
- Failure of a coagulation process.
- Failure of a filtration process.

Each individual alarm device is connected to a master SCADA system alarm that alerts El Centro staff and has visual/audible alarm indications on operator workstations at the plant and at the Central SCADA station. Backup power is available for all required alarms. A remote dialer sends off-site notifications to appropriate personnel, including an on-call staff member, in the event of an alarm condition when the plant is unattended. Any new or updated processes will also have alarms in accordance with the requirements of Section 60335. Alarm notifications are sent to SCADA and WWTP Operations staff.

4.3 Power Supply - Article 8, §60337

Section 60337 requires that the El Centro WWTP power supply shall be provided with alarm and standby power source. The El Centro WWTP is already in compliance with this requirement. Backup power is in place at the El Centro WWTP in the form of two backup generators.

4.4 Emergency Storage - Article 10, §60341

Section 60341 requires that water that does not meet the effluent quality limitations is manually diverted to an emergency standby basin in the event of a treatment process failure. The section also provides an alternative method allowing diversion to a less demanding reuse is an acceptable alternative to

emergency disposal of partially treated wastewater provided that the quality of the partially treated wastewater is suitable for the less demanding reuse. Because the current discharge of effluent is to the Central Main Drain and there is currently no proposed storage or distribution system for the recycled water, then the disposal of secondary treated effluent to the Central Main Drain shall remain available as an alternative disposal in the event of a failure of the recycled water system.

In the event of a failure of the UV process, the El Centro WWTP currently has an Emergency standby basin as described in section 4.10.

4.5 Primary Treatment – Article 10, §60343

Section 60343 requirements state that all primary treatment unit processes shall be provided with one of the following reliability features:

- a. Multiple primary treatment units capable of producing primary effluent with one unit not in operation;
- b. Standby primary treatment unit process;
- c. Long-term storage or disposal provisions.

The El Centro Wastewater Treatment Plant meets reliability requirement (a) by having two primary clarifiers.

4.6 Biological Treatment – Article 10, §60345

Section 60345 requires that all biological treatment unit processes shall be provided with one of the following reliability features:

- (a) Alarm and multiple biological treatment units capable of producing oxidized wastewater with one unit not in operation.
- (b) Alarm, short-term retention or disposal provisions, and standby replacement equipment.
- (c) Alarm and long-term storage or disposal provisions.
- (d) Automatically actuated long-term storage or disposal provisions.

The existing biological treatment system will be replaced by a new aeration process that also includes anoxic zones. This new facility is designed to provide multiple biological treatment units capable of producing oxidized wastewater with one unit not in operations, meeting requirement (a).

4.7 Secondary Sedimentation – Article 10, §60347

Section 60347 secondary sedimentation requirements state that all secondary sedimentation unit processes shall be provided with one of the following reliability features:

- (a) Multiple sedimentation units capable of treating the entire flow with one unit not in operation;
- (b) Standby sedimentation unit process;
- (c) Long-term storage or disposal provisions.

The Secondary clarifiers are proposed to be abandoned after the installation of the MBR as described in section 3.1 The MBR will have multiple units capable of treating the entire flow with one unit not in operation, meeting requirement (a).

4.8 Filtration – Article 10, §60353

Section 60353 filtration requirements state that all filtration unit processes shall be provided with one of the following reliability features:

- (a) Alarm and multiple filter units capable of treating the entire flow with one unit not in operation.
- (b) Alarm, short-term retention or disposal provisions and standby replacement equipment.
- (c) Alarm and long-term storage or disposal provisions.
- (d) Automatically actuated long-term storage or disposal provisions.
- (e) Alarm and standby filtration unit process.

The MBR is designed for multiple units capable of treating the entire flow with one unit not in operation, meeting requirements (a).

4.9 Disinfected Tertiary Recycled Water – Article 1, §60301.230

The new Signa UV system under construction will need to be further upgraded with additional UV lamps to meet Title 22 requirements. The disinfection requirements are defined as follows:

- (a) The filtered wastewater has been disinfected by either:
- (1) A chlorine disinfection process following filtration that provides a CT (the product of total chlorine residual and modal contact time measured at the same point) value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes, based on peak dry weather design flow; or

(2) A disinfection process that, when combined with the filtration process, has been demonstrated to inactivate and/or remove 99.999 percent of the plaque forming units of F-specific bacteriophage MS2, or polio virus in the wastewater. A virus that is at least as resistant to disinfection as polio virus may be used for purposes of the demonstration.

- (b) The median concentration of total coliform bacteria measured in the disinfected effluent does not exceed an MPN of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed and the number of total coliform bacteria does not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30 day period. No sample shall exceed an MPN of 240 total coliform bacteria per 100 milliliters.

The system will include automated valves such that if a unit were to go offline, the backup unit will automatically start up and flow will be diverted to the operational unit.

4.10 Contingency Plan

To maintain compliance with Title 22 requirements, The El Centro WWTP has in place a 29 MG emergency standby basin, which provides 3 days of storage at peak day design flows. The plant is configured to allow manual diversion of secondary effluent or partially disinfected effluent to the emergency standby basin if conditions exceed compliance limits. Conditions warranting immediate diversion include loss of a treatment process, loss of disinfection, or a break in the outfall. Should

diversion be required, operators or the on-call staff would be notified via the plant alarm system. After receiving the alarm, the operator proceeds to divert flow using manually operated valves. This process is completed in under ten minutes once on site. The plant has the ability to pump influent to the emergency standby basin. Water contained in the emergency standby basin is pumped back to the headworks or primaries for re-treatment. Backup power for these processes are provided via two backup generators. This contingency plan ensures that no untreated or inadequately treated water will be delivered to the use area. Emergency reporting procedures for using the standby basin are provided in Error! Reference source not found.F.

5 Effluent Disposal

This Section provides an overview of the WWTP treated effluent discharge location and disposal pathway. It summarizes the monitoring stations used to evaluate influent, effluent, and receiving water quality.

5.1 Effluent Outfall System

Treated effluent is currently discharged to the Central Main Drain. The existing discharge point shall be maintained at the Central Main Drain. The location of the discharge point is shown in **Figure 7**, below (EFF-001). The Central Main Drain is a tributary to the Alamo River. It starts near the north east corner of the plant property and runs East along Treshill road to the Alamo River.

5.2 Monitoring at Effluent Outfall Location

The proposed modifications to the El Centro WWTP are limited to processes between the existing monitoring locations for influent and effluent flow. All existing sampling stations will be retained.

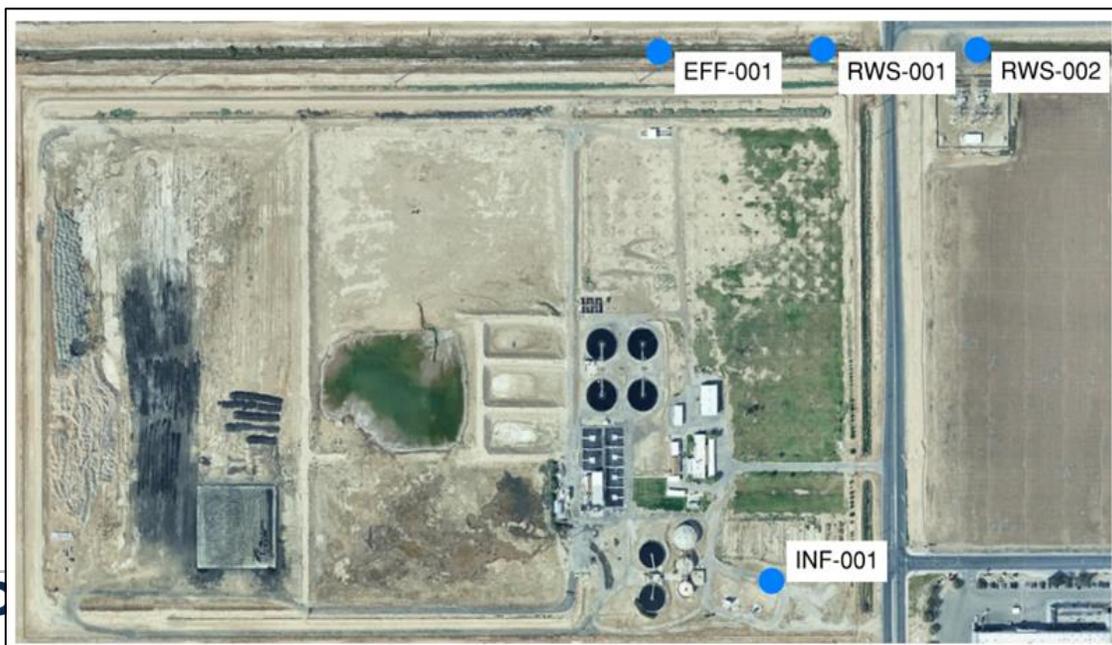


Figure 7. Influent and Effluent Location Map

INF-001

Measures wastewater coming into the treatment facility. The sampling station is located upstream of any in-plant return flows. This ensures that samples of the true influent wastewater can be obtained.

EFF-001

Effluent discharged from the treatment facility into the Central Main Drain; Latitude 32° 49' 03" N and Longitude 115° 34' 50" W.

RSW-001

Receiving water (Central Main Drain) monitoring location, not to exceed 100 feet upstream from the location where the effluent enters the Central Main Drain; Latitude 32° 49' 06" N and Longitude 115° 34' 44" W.

RSW-002

Receiving water (Central Main Drain) monitoring location not to exceed 200 feet downstream from the location where the effluent enters the Central Main Drain, at a point where a plume would be expected; Latitude 32° 49' 06" N and Longitude 115° 34' 40" W.

6 Use Area

Title 22, Article 3 lists available uses for tertiary disinfected Recycled Water. This report will provide three potential use cases for the recycled water produced at the El Centro WWTP. Use cases include discharging recycled water to the Central Main Drain, providing for recycled water irrigation purposes, and providing recycled water for cooling purposes. This report describes only how the El Centro WWTP intends to comply with the latest Title 22 Regulation Related to Recycled Water, DHS Guidelines. Once specific users are identified, a User Title 22 Engineering Report will be prepared separately to describe how recycled water User sites will comply with the requirements.

6.1 Use Case 1 – Effluent Nutrient Reduction

The El Centro WWTP currently discharges treated effluent into the Central Main Drain. If the El Centro WWTP were to produce Recycled Water, it will continue to discharge the recycled water into the Central Main Drain. This primary use case would not produce any economic benefits; however it would provide significant environmental benefits. Discharging recycled water would support the beneficial uses of the Alamo River, this includes recreational uses and wildlife habitat, hydropower generation, and the protection of rare/endangered species. The Salton Sea, a tributary of the Alamo River, would also benefit from the improvement of water quality discharged to the Central Main Drain.

6.2 Use Case 2 - Irrigation

The El Centro WWTP has a water connection to the Imperial Irrigation District raw water (untreated) system pipeline (gravity system) along La Brucherie Road, which is used for landscape irrigation within the plant. A booster pump system adjacent to the raw water connection (by the main access road entrance to the facility) pressurizes and supplies the irrigation system. One proposed use case for the RW is to be used for irrigation, as described above. It can also be used by future RW customers for the following irrigation use cases approved under Title 22.

- Food crops (including edible parts)
- Parks and playgrounds
- School yards
- Residential landscaping
- Golf courses with open public access

6.3 Use Case 3 - Cooling

If there is demand for this potential use within the local community, a storage tank, pump station and recycled water infrastructure will need to be developed to deliver water to specific locations.

Recycled water for industrial/commercial cooling or for air conditioning that involves a cooling tower, evaporative condenser, spraying or any mist crating mechanism needs to be at disinfected tertiary recycled water quality.

If a cooling system uses recycled water and generates mist that could reach employees or the public, it must include a drift eliminator whenever the system is operating. In addition, the recirculating water must be treated with chlorine or another biocide to minimize the growth of Legionella and other microorganisms.

6.4 Use Area Inspections and Monitoring

The use area will be inspected and monitored in accordance with the requirements in the current Monitoring and Reporting Program (see **Appendix G**). A revised Monitoring and Reporting Program may be required in order to meet Title 22 requirements:

7 Conclusions and Recommendations

The existing El Centro WWTP is currently functional, and in compliance with their NPDES permit. In order to produce a water quality that can be used as RW for any of the use cases established above, upgrades must be made to key plant processes to improve treatment performance and reliability. **Table 6** summarizes the project team’s key findings and corresponding recommendations.

Table 6. Conclusions and Recommendations

Conclusion	Action / Recommendation
Lack of Grit Removal system in the existing WWTP.	It is recommended to provide a new headworks facility upstream of the primary clarifiers to allow for grit removal from the influent wastewater, which will help prevent fouling and blinding in the MBR. This improvement also removes grit from the existing digesters, effectively increasing their available capacity.
Lack of Fine Screening in the existing WWTP.	It is recommended to provide a new fine screening process at the proposed headworks facility that will reduce the potential for fine particles to build up in an MBR at the El Centro WWTP.
Aeration system cannot reduce Total Nitrogen to >10 mg/l.	It is recommended to construct a new aeration basin that is designed to provide nitrification and denitrification, to reduce the total nitrogen in the effluent to meet the 10 mg/l limit.
Secondary treatment system cannot meet the required redundancy and treatment levels.	It is recommended to construct a new MBR that pairs with the new aeration process, allowing the WWTP to produce an effluent that consistently meets the requirements of Disinfected Tertiary Recycled Water. The high-quality effluent produced by the MBR allows does not need tertiary filtration, as the MBR provides the required level of filtration. Chemical storage, blowers, aeration diffusers and electrical facilities continue to be required for this option
Currently no tertiary filtration process, existing secondary clarifiers unable to meet Title 22 requirements for turbidity.	
Existing disinfection system unable to meet Title 22 redundancy requirements.	It is recommended to construct additional UV disinfection units to achieve the required disinfection capacity and ensure compliance with Title 22 recycled water standards.

Appendix A

Waste Discharge Requirements

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

Office
73-720 Fred Waring Dr. #100
Palm Desert, CA 92260

WaterBoards.ca.gov/Coloradoriver/

ORDER R7-2024-0041
NPDES No. CA0104426



**WASTE DISCHARGE REQUIREMENTS FOR THE
CITY OF EL CENTRO, EL CENTRO WASTEWATER TREATMENT
PLANT**

Table 1. Discharger Information

Discharger	City of El Centro
Name of Facility	El Centro Wastewater Treatment Plant
Facility Address	2255 N. La Brucherie Road, El Centro, CA 92243
County	Imperial County
Prior Order	R7-2019-0002

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Secondary Treated Disinfected Domestic Wastewater	32°, 49', 06" N	115°, 34', 44" W	Central Main Drain (Tributary to Alamo River)

Table 3. Administrative Information

This Order was adopted on:	December 10, 2024
This Order shall become effective on:	January 2, 2025
This Order shall expire on:	January 1, 2030
Due Date for Next Report of Waste Discharge (ROWD) and Application for National Pollutant Discharge Elimination System (NPDES) Permit Reissuance:	June 1, 2029, or as soon as possible if planned changes meet the Notice Requirement under 40 C.F.R. § 122.41(l)(1).
Discharge Classification by U.S. Environmental Protection Agency (USEPA) and the California Regional Water Quality Control Board, Colorado River Basin Region:	Major

I, MICHAEL PLACENCIA, Executive Officer, hereby certify that the following is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, Colorado River Basin Region, on December 10, 2024.

Original Signed By

MICHAEL PLACENCIA
Executive Officer

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1. FACILITY INFORMATION

Information describing the El Centro Wastewater Treatment Plant (Facility) is summarized on the cover page and in Sections 1 and 2 of the Fact Sheet (Attachment F). Section 1 of the Fact Sheet also includes information regarding the Facility's permit application.

2. FINDINGS

The California Regional Water Quality Control Board, Colorado River Basin Region (Colorado River Basin Water Board) finds as follows:

2.A. Legal Authorities. This Order serves as waste discharge requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as a National Pollutant Discharge Elimination System (NPDES) permit authorizing the Discharger to discharge into waters of the United States at the discharge location described in Table 2, subject to the requirements in this Order.

2.B. Background and Rationale for Requirements. The Colorado River Basin Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for the requirements in this Order, is hereby incorporated into and constitutes Findings for this Order. Attachments A through E and G through H are also incorporated into this Order.

2.C. Provisions and Requirements Implementing State Law. The provisions/requirements in Subsections 4.B, 4.C, 5.B, and 6.A.2 are included to implement state law only. These provisions/requirements are not required or authorized under the federal Clean Water Act; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

2.D. Notification of Interested Parties. The Colorado River Basin Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and provided them with an opportunity to submit written comments and recommendations. Details of the notification are provided in the Fact Sheet.

2.E. Consideration of Public Comment. The Colorado River Basin Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the public hearing are provided in the Fact Sheet.

THEREFORE, IT IS HEREBY ORDERED that Order R7-2019-0002 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. This action in no way prevents the Colorado River Basin Water Board from taking enforcement action for violations of the previous Order.

3. DISCHARGE PROHIBITIONS

- 3.A.** The discharge of waste to land is prohibited unless authorized in a separate waste discharge permit.
- 3.B.** The discharge of treated wastewater from the Facility at a location or in a manner different from that described in this Order is prohibited.
- 3.C.** The discharge of trash from the Facility to Central Main Drain, or any other water of the United States, is prohibited.
- 3.D.** The bypass or overflow of untreated or partially treated wastewater or wastes to Central Main Drain is prohibited, except as allowed under Sections 1.G (Bypass) and 1.H (Upset) of Attachment D, Standard Provisions.
- 3.E.** The discharge of waste in excess of the design treatment or disposal capacity of the system, 8.0 million gallons per day (MGD), is prohibited.
- 3.F.** The discharge of waste that causes contamination, pollution, or nuisance as defined in Water Code section 13050, subdivisions (k), (l) and (m), respectively, is prohibited.

4. EFFLUENT LIMITATIONS AND DISCHARGE PROHIBITIONS

4.A. Effluent Limitations

4.A.1 Final Effluent Limitations for Discharge Point 001

- 4.A.1.a.** The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001, with compliance measured at Monitoring Location EFF-001, as described in the Monitoring and Reporting Program (MRP), Attachment E.

Table 4. Effluent Limitations

Parameter	Units	Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	MGD	8.0	---	8.0	---	---
pH	Standard Units	---	---	---	6.0	9.0
Biochemical Oxygen Demand (BOD ₅) (5-day @ 20 Deg. C)	mg/L	30	45	---	---	---
Biochemical Oxygen Demand (BOD ₅) (5-day @ 20 Deg. C)	lbs/day ¹	2,000	3,000	---	---	---
Total Suspended Solids (TSS)	mg/L	30	45	---	---	---
Total Suspended Solids (TSS)	lbs/day ¹	2,000	3,000	---	---	---
Oil and Grease ²	mg/L	---	---	25	---	---
Oil and Grease	lbs/day ¹	---	---	1,668	---	---

¹ The mass-based effluent limitations are based on a design capacity of 8.0 MGD.

² Total oil and grease shall include the polar and non-polar fraction of oil and grease materials.

Parameter	Units	Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Chlordane	µg/L	---	---	---	---	0.00059
Chlordane	lbs/day ¹	---	---	---	---	0.000039
DDT	µg/L	---	---	---	---	0.00059
DDT	lbs/day ¹	---	---	---	---	0.000039
4,4'-DDE	µg/L	---	---	---	---	0.00059
4,4'-DDE	lbs/day ¹	---	---	---	---	0.000039
4,4'-DDD	µg/L	---	---	---	---	0.00084
4,4'-DDD	lbs/day ¹	---	---	---	---	0.000056
Dieldrin	µg/L	---	---	---	---	0.00014

Parameter	Units	Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Dieldrin	lbs/day ¹	---	---	---	---	0.0000093
PCBs	µg/L	---	---	---	---	0.00017
PCBs	lbs/day ¹	---	---	---	---	0.000011
Toxaphene	µg/L	---	---	---	---	0.0002
Toxaphene	lbs/day ¹	---	---	---	---	0.0000133
Chlorpyrifos	µg/L	---	---	---	---	0.015
Chlorpyrifos	lbs/day ¹	---	---	---	---	0.001
Diazinon	µg/L	---	---	---	---	0.1
Diazinon	lbs/day ¹	---	---	---	---	0.0066

Parameter	Units	Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Malathion	µg/L	---	---	---	---	0.028
Malathion	lbs/day ¹	---	---	---	---	0.00186
Selenium	µg/L	4.21	---	7.78	---	---
Selenium	lbs/day ¹	0.281	---	0.519	---	---
2,3,7,8-TCDD (Dioxin)	µg/L	0.000000014	---	0.000000028	---	---
2,3,7,8-TCDD (Dioxin)	lbs/day ¹	0.00000000093	---	0.0000000019	---	---

4.A.1.b. Percent Removal: The average monthly percent removal of biochemical oxygen demand (5-day at 20°C; BOD₅) and total suspended solids (TSS) shall not be less than 85 percent.

4.A.1.c. Bacteria: The bacterial density in the wastewater effluent discharged to Central Main Drain shall not exceed the following values, as measured by the following bacterial indicators:

E. Coli. A six-week rolling geometric mean (GM)³ of *Escherichia coli* (*E. coli*) not to exceed 100 colony forming units (cfu) per 100 milliliters (mL), calculated weekly

³ GM = geometric mean, a six-week rolling geometric mean calculated weekly.

and a statistical threshold value (STV)⁴ of 320 cfu/100 mL not to be exceeded by more than 10 percent of the samples collected in a calendar month, calculated in a static manner.

4.A.1.d. Toxicity: There shall be no toxicity in the treatment plant effluent, nor shall the treatment plant effluent cause any toxicity in the receiving water, as defined in Section 5 of the MRP. All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in human, plant, animal, or indigenous aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, or toxicity tests of appropriate duration or other appropriate methods specified by the Colorado River Basin Water Board.

Chronic Toxicity Effluent Limit. The discharge is subject to determination of “Pass” or “Fail” and “Percent Effect” from a chronic toxicity test using the Test of Significant Toxicity (TST) statistical t-test approach. The chronic toxicity effluent limit is expressed as “Pass” for the MMEL⁵ summary results and “Pass” and “<50% Effect” for each MDEL⁶ individual result. The MDEL for chronic toxicity is exceeded and a violation will be flagged when a chronic toxicity test, analyzed using the TST statistical approach, results in “Fail” and the “Percent Effect” is equal or greater than 50%. The MMEL for chronic toxicity is exceeded and a violation will be flagged when half or more of all the independent chronic toxicity tests, initiated within the same calendar month and analyzed using the TST statistical approach, result in “Fail.”

4.A.2. Interim Effluent Limitations – Not Applicable

4.B. Land Discharge Specifications – Not Applicable

4.C. Recycling Specifications – Not Applicable

5. RECEIVING WATER LIMITATIONS

5.A. Surface Water Limitations

Receiving water limitations are based on water quality objectives contained in the Water Quality Control Plan for the Colorado River Basin Region (Basin Plan) and are a required part of this Order. The discharge from the Facility shall not cause or contribute to the following in the Central Main Drain:

5.A.1. Dissolved Oxygen. The concentration of dissolved oxygen to fall below 5.0 milligrams per liter (mg/L). When dissolved oxygen in the receiving water is already below 5.0 mg/L, the discharge shall not cause any further depression.

⁴ STV = statistical threshold value, not to be exceeded by more than 10 percent of samples collected in a calendar month, calculated in a static manner.

⁵ Median Monthly Effluent Limit (MMEL). The MMEL for chronic toxicity shall only apply when there is a discharge on more than one day in a calendar month period. During such calendar months, up to three independent toxicity tests may be conducted when one (first) toxicity test results in “Fail.”

⁶ Maximum Daily Effluent Limit (MDEL)

- 5.A.2. Oil, Grease, and Floating Material.** Oil, grease, floating material (liquids, solids, foam and scum) or suspended material in amounts that create a nuisance or adversely affect beneficial uses.
- 5.A.3. Pesticides.** The deposition of pesticides or any combination of pesticides in concentrations that adversely affect beneficial uses.
- 5.A.4. Color.** Discoloration that creates a nuisance or adversely affects beneficial uses.
- 5.A.5. Biostimulatory Substances.** Biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
- 5.A.6. Turbidity.** An increase in turbidity that adversely affects beneficial uses.
- 5.A.7. pH.** The normal ambient pH to fall below 6.0 or exceed 9.0 units.
- 5.A.8. Temperature.** An alteration in the natural temperature, unless the Discharger can demonstrate to the satisfaction of the Colorado River Basin Water Board that the alteration in temperature does not adversely affect beneficial uses.
- 5.A.9. Settleable Substances.** The deposition of material in amounts that cause a nuisance or adversely affect beneficial uses.
- 5.A.10. Chemical Constituents.** Chemical constituents to be present in concentrations that adversely affect beneficial uses.
- 5.A.11. Toxicity.** Toxic pollutants to be present in the water column, sediments or biota in concentrations that adversely affect beneficial uses or that produce detrimental physiological responses in human, plant, animal, or aquatic life.
- 5.A.12. Taste and Odors.** An increase in taste- or odor-producing substances that adversely affects beneficial uses.
- 5.A.13. Total Dissolved Solids.** The concentration of total dissolved solids (TDS) to exceed an annual average concentration of 4,000 mg/L or a maximum daily concentration of 4,500 mg/L.
- 5.A.14. Water Quality Standards.** The violation of any applicable water quality standard for receiving waters adopted by the Colorado River Basin Water Board or the State Water Resources Control Board (State Water Board) as required by the federal Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Clean Water Act section 303 or amendments thereto, the Colorado River Basin Water Board will revise and modify this permit in accordance with such more stringent standard.

5.B. Groundwater Limitations – Not Applicable

6. PROVISIONS

6.A. Standard Provisions

- 6.A.1. Federal Standard Provisions.** The Discharger shall comply with all Standard Provisions included in Attachment D of this Order.

6.A.2. Colorado River Basin Water Board Standard Provisions. The Discharger shall comply with the following provisions. In the event that there is any conflict, duplication, or overlap between provisions specified by this Order, the more stringent provision shall apply:

- 6.A.2.a.** The Facility shall be protected from any washout or erosion of wastes or covering material, and from any inundation, which could occur as a result of floods having a predicted frequency of once in 100 years.
- 6.A.2.b.** The Discharger shall ensure that all site-operating personnel are familiar with the contents of this Order and shall maintain a copy of this Order at the site.
- 6.A.2.c.** The Discharger's wastewater treatment plant shall be supervised and operated by persons possessing certification of the appropriate grade pursuant to California Code of Regulations, title 23, section 3680.
- 6.A.2.d.** The Discharger shall immediately notify the Office of Emergency Services by phone at (800) 852-7550 to report any noncompliance that may endanger human health or the environment as soon as: (1) the Discharger has knowledge of the discharge, (2) notification is possible, and (3) notification can be provided without substantially impeding cleanup or other emergency measures.
- 6.A.2.e.** The Discharger shall provide a report to the Colorado River Basin Water Board upon determining that the treatment plant's monthly average flow rate for any month exceeds 80 percent of the design treatment or disposal capacity. The report should indicate what steps, if any, the Discharger intends to take to provide for the expected wastewater treatment capacity necessary when the plant reaches design capacity.
- 6.A.2.f.** In the event of any changes in ownership or management of this operation, the Discharger shall notify the Colorado River Basin Water Board of such change in writing. The Discharger shall also notify the succeeding owner or operator by letter that the new owner or operator must apply for coverage under this Order prior to discharging. The Discharger shall forward a copy of this letter to the Colorado River Basin Water Board within 30 days of providing the notice to the succeeding owner or operator.
- 6.A.2.g.** Prior to any modifications in this Facility which would result in any material change in the quality or quantity of wastewater treated or discharged, or any material change in the location of discharge, the Discharger shall report all pertinent information in writing to the Colorado River Basin Water Board, and if required by the Colorado River Basin Water Board, obtain revised requirements before any modifications are implemented.
- 6.A.2.h.** This Order does not authorize violation of any federal, state, or local laws or regulations.
- 6.A.2.i.** Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges from this Facility, may subject the Discharger to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain

violations may subject the Discharger to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.

6.A.2.j. In the event the Discharger does not comply or will be unable to comply with this Order for any reason, the Discharger shall notify the Colorado River Basin Water Board as follows:

- 1) For noncompliance with any prohibition, effluent limitation, or receiving water limitation of this Order, or for a spill in excess of 1,000 gallons of wastewater:
 - i. The Discharger shall notify the Colorado River Basin Water Board by email to RB7-coloradoriver@waterboards.ca.gov within 24 hours of having knowledge of such noncompliance.
 - ii. The Discharger shall submit a written report within five days of noncompliance, unless this requirement is waived by Colorado River Basin Water Board staff. The written report shall state the nature, time, duration, and cause of the noncompliance, and shall describe the measures being taken to remedy the current noncompliance and prevent recurrence including, where applicable, a schedule of implementation.
- 2) For all other forms of noncompliance:
 - i. The Discharger shall notify the Colorado River Basin Water Board at the time monitoring reports are submitted.

6.A.2.k. In accordance with Water Code section 1211, the Discharger shall obtain approval from the State Water Board's Division of Water Rights prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a decrease of flow in any portion of a watercourse.

6.B. Monitoring and Reporting Program (MRP) Requirements

The Discharger shall comply with the MRP in Attachment E of this Order and any future revisions thereto. This MRP may be modified by the Executive Officer at any time during the term of this Order and may include an increase in the number of parameters to be monitored, the frequency of the monitoring, the number and size of samples to be collected, or minor clarifications on MRP requirements.

6.C. Special Provisions

6.C.1. Reopener Provisions

6.C.1.a. Standard Revisions. This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for an Order modification, revocation and reissuance, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. Causes for modification include, but are not limited to, the violation of any term or condition contained in this Order, a material change in the character, location, or volume of discharge, the modification of land application plans, or the adoption of new

regulations by the State Water Board or the Colorado River Basin Water Board, including revisions to the Basin Plan.

6.C.1.b. Whole Effluent Toxicity. As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include an acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE.

6.C.1.c. 303(d)-Listed Pollutants. If new or revised water quality objectives or Total Maximum Daily Loads (TMDLs) come into effect for receiving waters, the effluent limitations in this Order may be modified as necessary to reflect any updated water quality objectives and TMDL Waste Load Allocations.

6.C.1.d. Reasonable Potential. This Order may be modified or revoked and reissued if present or future investigations demonstrate that the Discharger is causing or contributing to excursions above any applicable water quality standard or objective, or adversely impacting water quality and/or the beneficial uses of receiving waters.

6.C.1.e Pretreatment Program. Pursuant to 40 C.F.R. section 403.8(e), the Colorado River Basin Water Board may modify, or revoke and reissue, the NPDES permit if the Discharger must implement a pretreatment program.

6.C.2. Special Studies, Technical Papers and Additional Monitoring Requirements

6.C.2.a. Toxicity Reduction Evaluation (TRE) Plan

The overall objectives for any toxicity reduction evaluation are to: (1) verify that toxicity is occurring in the effluent at levels that have the potential to impact the receiving water in a negative way; (2) determine a viable control strategy to reduce toxicity, as needed; and (3) verify that, upon implementation of the control strategy, toxicity has been consistently reduced to levels that would not be expected to negatively impact the receiving water. Additionally, a Toxicity Identification Evaluation (TIE) may be required to further investigate the cause of the toxicity.

The Discharger must review and update the Toxicity Reduction Evaluation (TRE) Work Plan as defined in Attachment E. The Discharger must conduct a TRE when the chronic toxicity testing results in any combination of two or more MDEL or MMEL violations within a single calendar month or within two consecutive routine monitoring events. The Discharger shall take all reasonable steps to control toxicity once the source of toxicity is identified. Failure to conduct the required toxicity tests or conduct a TRE shall result in additional violations for chronic toxicity requirement under this Order and/or appropriate enforcement action.

6.C.2.b. Optional Metal Translator Study

Should the Discharger wish to use a translator for metals and selenium other than the default USEPA conversion factors listed in Tables 2 and 3 of the California Toxics Rule (CTR), the Discharger shall perform studies to determine site-specific metal translators and must submit a written request to the Executive Officer. Otherwise, the USEPA conversion factors shall remain the default

standard used when calculating any water quality-based effluent limitations for selenium and metals. USEPA has developed a guidance manual entitled, *The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion* (EPA 823-B-96-007, June 1996).

6.C.2.c. Discharger Monitoring Report-Quality Assurance (DMR-QA) Study

USEPA requires major and selected minor permittees subject to an NPDES Permit to participate in the annual DMR-QA Study Program. The DMR-QA Study evaluates the analytical ability of laboratories that routinely perform or support self-monitoring analyses required by NPDES permits.

There are two options to satisfy the requirements of the DMR-QA Study Program: (1) The Discharger can obtain and analyze a DMR-QA sample as part of the DMR-QA Study; or (2) per the waiver issued by USEPA to the State Water Board, the Discharger can submit the results of the most recent Water Pollution Performance Evaluation Study from its own laboratories or its contract laboratories. A Water Pollution Performance Evaluation Study is similar to the DMR-QA Study; it also evaluates a laboratory's ability to analyze wastewater samples to produce quality data that ensure the integrity of the NPDES Program.

The Discharger shall ensure that the results of the DMR-QA Study or the results of the most recent Water Pollution Performance Evaluation Study are submitted annually to the State Water Board's Quality Assurance Program Officer. The State Water Board's Quality Assurance Program Officer will send the DMR-QA Study results or the results of the most recent Water Pollution Performance Evaluation Study to USEPA's DMR-QA Coordinator and Quality Assurance Manager.

6.C.3. Best Management Practices and Pollution Prevention

6.C.3.a. Pollutant Minimization Program

The Discharger shall develop and conduct a Pollutant Minimization Program (PMP) when there is evidence that a priority pollutant is present in the effluent above an effluent limitation (e.g., sample results reported as "Detected, but Not Quantified" [DNQ] when the effluent limitation is less than the Method Detection Limit [MDL], sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) and either:

- 1) A sample result is reported as DNQ and the effluent limitation is less than the Reporting Level (RL); or
- 2) A sample result is reported as Not Detected (ND) and the effluent limitation is less than the MDL, using definitions described in Attachment A and reporting protocols described in MRP Section 10.B.4.

The PMP shall include, but not be limited to, the following actions and submittals acceptable to the Colorado River Basin Water Board:

- i. An annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling.
- ii. Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system.
- iii. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation.
- iv. Implementation of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy; and
- v. An annual status report that shall be sent to the Colorado River Basin Water Board including:
 - a) All PMP monitoring results for the previous year.
 - b) A list of potential sources of the reportable priority pollutant(s).
 - c) A summary of all actions undertaken pursuant to the control strategy.
 - d) A description of actions to be taken in the following year.

6.C.3.b. Spill Response Plan

The Discharger shall develop and submit to the Colorado River Basin Water Board a Spill Response Plan (SRP). The Discharger shall review and update the existing SRP on an annual basis. The Discharger shall submit the updated SRP with each Annual Report. At a minimum, the SRP shall include sections concerning spill cleanup and containment measures, public notifications, monitoring, and the procedures to be carried out if floatable material is visible on the water surface near the discharge point. The Discharger shall make the SRP available for staff review during Colorado River Basin Water Board inspections. The Discharger shall ensure that all operating personnel are familiar with the contents of the SRP. A copy of the SRP shall be maintained at the site and shall be accessible to all operating personnel.

6.C.3.c. Stormwater

Enrollment under State Water Board's *General Permit for Storm Water Discharges Associated with Industrial Activities*, Order 2014-0057-DWQ (NPDES No. CAS000001) (Industrial General Permit) is required for facilities engaged in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of a facility with a design flow of 1 MGD or more, or are required to have an approved pretreatment program under 40 C.F.R. part 403.

The Discharger is required to submit a Notice of Intent to obtain coverage under the Water Quality Order 2014-0057-DWQ, NPDES General Permit CAS000001 for Discharges of Storm Water Associated with Industrial Activities because the Facility design flow is greater than 1 MGD. The Discharger is enrolled under the Industrial General Permit, and the WDID No. for the Facility is 713I005796.

6.C.4. Construction, Operation and Maintenance Specifications

6.C.4.a. Treatment Basins

- 1) A minimum depth of freeboard of two (2) feet shall be maintained at all times in all treatment basins.
- 2) The treatment basins shall be managed to prevent breeding of mosquitoes, in particular:
 - i. An erosion control program should assure that small coves and irregularities are not created around the perimeter of the water surface.
 - ii. Weeds shall be minimized through control of water depth, harvesting, or herbicides.
 - iii. Dead algae, vegetation, and debris shall not accumulate on the water surface.
- 3) The treatment basins shall be maintained so they will be kept in aerobic conditions.
- 4) Onsite wastes shall be strictly confined to the lands specifically designated for the disposal operation.
- 5) Public contact with undisinfected wastewater shall be precluded through such means as fences, signs, and other acceptable alternatives.
- 6) Objectionable odors originating at the Facility shall not be perceivable beyond the limits of the property boundary.
- 7) Ponds shall have sufficient capacity to accommodate allowable wastewater flow, design seasonal precipitation, ancillary inflow, and infiltration. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.

6.C.4.b. Facility and Collection System

- 1) The Discharger shall, at all times, properly operate and maintain all systems and components of collection, treatment and control which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance include effective performance measures, adequate process controls, and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of this Order. All systems, both in-service and reserved, shall be inspected and maintained on a regular basis. Records shall be kept of the

inspection results and maintenance performed and made available to the Colorado River Basin Water Board upon demand.

- 2) Temporary power or adequate storage capacity shall be provided to maintain the plant in operation in the event of commercial power failure.
- 3) Adequate measures shall be taken to ensure that unauthorized persons are effectively excluded from contact with the wastewater disposal facilities.
- 4) The Discharger shall implement acceptable operation and maintenance at the Facility so that needed repairs and maintenance are performed in a timely manner.

6.C.4.c. Operations Plan for Proposed Plant Expansion

At least 30 days in advance of the operation of an expanded wastewater treatment system, the Discharger shall submit an Operations Plan, in accordance with Water Code section 13385, subdivision (j)(1)(D). The Operations Plan shall describe the actions the Discharger will take during the period of adjusting or testing, including steps to prevent violations and identification of the shortest reasonable time required for the period of adjusting and testing (not to exceed 90 days for a wastewater treatment unit that relies on a biological treatment process and not to exceed 30 days for any other wastewater treatment unit). Upon receipt of the Operations Plan by the Executive Officer, and if the Executive Officer has not objected in writing to the Operations Plan, Water Code section 13385, subdivisions (h) and (i), shall not apply in accordance with subdivision (j)(1) of section 13385 if a violation is caused by the operation of a new or reconstructed wastewater treatment unit during a defined period of adjusting or testing, as described above.

6.C.5. Special Provisions for Publicly-Owned Treatment Works (POTWs Only)

6.C.5.a. Sludge Requirements

- 1) This Order does not authorize any act that results in a violation of requirements administered by USEPA to implement 40 C.F.R. part 503, Standards for the Use or Disposal of Sewage Sludge. These standards regulate the final use or disposal of sewage sludge that is generated during the treatment of domestic sewage in a municipal wastewater treatment facility. The Discharger is responsible for meeting all applicable requirements of 40 C.F.R. part 503 that are under USEPA's enforcement authority. Attachment H contains biosolids and sludge management requirements.
- 2) Where applicable, the Discharger shall ensure compliance with the requirements in State Water Board Order No. 2004-12-DWQ, *General Waste Discharge Requirements for the Discharge of Biosolids to Land for Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural and Land Reclamation Activities*.

6.C.5.b. Source Control and Pretreatment Provisions

In the event that the Facility receives influent from Industrial Users (40 C.F.R. § 403.3(j)) which Pass Through (40 C.F.R. § 403.3(p)) or Interfere (40 C.F.R. § 403.3(k)) with the operation of the wastewater treatment facility or are otherwise subject to National Pretreatment Standards (40 C.F.R. § 403.3(l)), then the Facility shall have and enforce an adequate pretreatment program (40 C.F.R. § 403.8) as follows:

- 1) The Discharger shall be responsible for the compliance with all pretreatment requirements contained in 40 C.F.R. part 403, and shall be subject to enforcement actions, penalties, and other remedies by the USEPA or the Colorado River Basin Water Board, as provided in the Clean Water Act.
- 2) Within one year of notification that a pretreatment program is required, the Discharger shall submit a formal pretreatment program for approval by the Colorado River Basin Water Board.
- 3) The Discharger must seek approval of its pretreatment program from the Colorado River Basin Water Board subject to Provision 6.C.1.e. of this Order in the event a pretreatment program is developed.

6.C.5.c. Collection Systems

- 1) The Discharger's collection system is part of the system that is subject to this Order. As such, the Discharger must properly operate and maintain its collection system. (40 C.F.R. § 122.41(e).) The Discharger must report any non-compliance (40 C.F.R. § 122.41(l)(6) and (7)) and mitigate any discharge from the collection system in violation of this Order (40 C.F.R. § 122.41(d)). See Standard Provision 6.A.2.j and Attachment D, Sections 1.C, 1.D, 5.E, and 5.H.
- 2) The Discharger is subject to the requirements of and must comply with State Water Board Order 2022-0103-DWQ, *Statewide General Waste Discharge Requirements for Sanitary Sewer Systems* adopted on December 6, 2022, and became effective on June 5, 2023 (Sanitary Sewer Order). The Sanitary Sewer Order requires public agencies that own or operate sanitary sewer systems to develop and implement sewer system management plans (SSMPs) and report all sanitary sewer overflows (SSOs) to the State Water Board's online SSO database. The Discharger is enrolled under the Sanitary Sewer Order, and the Discharger's WDID number is 7SSO10525.

6.C.6. Other Special Provisions

6.C.6.a. The Discharger may be required to submit technical reports as directed by the Colorado River Basin Water Board's Executive Officer.

6.C.6.b. The Discharger shall exclude from the wastewater treatment plant any liquid or solid waste that could adversely affect the plant operation or effluent quality. The excluded liquid or solid waste shall be disposed of in accordance with applicable regulations.

6.C.7. Special Provisions Reporting Schedules

6.C.7.a Deliverables and Due Dates. The Discharger shall comply with the following compliance schedule as summarized in Table 5:

Table 5. Compliance Schedule

Activity	Description	Due Date
Spill Response Plan (SRP) 6.C.3.b	The Discharger must annually update the Spill Response Plan (SRP), which must include sections on spill cleanup and containment measures.	Annual updates submitted yearly with Annual Report.
Toxicity Reduction Evaluation (TRE) Workplan 6.C.2.a	The Discharger must review and update the TRE Work Plan. The Work Plan should include a description of steps the Discharger will take in the event toxicity is detected. A Toxicity Identification Evaluation plan should also be incorporated in the workplan in the event it is required with a TRE.	Within 90 days of the effective date of this Order and any time there are staff or operational changes.
Discharger Monitoring Report-Quality Assurance (DMR-QA) Study 6.C.2.c	The Discharger must conduct a DMR-QA Study to evaluate the analytical ability of laboratories that routinely perform or support self-monitoring analyses. The results of the DMR-QA Study or the most recent Water Pollution Performance Evaluation Study are submitted to the State Water Board.	Annual updates submitted yearly to the State Water Board's Quality Assurance Officer.
Pollutant Minimization Program (PMP) 6.C.3.a	The Discharger must develop a PMP when there is evidence a priority pollutant is present in the effluent above an effluent limitation and either: (1) the sample result is reported as DNQ and the effluent limitation is less than the RL; or (2) a sample result is reported as ND and the effluent limitation is less than the MDL.	Within 90 days after receipt of evidence of a priority pollutant effluent exceedance.
Biosolids and Sludge Reporting 10.D.1	The Discharger shall submit an annual biosolids report electronically via https://cdx.epa.gov/ to the USEPA Region 9 Biosolids Coordinator, and to the Colorado River Basin Water Board.	February 19 of each year for the period covering the previous calendar year.

7. COMPLIANCE DETERMINATION

Compliance with the effluent limitations contained in Section 4 of this Order will be determined as specified below:

7.A. Priority Pollutant Effluent Limitations

Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined in the MRP and Section 7 of this Order. For purposes of reporting and administrative enforcement by the Colorado River Basin Water Board or the State Water Board, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the Reporting Level (RL).

7.B. Multiple Sample Data

When determining compliance with an Average Monthly Effluent Limitation (AMEL), Average Weekly Effluent Limitation (AWEL), and Maximum Daily Effluent Limitation (MDEL) for pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of “Detected, but Not Quantified” (DNQ) or “Not Detected” (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

- 7.B.1.** The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
- 7.B.2.** The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle, unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

7.C. Average Monthly Effluent Limitation (AMEL)

If the average (or when applicable, the median determined by Section 7.B above for multiple sample data) of daily discharges over a calendar month exceeds the AMEL for a given parameter, this will represent a single violation, though the Discharger will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of non-compliance in a 31-day month), where no data is available to show compliance. If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the AMEL, the Discharger will be considered out of compliance for that calendar month. The Discharger will only be considered out of compliance for days when the discharge occurs. For any one calendar month during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar month with respect to AMEL.

7.D. Average Weekly Effluent Limitation (AWEL)

If the average (or when applicable, the median determined by Section 7.B above for multiple sample data) of daily discharges over a calendar week exceeds the AWEL for a given parameter, this will represent a single violation, though the Discharger

will be considered out of compliance for each day of that week for that parameter, resulting in seven days of non-compliance where no data is available to show compliance. If only a single sample is taken during the calendar week and the analytical result for that sample exceeds the AWEL, the Discharger will be considered out of compliance for that calendar week. The Discharger will only be considered out of compliance for days when the discharge occurs. For any one calendar week during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar week with respect to AWEL.

A calendar week will begin on Sunday and end on Saturday. Partial calendar weeks at the end of the calendar month will be carried forward to the next month in order to calculate and report a consecutive seven-day average value on Saturday.

7.E. Maximum Daily Effluent Limitation (MDEL)

If a daily discharge (or when applicable, the median determined by Section 7.B above for multiple sample data of a daily discharge) exceeds the MDEL for a given parameter, the Discharger will be considered out of compliance for that parameter for that one day only within the reporting period. For any one day during which no sample is taken, no compliance determination can be made for that day with respect to MDEL.

For multiple samples collected in a calendar day, the maximum daily value is the average of the samples collected in a calendar day, or when applicable, the median as determined by Section 7.B, above.

7.F. Median Monthly Effluent Limitation (MMEL)

If the median of daily discharges over a calendar month exceeds the MMEL for a given parameter, a potential violation will be flagged and the Permittee will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of non-compliance in a 31-day month). However, a potential violation of the MMEL will be considered one violation for the purpose of assessing State mandatory minimum penalties. If no sample (daily discharge) is taken over a calendar month, no compliance determination can be made for that month with respect to effluent violation determination, but compliance determination can be made for that month with respect to reporting violation determination.

7.G. Instantaneous Minimum Effluent Limitation

If the analytical result of a single grab sample is lower than the instantaneous minimum effluent limitation for a parameter, the Discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both are lower than the instantaneous minimum effluent limitation would result in two instances of non-compliance with the instantaneous minimum effluent limitation). There are no mass limits for instantaneous minimum effluent limitations.

7.H. Instantaneous Maximum Effluent Limitation

If the analytical result of a single grab sample is higher than the instantaneous maximum effluent limitation for a parameter, the Discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both exceed the instantaneous maximum effluent limitation would result in two instances of non-compliance with the instantaneous maximum effluent limitation). There are no mass limits for instantaneous maximum effluent limitations.

7.I. Effect of Conducting a Pollutant Minimization Program (PMP)

If a sample result for a priority pollutant, or the arithmetic mean or median of multiple sample results is below the RL, and there is evidence that the priority pollutant is present in the effluent above an effluent limitation and the Discharger conducts a PMP for the priority pollutant (as described in Section 6.C.3.a) the Discharger shall not be deemed out of compliance.

7.J Compliance with Single Constituent Effluent Limitation

Dischargers shall be deemed out of compliance with an effluent limitation if the concentration of a pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported Minimum Level (ML).

7.K. Mass and Concentration Limitation

Compliance with mass and concentration effluent limitations for the same parameter shall be determined separately with their respective limitations. When the concentration of a constituent in an effluent sample is determined to be ND or DNQ, the corresponding mass emission rate (MER) determined from that sample concentration shall also be reported as ND or DNQ.

7.L. Percent Removal

Compliance with the secondary treatment standard for monthly average percent removal of biochemical oxygen demand and total suspended solids, pursuant to 40 C.F.R. part 133, shall be determined separately for each wastewater treatment facility discharging through an outfall. For each wastewater treatment facility, the monthly average percent removal is the average of the calculated daily discharge percent removals only for days on which the constituent concentrations are monitored in both the influent and effluent of the wastewater treatment facility at locations specified in the MRP (Attachment E) within a calendar month. The percent removal for each day (Daily Percent Removal) shall be calculated according to the following equation:

$$\text{Daily Percent Removal} = \frac{(\text{Daily Influent Concentration} - \text{Daily Effluent Concentration})}{\text{Daily Influent Concentration}} * 100$$

The percent removal for the month (Monthly Percent Removal) shall be calculated according to the following equation:

$$\text{Monthly Percent Removal} = \frac{(\text{Sum of the Daily Percent Removal})}{\text{Number of Daily Percent Removal Values}}$$

7.M. Chronic Toxicity Effluent Limitation

Compliance with effluent limitations established in the Order are determined from a chronic toxicity test using the Test of Significant Toxicity (TST) statistical t-test approach described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010). The Discharger must report either a “Pass” or a “Fail” and the Percent Effect as required in the MRP, Section 5. If a result is reported as a “Fail,” the Discharger must follow the requirements in MRP, Section 5.A, Chronic Toxicity Testing, to initiate an accelerated monitoring schedule or conduct a TRE.

7.N. Chronic Toxicity

The discharge is subject to determination of “Pass” or “Fail” and “Percent Effect” from a chronic toxicity test using the Test of Significant Toxicity (TST) statistical t-test approach described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010), Appendix A, Figure A-1, Table A-1, and Appendix B, Table B-1. The null hypothesis (Ho) for the TST statistical approach is: Mean discharge In-stream Waste Concentration (IWC) response $\leq 0.75 \times$ Mean control response. A test result that rejects this null hypothesis is reported as “Pass.” A test result that does not reject this null hypothesis is reported as “Fail.” The relative “Percent Effect” at the discharge IWC is defined and reported as: $((\text{Mean control response} - \text{Mean discharge IWC response}) \div \text{Mean control response}) \times 100$. This is a t-test (formally Student’s t-Test), a statistical analysis comparing two sets of replicate observations - in the case of Whole Effluent Toxicity (WET), only two test concentrations (i.e., a control and IWC). The purpose of this statistical test is to determine if the means of the two sets of observations are different (i.e., if the IWC or receiving water concentration differs from the control (the test result is “Pass” or “Fail”). The Welch’s t-test employed by the TST statistical approach is an adaptation of Student’s t-test and is used with two samples having unequal variances.

The MDEL for chronic toxicity is exceeded and a violation will be flagged when a chronic toxicity test, analyzed using the TST statistical approach, results in “Fail” and the “Percent Effect” is ≥ 0.50 .

The MMEL for chronic toxicity is exceeded and a violation will be flagged when half or more of all the independent chronic toxicity tests, conducted within the same calendar month and analyzed using the TST statistical approach, results in “Fail.” The MMEL for chronic toxicity shall only apply when there is a discharge on more than one day in a calendar month period. During such calendar months, up to three independent toxicity tests may be conducted when one toxicity test results in “Fail.”

The chronic toxicity MDEL and MMEL are set at the IWC for the discharge (100% effluent) and expressed in units of the TST statistical approach (“Pass” or “Fail”, “Percent Effect”). All NPDES effluent compliance monitoring for the chronic toxicity MDEL and MMEL shall be reported using only the 100% effluent concentration and negative control, expressed in units of the TST. The TST hypothesis (H_0) (see above) is statistically analyzed using the IWC and a negative control. Effluent toxicity tests shall be run using a multi-concentration test design when required by Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (USEPA 2002, EPA-821-R-02-013). The Regional Water Board’s review of reported toxicity test results will include review of concentration-response patterns as appropriate (see Fact Sheet discussion at VII.C.5). As described in the bioassay laboratory audit correspondence from the State Water Resources Control Board dated August 7, 2014, and from the USEPA dated December 24, 2013, the Percent Minimum Significant Difference (PMSD) criteria only apply to compliance reporting for the No Observable Effect Concentration (NOEC) and the sublethal statistical endpoints of the NOEC, and therefore are not used to interpret TST results. Standard Operating Procedures used by the toxicity testing laboratory to identify and report valid, invalid, anomalous, or inconclusive effluent (and receiving water) toxicity test measurement results from the TST statistical approach, including those that incorporate a consideration of concentration- response patterns, must be submitted to the Regional Water Board (40 CFR § 122.41(h)). The Regional Water Board will make a final determination as to whether a toxicity test result is valid, and may consult with the Permittee, the USEPA, the State Water Board’s Quality Assurance Officer, or the State Water Board’s Environmental Laboratory Accreditation Program (ELAP) as needed. The Board may consider the results of any TIE/TRE studies in an enforcement action.

7.O. Bacteria Effluent Limitations

Compliance with the bacteria effluent limitations established in Section 4.A.1.d of the Order shall be determined as follows:

7.O.1. Six-week Rolling Geometric Mean (GM) for *E. coli* bacteria. The rolling geometric mean shall be calculated using at least 5 sample results over a 6-week period from a site using the following formula:

$$GM = \sqrt[n]{(x_1)(x_2)(x_3)\cdots(x_n)},$$

where x is the sample value and n is the number of samples taken.

If the weekly calculated six-week rolling geometric mean bacterial concentration for *E. coli* exceeds the bacteria objective summarized in the Effluent Limitations and Discharge Requirements Section 4.A.1.d of this Order, this will represent a single violation of the water quality-based effluent limitation for bacteria and the Discharger will be considered out of compliance for the week in which the GM was reported.

7.O.2. Statistical Threshold Value (STV) for *E. coli* bacteria. (1) The data set shall be ranked from low to high, ranking any ND concentrations lowest, followed by

quantified values. (2) The number of sample results should then be multiplied by 90 percent then rounded up to the nearest whole number. (3) Count the values in the data set starting from lowest to highest until the number indicated in step (2) is reached. (4) To be compliant with the statistical threshold value in the Effluent Limitations and Discharge Requirements Section 4.A.1.d of this Order, all sample results less than the point described in step 3 must be less than the STV. If a STV was exceeded by more than 10 percent of the samples collected in a calendar month, calculated in a static manner, this will represent a single violation of the water quality-based effluent limitation for bacteria and the Discharger will be considered out of compliance for the month in which the STV was reported.

7.P. Single Operational Upset

A Single Operational Upset (SOU) that leads to simultaneous violations of more than one pollutant parameter shall be treated as a single violation and limits the Discharger's liability in accordance with the following conditions:

7.P.1. A SOU is defined as a single unusual event that temporarily disrupts the usually satisfactory operation of a system in such a way that it results in violation of multiple pollutant parameters.

7.P.2. The Discharger may assert a SOU as a limit to liability only for those violations which the Discharger submitted a notice of the upset as required in Section 5.E.2.b. of Attachment D, Standard Provisions.

7.P.3. For purposes of federal law, determination of compliance and civil liability (including any more specific definition of SOU, the requirements for Dischargers to assert the SOU limitation of liability, and the manner of counting violations) shall be in accordance with USEPA's Memorandum Issuance of Guidance Interpreting Single Operational Upset (September 27, 1989).

7.P.4. For purposes of state law, determination of compliance and civil liability (including any more specific definition of SOU, the requirements for Dischargers to assert the SOU limitation of liability, and the manner of counting violations) shall be in accordance with Water Code section 13385, subdivision (f).

7. Q. Total Residual Chlorine Effluent Limitations - Not Applicable

7. R. Significant Figures

The Discharger shall report monitoring and calculation results with significant figures consistent with tabulated values in Table 4 (Effluent Limitations).

Appendix B

Existing Design Criteria

El Centro WWTP Design Criteria

Parameter	Units	Value
Plant Influent		
Design Avg. Flow	MGD	8
Design Peak Flow	MGD	12
Influent BOD	mg/l	250
Influent TSS	mg/l	250
Headworks¹		
Bar Screens	-	-
Primary Clarification		
Number	No.	2
Diameter	ft	65
Sidewater Depth	ft	8.75
Surface Area	ft ²	3,318
Detention Time	hr	1.3
Overflow Rate	gpd/ft ²	1,205
Primary Sludge Pumps		
Number of Pumps	No.	2
Aeration Basins		
Number	No.	4
Size (LxWxSWD)	ft	50 x 50 x 12.05
Number	No.	2
Size (LxWxSWD)	ft	50 x 55 x 12.05
Total Hydraulic Detention Time	Hrs	4.34
Total BOD Loading	Lb/day	11,700
Total BOD Loading	Lb/1000 cf	60.5
Aeration Blowers		
Number	No.	2
Type	-	Centrifugal
Capacity, each	Scfm	5,000
Discharge pressure	psig	6.5
RAS/WAS Pump Station		
Capacity	gpd/ft ²	990
RAS Pumps	No.	3
Type		Self-priming,
Capacity	gpm	2800
Total Head	Ft	54
Motor HP	Each	130
WAS Pumps	No.	2
Type		Self-priming,
Capacity	gpm	560
Total Head	Ft	40
Motor HP	Each	7.5
Secondary Clarification		
Number	No.	4
Type	-	Circular
Diameter	ft	80
Avg. Sidewater Depth	ft	9.95
Detention Time	Hours	4.5
Overflow Rate	Gpd/sf	400
Plant Water Pump Station		
Plant Water Pumps	No.	2
Type	-	Vertical Turbine
Capacity	gpm	300
Total Head	psi	120
Motor HP	ea	40

El Centro WWTP Design Criteria

Parameter	Units	Value
Ultraviolet Disinfection		
Total Capacity	MGD	16
Capacity, each	MGD	8
Channels	-	2
UV Transmission	%	62
Minimum Dose	mJ/sq-cm	30
Channels	No.	2
Banks per channel	No.	3
Lamps per bank	No.	8
Fecal Coliform Limit	30 day mean	200
Thickening		
Type	-	gravity belt
Number	No.	1
Max. Hydraulic Loading @ Design Average Flow	gpm	560
Max. Solids Loading	lbs/hr	917
Thickened Sludge Solids	%	4
Sludge Pumps		
Number	No.	2
Max. Capacity	gpm	85
Total Head	ft	170
Motor Power, each	HP	7.5
Anaerobic Digesters		
Primary Digester		
Type	No.	1
Type	-	primary
Dimater	ft	60
SWD	ft	28
Working Volume	gal	590,000
Primary Digester		
Type	No.	2
Type	-	primary
Dimater	ft	40
SWD	ft	18.5
Working Volume	gal	200,000
Total Detention Time	days	16
Secondary Digester		
Type	No.	3
Type	-	secondary
Dimater	ft	40
SWD	ft	18.5
Working Volume	gal	91,500
Dewatering		
Type	-	belt press
Number	No.	2
Max. Solids Loading	lbs/hr	200
Motor Power, each	HP	2

El Centro WWTP Design Criteria

Parameter	Units	Value
Sludge Drying Beds		
Number	No.	1
Length x Width (ft x ft)		209 x 209

Notes:

¹⁾ Headworks design criteria not provided.

Appendix C

Proposed Fine Screening, Grit Removal, MBR Brochures
and Conceptual Layouts



Budget Proposal for the
City of El Centro WRF
ZeeWeed* Membrane Filtration System

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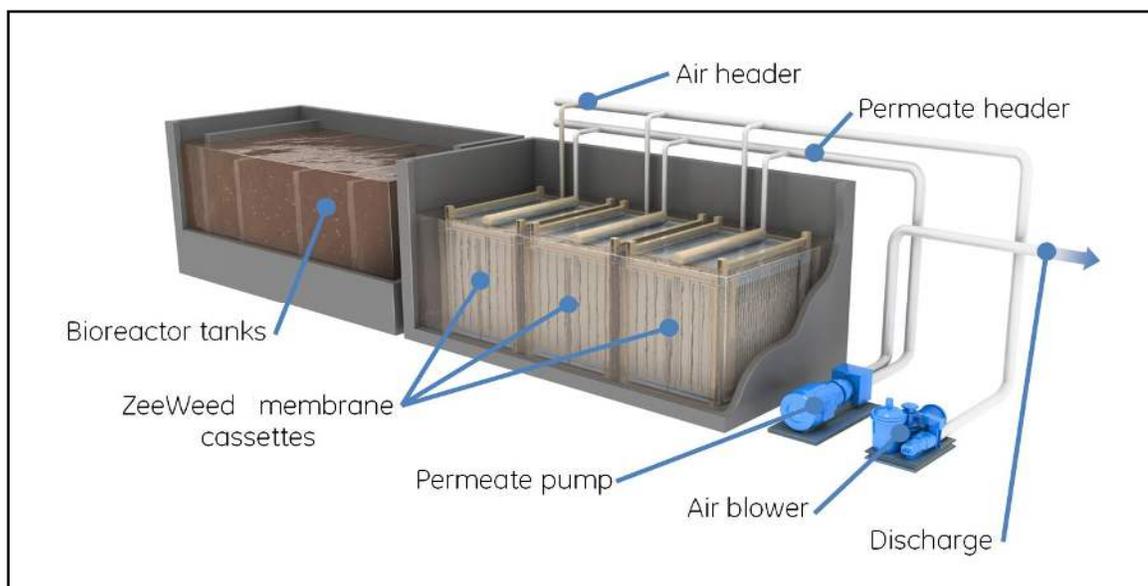
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1. System Design and Scope

The membrane bioreactor (MBR) process consists of a suspended growth biological reactor integrated with a membrane filtration system, using the ZeeWeed hollow fiber ultrafiltration membrane. The membrane filtration system essentially replaces the solids separation function of secondary clarifiers and tertiary sand filters used in a conventional activated sludge process.

ZeeWeed ultrafiltration membranes are directly immersed in mixed liquor. Using a permeate pump, a vacuum is applied to a header pipe connected to the membranes. The vacuum draws the treated water through the hollow fiber membranes. Permeate is then directed to downstream disinfection or discharge facilities. Air, in the form of large bubbles, is introduced below the bottom of the membrane modules, producing turbulence that scours the outer surface of the hollow fibers to keep them clean.



The proposed MBR design utilizes LEAPmbr aeration, Veolia's latest technology for wastewater treatment, which offers the lowest cost of ownership in the industry. LEAPmbr aeration incorporates several innovations, including the latest ZeeWeed 500 module with increased membrane surface area, increased productivity through proven membrane design flux improvements, an optimized membrane tank design, along with a more efficient membrane aeration system (known as LEAPmbr aeration technology) that simplifies the aeration system and reduces aeration requirements. These innovations combine to offer:

- 15% productivity improvement
- 20% footprint reduction
- 50% reduction in membrane aeration equipment
- 30% membrane aeration energy savings

The use of LEAPmbr aeration offers some of the most important benefits of a ZeeWeed MBR systems – simplicity, reliability, and lowest life-cycle cost.



Simplicity

Over the years, Veolia has continually improved the design of ZeeWeed MBR systems, making them the simplest MBR systems in the industry to operate and maintain. The system is fully automated, with operators having the ability to review operation, adjust set points, or schedule operating tasks through the easy-to-understand HMI graphical display.

A fully automated suite of membrane maintenance procedures will ensure long-term, successful operation, including:

in situ chemical membrane cleaning performed directly in the membrane process tanks so your operators don't waste time moving cassettes.

the ability to increase or decrease the frequency of maintenance cleans to fit the operating conditions.

the ability to backpulse when needed to greatly improve your operator's ability to recover from non-design conditions.

The above cleaning systems are automated resulting in operators having available a full suite of comprehensive cleaning systems which are simple to use and initiate.

Reliability

Veolia's reinforced ZeeWeed hollow fiber membrane incorporates a patented internal support to which the membrane is bonded, creating the most robust membrane in the industry. In addition, Veolia's automated manufacturing processes ensure a consistent membrane product meeting the highest standards of workmanship and quality. This exceptionally strong and reliable membrane forms the backbone of ZeeWeed MBR systems, which consistently exceeds the toughest regulatory standards around the world.

Veolia is the world leader in MBR technology, with the majority of the industry's largest and longest-operating MBR plants. Veolia now has over two decades of experience with the well-proven ZeeWeed membrane. The earliest MBR plants using the ZeeWeed 500 membrane, Veolia's current standard for MBR applications, have now been in operation for over 10 years. Veolia's long-term and wide-ranging MBR experience ensures that plant operators can count on many years of successful operation of the proposed ZeeWeed MBR plant.

Lowest Lifecycle Cost

LEAPmbr aeration is a significant innovation for ZeeWeed MBR technology that offers a 30% reduction in air flow versus Veolia's previous air cycling technology. When combined with LEAPmbr's other features, membrane aeration energy savings are almost 50% compared with the previous generation of ZeeWeed membranes. In addition to the substantial energy savings, LEAPmbr requires fewer membrane modules and cassettes, smaller membrane tanks, fewer valves and pipes, and lower connected horsepower. In many cases, a ZeeWeed MBR system using LEAPmbr technology has an equivalent lifecycle cost to conventional treatment options.

2. ZeeWeed Membrane Operational Tactics

2.1 Types of Membrane Cleanings

Effective and regular cleaning is critical for smooth operation of a membrane filtration system. There are several properties of a membrane that are required in order for it to be cleaned regularly and easily, including:

- ability to backpulse at a flow rate and pressure that allows even distribution of cleaning chemicals to all membrane being cleaned
- ability to clean, automatically, an entire membrane train at a time
- ability to function properly immediately after cleaning without the time delay required to “ripen” or to form a filtering “gel” layer on the membrane surface, as is needed for microfilters and flat sheet membrane to minimize deep pore fouling

Veolia membranes can be cleaned without or with cleaning chemicals.

Cleaning without chemicals include the following methods:

- Relaxation
- Backpulse

Cleaning with chemicals include the following methods:

- Maintenance Clean (**MC**)
- Recovery Clean (**RC**) that sometimes is referred to as Clean-in-Place (CIP)

All of these membrane properties and cleaning methods are standard for ZeeWeed UF hollow fiber membrane systems.

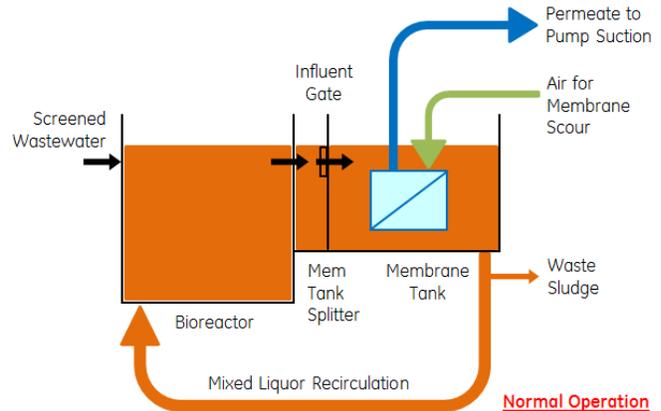
Veolia MBR can utilize a number of the routine or “as-required” membrane cleaning tactics; they are summarized below, along with a production cycle – permeation.

Activity	Operation	Duration	Frequency
Permeation	Automatic	11–11.5 minutes	Every 12 minutes
Relaxation (Typical)	Automatic	30–60 seconds	Every 12 minutes
Backpulse (Non-Typical)	Automatic	30–45 seconds	Every 12 minutes, replaces relaxation mode
Maintenance clean	Automatic	45 minutes	1–2 times per week
Recovery clean	Automatic, manually initiated	6–16 hours	Once per year per chemical

2.2 Permeation

During permeation or normal production, the membrane system functions as presented in the table and diagram below.

Function	Status
Permeation	✓
Aeration	✓
Sludge Recirculation	✓
Sludge Wasting	✓
Permeate Addition	–
Chemical Addition	–
Tank Drain	–

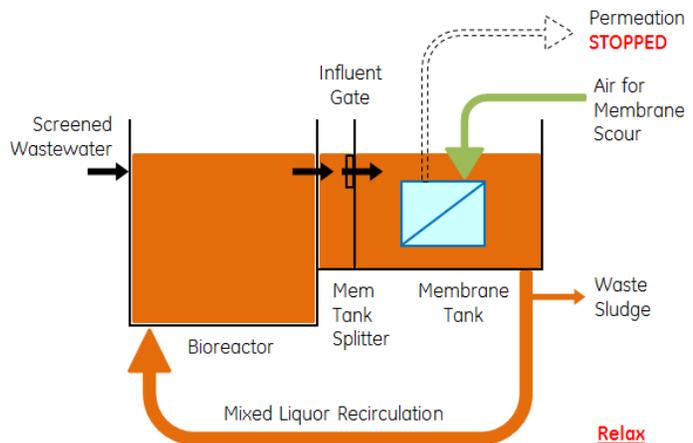


2.3 Relaxation

Membrane relaxation is a default mode used in all MBRs as much as possible in lieu of backpulsing. While operating in relaxation mode, permeation for each train is stopped sequentially for a short period of time (30-60 sec) every 12 minutes to allow air scouring of the membrane without permeation. No chemical or permeate is used during relaxation period. This is the normal operating mode of ZeeWeed MBR systems. Relaxation mode is fully automated when activated by operator.

The relaxation sequence is summarized in the table and depicted in the figure below.

Function	Status
Permeation	–
Aeration	✓
Sludge Recirculation	✓
Sludge Wasting	✓
Permeate Addition	–
Chemical Addition	–
Tank Drain	–



2.4 Backpulse

Under certain membrane fouling and/or poor sludge filterability conditions, the ability to backpulse is essential to maintain a clean membrane. This feature allows for reliable system performance during unexpected influent or process operating scenarios. Applying the backpulse cleaning is one of the simplest methods to ensure that immersed membranes retain optimum permeability throughout all operating conditions.

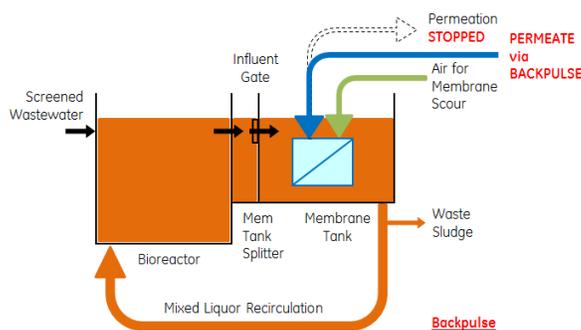
Backpulsing involves reversing the flow through the membranes to dislodge any particles that may have adhered to the membrane surface. Permeate is used for backpulsing and is taken from the common permeate collector or gravity backpulse storage tank. Backpulsing utilizes no cleaning chemicals. Backpulsing is fully

automated when activated by operator. An optimized backpulse schedule will ensure that the plant benefits from:

- High membrane permeability
- Ability to handle difficult to filter sludge
- Efficient plant operation with minimal downtime
- Minimized power costs
- Lower consumption of cleaning chemicals during MCs and RCs
- Potentially lower cleaning frequencies

The backpulse sequence is summarized in the table and depicted in the figure below.

Function	Status
Permeation	–
Aeration	✓
Sludge Recirculation	✓
Sludge Wasting	✓
Permeate Addition	✓
Chemical Addition	–
Tank Drain	–



2.5 Maintenance Cleans (MCs)

The goal of pre-scheduled regular maintenance cleaning is to maintain sustainable operating TMP and therefore increase the interval between recovery cleanings (see below).

The MC procedure is fully automated and is scheduled to occur during off-peak hours of the day. This is only done on one membrane train at a time, so that remaining trains can still treat plant flows. The ZeeWeed membrane filtration systems typically include MCs using sodium hypochlorite (NaOCl) to target organic foulants and citric acid for the removal of inorganic foulants. Typically, the acid MC follows the sodium hypochlorite MC (back-to-back sequence) for best cleaning efficiency.

The cleaning chemical concentrations typically used for MCs are:

- 200 mg/L for sodium hypochlorite (NaOCl)
- 2,000 mg/L for citric acid

The MC cleaning procedure incorporates the following features:

- Fully automated, once the frequency is set by the operator
- Performed without draining the membrane tank
- Requires low chemical concentration

The MC consists of a series of short backpulses with a cleaning chemical solution injected into membrane fiber, followed by a backpulse with only permeate to flush the headers and membranes.

During train maintenance clean, main MBR functions are utilized as follows:

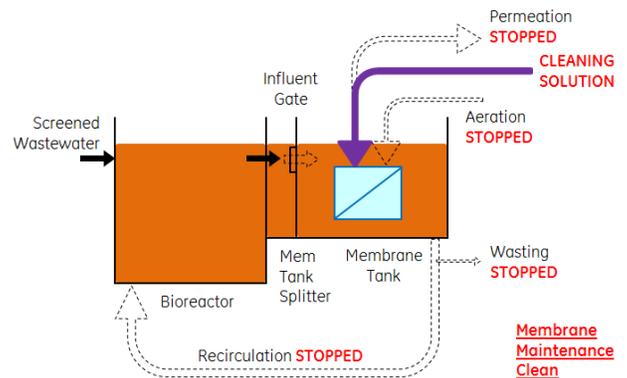
- Biological portion of the MBR in normal operation

- Mixed liquor recirculation for membrane train being cleaned is OFF
- Membrane aeration is ON and OFF
- Permeation is OFF
- Backpulsing with chemical solution is ON and OFF
- Relaxation is ON and OFF

MCs are performed without removing the membrane cassettes from the membrane tank. Introduced chemical solution is eventually consumed by mixed liquor present in the membrane tank. The frequency and duration of this procedure can be optimized in response to operating conditions and sludge characteristics.

The MC sequence is summarized in the table and depicted in the figure below.

Function	Status
Permeation	–
Aeration	–
Sludge Recirculation	–
Sludge Wasting	–
Permeate Addition	✓
Chemical Addition	✓
Tank Drain	–



2.6 Recovery Cleans (RCs)

An RC is required to restore the permeability of the membrane once the membrane becomes fouled. This is only done on one train at a time, so that remaining trains can still treat plant flows. An RC should be initiated when permeability declines to less than 50% of initial stable permeability. The RC procedure consists of a chemical backpulse sequence, followed by a chemical soak period. The cleaning chemical concentrations typically used to soak the membranes are:

- 1,000 mg/L for sodium hypochlorite (NaOCl)
- 2,000 mg/L for citric acid

Key features of the RC procedure for ZeeWeed MBR are:

- Fully automated once initiated by the operator
- Cleans all membrane cassettes in a membrane tank at the same time
- Requires moderate chemical concentration
- Includes sludge neutralization, i.e. does not require chemical neutralization

The RCs, unlike MCs, are not required to be conducted in a back-to-back format, resulting in flexibility to the operator for timing the recovery cleans. The cleaning solution is backpulsed through the membrane into the empty membrane tank at 20 gfd through a series of backpulses and relaxes.

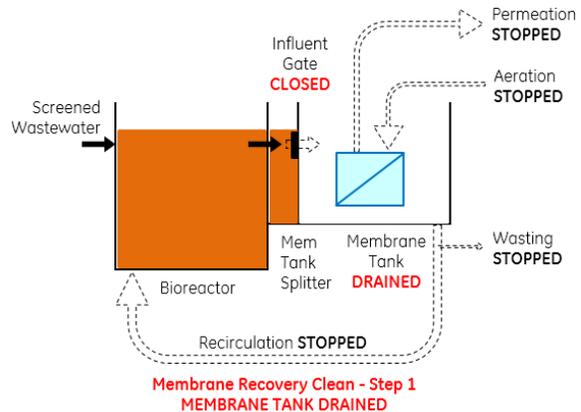
RC involves more steps as compared with MC, but all of them but the initiation are automated).

The RCs are performed in-situ, without removing the membrane cassettes from the membrane tank. Following the clean, chemical solution is neutralized by feeding mixed liquor into the membrane tank.

The RC sequence is summarized in the tables and depicted in the figures below.

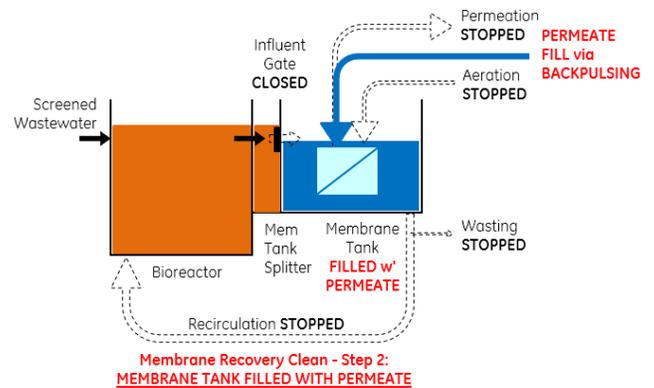
During Step 1 RC, membrane tank feed is stopped (or the tank is isolated from the rest of the system), and the tank is drained. For that, mixed liquor typically gets pumped to the bioreactor.

Recovery Clean – Step 1	
Function	Status
Permeation	–
Aeration	–
Sludge Recirculation	–
Sludge Wasting	–
Permeate Addition	–
Chemical Addition	–
Tank Drain	✓



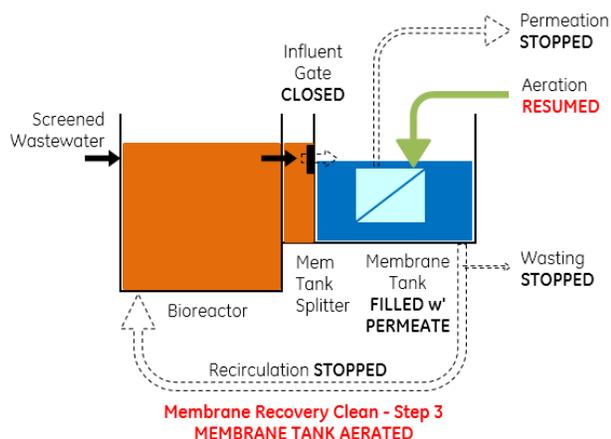
During Step 2 RC, membrane tank is filled with permeate using membrane backpulse system.

Recovery Clean – Step 2	
Function	Status
Permeation	–
Aeration	–
Sludge Recirculation	–
Sludge Wasting	–
Permeate Addition	✓
Chemical Addition	–
Tank Drain	–



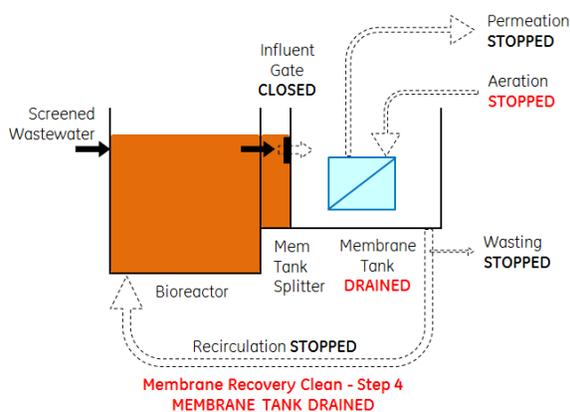
During Step 3 RC, membrane tank continues being filled with permeate. Additionally, membranes get aerated in order to strip-off/lift-off any cake layer and/or debris from membrane surface and tank walls and bottom.

Recovery Clean – Step 3	
Function	Status
Permeation	–
Aeration	✓
Sludge Recirculation	–
Sludge Wasting	–
Permeate Addition	✓
Chemical Addition	–
Tank Drain	–



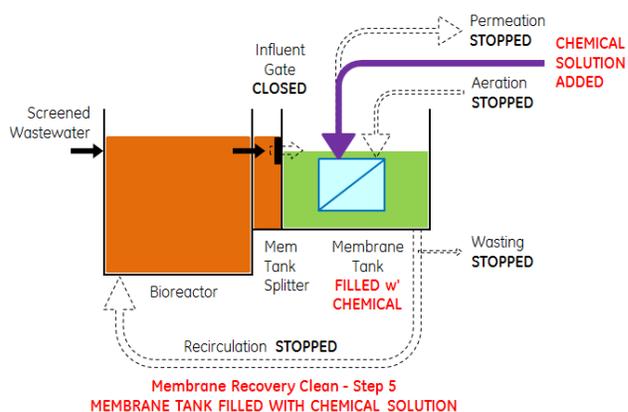
During Step 4 RC, membrane tank filling with permeate is stopped, and the tank is drained again. For that, a mixture of permeate and residual mixed liquor gets pumped to the bioreactor.

Recovery Clean – Step 4	
Function	Status
Permeation	–
Aeration	–
Sludge Recirculation	–
Sludge Wasting	–
Permeate Addition	–
Chemical Addition	–
Tank Drain	✓



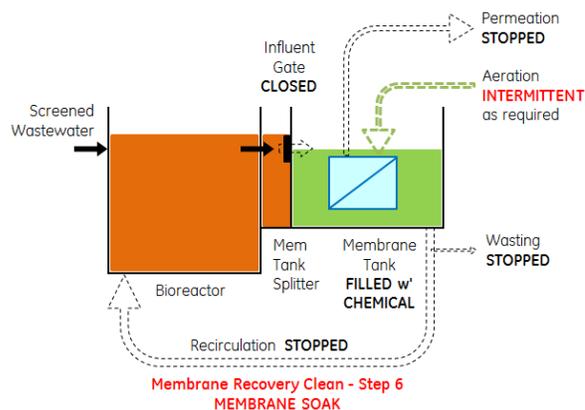
During Step 5 RC, membranes are backpulsed with chemical solution diluted with permeate.

Recovery Clean – Step 5	
Function	Status
Permeation	–
Aeration	–
Sludge Recirculation	–
Sludge Wasting	–
Permeate Addition	✓
Chemical Addition	✓
Tank Drain	–



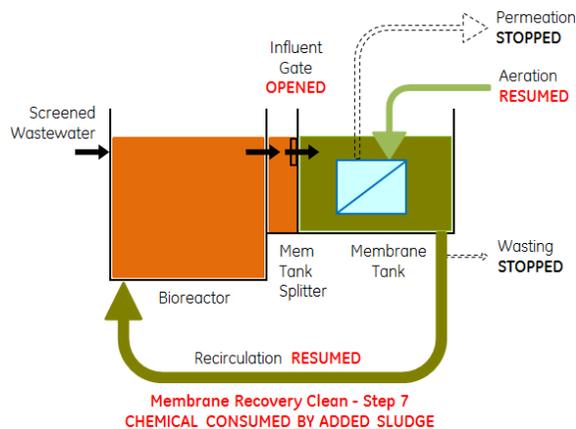
During Step 6 RC, membranes immersed in cleaning solution are intermittently aerated.

Recovery Clean – Step 6	
Function	Status
Permeation	–
Aeration	On/Off
Sludge Recirculation	–
Sludge Wasting	–
Permeate Addition	–
Chemical Addition	–
Tank Drain	–



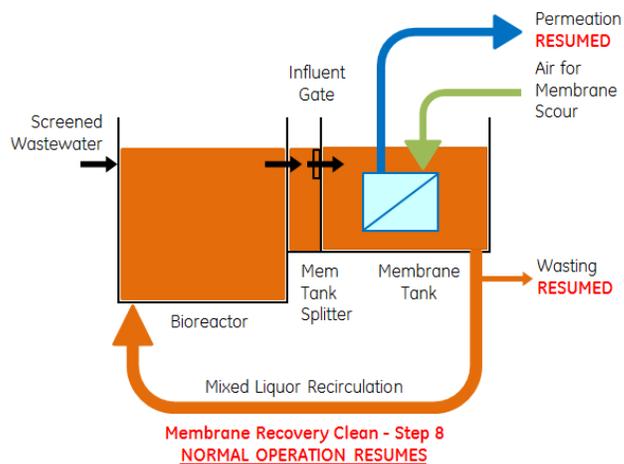
During Step 7 RC, membrane tank feed and sludge recirculation are resumed, while membrane aeration continues.

Recovery Clean – Step 7	
Function	Status
Permeation	–
Aeration	✓
Sludge Recirculation	✓
Sludge Wasting	–
Permeate Addition	–
Chemical Addition	–
Tank Drain	–



During Step 8 RC, membrane tank normal operation fully resumes.

Recovery Clean – Step 8	
Function	Status
Permeation	✓
Aeration	✓
Sludge Recirculation	✓
Sludge Wasting	✓
Permeate Addition	–
Chemical Addition	–
Tank Drain	–



3. Basis Of Design

The proposed ZeeWeed membrane filtration system for City of El Centro WRF system is offered based on using the design parameters summarized in the following sections.

3.1 Influent Flow Data

The influent design flows are summarized in the table below.

influent design flows

flow conditions		units
Average Day Flow (ADF)	6.0	MGD
Maximum Month Flow (MMF)	8.0	MGD
Maximum Daily Flow (MDF)	10.5	MGD
Peak Hourly Flow (PHF)	14.0	MGD
maximum flow with one train offline for maintenance or cleaning (for ≤30 continuous days)	8.00	MGD

note 1: any flow conditions that exceed the above-noted flow limits must be equalized prior to treatment in the ZeeWeed membrane filtration system.

ADF – the average flow rate occurring over a 24-hour period based on annual flow rate data.

MMF – the average flow rate occurring over a 24-hour period during the 30-day period with the highest flow based on annual flow rate data.

MDF – the maximum flow rate averaged over a 24-hour period occurring within annual flow rate data.

PHF – the maximum flow rate sustained over a 1-hour period based on annual flow rate data.

3.2 Influent Quality

Below are the ultrafiltration system influent characteristics that were used for this design; any deviation from the values below may impact the membrane system design.

Acceptable Mixed Liquor Properties Entering into Membrane Tanks

Properties of Mixed Liquor Entering Membrane Tanks	Acceptable Operating Range
temperature (°C)	20 – 35
MLSS concentration (mg/L) ¹	≤ 10,000
pH (SU)	6.5 – 7.5
soluble cBOD ₅ concentration (mg/L)	≤ 5
NH ₃ -N concentration (mg/L)	≤ 1.0



colloidal TOC (cTOC) concentration (mg/L) ²	≤ 10
soluble alkalinity (mg/L as CaCO ₃)	50 – 300
time to filter (TTF) (seconds) ³	≤ 200
material greater than 2 mm in size (mg/L) ⁴	≤ 1

note 1: Membrane tank MLSS concentration of up to 12,000 mg/L is permissible during MDF and PHF events only. Membrane tanks MLSS concentration to be ≤10,000 mg/L during all other flow conditions.

note 2: Colloidal TOC (cTOC) is the difference between the TOC measured in the filtrate passing through a 1.5-µm filter paper and the TOC measured in the ZeeWeed membrane permeate.

note 3: Per seller’s standard time to filter (TTF) procedure (available upon request).

note 4: Per seller’s standard sieve test procedure (available upon request).

note 5: Chemicals that are not compatible with the ZeeWeed PVDF membrane are not permitted in the membrane tanks.

3.3 Effluent Quality

The following performance parameters are expected upon equipment startup and once the biological system has stabilized based on the data listed in sections 3.1 and 3.3.

Effluent Design Parameters

Effluent Design Parameters	Value	Unit
TSS	≤ 2	mg/L
turbidity	≤ 0.2 NTU 95% of the time within a 24-hr period ≤ 0.5 NTU at any time	NTU

3.4 Influent Variability

Influent wastewater flows or loads in excess of the design criteria defined above must be equalized prior to entering the membrane tanks. In the event that the influent exceeds the specifications used in engineering this proposal, or the source of influent changes, the ability of the treatment system to produce the designed treated water quality and/or quantity may be impaired. Buyer may choose to continue to operate the system but assumes the risk of damage to the system and/or additional costs due to increased membrane cleaning frequency, potential for biological upset and/or increased consumables usage.

3.5 Membrane System Design

Membrane Design Parameters

Membrane Design Parameters		Unit
number of membrane trains	4	no.
number of cassette spaces per train	5	no.
number of cassettes installed per train	4	no.
type of cassette	64 M	modules/ cassette
module design per train	4 x 64 + 1 blank	n/a
total number of modules installed per train	256	no.
total number of modules installed per plant	1024	no.
total number of cassettes installed per plant	16	no.
membrane tank internal dimensions	35 x 9 x 13	L x W x H (ft)

note 1: Tank dimensions and volumes are preliminary only and may change slightly once final detail design commences.

note 2: The ultrafiltration system is designed for installation within concrete tanks supplied by buyer.

4. Scope of Supply

4.1 Scope of supply by Veolia

Veolia's scope of supply for a ZeeWeed 500 membrane wastewater treatment system, for the City of El Centro MBR system.

Scope Of Supply by Veolia

	Description
The MBR system will consist of the following equipment:	
ZeeWeed Membranes	
16 sets	membrane tank cassette mounting assemblies
16	ZeeWeed 500EV membrane cassettes
1024	ZeeWeed 500EV membrane modules
4 sets	permeate collection & air distribution header piping
4	membrane tank level transmitter (one per train)
Ejector & Associated Equipment	
4	air ejector assembly w/ air supply assembly
Master Control Panel	
1	master control panel w/ Allen Bradley Control Logix PLC and Panelview plus 7 HMI and Flexlogic I/O
Process Pump & Associated Equipment	
4	positive displacement, reversible lobe process pump
4	required pump isolation valves and check valves
4 sets	pressure transmitter, pressure gauge, flow meter
4 sets	chemical injection ports and valves
4	integrity test air injection ports with isolation valves
4	Hach TU5300 turbidimeter (one per train) - includes isolation valves, throttle valve and backplate.
Backpulse System	
Incl	process pumps will also provide backpulse duty
1	flow through backpulse water storage tank, with tank level control and associated valves
Membrane Air Scour Blowers	
4	membrane air scour blowers - includes isolation valves, flow switches, pressure gauges and acoustical enclosures



	Description
RAS Pump System	
4	RAS pumps; centrifugal
4	Pressure gauge, including isolation valve
4 sets	Isolation valves, butterfly
1 set	WAS valve & flow meter; installs on RAS line
Membrane Cleaning Systems	
1+1	sodium hypochlorite chemical feed system - includes dosing pump and associated valving.
1+1	citric acid chemical feed system - includes dosing pump and associated valving
Miscellaneous	
1+1	air compressor for pneumatic valve operation and refrigerated air drier
1	Integrity test regulation system, low pressure, precision relieving regulator
1	Router & network switch for remote monitor system
General	
Included	P&IDs and equipment general arrangement and layout drawings for Veolia supplied equipment
Included	operating training
Included	operating & maintenance manuals
Included	field service and start-up assistance - 60 days support over 3 site visits from Veolia field-service personnel for commissioning, plant start-up and operator training
Included	InSight Pro – Process consulting service– 1 year
included	24/7 emergency phone support – 1 year
Included	equipment mechanical warranty - 1 year or 18 months from shipment
Included	membrane warranty–10 year (2-year cliff and 8 year prorated)

note 1: Additional man-hours will be billed separately from the proposed system capital cost at a rate of \$1,450 per day plus living and traveling expenses. Detailed Veolia service rates are available upon request.

note 2: All Veolia supplied equipment is designed for installation in an unclassified area.

note 3: To receive complete 24/7 Emergency Telephone Technical Support Service and to allow for InSight Monitor Service, a suitable secure remote internet connection, by buyer, is required



Important things to note for scope

- Electrical rating on all motors is 460V / 3ph / 60 Hz. Single phase power requirement is 120V.
- All proposed equipment and instrumentation quoted is to be installed in a NFPA 820 non classified area.
- Trash and non-biodegradable solids, such as hair, lint, grit and plastics may foul or damage the membranes if allowed to pass into the membrane chamber. An internally fed drum screen with wire-mesh or punched-hole (Veolia recommended) openings less than or equal to 2-mm in size with no possibility of bypass or carryover is absolutely required to maintain both membrane warranty, and optimal MBR operation.
- All devices will be Veolia standard devices and the proposed equipment will be supplied to Veolia specifications. Any changes to the proposed equipment to meet the Buyer's specification, including custom tag numbering, will require re-evaluation.
- Equipment will be supplied loose shipped unless otherwise noted.

4.2 Buyer Scope of Supply

The following items are for supply by buyer and will include but are not limited to:

- overall plant design responsibility
- review and approval of design parameters related to the membrane separation system
- review and approval of Veolia-supplied tank and equipment drawings and specifications
- detail drawings of all termination points where Veolia equipment or materials tie into equipment or materials supplied by buyer
- design, supply and installation of lifting devices including overhead traveling bridge crane and/or monorail able to lift 4,535 kg (10,000 lb) for membrane removal, lifting davits c/w a hoist, guide rails for submersible mixers and pumps etc.
- civil works, provision of main plant tank structure, buildings, equipment foundation pads etc. including but not limited to:
 - common channels, housekeeping pads, equipment access platforms, walkways, handrails, stairs etc.
 - equalization tank – as required
 - bioreactor tank – as required
- membrane tanks c/w tank covers or grating, and their support over membrane tanks
- treated water storage tank, as required
- all chemical storage tanks, day tanks, and secondary containments
- HVAC equipment design, specifications and installation (where applicable)
- UPS, power conditioner, emergency power supply and specification (where applicable)



- 2-mm Pretreatment fine screens
- biological process equipment – including process blowers, diffusers and mixers
- VFDs and MCC for all Veolia supplied equipment unless noted
- plant SCADA system
- process and utilities piping, pipe supports, hangers, valves, etc. including but not limited to:
 - piping, pipe supports and valves between Veolia-supplied equipment and other plant process equipment
 - piping between any loose-supplied Veolia equipment
 - process tank aeration system air piping, equalization tank system piping, etc.
 - interconnecting piping between Veolia-supplied skids and tanks (as applicable)
- electrical wiring, conduit and other appurtenances required to provide power connections as required from the electrical power source to the Veolia control panel and from the control panel to any electrical equipment, pump motors and instruments external to the Veolia-supplied enclosure
- supply and installation of suitable, secure remote internet connection for 24/7 emergency telephone technical support service and InSight remote monitoring & diagnostics service
- design, supply and installation of equipment anchor bolts and fasteners for Veolia supplied equipment. All seismic structural analysis and anchor bolt sizing
- receiving (confirmation versus packing list), unloading and safe storage of Veolia-supplied equipment at site until ready for installation
- installation on site of all Veolia supplied skids and loose-shipped equipment
- alignment of rotating equipment
- raw materials, chemicals, and utilities during equipment start-up and operation
- disposal of initial start-up wastewater and associated chemicals
- supply of seed sludge for biological process start-up purposes
- laboratory services, operating and maintenance personnel during equipment checkout, start-up and operation
- touch up primer and finish paint surfaces on equipment as required at the completion of the project
- weather protection as required for all Veolia-supplied equipment. Skids and electrical panels are designed for indoor operation and will need shelter from the elements
- all permits

5. Typical list of Vendors and lead time

Equipment	Vendor	Lead time
membranes ¹	Veolia	40 weeks
membrane blowers	Aerzen/Sulzer	20-24 weeks
Permeate pumps	Boerger	24-36 weeks
Backpulse pumps	Boerger	24-36 weeks
RAS pumps	Flowserve/Sulzer	30-40 weeks
chemical dosing pumps	Prominent	12-14 weeks
control panel	Allen Bradley	32-36 weeks
air compressors	Gardner Denver	22-24 weeks

note 1: If membranes are required on site before the procurement duration allows, they can be released for procurement ahead of the other major equipment.

7. Warranties

7.1 Warranty Description

The seller offers a comprehensive two-part warranty for the City of El Centro WRF MBR system as follows:

- **mechanical warranty:** seller will repair or replace any device or part thereof that was supplied by the seller that proves to be defective. This warranty excludes the membrane modules.
- **membrane warranty:** This warranty provides protection and assurances to the buyer/owner with respect to the membrane modules.

The start date for all warranties is upon substantial completion or six (6) months from equipment shipment, whichever occurs first. Substantial completion is defined as when the buyer/owner makes beneficial use of the equipment supplied by the seller.

7.2 Mechanical warranty

material and workmanship warranty

The mechanical warranty is only applicable to equipment supplied by the seller. Seller's obligation under this warranty is to the repair or replace, at its factory, of any device or part thereof, which shall prove to have been thus defective. The mechanical warranty period on all equipment supplied, unless otherwise noted, is twelve (12) months from the date of substantial completion or eighteen (18) months from equipment shipment, whichever occurs first. Warranty repair, replacement or re-performance by seller shall not extend or renew the applicable warranty period.

Seller assumes no liability for any damage to equipment caused by inadequate storage or handling per manufacturer's recommendations in supplied technical literature, or by defective or sub-standard workmanship or materials provided by the buyer/owner or any other third party responsible for handling, storing or installing the equipment, and does not cover the results of improper commissioning, operation or maintenance of the Equipment by Buyer or third parties, repairs or alterations made by Buyer without Seller's written consent, influent water which does not comply with agreed parameters, erosion or corrosion, or fair wear and tear.

The buyer/owner undertakes to give immediate notice to seller if goods or performance appear defective and to provide seller with reasonable opportunity to make inspections and tests. If seller is not at fault, the buyer/owner shall pay seller the costs and expenses of the inspections and tests.

Goods shall not be returned to seller without seller's permission. Seller will provide buyer/owner with a "return goods authorization" (RGA) number to use for returned goods. All returns are F.C.A. – Oakville, Ontario, Canada. All costs associated with the removal and shipment of the defective part from the buyer/owner's facility to the seller's factory and all costs related to return shipment to the buyer/owner's facility and installation of a repaired or replacement part shall be the buyer/owner's responsibility.

Implied warranties, including but not limited to warranties of fitness for particular purpose, use or application, and all other obligations or liabilities on the part of the seller,



unless such warranties, obligations or liabilities are expressly agreed to in writing by seller, are null and void.

7.3 membrane warranty

Ten (10) year warranty is offered on the membrane modules with the first twenty-four (24) months offered as a full replacement warranty and the remaining ninety-six (96) months as a prorated warranty.

7.4 warranty provisions

In addition to the membrane warranty limitations as defined in the “seller’s warranty – ZeeWeed membrane modules”, the membrane warranty is subject to the following provisions:

- the equipment is operated and maintained at all times in accordance with the seller’s operations and maintenance manual,
- the equipment is operated within the mixed liquor characteristics defined in table 1 of this section,
- seller has, until performance of its obligation herein is met, reasonable access to the equipment and the operational data relating thereto,
- the buyer/owner furnishes adequate and competent operating, supervisory and maintenance staff, and necessary laboratory facilities with test equipment and personnel,
- the buyer/owner utilizes the services of seller until its performance obligations are met,
- the buyer/owner supplies all necessary raw materials and services of a quantity and of a quality specified by the seller
- an adequate and continuous power supply is available that will enable operation of all required equipment,
- the following pre-treatment guidelines are followed:
 - **fats, oil and grease (FOG)** – FOG concentration shall not exceed 150 mg/L of emulsified FOG in the feed with no free oil and less than 10 mg/L of mineral or non-biodegradable oil.
 - **pretreatment** - A punched hole or woven wire mesh screen with a maximum size opening of no greater than 2 mm and without possibility of bypass of any particle larger than 2 mm in all directions must be included in the headwork’s. Seller must be consulted regarding the type, capacity, and size opening of the screens that are to be installed.
 - **process chemical additives** - The use of any chemicals added to the wastewater treatment process (e.g.: polymers, flocculants, coagulants, antifoams) that may come in contact with the ZeeWeed membranes must be approved by seller prior to use. This includes chemicals used in processes outside of the seller’s system that may be transferred to the seller’s system, such as in solids handling facilities.



mixed liquor characteristics for warranty purposes

parameter	design value	accepted operating range
mixed liquor temperature (°C)	20	20-35
MLSS concentration in membrane tanks (mg/L) ¹	10,000	10,000 – 12,000
pH of mixed liquor in membrane tanks (SU)	7.0	6.5 – 7.5
soluble cBOD ₅ concentration in mixed liquor entering membrane tanks (mg/L)	5	≤ 5
NH ₃ -N concentration in mixed liquor entering membrane tanks (mg/L)	0.5	≤ 1.0
colloidal TOC (cTOC) concentration in mixed liquor entering membrane tanks (mg/L) ²	7	≤ 10
soluble alkalinity of mixed liquor entering membrane tanks (mg/L as CaCO ₃)	100	50 – 300
time to filter (TTF) of mixed liquor in membrane tanks ³	100	≤ 200
material greater than 2-mm in size in mixed liquor in membrane tanks (mg/L) ⁴	0	≤ 1
fats, oil & grease (FOG) (mg/L)	Refer to Note 6	

1. Membrane tank MLSS concentration of 12,000 mg/L is permissible during MDF and PHF events only. Membrane tank MLSS concentration to be 8,000 to 10,000 mg/L during all other flow conditions.
2. Colloidal TOC (cTOC) is the difference between the TOC measured in the filtrate passing through a 1.5 µm filter paper and the TOC measured in the ZeeWeed membrane permeate.
3. Per seller's standard Time to Filter (TTF) procedure (available upon request).
4. Per seller's standard Sieve Test procedure (available upon request).
5. Chemicals that are not compatible with the ZeeWeed PVDF membrane are not permitted in the membrane tank.
6. FOG concentration shall not exceed 150 mg/L of emulsified FOG in the feed with no free oil and less than 10 mg/L of mineral or non-biodegradable oil

8. Preliminary Electrical load and chemical consumption estimates

8.1 Electrical load Estimates

The data presented below is for information purposes only and is based on the design information provided by the buyer and presuming that the equipment is operated according to the design basis and in accordance with seller's operations and maintenance manuals.

Item	No. installed	No. operating	motor HP	connected load (HP)	equipment %	motor %	starter/VFD %	Runtime (hr/day)	kW-h/y
process pumps ²	4	4	40	160	60	95	97	23	509,293
membrane blowers	4	4	40	160	75	90	97	24	350,892
RAS pumps	4	4	25	100	80	92	97	24	358,542
air compressors	2	1	5	10	70	91	100	2	2,722

note 1: Annual power consumption estimate is calculated at ADF condition

note 2: Assumes membrane relaxation mode used

note 3: Calculations based on assumed plant hydraulics

8.2 Annual Chemical Consumption Estimates

The data presented below is for information purposes only and is based on the design information provided by the buyer and presuming that the equipment is operated according to the design basis and in accordance with seller's operations and maintenance manuals.

Chemical	US gal/year
sodium hypochlorite (10.3% w/w, SG: 1.168)	5,261
citric acid (50.0% w/w, SG: 1.24)	2,412

note 1: Cleaning chemical consumption estimates are based on the frequencies and concentrations summarized in the table below. Frequencies are typical for ZW-MBR operation, actual frequency of maintenance and recovery cleans may change with final design or may change once system is in operation.

Basis of Chemical Consumption Estimates

Chemical		Maintenance Clean	Recovery Clean
sodium hypochlorite solution (10.3% w/w, SG: 1.168)	frequency	2 times per week	2 times per year
	concentration	200 mg/L	1,000 mg/L
citric acid solution (50.0% w/w, SG: 1.24)	frequency	1 time per 14 days	2 times per year
	concentration	2,000 mg/L	2,000 mg/L

9. Commercial

9.1 Equipment Shipment and Delivery

Equipment shipment is estimated at 40 to 48 weeks after order acceptance. The buyer and seller will arrange a kick-off meeting after contract acceptance to develop a firm shipment schedule.

Typical Drawing Submission and Equipment Shipment Schedule

Deliverables		8-12 Weeks	2-3 Weeks	38-40 Weeks		2 Weeks
acceptance of PO	■					
submission of drawings		■				
drawings approval			■			
equipment manufacturing				■		
equipment shipment					■	
plant operations manuals						■

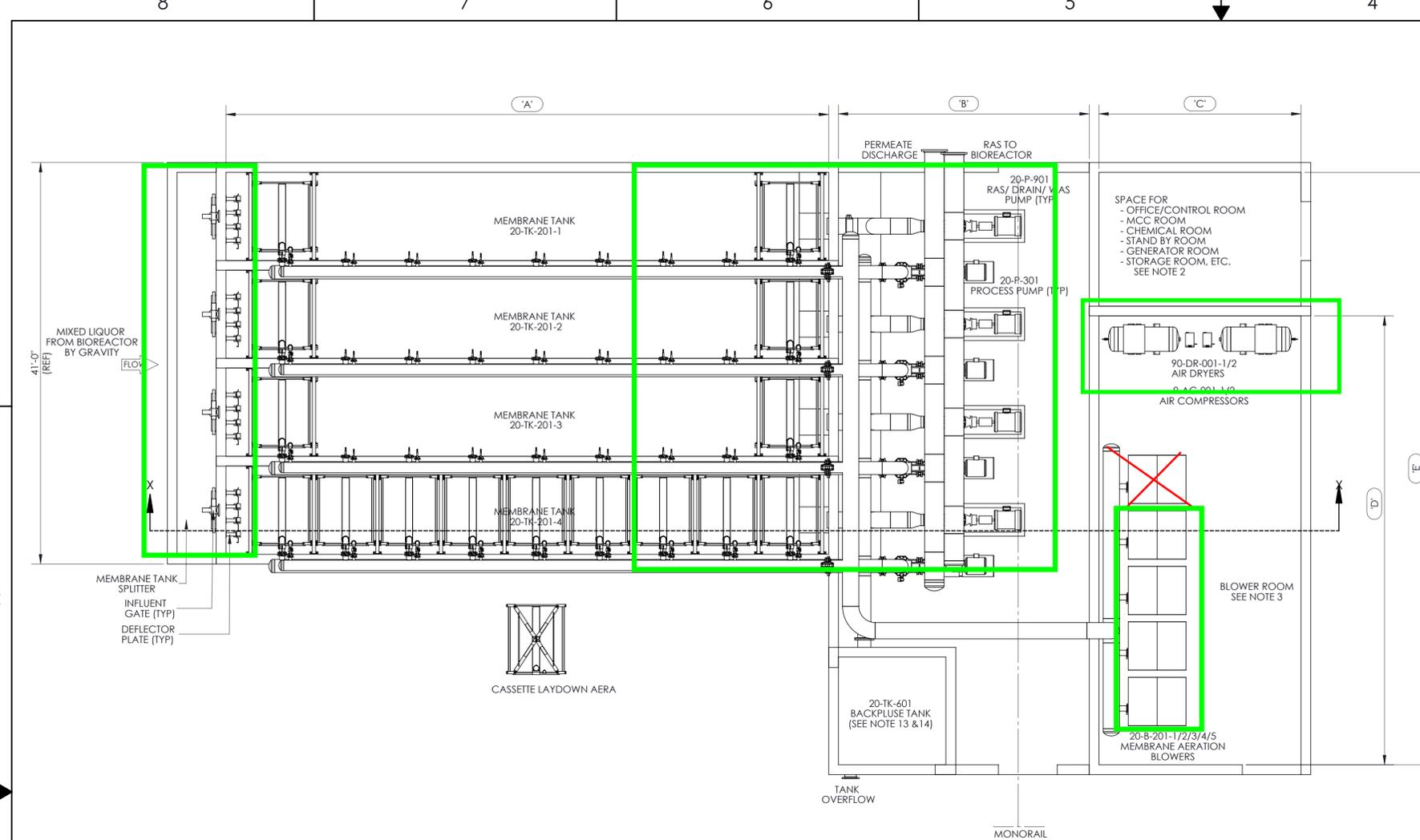
The delivery schedule is presented based on current workload backlogs and production capacity. This estimated delivery schedule assumes no more than 2 weeks for buyer review of submittal drawings. Any delays in buyer approvals or requested changes may result in additional charges and/or a delay to the schedule.

9.2 Freight Terms

The following freight terms used are defined by INCOTERMS 2020.

All pricing is CIP to El Centro, California project site.

9.3 General Arrangement Drawing

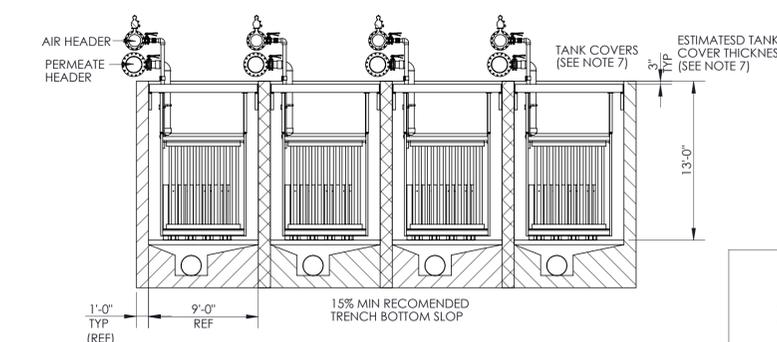
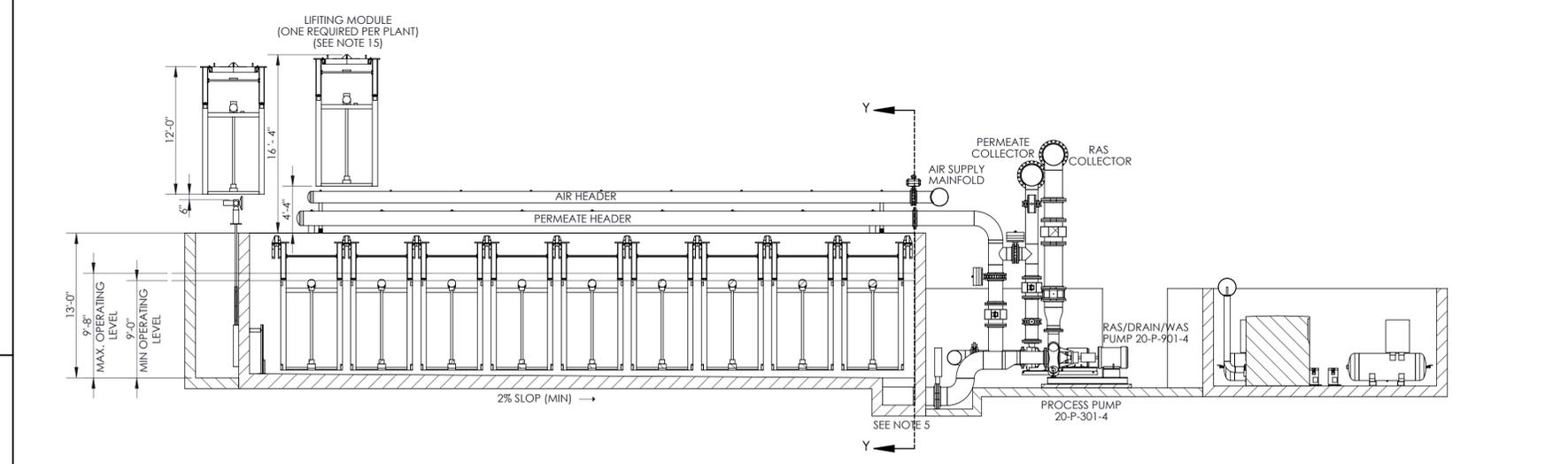


MAJOR TANK & BUILDING DIMENSIONS

CASSETTES 'N' PER TRAIN	'A'	'B'	'C'	'D'	'E'
1	8'-5"	17'-6"	12'-0"	44'-4"	59'-0"
2	15'-0"	17'-6"	12'-0"	44'-4"	59'-0"
3	21'-8"	17'-6"	13'-0"	44'-4"	59'-0"
4	28'-4"	19'-0"	15'-0"	45'-10"	60'-6"
5	35'-0"	19'-0"	18'-0"	45'-10"	60'-6"
6	41'-8"	19'-0"	18'-0"	45'-10"	60'-6"
7	48'-4"	21'-4"	18'-0"	45'-10"	60'-6"
8	55'-0"	21'-4"	20'-8"	45'-10"	60'-6"
9	61'-8"	25'-8"	20'-8"	45'-10"	60'-6"

ALL EQUIPMENT AND PIPING SIZE SHOWN ON THIS DRAWING IS FOR THE LARGEST TRAIN SIZE (9 CASSETTE). EQUIPMENT LAYOUT CAN CHANGE WITH SMALLER TRAIN SIZE

- NOTE:
- FOR SCOPE OF SUEZ-SUPPLIED EQUIPMENT AND TECHNICAL DATA REFER TO THE PROPOSAL AND P&IDs.
 - SIZE AND LOCATION OF LISTED ROOM ARE PRESENTED FOR REFERENCE ONLY. SYSTEM INTEGRATOR TO DETERMINE SIZE AND LOCATION OF ALL AMENITIES.
 - BIOLOGICAL PROCESS AERATION BLOWER ARE NOT INCLUDE IN THE BLOWER ROOM. BOTH GROU OF BLOWER CAN BE PLACED IN THE SAME ROOM.
 - SYSTEM INTEGRATED IS RESPONSIBLE FOR DESIGN OF CONCRETE TANKS, GRAVITY CHANNELS INFLUENT GATES, EMERGENCY OVERFLOW, WALKWAYS/HANDRAILS ON TOP OF WALL (IF REQUIRED), THESE ARE NOT SHOWN IN THIS DRAWING FOR CLARITY.
 - TANK BOTTOM AND DRAIN SUMP DESIGN ARE NOT BY SUEZ, HOWEVER IT IS RECOMMENDED THAT MEMBRANE TANK BOTTOM IS TO BE CONFIGURED AS A ONE WAY SLOP TOWARDS DRAIN TRENCH CROSSING THE ENTIRE TANK WIDTH. DRAIN SUMP CAN BE LOCATED ANYWHERE INSIDE THE TRENCH, WITH A TRENCH SLOP TAPERING INTO THE SUMP ON ONE OR BOTH SIDE OF IT, DEPENDING ON THE LOCATION OF THE DRAIN SUCTION NOZZLE.
 - DRAIN SUCTION NOZZLE OPENING HAS TO BE AT LEAST 6" BELOW ELEVATION OF A TANK BOTTOM AT ITS SHALLOW END.
 - TANK TO BE COVERED FOR ACCESS TO CASSETTE AND EQUIPMENT. DESIGN, SUPPLY AND INSTALLATION OF MEMBRANE TANK COVERS ARE BY OTHERS (TANK MUST BE VENTED). SUEZ-SUPPLIED CASSETTE SUPPORT BEAMS INCLUDE A 3" ALLOWANCE FOR TANK COVER THAT HAVE TO BE FLUSH WITH TOP OF TANKS. SPECIFIC DESIGN HAVE TO BE COORDINATED WITH SUEZ. FOR ADDITIONAL INFORMATION REFER TO THE SUEZ DESIGN GUIDELINE LISTED BELOW (NOTE 16c).
 - MEMBRANE TANK INTERNALS WILL BE IN CONTACT WITH MEMBRANE CLEANING CHEMICAL-TYPICALLY SODIUM HYPOCHLORITE OR CITRIC ACID SOLUTIONS. FOR ADDITIONAL INFORMATION REFER TO THE SUEZ DOCUMENT LISTED BELOW (NOT 16b).
 - ALL INTERNAL DIMENSION ARE GIVEN TO THE FINISHED CONCRETE AND COATING SURFACE: CONTRACTOR TO CALCULATE THE THICKNESS OF THE COATING BEFORE POURING THE CONCRETE (NOTE 16c).
 - DEFLECTOR PLATE DESIGN AND SUPPLY ARE BY OTHERS. FOR ADDITIONAL INFORMATION REFER TO THE SUEZ DESIGN GUIDELINE LISTED BELOW (NOTE 16d).
 - DESIGN AND SUPPLY OF SUPPORTS FOR PERMEATE AND AIR HEADER ARE BY OTHERS. SYSTEM INTEGRATED TO DETERMINE DESIGN, NUMBER AND LOCATION OF SUPPORTS. SUEZ TIE POINT MUST NOT BE USED TO SUPPORT INTERCONNECTING PIPING.
 - SYSTEM INTEGRATOR TO CONSIDER PROVISION FOR FOAM/SLUDGE SURFACE WASTING AT THE DETAILED ENGINEERING STAGE.
 - MINIMUM OPERATING LEVEL IN THE BACKPULSE TANK (IF APPLICABLE) TO ALWAYS STAY ABOVE TOP OF CASTING OF THE BACKPULSING PUMP.
 - THE BACKPULSE TANK IS OF INLINE (FLOW THROUGH) CONFIGURATION IF PD PROCESS PUMPS ARE USED; IT IS OF OFF-LINE CONFIGURATION IF CENTRIFUGAL PROCESS PUMPS ARE USED. NOT THAT BACKPULSE TANK IS USED ON SMALLER SYSTEM ONLY.
 - ESTIMATED CASSETTE SHIPPING WEIGHT 4,500 LBS (2,040 KG). ESTIMATED CASSETTE MAX WEIGHT (SLUDGED) 10,000 LBS (4,535 KG). MEMBRANE LIFTING DEVICE (TRAVELING BRIDGE-CRANE) TO BE SIZED FOR 5,000 KG (NOTE 16e).
 - THE FOLLOWING DESIGN GUIDELINES ARE AVAILBLE FROM SUEZ UPON REQUEST:
 - TANK COVER GUIDELINES FOR ZEEWEED 500 SYSTEMS.
 - MG-09012-C CONCRETE TANK COATING GUIDELINES FOR ZEEWEED SYSTEMS.
 - MG-09011-A MEMBRANE TANK TOLERANCES.
 - BEP #2007-04 BAFFLE DESIGN.
 - ZEEWEED 500 SERIES MEMBRANE LIFTING EQUIPMENT GUIDELINE.



suez

**REFERENCE ONLY
DO NOT USE FOR
CONSTRUCTION**

TOLERANCES UNLESS NOTED DECIMALS .XX ANGLES .XXX FRAC.		suez		CUSTOMER INFORMATION PRE ENGINEERED LEAP MBR 4 TRAINS PUMP FROM		PLOT PLAN CENTRIFUGAL PROCESS PUMP		DRAWING NUMBER 410000-A-AG-03		REVISION A	
PROJECT NO. 4100000		PART/MATERIAL NO.		SCALE 1:128		SIZE D		SHEET 1 OF 1		PROJECT NO. 4100000	
ECO		DWN		APPR		APPR		DATE 11 MAY 20		LAST SAVED: Tuesday, May 12, 2020 3:47:31 AM	

Scope of Supply

Project:

El Centro, CA WWTP

Equipment:

SAVI Flo-Drum In-Channel Rotating Drum Screen Model VSA 1800/2
(BABA Compliant)

Represented By:

Coombs Hopkins

Matt Rebmann

Phone: 760-931-0555

Email: matt@chcwater.com

Regional Sales Manager:

SAVÉCO North America, Inc.

Charles Baines

Phone: 208-570-2236

Email: charles.baines@savecowaterna.com

Project No.:

November 19, 2025



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ITEM: "A" – Two (2) SAVI Flo-Drum In-Channel Rotating Drum Screen Model VSA 1800/2

(1 Duty/1 Standby)



BASIS OF DESIGN (EACH)

Application:	Municipal Wastewater
Screen Peak Design Flow:	9 MGD
Influent & Effluent Channel Width:	64.0 inches
Channel Width:	6.0 feet
Channel Depth:	8.0 feet
Screen Opening:	2 mm
Opening Type:	Perforated
Downstream Water Level:	2.4 feet
Headloss:	7.0 inches at Peak Flow @ 50% blinding
Angle of Inclination:	35 degrees
Discharge Height:	4.3 feet above operating level
Wash Water Requirement:	35 gpm @ 72 psi
Screenings Capture Ratio Value (SCR):	86% independently tested at UKWIR testing facility

FINE SCREEN (EACH)

- Fully automatic, self-cleaning, perforated plate, rotating drum fine screen with integral screenings washing, conveying, and dewatering.
- Cylindrical drum screen basket constructed of perforated plate media from type 316 stainless steel with perforations around the entire basket.
- Proprietary triple face seal with polyurethane designed for maximum capture of fine solids including hair and to prevent material bypass.
- Cleaning brush and spray bar on the outside of the screen drum to thoroughly clean the drum and to prevent small solids from passing through the screen.
- Drum screen supported by reinforced type 316L stainless steel support arm on drive end and rollers on the opposite end. Rollers with stainless steel shafts mounted to upper support plate and shall require no lubrication.
- One piece type 316 stainless steel seal plate on the influent end of the drum screen, directs flow into the screen basket and creates a seal with the channel preventing flow bypass.
- Drum screen and screw conveyor are driven by a common drive unit.
- The shafted screenings screw conveyor to be constructed of 316 stainless steel

- Shafted screw supported by a lower sealed, self-lubricating bronze bushing.
- The screenings screw conveyor shall have a brush mounted on it for the length of the screenings inlet hopper.
- Screenings spray wash system with multiple injection points located in transport zone prior to dewatering zone with manual ball valves.
- Dual chambered dewatering and discharge zone from type 316 stainless steel with hinged access door.
- Dewatering zone drain flush spray system from type 316 stainless steel with manual ball valve.
- Plastic hose for drain connection to direct pressate back into the channel.
- Drive unit with 2.0 HP TEFC inverter duty motor suitable for 460/3/60 electrical supply.
- Fasteners and anchors from type 316 stainless steel.
- Continuous Bagger Assembly to collect dewatered screenings at discharge with refillable bag cassette.

FINE SCREEN HOUSING (EACH)

- Spray protection housing to cover the sides and top of the screen basket from type 316 stainless steel.

FINE SCREEN SUPPORTS (EACH)

- A stand from type 316 stainless steel is supplied to support the fine screen unit. Support shall allow unit to be rotated.

HARDWARE (EACH)

- Assembly fasteners from type 316 stainless steel.
- Anchor rods from type 316 stainless steel.

CONTROL PANEL AND INSTRUMENTATION (EACH)

- One (1) NEMA 4X type 316 stainless steel swing-out main control panel suitable for 480/3/60 electrical supply. Control panel shall contain the following control devices for operation of the drum screen.
 1. Enclosure, Dead Front w/ Swing-Out Panel
 2. Enclosure, Panel Light
 3. Enclosure, Convenience Receptacle
 4. Main Circuit Breaker Disconnect, w/ Through Door Handle
 5. Motor Branch Circuit Protection
 6. VFD, Square D, Altivar 320 [Screen 2HP]
 7. Control Power Transformer, 480-120VAC w/ branch circuit protection
 8. Circuit breakers, 120VAC
 9. Surge Protection, 480VAC
 10. Surge Protection, 120VAC
 11. PLC, Allen-Bradley CompactLogix, with Required I/O and Ethernet
 12. OIU, Allen-Bradley PanelView Plus 7, 12" display

13. 24VDC Power Supply
14. UPS Battery Backup
15. Ethernet Switch, Managed
16. Elapsed Time Meter, On OIU
17. Panel heater with thermostat
18. Pilot Lights, PTT, LED Type: [As Required]
19. Push Buttons [As Required]
20. Selector Switches [As Required]
21. Control Relays [As Required]
22. Dry Output Contacts [Running, Fault, E-Stop, High Level]
23. Terminal Blocks
24. UL Certification

- One (1) NEMA 4X local control station to control the following functions:
 1. Hand-Off-Auto selector switch.
 2. Emergency stop pushbutton.
 3. Three (3) solenoid valve pushbuttons.
- One (1) motor cut-out switch suitable for the area classification, mounted to dewatering/discharge access door.
- One (1) NEMA 4X 120V brass body solenoid valve to control compaction zone water spray functions.
- One (1) NEMA 4X 120V electrically actuated stainless steel body ball valve to control drum water spray functions.
- Ultrasonic Level Controller and Sensors – One (1) Pulsar Ultra-4 ultrasonic controller with one (1) upstream sensor for screen start. The controller shall have 5 internal relays and shall be provided in a windowed NEMA 4X fiberglass enclosure suitable for wall mounting. The sensor shall have a range of 1-20 ft and be supplied with a 33 ft integral cable and shall be suitable for installation in a Class I Division 1, Group D hazardous area, with stainless steel mounting bracket.

SPARE PARTS (TOTAL)

- Four (4) plastic rollers.
- One (1) set of basket cleaning brushes.
- One (1) complete solenoid valve rebuild kit.
- Five (5) boxes with 230 foot endless bags.
- ~~One (1) set of special tools required.~~ No special tools are required for this equipment.

FIELD SERVICE (TOTAL)

- Site service of one (1) trip for a total of two (2) days for installation inspection, startup and operator training.

CLARIFICATIONS/COMMENTS

- None

OPTIONAL ITEMS (EACH)

- None.

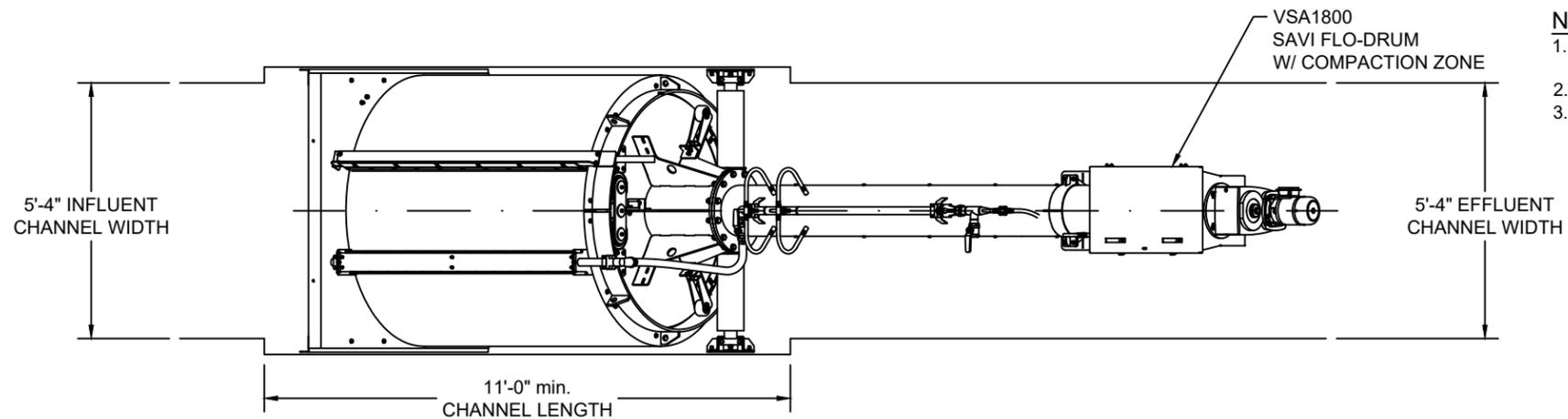
NOTE: ANY ITEM NOT LISTED ABOVE TO BE FURNISHED BY OTHERS.

EXCLUSIONS

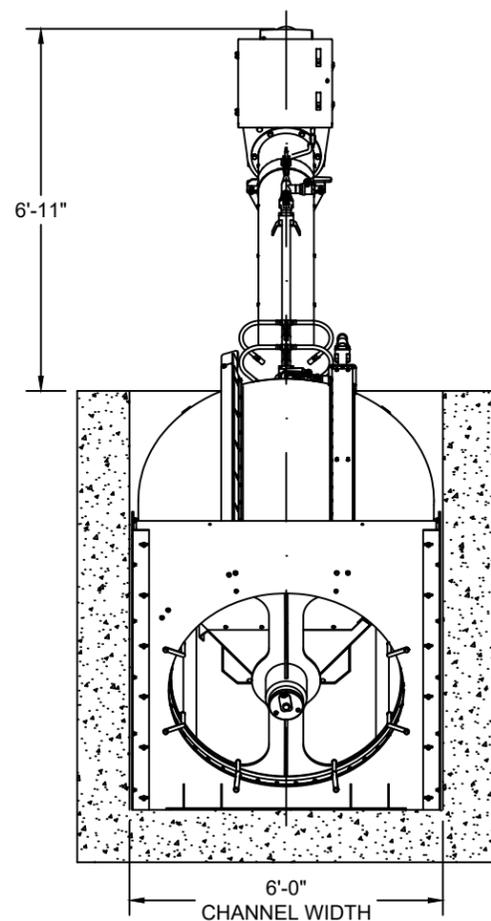
Taxes, electrical wiring, conduit or electrical equipment, piping, valves, or fittings, shimming material, lubricating oil or grease, shop or field painting, field welding, erection, hoist or lifting apparatus, detail shop fabrication drawings, performance testing, unloading, storage, concrete work, civil design, grating, platforms, stairs, hand railing, dumpster (except as specifically noted).

This proposal section has been reviewed for accuracy and is approved for issue:

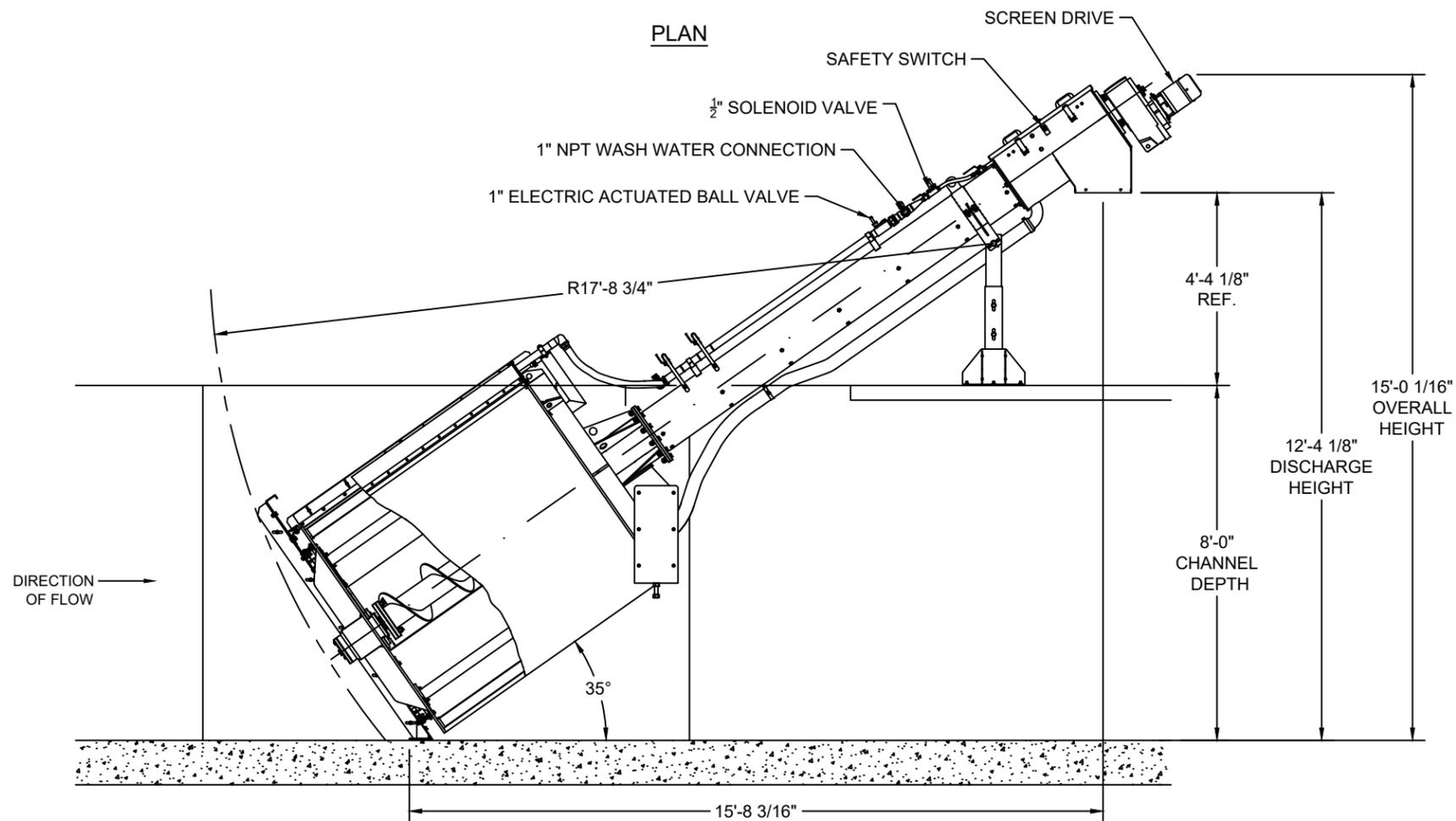
By: Charles Baines Date: November 19, 2025



- NOTES:**
1. CONCRETE, GROUT, INTERCONNECTING PIPING NOT BY SAVECO
 2. ALL INTERCONNECTING PIPING TO BE SELF SUPPORTING
 3. DRAWING NOT FOR CONSTRUCTION



INFLUENT ELEVATION



SIDE ELEVATION

PROCESS DESIGN INFORMATION (EACH SCREEN):

APPLICATION:	MUNICIPAL WASTEWATER
SCREEN PEAK DESIGN FLOW:	7.66 MGD
INFLUENT & EFFLUENT CHANNEL WIDTH:	64.0 INCHES
CHANNEL WIDTH @ SCREEN:	6.0 FEET
CHANNEL DEPTH:	8.0 FEET
SCREEN OPENING:	2 MM
OPENING TYPE:	PERFORATED
DOWNSTREAM WATER LEVEL:	2.4 FEET
HEADLOSS:	7.0 INCHES AT PEAK FLOW @ 50% BLINDING
ANGLE OF INCLINATION:	35 DEGREES
DISCHARGE HEIGHT:	4.3 FEET FROM TOP OF CHANNEL
WASH WATER REQUIREMENT:	35 GPM @ 72 PSI
SCREENINGS CAPTURE RATIO VALUE (SCR):	86% INDEPENDENTLY TESTED AT UKWIR TESTING FACILITY



Project Information
PROJECT NAME: BANNING WWTP
BANNING, CA

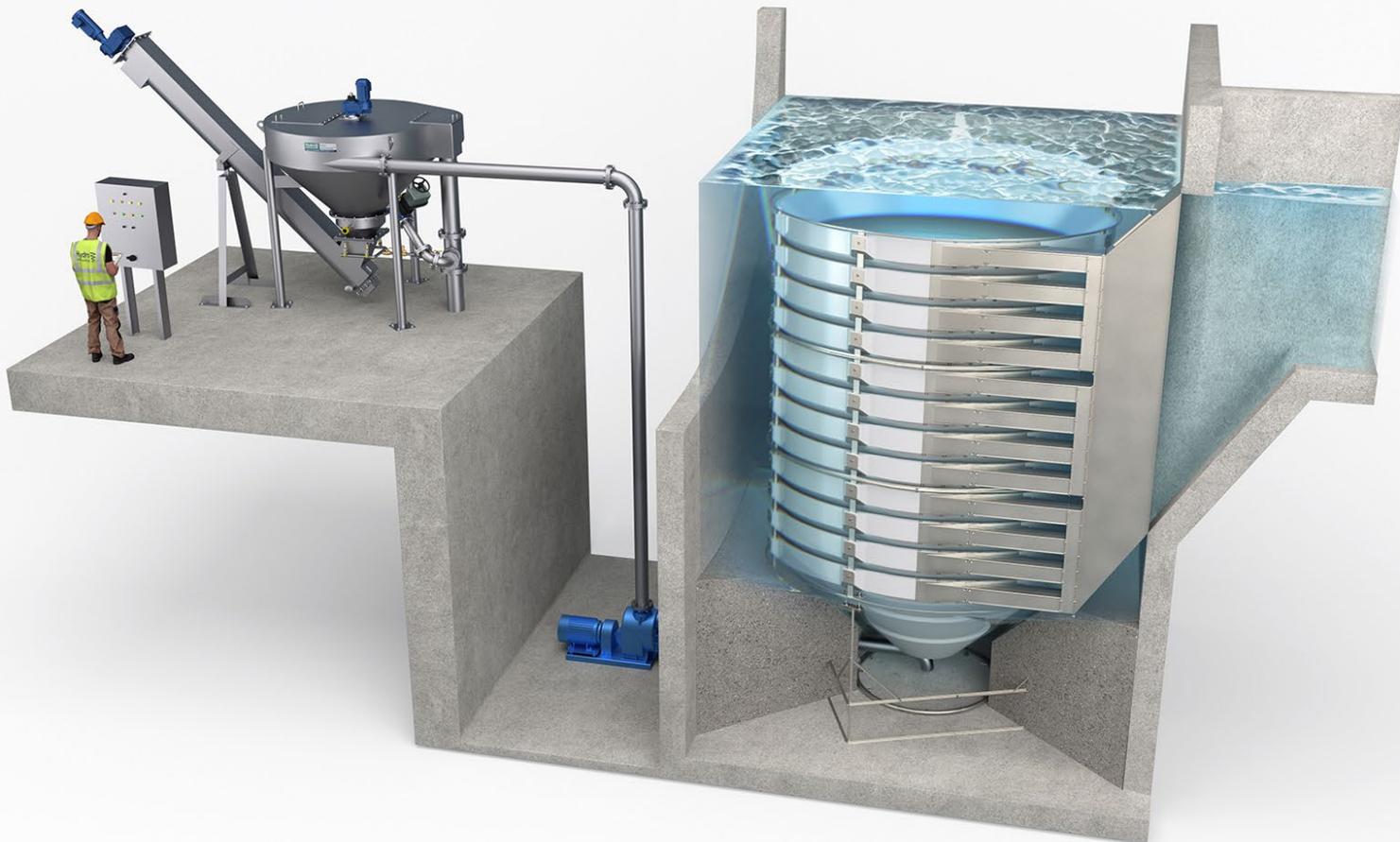


PROPRIETARY AND CONFIDENTIAL
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Status:
SALES DRAWING

Title
VSA1800/2 SAVI FLO-DRUM IN-CHANNEL ROTATING DRUM SCREEN

Designer MB29	Checker AR35	Date 09-10-2025	Sheet 1 OF 1
Scale 1/4"=1'-0"	Drawing Number WEC225190-A	Revision -	



Grit Removal System Proposal Package El Centro, CA · WWTP Dudek & Associates

Manufacturer

Hydro International
2925 NE Aloclek Suite 140
Hillsboro, OR 97124
(503) 615-8130 ph
hydro-int.com

Representative

Coombs-Hopkins Company
2011 Palomar Airport Road, Suite 303
Carlsbad, CA 92011
(760) 931-0555 ph

November 19, 2025

Mr. Ken Deibert
Dudek & Associates
750 Second Street
Encinitas, CA 92024

RE: Headworks Grit Removal System
El Centro, CA – WWTP
File #25-1480339-A

Dear Mr. Deibert:

Thank you for your interest in Hydro International. We are pleased to present our proposal for a HeadCell® Grit Removal, Washing, and Dewatering System. Hydro International is dedicated to providing innovative, high performance advanced grit management systems grit removal equipment. Supported by over 30 years of research, testing both in our lab and in the field, product development and superior engineering we pride ourselves on providing high-quality products and unmatched customer service. Our extensive experience includes thousands of installations throughout the world.

Grit is continually introduced into collection systems but is not uniformly carried to treatment facilities. As flows increase, the grit load entering the plant elevates. Once in the treatment plant, where velocities are slower, grit will deposit in processes, disrupting systems, decreasing equipment longevity, and increasing maintenance costs. The HeadCell® Grit Removal System offers many benefits over conventional grit removal systems including:

- Complete system designed to process the solids load as well as the hydraulic load through each step of the process, collection, washing, and dewatering and producing a clean, dry product.
- Removing fine and slowly settling grit, protecting equipment and processes from abrasive wear and sedimentation
- All-hydraulic design with no moving parts, minimizing operating and maintenance costs
- Small footprint yet capable of high efficiency solids capture and removal
- Robust design allowing long component life with minimal wear

We sincerely appreciate your interest in our equipment and look forward to working with you on this project. As you progress with the design, we can quickly generate CAD drawings, budget updates, and specifications as well as provide review of equipment layouts and specifications for your particular application. Reference lists are available through your local representative. If you have any questions or concerns, do not hesitate to contact us.

Regards,
Hydro International

A handwritten signature in black ink that reads "Maria Grossen". The signature is written in a cursive, flowing style.

Maria Grossen
Applications Engineering

Performance Objective

Hydro International is pleased to propose the following HeadCell® grit removal, washing, and dewatering system to be installed in an existing plant which has flows of 4 mgd average and 9 mgd peak. Each component of the grit removal system's performance shall be outlined below.

Proposed Equipment Summary

HeadCell® Grit Concentrator Unit

The HeadCell® is an all-hydraulic grit concentrator, which uses vortex flow and a stacked tray design to efficiently capture and settle fine grit via large surface area and short settling distances. The unit can be installed into the process flow, downstream of screening, in any system where limited head is available. The unit requires no external power source, has no internal moving parts, is self-cleaning, and has a compact modular construction. Wide turndown ratios can be accommodated in the HeadCell® when it is combined with Hydro's high performance washing system.

Hydro has standardized on a new HeadCell® tank design that incorporates a shorter stainless-steel inlet duct. The new design connects to the opening at the inside face of the tank structure to minimize the steel exposed to the corrosive environment at and above the air/water interface.

Therefore, the tapering of the transition upstream of the tank wall will need to be done with the concrete form work during the tank placement. Concrete work from the upstream channel to the tank wall needs to reflect the proper slope (angling downward from the influent channel invert towards the inlet flume opening) and taper (narrowing the influent channel width to match the width of the flume opening), as shown on the drawings.

A second change is the collection sump design. The sump is larger in diameter and formed from concrete/grout below the trays. The larger grit sump will allow for the intermittent grit fluidization in lieu of 24/7. The sump includes a fluidizing ring to resuspend settled grit more aggressively. It does require more water, but as it is run intermittently the resulting water usage is lower. The larger sump does allow for intermittent grit pumping in applications where overnight flows are low or other project drivers make intermittent grit pumping a benefit.

Specifications

Quantity:	1
Size:	9' diameter
Number of Tray/Unit:	9
Surface Area/Unit:	572 ft ²
Loading Rate @ Peak Flow/Unit:	10.9 gpm/ft ²
Performance @ Peak Flow:	95% removal of all grit (SG 2.65) ≥ 106 microns
Performance @ Average Flow:	95% removal of all grit (SG 2.65) ≥ 75 microns
Peak Flow/Unit:	9 mgd with 12" headloss
Average Flow/Unit:	4 mgd with 3" headloss
Discharge:	Weir
Underflow Connection:	4" flanged pipe
NPW Connection:	1.5" NPT
NPW Requirement/Unit:	Intermittent 32 gpm @ 50 psig
Material of Construction:	304 SS Support Structure/Duct/Underflow Polyethylene Trays
Weight Dry (approximate):	2,900 lbs

Hydro GritCleanse™ Grit Washing / Dewatering Unit

The Hydro GritCleanse™ is a fully automated, high efficiency unit that effectively removes, washes, and dewater fine grit, sugar sand, and high-density fixed solids from grit slurries. The large conical clarifier with tangential inlet and internal baffle enhances the settling of fine particles and the fluidized sand bed scrubs off and separates attached organics, resulting in a dry grit with extremely low organic content suitable for landfill disposal.

Specifications

Quantity:	1
Size:	8412
Design Flow/Unit:	250 gpm with 2" headloss
Influent Solids Concentration:	≤1.5%
Influent Connection:	4" flanged pipe
Capacity:	Up to 1.5 cy/hr
Screw Diameter:	12"
Clarifier Size:	84"
Min. Free Water Surface Area:	38.5 ft ²
Auger Motor:	2 hp, TENV, 460V/3 phase/ 60 Hz
Agitator Motor:	1 hp, TENV, 460V/3 phase/ 60 Hz
Effluent Connection:	8" flanged pipe
Organics Discharge Connection:	4" flanged pipe
Drain Connection:	3" NPT pipe
NPW Connection:	1" NPT (2 No.)
NPW Requirement Fluidized Bed:	25 gpm @ 50 psig Continuous
NPW Requirement Organics Flush:	25 gpm @ 50 psig (20-30 sec. hourly)
Operation:	Continuous or a minimum of 10-15 minutes
Body Material:	304 SS
Weight Dry/Wet (approximate):	3,600 / 10,400 lbs.
Performance:	95% removal of all grit (specific gravity 2.65) ≥ 75 microns with less than 5% volatile solids and greater than 90% total solids w/ standard intermittent screw operation and <0.5% influent solids concentration

Grit Pump

The grit pump shall be designed to convey grit slurry from the HeadCell® grit concentrator unit to the Hydro GritCleanse grit washing/dewatering unit. The grit pump shall be a recessed impeller, vortex-type unit, specifically designed to pump slurries of grit, debris, and organic solids without clogging. The parts exposed to abrasive wear (case, impeller and wearplate) shall have a minimum 650 Brinell hardness for maximum wear resistance.

Specifications

Quantity:	2 (1 duty/1 standby)
Style:	Dry- Pit
Nominal Size:	TBD
Design Flow Rate:	250 gpm
Design TDH:	TBD by Engineer
Motor:	460V/3-phase
Horsepower:	TBD

Control Panel

The panel shall contain all timers, VFDs, switches, and indicator lights to operate one (1) HeadCell® NPW system, one (1) GritCleanse™ unit, and two (2) grit pumps in either fully automated or manual mode.

Specifications

Quantity:	1
Enclosure Material:	304 SS
Enclosure Type:	NEMA 4X
Power Supply:	480V/3-phase
Control Logic:	AB Micro850 PLC w/ PanelView Plus 600 OIU
Grit Pump Control:	VFD
Hydro GritCleanse™ Motor Control:	VFDs (2 No.)

System Hydraulics

System hydraulics is the responsibility of the design engineer. Hydro International can provide information on HeadCell® hydraulics and pumping and piping FAQs to assist the engineer in determining system hydraulics and pump requirements, upon request.

Design Recommendations

- 1/2" or finer screening prior to the grit removal system
- Velocity through bar screen openings/slots/apertures should not exceed 4 ft/s at peak flow as recommended by industry design manuals.
- Estimated grit load at peak flow is 0.12 yd³/hr.
- Stated output grit quality (total solids/volatile solids) is based on a minimum plant influent grit quantity of 50 pounds Fixed Solids/million gallon (FS/mg).
- All piping connected to Hydro equipment must be supported by other means than the Hydro equipment
- 2 – 3 ft/s channel velocities at peak flow as recommended by industry design manuals
- 4 – 7 ft/s grit slurry pipe velocities as recommended by industry design manuals
- Incorporate a drain line, piped to a floor drain, in the grit dumpster to allow for further dewatering prior to disposal
- A minimum 18" of access clearance around all equipment and minimum 3' of access clearance above equipment
- Operators find that it is useful to locate a spray hose adjacent to the equipment so that they can spray all equipment down during an inspection
- Incorporate a minimal access platform to facilitate inspection access to the top of the equipment
- Equipment not recommended to be placed outdoors in freezing climates
- Intermittent operation of grit pump system may be an option. Contact Hydro for further information.
- Discharge chutes for grit should be at a minimum 45° incline if it is open chute. If it is an enclosed chute/pipe/tube then a minimum angle of 60° is required to ensure plugging does not occur.
- Grit pumps may require NPW for seal flushing. Requirements for flushing are dependent on the make, model, and seal type of the pump specified by the engineer.
- Discharge from Hydro's equipment shall be to the atmosphere. There shall be no backpressure created by downstream piping connected to Hydro's equipment.

Start-up

One (1) factory trained representative, two (2) trips, for start-up and instruction services as required totaling four (4) days.

Quote Validity: 30 days After expiration of validity Hydro International reserves the right to adjust pricing to account for any significant increases in material costs.

Exclusions

Any item(s) not specifically described above are excluded and are not to be supplied by Hydro International including but not limited to the following:

- Field assembly, erection, and installation
- Pipe connections and fittings not expressly stated above
- All pipe supports, hangers and braces
- Controls, switches, control panels and instrumentation of any kind not expressly stated above
- Wiring and conduit
- Field or touch-up paint, painting, blasting and touch-up of surface finish
- Spare parts not specifically stated above
- Unloading, hauling and storage charge
- Lubricating oil and greases
- Grit study, field performance testing, laboratory testing and sample collection and analysis
- All concrete and grouting work
- Insulation and heat tracing of any kind
- Performance, Warranty, Efficacy and/or Supply Bond(s)
- Grit dumpsters
- Translation Services
- Interconnecting piping and valving not expressly stated above including bellmouth on grit slurry suction line

- Grit pump associated piping, valving, gauges
- Covers and access hatches
- Anchor Bolts

Options

Quotes will be provided upon request for the following optional features:

- Stainless steel valve bodies
- Additional field days for startup or training
- Explosion proof upgrade
- Upgrade 304 to 316 Stainless Steel
- Field performance testing, laboratory testing and sample collection and analysis
- Service & maintenance contract
- Extended warranty

Warranty

Hydro International's Standard Warranty shall apply per the Terms and Conditions of Sale.

Delivery

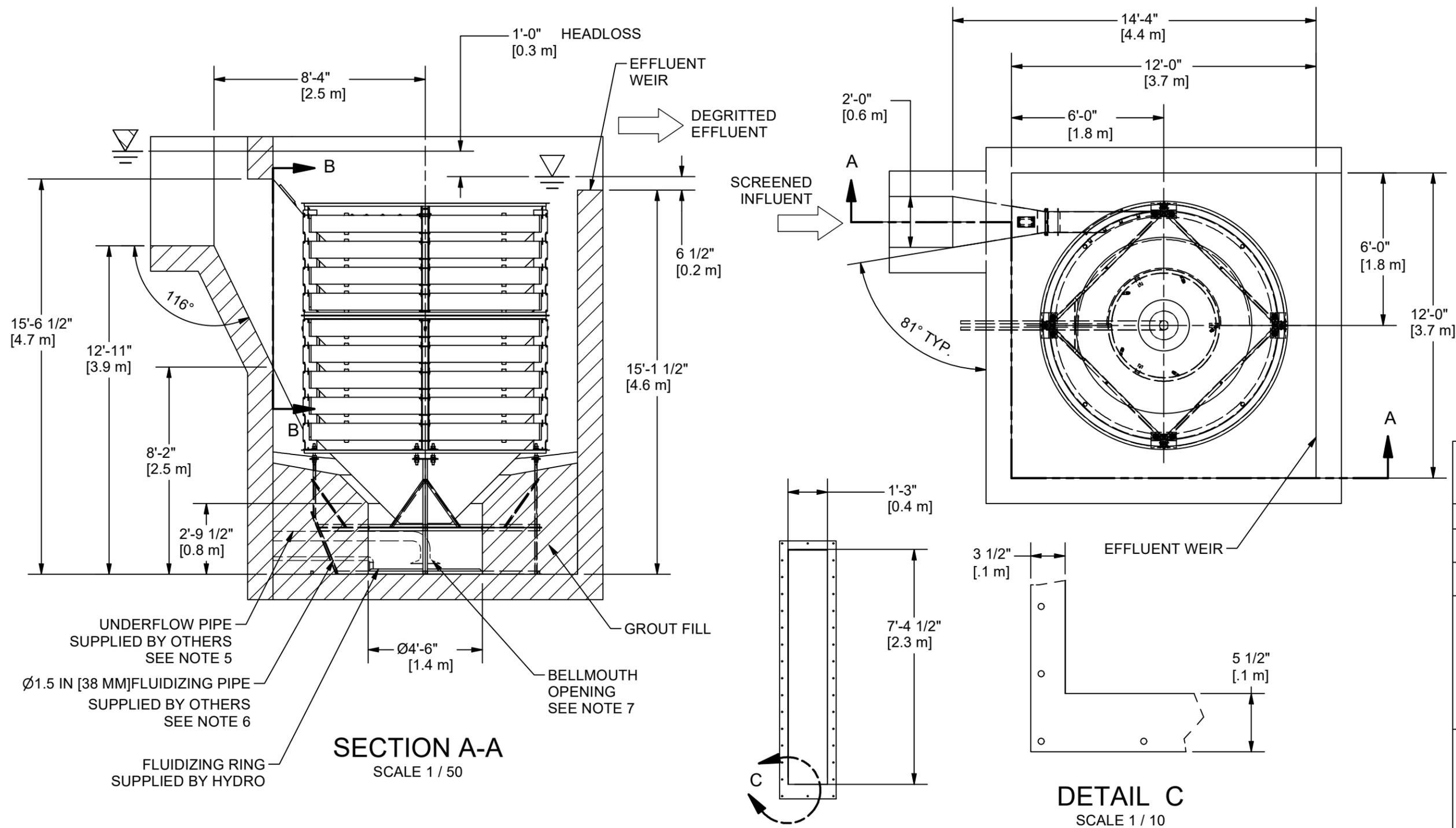
Please allow 14-16 weeks after receipt of purchase order for approval drawings. Shipment is typically a maximum of 18-20 weeks after receipt of "Approved" or "Approved as Noted, Resubmittal Not Required" submittal package. Price includes truck freight to jobsite but does not include any state, or local taxes if required. Timelines are based on typical workloads and can vary, with current market conditions timing will be longer.

Terms & Conditions

This proposal is made pursuant to Hydro International's standard Terms & Conditions of Sale, attached hereto, and made a part hereof.

DO NOT CHANGE DUCT LAYOUT OR PIPE ORIENTATION WITHOUT CONSULTING HYDRO INTERNATIONAL

1. ALLOW GRIT PUMP TO FULLY DRAIN HEADCELL TANK.
2. PLANT FLOW BYPASS RECOMMENDED TO ALLOW THE HEADCELL TO BE TAKEN OUT OF SERVICE FOR MAINTENANCE.
3. CLOCKWISE & COUNTERCLOCKWISE UNITS ARE AVAILABLE. CW SHOWN.
4. ALTERNATE EFFLUENT CONFIGURATIONS ARE AVAILABLE.
5. THE GRIT PUMP SUCTION PIPE SHOULD BE DESIGNED FOR A 4-7 FT/S [1.2-2.2 M/S] PIPE VELOCITY.
6. FLUIDIZING WATER REQUIREMENTS INTERMITTENT 32 GPM [2.0 L/S] AT 50PSIG
7. DISTANCE BETWEEN BELL MOUTH AND BOTTOM OF TANK 1.25 X SUCTION PIPE DIAMETER



SECTION A-A
SCALE 1 / 50

SECTION B-B
SCALE 1 / 40

DETAIL C
SCALE 1 / 10

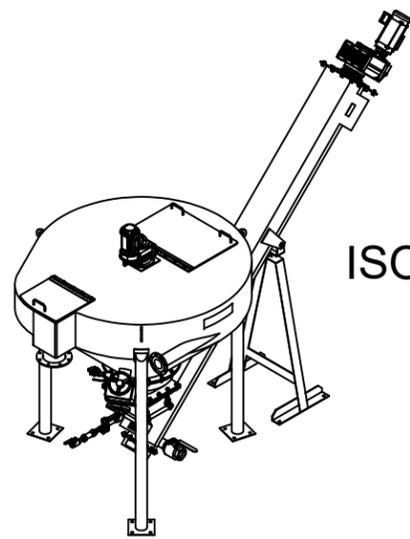


IF IN DOUBT ASK		
DATE: 4/24/2024	SCALE: 1 / 50	
DRAWN BY: RL	CHECKED BY: LS	APPROVED BY: DS
Title		
HEADCELL PROPOSAL 9' DIAMETER 9 TRAYS CONCRETE DUCT		

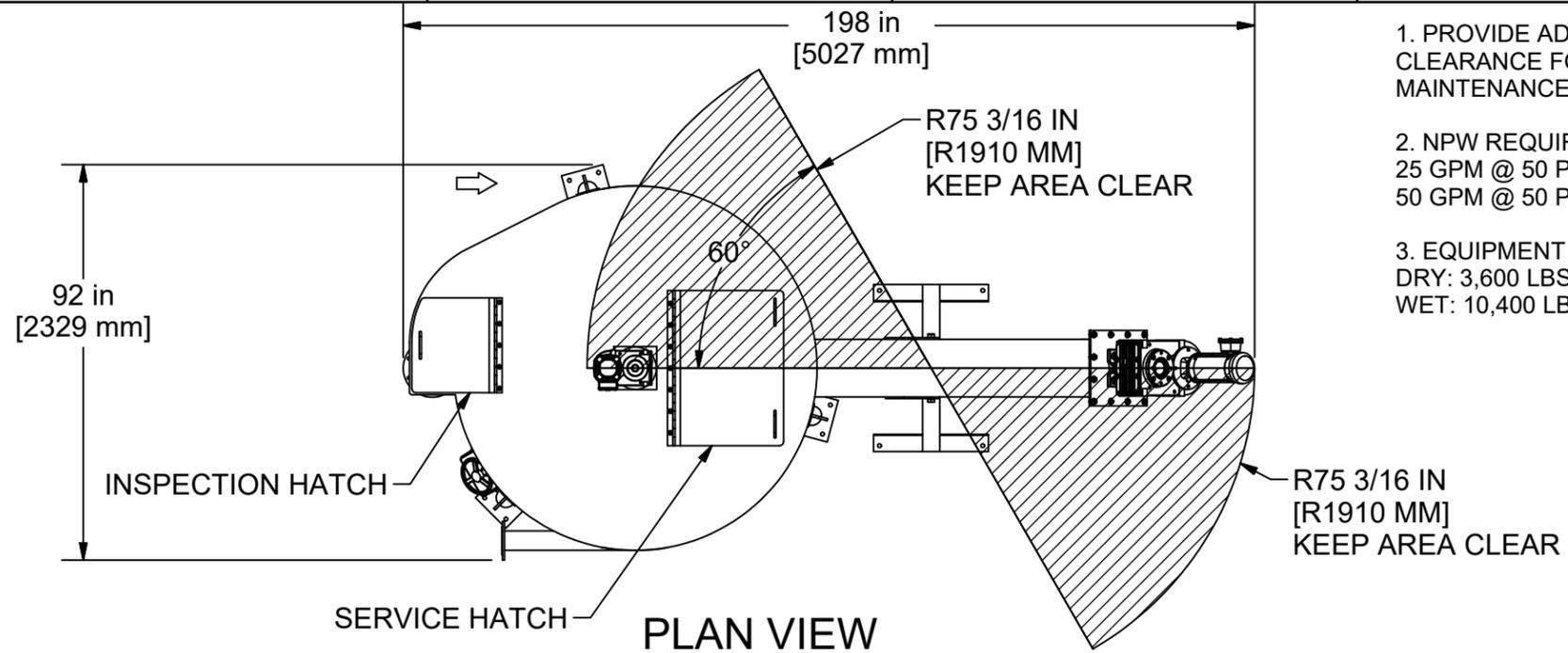


ANY WARRANTY GIVEN BY HYDRO INTERNATIONAL WILL APPLY ONLY TO THOSE ITEMS SUPPLIED BY IT. ACCORDINGLY HYDRO INTERNATIONAL CANNOT ACCEPT ANY RESPONSIBILITY FOR ANY STRUCTURE, PLANT, OR EQUIPMENT, (OR THE PERFORMANCE THERE OF) DESIGNED, BUILT, MANUFACTURED, OR SUPPLIED BY ANY THIRD PARTY. HYDRO INTERNATIONAL HAVE A POLICY OF CONTINUOUS DEVELOPMENT AND RESERVE THE RIGHT TO AMEND THE SPECIFICATION. HYDRO INTERNATIONAL CANNOT ACCEPT LIABILITY FOR PERFORMANCE OF ITS EQUIPMENT, (OR ANY PART THEREOF), IF THE EQUIPMENT IS SUBJECT TO CONDITIONS OUTSIDE ANY DESIGN SPECIFICATION. HYDRO INTERNATIONAL OWNS THE COPYRIGHT OF THIS DRAWING, WHICH IS SUPPLIED IN CONFIDENCE. IT MUST NOT BE USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT IS SUPPLIED AND MUST NOT BE REPRODUCED, IN WHOLE OR IN PART, WITHOUT PRIOR PERMISSION IN WRITING FROM HYDRO INTERNATIONAL.

WEIGHT: 2858 lbmass	MATERIAL:
STOCK NUMBER:	
DRAWING NO.: 9' 9T 1.08 CONC INT	
SHEET SIZE: B	SHEET: 1 OF 1
Rev: C	

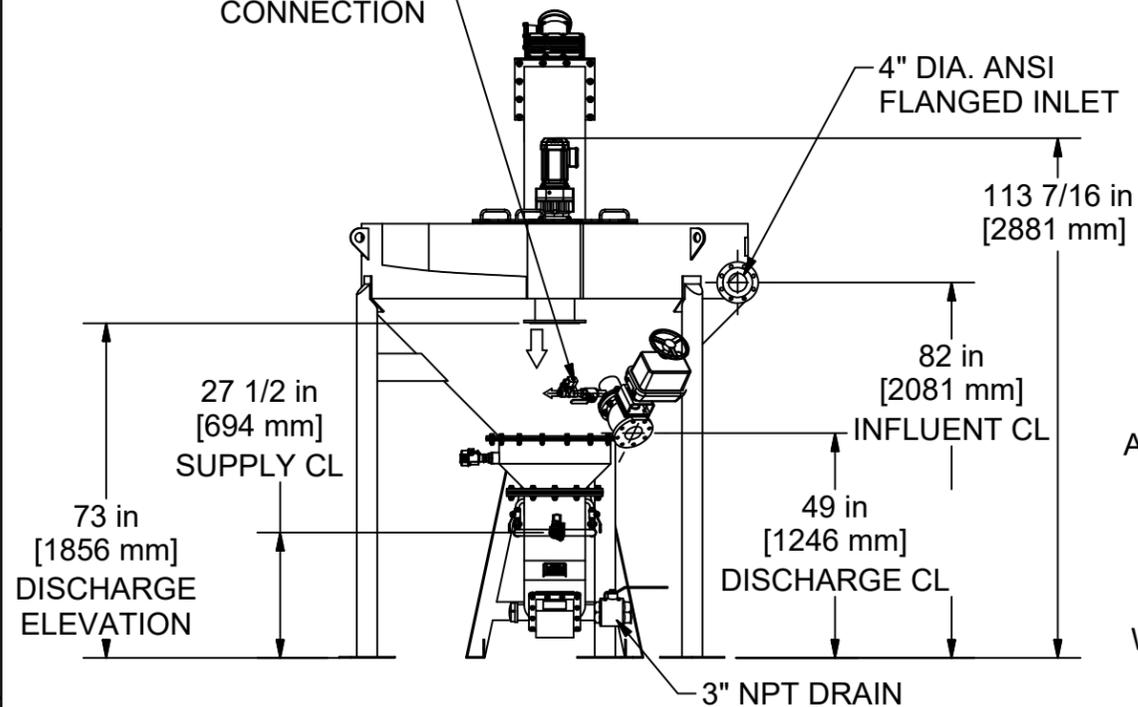


ISOMETRIC VIEW
NTS

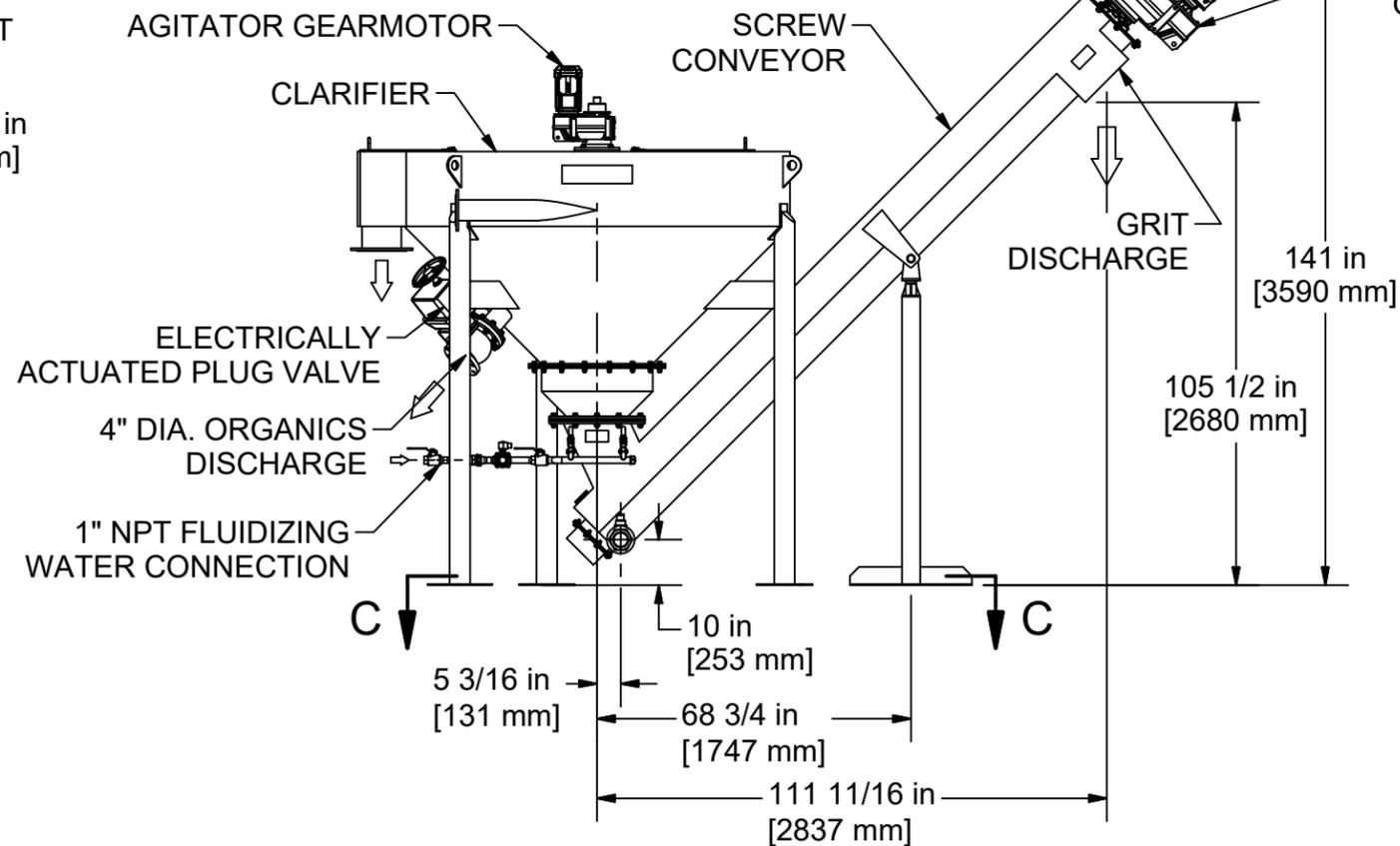


1. PROVIDE ADEQUATE CLEARANCE FOR SERVICE AND MAINTENANCE ACCESS
2. NPW REQUIREMENTS:
25 GPM @ 50 PSI CONTINUOUS
50 GPM @ 50 PSI INTERMITTENT
3. EQUIPMENT WEIGHTS:
DRY: 3,600 LBS [1,630 KG]
WET: 10,400 LBS [4,700 KG] (MAX)

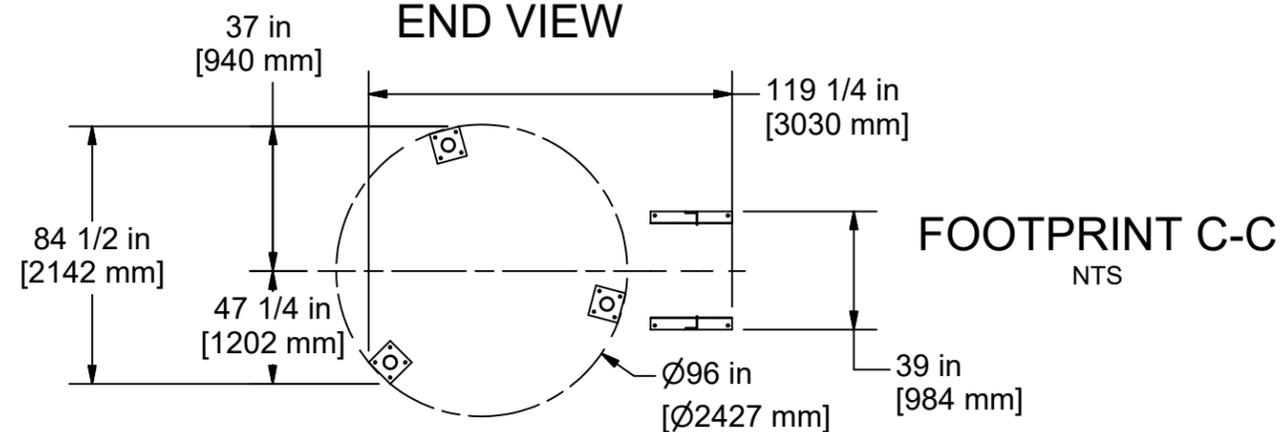
1" FLUSH WATER CONNECTION



END VIEW



SIDE VIEW



REVISION HISTORY			
REV	BY	DESCRIPTION	DATE
SR		3-INCH DRAIN	17-Jul-19
-		FIRST RELEASE	



IF IN DOUBT ASK

DATE: 5/11/2023	SCALE: 1 / 40	
DRAWN BY: SR	CHECKED BY: LS	APPROVED BY: LS

Title
PROPOSAL

8412 GRITCLEASE
COUNTERCLOCKWISE



hydro-int.com
©2021 HYDRO INTERNATIONAL

WEIGHT: 3513 lbmass	MATERIAL:	
STOCK NUMBER: N/A		
DRAWING NO.: 8412 GCL 4 CCW-SUBMITTAL		
SHEET SIZE: B	SHEET: 2 OF 2	Rev:

North American Grit Gradations

Hydro International is pleased to announce the availability of national and regional grit gradation data. This data, which has been compiled from over 120 tests across North America, contains average physical size data as well as settling velocity (SES) data, making it the most comprehensive information available on grit and its behavior.

Virtually all conventional grit removal processes rely on gravity sedimentation to achieve the separation of grit from wastewater. Most conventional grit removal processes are designed based on the assumption that grit is spherical and has a specific gravity 2.65. However, not all grit maintains a specific gravity of 2.65 and other factors such as shape and encapsulation by fats, oils and grease significantly impact its settling velocity. Therefore, the best means to analyze grit is to determine the settling velocity for given particle size ranges. Settling velocity data can be correlated to the measured settling velocity of a clean sand sphere. The settling velocity is expressed as the Sand Equivalent Size (SES), which is the sand particle size having the same settling velocity as the more buoyant grit particle. The correlated particle size, or Sand Equivalent Size can then be used for design of the grit removal process.

When settling velocity is considered in the design actual removal efficiency of grit particles can be estimated more realistically.

Data is available for the following regions:

Region	States / Provinces Included
Northeast	ME, VT, NH, MA, RI, NY, CT
Mid-Atlantic	PA, NJ, MD, DE, DC, VA, WV
Southeast	NC, SC, GA, AL, FL, MS
North Central	MO, KS, KY, IN, OH, IL, MI, WI, IA, MN, ND, SD, NE
South Central	TN, AR, OK, TX, LA
West	WA, OR, CA, AK, HI, AZ, NV, NM, CO, ID, MT, UT, WY
Western Canada	AB, MB, SK
Ontario Canada	ON

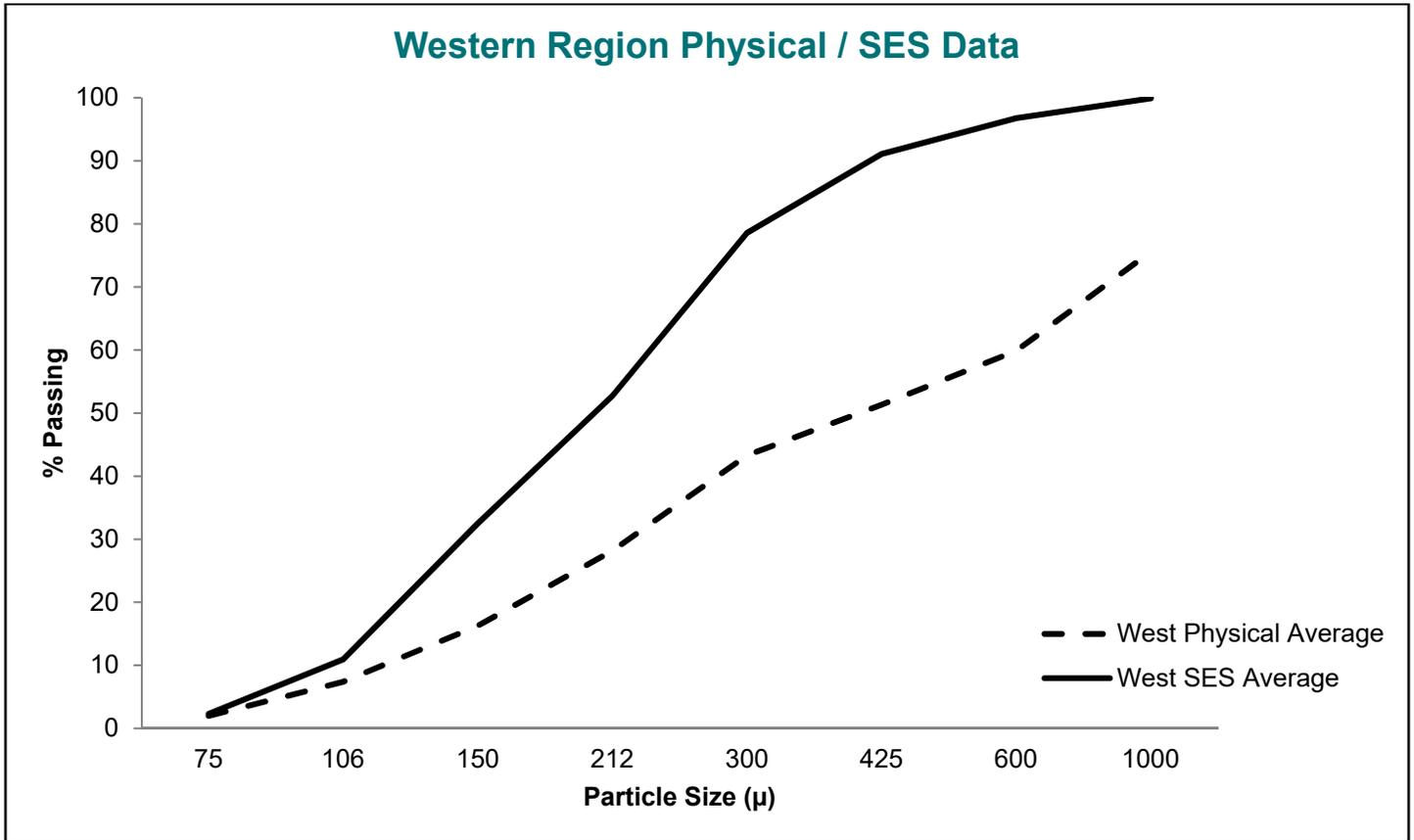
State data is available for individual states where more than 5 data points are available; those states currently include: Georgia, Texas, Florida, California, and Virginia.

Hydro International

2925 NE Alcock Suite 140 · Hillsboro, OR 97124

Tel: (866) 615-8130 Fax: (503) 615-2906 Web: hydro-int.com

Western US Regional Gradation



Micron	% Passing								
	75	106	150	212	300	425	600	1000	
West Physical Average	2.0	7.4	16.3	28.2	43.3	51.3	59.9	75.6	<i>Physical</i>
West SES Average	2.3	11.0	32.5	52.7	78.6	91.1	96.8	99.9	<i>SES</i>

The above table shows the % of grit passing through various sieve sizes based on physical size (unshaded) and Sand Equivalent Size (SES) (shaded). SES provides the settling velocity distribution of the grit particles.

Appendix D

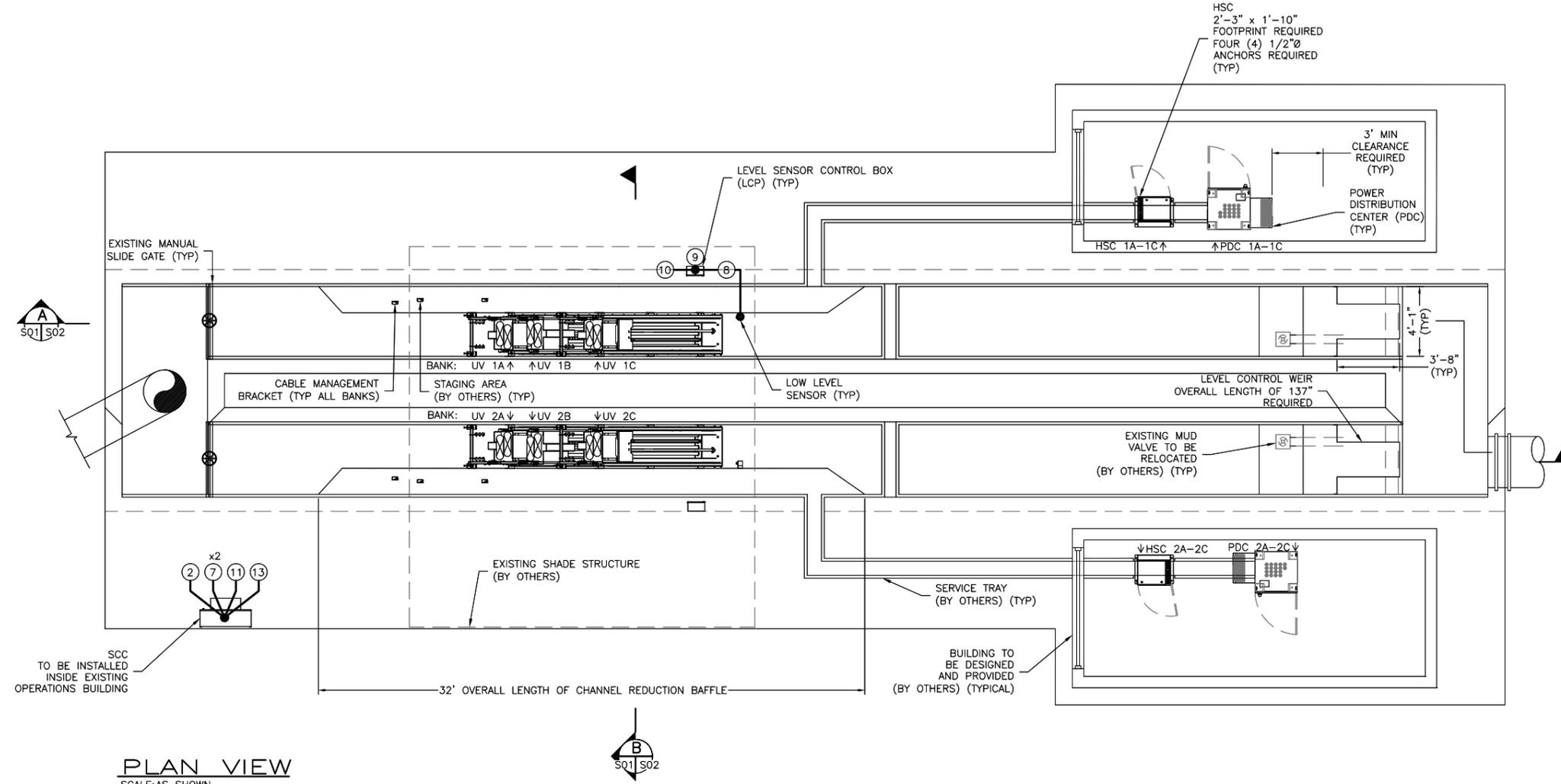
Proposed UV System Brochures and Conceptual Layouts

TROJAN UV SIGNA™

EQUIPMENT INTERCONNECTIONS

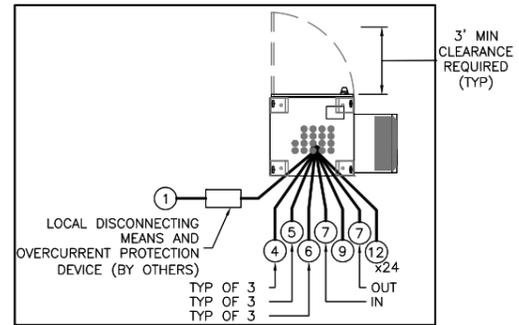
No.	DESCRIPTION	FROM	TO
1	POWER DISTRIBUTION CENTER (PDC)* POWER SUPPLY 480Y/277V, 3 PHASE, 4 WIRE + GROUND 34 AMPS MAXIMUM CURRENT/PHASE 27.4 kVA/PDC POWER DRAW	DISTRIBUTION PANEL (DP) (BY OTHERS) (NOT SHOWN)	PDC(s) (TOP OF PANEL)
2	SYSTEM CONTROL CENTER (SCC)* POWER SUPPLY 120V, 1 PHASE, 2 WIRE + GROUND, 1.5 kVA	DP (BY OTHERS) (NOT SHOWN)	SCC
3	HYDRAULIC SYSTEM CENTER (HSC)* POWER SUPPLY 480V, 3 PHASE, 3 WIRE + GROUND, 2.5 kVA	DP (BY OTHERS) (NOT SHOWN)	HSC
4	BONDING CONDUCTOR 8 AWG TYPE TWH STRANDED	PDC(s) (UNDERSIDE OF PANEL)	UV BANK(s)
5	UV INTENSITY 4-20mA ANALOG INPUT (SUPPLIED)	UV BANK(s)	PDC(s) (UNDERSIDE OF PANEL)
6	BANK IN PLACE PROXIMITY SENSOR 3 CONDUCTOR CABLES (SUPPLIED)	PROXIMITY SENSOR(s)	PDC(s) (UNDERSIDE OF PANEL) (DAISY CHAINED)
7	MODBUS BELDEN 3106A OR EQUIVALENT (ONE LINE PER CHANNEL)	SCC	HSC(s) & PDC(s) (UNDERSIDE OF PANEL) (DAISY CHAINED)
8	DISCRETE LOW LEVEL SIGNAL 12 VDC - 2 CONDUCTORS	LOW LEVEL SENSOR	LEVEL SENSOR CONTROL BOX (LCP)
9	DISCRETE WATER LEVEL SIGNAL 2 CONDUCTORS	LEVEL SENSOR CONTROL BOX (LCP)	PDC(s) (UNDERSIDE OF PANEL)
10	LEVEL SENSOR CONTROL BOX (LCP)* POWER SUPPLY 120V, 1 PHASE, 2 WIRE + GROUND, 0.12 kVA	DP (BY OTHERS) (NOT SHOWN)	LEVEL SENSOR CONTROL BOX (LCP)
11	FLOW METER 4-20 mA, DC ANALOG INPUT (BY OTHERS)	FLOW METER PANEL (NOT SHOWN) (BY OTHERS)	SCC
12	LAMP CABLES (SUPPLIED BY TROJAN) (ROUTED BY OTHERS)	UV BANK	PDC (UNDERSIDE OF PANEL)
13	ETHERNET/IP COMMUNICATION	SCC	PLANT SCADA (BY OTHERS) (NOT SHOWN)

* GROUND CONNECTION REQUIRED TO PLANT GRID (BY OTHERS).

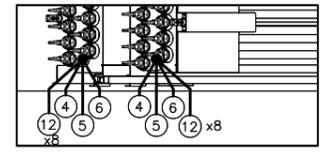


PLAN VIEW
SCALE: AS SHOWN

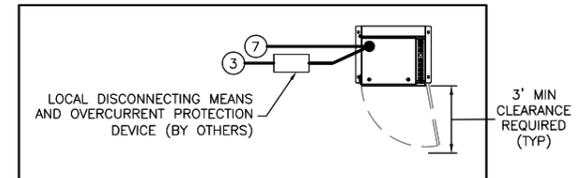
- NOTES:**
- : DO NOT SLOPE CHANNEL FLOOR.
 - : CHANNEL WIDTH MUST BE KEPT WITHIN A TOLERANCE OF $-/+1\frac{1}{2}$ " AT UV BANK FRAME AND $-/+1\frac{1}{4}$ " FOR REST OF CHANNEL.
 - : ALL CHANNEL ELEVATIONS MUST BE KEPT WITHIN A TOLERANCE OF $-/+1\frac{1}{4}$ " AGAINST A COMMON DATUM ELEVATION.
 - : ANCHOR BOLTS ARE NOT SUPPLIED BY TROJAN TECHNOLOGIES.
 - : SYSTEM CONDUIT, WIRING, DISTRIBUTION PANELS & INTERCONNECTIONS BY OTHERS.
 - : ELECTRICAL REQUIREMENTS SHOWN ARE TO SUPPLY TROJAN UV EQUIPMENT ONLY.
 - : REMOVABLE GRATING SECTIONS SHALL BE EASILY REMOVED BY ONE PERSON. MAXIMUM WEIGHT OF THE SECTIONS SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF THE APPLICABLE JURISDICTION.
 - : CONTRACTOR TO REVIEW ALL TROJAN TECHNOLOGIES INSTALLATION INSTRUCTIONS PRIOR TO EQUIPMENT INSTALLATION.
 - : EFFLUENT LEVELS SHOWN REFLECT HYDRAULICS ASSOCIATED WITH TROJAN EQUIPMENT ONLY. EFFLUENT LEVELS MAY BE ALTERED DUE TO CHANNEL DEBRIS OR GEOMETRY.
 - : HYDRAULIC HOSE ELEVATIONS NOT TO EXCEED 12" ABOVE HSC MOUNTING ELEVATION.
 - : INCLUDED CABLE LENGTH ALLOWS FOR 77.5' ROUTING (RISE + RUN) BETWEEN CABLE/HOSE MANAGEMENT BRACKET AND UNDERSIDE OF PDC. (67.0' ROUTING ASSUMED BASED ON THIS LAYOUT.)
 - : INCLUDED HOSE LENGTH ALLOWS FOR 80' ROUTING (RISE + RUN) BETWEEN HYD CYLINDERS AND HOS CONNECTION ON THE HSC.
 - : SITE TO PROVIDE APPROVED (ENGINEERED) ANCHOR POINTS FOR PERSONNEL TO USE AS PART OF THEIR FALL RESTRAINT SYSTEM AROUND OPEN CHANNELS. THE ANCHOR POINTS MUST BE POSITIONED SO THAT THE PREFERRED RETRACTABLE LIFELINE OF 8 FEET IS OF SUFFICIENT LENGTH TO ACCESS THE WORK AT THE CHANNEL.
 - ** SOLID GRATING REQUIRED TO BLOCK ULTRAVIOLET (UV) LIGHT.



PDC INTERCONNECT DETAIL
SCALE: NOT TO SCALE



UV BANK INTERCONNECT DETAIL
SCALE: NOT TO SCALE
NOTE: TYPICAL FOR ALL UV BANKS. TROUGH NOT SHOWN FOR CLARITY.



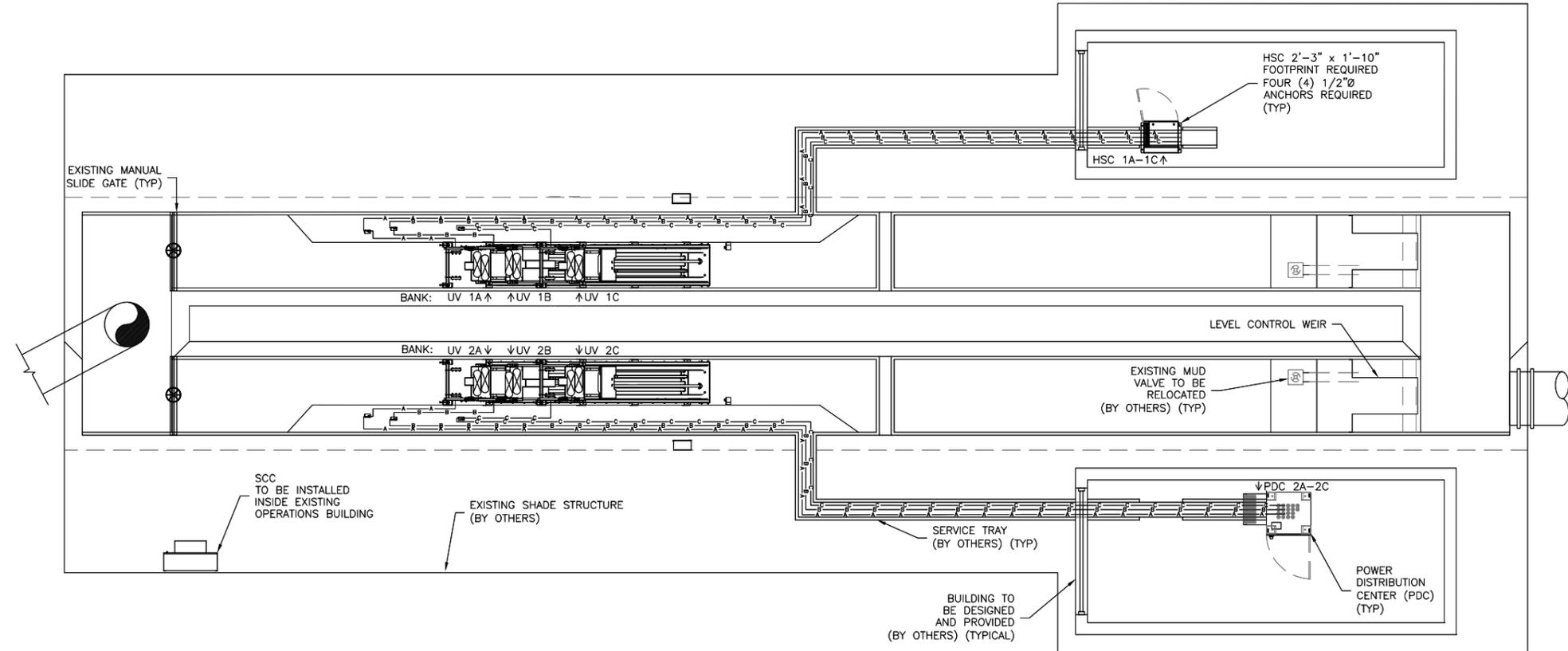
HSC INTERCONNECT DETAIL
SCALE: NOT TO SCALE

(1 DUTY/ 1 REDUNDANT CHANNEL)

DESIGN CRITERIA	PEAK FLOW	8 MGD
	U.V TRANSMITTANCE AT 253.7 nm	62%
	SUSPENDED SOLIDS	30 mg / L
	DISINFECTION STANDARD	200 FC / 100mL (30 DAY GEO MEAN)

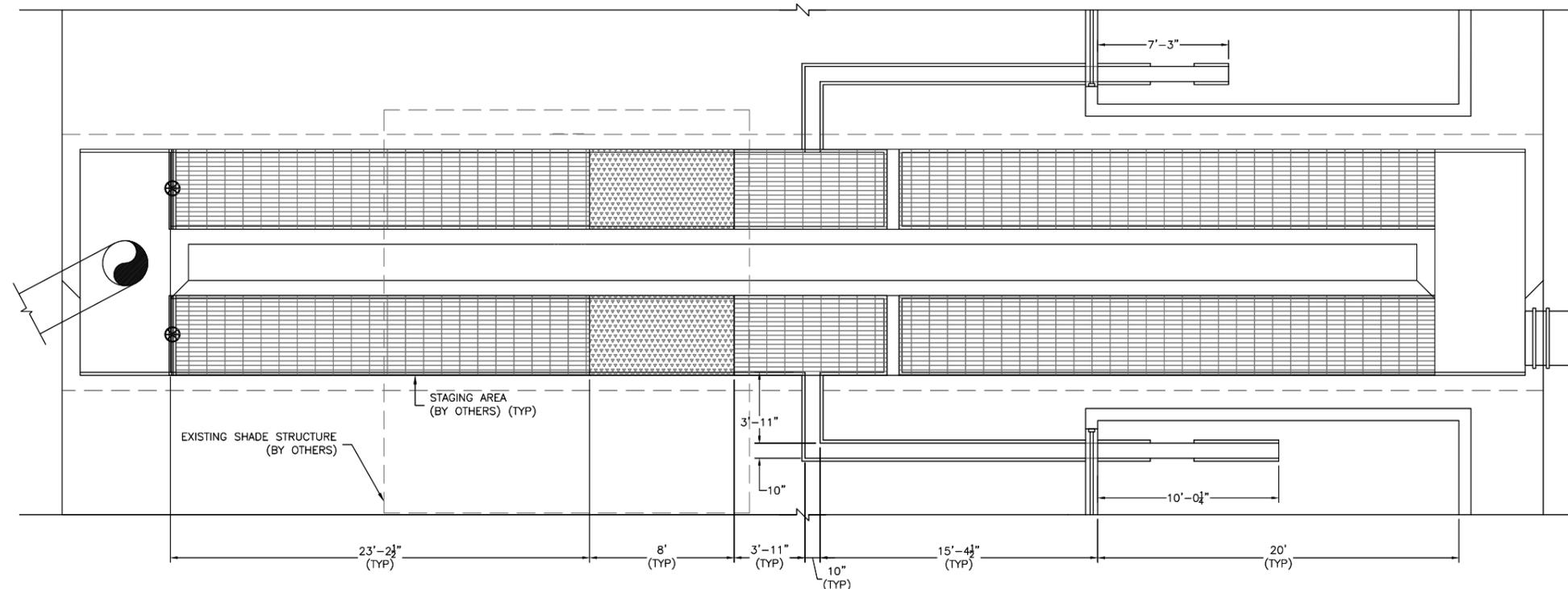
TROJAN UV
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DESCRIPTION:	LAYOUT, TROJANUVSIGNA EL CENTRO, CA	QUOTE NO.	229392
DRAWN BY :	JRN	DATE :	24MR19
CHECKED BY :	SPM	DATE :	24MR19
APPROVED BY :	HM	DATE :	24MR25
SCALE (11x17) :	1/8" = 1'-0"	LOG NUMBER :	N/A
DWG NO.	S01	REV.	D
PROJECT NO.	810206		



LAMP CABLE & HYDRAULIC HOSE ROUTING PLAN

SCALE: AS SHOWN
NOTE: PDC NOT SHOWN FOR CLARITY.



GRATING AND TROUGH PLAN VIEW

SCALE: AS SHOWN
NOTE: DESIGN OF GRATING SECTIONS SHOULD BE SIZED TO ALLOW FOR EASY REMOVAL BY SERVICE TECHNICIANS. SOLID GRATING MUST BE PROVIDED IN AREA INDICATED TO BLOCK UV LIGHT.

NOTES:

- : DO NOT SLOPE CHANNEL FLOOR.
- : CHANNEL WIDTH MUST BE KEPT WITHIN A TOLERANCE OF $-/+1\frac{1}{2}''$ AT UV BANK FRAME AND $-/+1\frac{1}{4}''$ FOR REST OF CHANNEL.
- : ALL CHANNEL ELEVATIONS MUST BE KEPT WITHIN A TOLERANCE OF $-/+1\frac{1}{4}''$ AGAINST A COMMON DATUM ELEVATION.
- : ANCHOR BOLTS ARE NOT SUPPLIED BY TROJAN TECHNOLOGIES.
- : SYSTEM CONDUIT, WIRING, DISTRIBUTION PANELS & INTERCONNECTIONS BY OTHERS.
- : ELECTRICAL REQUIREMENTS SHOWN ARE TO SUPPLY TROJAN UV EQUIPMENT ONLY.
- : REMOVABLE GRATING SECTIONS SHALL BE EASILY REMOVED BY ONE PERSON. MAXIMUM WEIGHT OF THE SECTIONS SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF THE APPLICABLE JURISDICTION.
- : CONTRACTOR TO REVIEW ALL TROJAN TECHNOLOGIES INSTALLATION INSTRUCTIONS PRIOR TO EQUIPMENT INSTALLATION.
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- ** SOLID GRATING REQUIRED TO BLOCK ULTRAVIOLET (UV) LIGHT.



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DESCRIPTION: LAYOUT, TROJANUVSIGNA EL CENTRO, CA		QUOTE NO. 229392
DRAWN BY: JRN	DATE: 24MR19	PROJECT NO. 810206
CHECKED BY: SPM	DATE: 24MR19	DWG NO. S03
APPROVED BY: HM	DATE: 24MR25	REV. D
SCALE (11x17): 1/8" = 1'-0"		LOG NUMBER: N/A

Appendix E

Summary of El Centro WWTP Reliability Features

Appendix A
 Plant Reliability Features
 El Centro WWTP

Process	Alarms	Power Supply	Emergency Storage	Primary Treatment	Biological Treatment	Secondary Sedimentation	Disinfection	Contingency Plan
Secondary and UV	Loss of the normal power supply	Loss of power alarm	29 MG Stand-by basin	2 primary clarifiers	Stand-by basin	4 secondary clarifiers	Stand-by basin	Stand-by basin
	UV disinfection failure	2 backup generators	3 days of storage at 8 mgd	Plant can operate with 1 unit out of service	3 days of storage at 8 mgd	Plant can operate with 1 unit out of service	UV failure alarm	Manual diversion of secondary effluent
	Blower Failure	Stand-by basin					Redundant capacity with 1 standby bank in each channel	2 backup generators
								Portable bypass pumps
								Emergency Reporting
Proposed MBR	The maximum flow to the MBR with one train offline for maintenance or cleaning (for ≤30 continuous days) is 8 MGD							

Appendix F

Emergency Standby Basin Procedures

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION**

BOARD ORDER R7-2013-0037

**WASTE DISCHARGE REQUIREMENTS
FOR
CITY OF EL CENTRO, OWNER/OPERATOR
WASTEWATER TREATMENT FACILITY EMERGENCY STANDBY BASIN
El Centro – Imperial County**

The California Regional Water Quality Control Board, Colorado River Basin Region (Regional Water Board) finds that:

1. The City of El Centro (hereafter referred to as Discharger) owns and operates a publicly owned wastewater treatment plant (POTW) that provides sewage services to approximately 43,000 residents and businesses in the City of El Centro, Imperial County. The wastewater treatment plant is located at 2255 La Brucherie Road, El Centro, California 92243, in the center of Section 25, T15S, R13E, SBB&M.
2. The POTW has a design capacity of 8.0 million gallons per day (mgd) and consists of: headworks with an automated bar screen; 2 primary clarifiers; 6 activated sludge (extended aeration) units; 4 secondary clarifiers; and an ultraviolet light disinfection system (two UV Units). The POTW also includes a standby basin that is used to divert wastewater during emergencies and/or routine maintenance of the treatment units. Attachment A, incorporated herein and made part of this Order by reference, shows the location of the POTW.
3. The Discharger discharges treated wastewater from its plant into the Central Main, a water of the United States, which is a tributary to the Alamo River, pursuant to Regional Water Board Order R7-2009-0022 (National Pollutant Discharge Elimination System Permit CA0104426). The Alamo River is also a water of the United States.

Wastewater Discharge Covered by this Order

4. The Discharger's first wastewater treatment plant was constructed in the 1950's and consisted of three (3) primary treatment lagoons. In the 1970's, the Discharger converted one of the lagoons to the current activated sludge treatment plant. In the late 1970's, the Discharger took out of service another two of the primary treatment lagoons. One of these two lagoons is used for drying and storing sludge prior to disposal. The Discharger uses the other lagoon (hereafter referred to as standby basin) for discharge of wastewater during routine maintenance of the POTW.
5. The discharge to the standby basin is currently governed by Regional Water Board Order R7-2003-0009, which is not consistent with current state policies and regulations.
6. Order R7-2003-0009 states that the Discharger can discharge a maximum of 5 mgd to the standby basin. Order R7-2003-0009 does not accurately reflect the actual capacity of the standby basin and the typical quality or volume of the discharge to the basin.

7. The Discharger reports that it uses the Standby Basin annually when it needs to perform routine maintenance of the POTW's UV disinfection system. When this occurs, the Discharger discharges up to 300,000 gallons of secondary treated wastewater to the basin. The Discharger reports that it has not used the standby basin for discharge of untreated wastewater during the last 20 years. With the addition of the second UV Unit, the only time that secondary, but undisinfecting, effluent is placed in the lagoon is during annual cleaning of the pipeline between the UV Units and the secondary clarifiers.
8. The standby basin covers approximately 15 acres and has an average depth of eight (8) feet. The capacity of the Standby Basin is approximately 29 million gallons with two (2) feet of freeboard and 34 million gallons with one (1) foot of freeboard.
9. The maximum monthly average flow reported for the POTW during the last five years is 4.18 mgd, which occurred in January 2010. Monthly average flows for 2012 ranged from 3.1 to 3.5 mgd, with the highest flows occurring during August and September.
10. Even though the Discharger typically discharges treated, disinfected wastewater into the standby basin, the standby basin is available also for discharge of partially treated or untreated wastewater should there be an emergency or need to perform maintenance/repairs of the other key treatment units of the POTW. Under such a scenario, should there be a need for the Discharger to divert all the flow from the POTW to the standby basin, the Discharger could discharge for 3 consecutive days into the basin at the design capacity of the POTW. At current average flows into the plant, the Discharger has approximately 8 days of emergency storage capacity.

Hydrogeologic Conditions and Beneficial Uses to be Protected

11. When the original lagoons were constructed in the 1950's, they were built with a 3-foot thick clay liner to prevent percolation of wastewater. The walls of the lagoons were also constructed with compacted clay.
12. The POTW is on a site that is relatively flat at an average elevation of 100 feet above sea level, and is not within a FEMA designated 100-year flood plain.
13. Annual precipitation for El Centro averages approximately 2.5 inches.
14. The Water Quality Control Plan for the Colorado River Basin Region of California (Basin Plan), which was adopted on November 17, 1993, and amended on November 16, 2012, designates the beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan (including amendments adopted by the Regional Water Board to date).
15. The discharge is within the Imperial Hydrologic Unit. The Basin Plan designates the following beneficial uses for groundwater in the Imperial Hydrologic Unit:

- a. Municipal supply (MUN)
 - b. Industrial supply (IND)
16. Most of the first-encountered groundwater in the Imperial Hydrologic Unit is either irrigation water that passes the root zone of crops and flushes salts accumulated in the soil profile. This groundwater is typically too saline (total dissolved solids > 5,000 mg/L) to serve for municipal purposes.
 17. There are no supply groundwater wells within one mile of the WWTFs. The water supply for El Centro is water from the Colorado River delivered to the city by the Imperial Irrigation District's canal system.
 18. It is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This order promotes that policy by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.

Other Regulatory Considerations

19. Discharges of wastewater to land, including but not limited to evaporation ponds, percolation ponds, or subsurface leachfields, are exempt from the solid waste management requirements of Title 27, CCRs, Section 2005 et seq. (hereinafter Title 27), pursuant to Section 20090(b) of Title 27, so long as the following conditions are met: (1) the discharge is regulated by Regional Water Board waste discharge requirements or a waiver; (2) the discharge is in compliance with the Basin Plan water quality standards; and (3) the wastewater does not need to be managed as a hazardous waste. Here, the discharge to the standby basin is temporary (two days maximum) and will be returned to the influent stream in compliance with Board Order R7-2009-0022 for proper treatment and disposal. The discharge is also in compliance with the Basin Plan's water quality standards since it satisfies the antidegradation provisions of State Water Resources Control Board (State Water Board) Resolution 68-16 ("Policy with Respect to Maintaining High Quality Waters of the State") (hereinafter Resolution 68-16), as further explained in the Finding below. Finally, the discharge is a domestic strength wastewater. As such, it does not need to be managed as a hazardous waste.
20. Resolution 68-16 requires a Regional Water Board in regulating the discharge of waste to maintain high quality waters of the state (i.e., background water quality) until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in applicable plans and policies (e.g., violation of any water quality objective).
21. Some degradation of groundwater from the discharge to the standby storage basin is consistent with Resolution 68-16, provided that this degradation:

- a. Is confined to a reasonable area and will provide social and economic benefit to the people of the State;
 - b. Is minimized by means of full implementation, regular maintenance, and optimal operation of BPTC measures;
 - c. Is limited to waste constituents typically encountered in domestic wastewater; and
 - d. Does not result in the loss of any beneficial use as prescribed in the applicable basin plan, or violation of any water quality objective.
22. The discharge permitted herein is an intermittent discharge to a standby basin that was originally constructed with a 3-foot clay liner to minimize percolation of wastewater into the upper-most encountered groundwater. The typical discharge into the standby basin consists of either (a) approximately 300,000 gallons of secondary treated and disinfected wastewater once per year, or (b) 300,000 gallons of secondary, but undisinfected, wastewater once per year. Under these two scenarios the threat to water quality is low because the wastewater is treated and most of it is expected to evaporate and not percolate to the groundwater due to the basin's 3-foot clay liner.
23. This Order also provides for the use of the standby basin for discharge of partially treated (e.g., primary effluent) or untreated wastewater resulting from emergencies at the POTW, provided the Discharger is able to pump the wastewater back into the WWTP within 3 days from the date it discharged to the basin for full treatment and disposal pursuant to the NPDES Permit. The discharge of untreated or partially treated wastewater to the basin has a slightly higher threat to water quality and significantly higher nuisance potential than the discharge described in Finding 18, above. The amount of wastewater that may percolate into the water table during a 3-day period is insignificant because of the 3-foot clay layer underlying the basin. Notwithstanding this fact, to the extent that any wastewater from the basin percolates, it does have a slight potential to degrade groundwater whose quality is already poor. Compliance with the terms of this Order will keep any slight degradation that may occur confined to the groundwater in the immediate area beneath and around the basin and will prevent nuisance conditions. The Discharger provides sewage services which are in themselves a benefit to the people of the State and also allow for economic prosperity of people in the area. Therefore, the permitted discharge is consistent with the anti-degradation provisions of Resolution 68-16.
24. Pursuant to California Water Code Section 13263(g), the discharge of waste is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

CEQA and Public Participation

25. In accordance with the California Environmental Quality Act (CEQA) (California Public Resources Code Section 21000 et seq.) and the implementing CEQA Guidelines (California Code of Regulations, Title 14, Section 15000 et seq.), the action to adopt revised waste discharge requirements for this existing facility is exempt from the provisions of CEQA, pursuant to CEQA Guidelines Section 15301.
26. The Board has notified the Discharger and all known interested agencies and persons of

its intent to draft WDRs for this discharge, and has provided them with an opportunity for a public meeting and an opportunity to submit comments.

27. The Board, in a public meeting, heard and considered all comments pertaining to this discharge.

IT IS HEREBY ORDERED, that Order R7-2003-0009 be rescinded, except for enforcement purposes, and in order to meet the provisions contained in Division 7 of the California Water Code, RCRA Subtitle D, and regulations adopted thereunder, and the provisions of the Federal Clean Water Act, and regulations and guidelines adopted thereunder, the discharger shall comply with the following:

A. Discharge Prohibitions

1. Discharge of waste classified as 'hazardous,' as defined in Title 23, CCR, Section 2521(a), or 'designated,' as defined in California Water Code section 13173, is prohibited.

Discharge of wastewater in a manner or at location different than that described in Findings 7, 10, and 20 is prohibited.

2. Discharge of untreated wastewater or primary effluent into the standby basin for permanent disposal is prohibited.
3. The discharge of wastes from the POTW to surface waters is prohibited except as allowed by Order R7-2009-0022 (National Pollutant Discharge Elimination System Permit CA0104426).
4. Surfacing or overflowing of wastewater from the standby basin is prohibited.

B. Discharge Specifications

1. The total volume of wastewater discharged to the standby basin during any three-day period shall not exceed 29 million gallons.
2. Untreated wastewater or primary effluent discharged into the standby basin shall be pumped back into the POTW for proper treatment and disposal within three (3) days from the date the discharge to the standby basin took place.
3. The standby basin shall have a minimum of two (2) feet of freeboard at all times.
4. The discharge to the standby basin shall not cause pollution or nuisance as defined in Sections 13050(l) and 13050(m) of Division 7 of the California Water Code.
5. Public contact with wastewater shall be precluded or controlled through fences, signs, or other acceptable alternatives.

6. The discharge shall not cause degradation of any water supply.
7. The standby basin shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
8. Disposal of oil and grease, biosolids, screenings, and other solids from the standby basin shall be pursuant to Title 27, and the review and approval of the Regional Water Board Executive Officer.
9. Objectionable odors originating at this facility shall not be perceivable beyond the limits of POTW.
10. The standby basin shall be managed to ensure its structural integrity. In this regard an erosion control program shall be implemented to assure that small coves and irregularities are not created in the basin.
11. The standby basin shall have sufficient capacity to accommodate the allowable volume of wastewater that can be discharged during any three-day period and design seasonal precipitation based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.

C. Provisions

1. The Discharger shall comply with Monitoring and Reporting Program (MRP) R7-2013-0037, and future revisions thereto, incorporated herein and made a part of this Order by reference, as specified by the Regional Water Board Executive Officer.
2. Prior to implementing a modification that results in a material change in the quality or quantity of the discharge, or a material change in the location of discharge, the Discharger shall report all pertinent information in writing to the Regional Water Board, and obtain revised requirements.
3. Prior to a change in ownership or management of the POTW, the Discharger shall transmit a copy of this Board Order to the succeeding owner/operator, and forward a copy of the transmittal letter to the Regional Water Board.
4. The Discharger shall ensure that all site-operating personnel are familiar with the content of this Board Order, and shall maintain a copy of this Board Order at the site.
5. This Board Order does not authorize violation of any federal, state, or local laws or regulations.
6. The Discharger shall comply with all of the conditions of this Board Order. Noncompliance is a violation of the Porter-Cologne Water Quality Control Act (Cal. Water Code, § 13000 et seq.), and is grounds for enforcement action.

7. The Discharger shall report orally any noncompliance that may endanger human health or the environment. The noncompliance shall be reported immediately to the Regional Water Board Executive Officer and the Office of Emergency Services as soon as:
 - a. The Discharger has knowledge of the discharge,
 - b. Notification is possible, and
 - c. Notification will not substantially impede cleanup or other emergency measures.

During non-business hours, the Discharger shall leave a message on the Regional Water Board office voice recorder. A written report shall be provided within five (5) business days the Discharger is aware of the incident. The written report shall include a description of the noncompliance, the cause, period of noncompliance, anticipated time to achieve full compliance, and steps taken or planned, to reduce, eliminate, and prevent recurrence of the noncompliance. The Discharger shall report all intentional or unintentional spills occurring within the facility or collection system to the Regional Water Board office in accordance with the above time limits.

8. The Discharger shall allow the Regional Water Board, or an authorized representative, upon presentation of credentials and other documents as may be required by law, to:
 - a. Enter the premises regulated by this Board Order, or the place where records are kept under the conditions of this Board Order;
 - b. Have access to and copy, at reasonable times, records kept under the conditions of this Board Order;
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Board Order; and
 - d. Sample or monitor at reasonable times, for the purpose of assuring compliance with this Board Order or as otherwise authorized by the California Water Code, any substances or parameters at this location.
9. The Discharger is the responsible party for the WDRs and the Monitoring and Reporting Program (MRP) for the facility. The Discharger shall comply with all conditions of these WDRs. Violations may result in enforcement action, including Regional Water Board orders or court orders that require corrective action or impose civil monetary liability, or modification or revocation of these WDRs by the Regional Water Board.
10. The Discharger shall provide adequate notice to the Regional Water Board Executive Officer of the following:
 - a. The introduction of pollutants into any treatment facility described in the Findings of this Board Order from an indirect Discharger which would be subject to Section 301 or 306

of the Clean Water Act, if the pollutants were discharged directly.

- b. Any substantial change in the volume or character of pollutants introduced into any treatment facility described in the Findings of this Board Order, by an existing or new source; and
 - c. Any planned physical alteration or addition to the facilities described in this Board Order, or change planned in the Discharger's sludge use or disposal practice, where such alterations, additions, or changes may justify the application of Board Order conditions that are different from or absent in the existing Board Order, including notification of additional disposal sites not reported during the Board Order application process, or not reported pursuant to an approved land application plan.
11. The Discharger shall report all instances of noncompliance. Reports of noncompliance shall be submitted with the Discharger's next scheduled self-monitoring report or earlier if requested by the Regional Water Board Executive Officer, or if required by an applicable standard for sludge use and disposal.
 12. Adequate measures shall be taken to assure that flood or surface drainage waters do not erode or otherwise render portions of the discharge facilities inoperable.
 13. This Board Order does not convey property rights of any sort, or exclusive privileges, nor does it authorize injury to private property or invasion of personal rights, or infringement of federal, state, or local laws or regulations.
 14. This Board Order may be modified, rescinded, or reissued, for cause. The filing of a request by the Discharger for a Board Order modification, rescission or reissuance, or notification of planned changes or anticipated noncompliance, does not stay any Board Order condition. Causes for modification include a change in land application plans, or sludge use or disposal practices, and adoption of new regulations by the State or Regional Water Board (including revisions to the Basin Plan), or federal government.

I, Robert Perdue, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, Colorado River Basin Region, on June 20, 2013.

Ordered by: _____
Original signed by
ROBERT PERDUE
Executive Officer

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION**

MONITORING AND REPORTING PROGRAM R7-2013-0037
FOR
CITY OF EL CENTRO, OWNER, OPERATOR
STANDBY BASIN
El Centro – Imperial County

Location of Discharge:
S ½ of Section 25, T15S, R13E, SBB&M.

MONITORING AND REPORTING

MONITORING

1. This Monitoring and Reporting Program (MRP) describes requirements for monitoring a wastewater system and groundwater quality (when needed). This MRP is issued pursuant to California Water Code section 13267. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer.
2. Water Code section 13267 states, in part:

“In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.”

3. Water Code section 13268 states, in part:

“(a) (1) Any person failing or refusing to furnish technical or monitoring program reports as required by subdivision (b) of § 13267, or failing or refusing to furnish a statement of compliance as required by subdivision (b) of Section 13399.2, or falsifying any information provided therein, is guilty of a misdemeanor, and may be liable civilly in accordance with subdivision (b). (b) (1) Civil liability may be administratively imposed by a regional board in accordance with Article 2.5 (commencing with § 13323) of Chapter 5 for a violation of subdivision (a) in an

amount which shall not exceed one thousand dollars (\$1,000) for each day in which the violation occurs."

4. The Discharger owns and operates the wastewater system that is subject to Board Order R7-2013-0037. The reports are necessary to ensure that the Discharger complies with the Order. Pursuant to Water Code section 13267, the Discharger shall implement the MRP and shall submit the monitoring reports described herein.
5. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Board Order, and records of all data used to complete the application for this Board Order, for a period of at least five (5) years from the date of the sample, measurement, report or application. Records of monitoring information shall include the date, exact place, and time of measurement(s) and the individual(s) who performed the measurement(s).

REPORTING

1. The Discharger shall inspect the general condition of the standby basin (e.g., structural integrity, whether weeds are growing in it and along its banks, signs of erosion, etc.) weekly and maintain a log at the POTW regarding the condition and use of the standby basin. The log shall be available for inspection by the Regional Water Board and its representatives upon request.
2. For an anticipated discharge to the standby basin (e.g., scheduled unit maintenance), the Discharger shall, prior to discharge to the basin, submit to the Regional Water Board a report **two (2) working days before the proposed discharge is to take place**. The report shall:
 - a. Describe the structural integrity of the basin;
 - b. Describe the reasons for the proposed discharge to the basin and the anticipated volume of wastewater that is to be discharged to the basin;
 - c. The level of quality of the wastewater to be discharged (e.g., secondary disinfected wastewater, secondary undischinfected wastewater, etc.); and
 - d. Note whether there is any wastewater in the basin and record the available freeboard if there is wastewater in it.
3. For an emergency discharge to the standby basin, the Discharger shall notify the Regional Water Board via telephone (760-346-7491) within 24-hours from the time the discharge took place. The notification shall include when and why the discharge took place.
- ✱ 4. Following any discharge to the standby basin, the Discharger shall submit to the regional Water Board a report that:
 - a. Estimates the volume of wastewater discharged (gallons),
 - b. Describes the quality of discharge (e.g., raw sewage, primary effluent, etc.), *Secondary undischinfected wastewater*
 - c. Includes the dates and times when the discharge began and ended; and
 - d. If raw sewage or primary effluent was discharged into the standby basin, the dates and times when the pumping of the wastewater from the basin back into the POTW began

and ended.

5. Monitoring reports shall be certified under penalty of perjury to be true and correct, and shall contain the required information at the frequency designated in this monitoring and reporting program (MRP).

6. Each report required herein shall contain the following statement:

"I declare under the penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations."

7. The MRP, and other information requested by the Regional Water Board, shall be signed by the District Manager or Chief Plant Operator.

8. Other duly authorized representative of the Discharger may sign the documents if:

- a. Authorization is made in writing by the either one of the person described above;
- b. Authorization specifies an individual or person having responsibility for the overall operation of the regulated disposal system; and
- c. Written authorization is submitted to the Regional Water Board Executive Officer.

9. The Discharger shall submit monitoring reports to:

California Regional Water Quality Control Board
Colorado River Basin Region
73-720 Fred Waring, Suite 100
Palm Desert, CA 92260

Ordered by: Original signed by
ROBERT PERDUE
Executive Officer

June 20, 2013
Date

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

ATTACHMENT "A"



SITE MAP
CITY OF EL CENTRO, OWNER/OPERATOR
STANDBY BASIN
El Centro – Imperial County
Location of Discharge: S1/2 of Section 25, T15S, R13E, SBB&M

Appendix G

Monitoring and Reporting Program

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Section 308 of the federal Clean Water Act and 40 Code of Federal Regulations (40 C.F.R.) sections 122.41(h), (j)-(l), 122.44(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Colorado River Basin Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. This MRP establishes monitoring, reporting, and recordkeeping requirements that implement the federal and California laws and/or regulations.

1. GENERAL MONITORING PROVISIONS

1.A. Sample Volume and Monitoring Locations. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of the Colorado River Basin Water Board.

1.B. Instrumentation and Calibration. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated and maintained to ensure that the accuracy of the measurements is consistent with the accepted capability of that type of device. All flow measurement devices shall be calibrated at least once per year or more frequently as per the factory stipulated requirements, to ensure continued accuracy of the devices. Devices selected shall be capable of measuring flows with a maximum deviation of less than ± 10 percent from true discharge rates throughout the range of expected discharge volumes.

1.C. Laboratory Certification. All analyses shall be conducted at a laboratory certified for such analyses by Environmental Laboratory Accreditation Program (ELAP) through the State Water Board, Division of Drinking Water (DDW) in accordance with Water Code section 13176, and must include quality assurance/quality control data with their reports. A copy of the laboratory certification shall be provided in the Annual Report due to the Regional Water Board each time a new certification and/or renewal of the certification is obtained from ELAP.

1.D. Monitoring Test Procedures. The collection, preservation and holding times of all samples shall be in accordance with the test procedures under 40 C.F.R. part 136 (amended May 18, 2012) *Guidelines Establishing Test Procedures for the Analysis of Pollutants*, promulgated by the United States Environmental Protection Agency (USEPA), unless otherwise specified in this MRP. In addition, the Colorado River Basin Water Board and/or USEPA, at their discretion, may specify test methods that are more sensitive than those specified in 40 C.F.R part 136.

1.E. General Analytical Testing Methods. The Discharger must utilize analytical methods as follows:

- 1.E.1. A test procedure listed in 40 C.F.R. section 136.3; or
- 1.E.2. An alternative test procedure approved by USEPA as provided in 40 C.F.R. sections 136.4 or 136.5; or
- 1.E.3. A test procedure listed in 40 C.F.R. part 136, with modifications allowed by USEPA as provided in 40 C.F.R. section 136.6.

Guidance on procedures for approval of alternative and new test procedures can be obtained from the following references: *Protocol for EPA Approval of Alternative Test Procedures for Organic and Inorganic Analytes in Wastewater and Drinking Water* (EPA 821-B-98-002, March 1999); and *Protocol for EPA Approval of New Methods for Organic and Inorganic Analytes in Wastewater and Drinking Water* (EPA 821-B-98-003, March 1999).

1.F. Minimum Levels (ML) and Analytical Method Selection. USEPA published regulations for the Sufficiently Sensitive Methods Rule (SSM Rule), which became effective September 18, 2015. When more than one test procedure is approved under 40 CFR part 136 for the analysis of a pollutant or pollutant parameter, the test procedure must be sufficiently sensitive as defined at 40 C.F.R. sections 122.21(e)(3) and 122.44(i)(1)(iv). A USEPA-approved analytical method is sufficiently sensitive where:

- a. The ML is at or below both the level of the applicable water quality criterion/objective and the permit limitation for the measured pollutant or pollutant parameter; or
- b. In permit applications, the ML is above the applicable water quality criterion/objective, but the amount of the pollutant or pollutant parameter in a facility's discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge; or
- c. The method has the lowest ML of the USEPA-approved analytical methods where none of the USEPA-approved analytical methods for a pollutant can achieve the MLs necessary to assess the need for effluent limitations or to monitor compliance with a permit limitation.

The MLs in SIP Appendix 4 of the State Implementation Plan (SIP) remain applicable. However, there may be situations when analytical methods are published with MLs that are more sensitive than the MLs for analytical methods listed in the SIP. For instance, USEPA Method 1631E for mercury is not currently listed in SIP Appendix 4, but it is published with an ML of 0.5 ng/L⁷, which makes it a sufficiently sensitive analytical method. Similarly, USEPA Method 245.7 for mercury is published with an ML of 5 ng/L.

⁷ ng/L – Nanogram per Liter

For priority pollutants, the Discharger shall require its testing laboratory to calibrate the analytical system down to the minimum levels (MLs) specified in 40 C.F.R. part 136, unless an alternative minimum level is approved by the Colorado River Basin Water Board's Executive Officer.

1.G. Analytical Testing Methods for Metals. In conformance with 40 C.F.R. section 122.45(c), analyses to determine compliance with the effluent limitations for metals shall be conducted using the total recoverable method, unless (1) the applicable effluent limitation for that metal is expressed in the dissolved or valent or total form or (2) all approved analytical methods for the metal inherently measure only its dissolved form (e.g., hexavalent chromium). For example, the dissolved method in conformance with 40 C.F.R. part 136 shall be used to measure compliance with a Chromium (VI) effluent limitation. For cyanide,⁸ analytical test methods in conformance with 40 C.F.R. part 136 shall be used as acceptable methods to measure cyanide.⁹

1.H. Quality Assurance Plan (QAP). In accordance with the test procedures under 40 C.F.R. part 136, samples shall be analyzed as soon as possible after collection. The Discharger shall develop and implement a written Quality Assurance Plan (QAP) using USEPA approved instruments and equipment for samples that are analyzed on-site (e.g., pH, dissolved oxygen, temperature, and residual chlorine) for the purposes of reporting compliance with effluent limitations contained in the Order. The QAP shall at a minimum address the following steps:

- 1.H.1. Provide a description of Standard Operating Procedures (SOPs);
- 1.H.2. Provide an overview of the task description and objectives;
- 1.H.3. Identify the sampling process, method and handling;
- 1.H.4. Identify the instrumentation/equipment testing, inspection and maintenance;
- 1.H.5. Identify the instrumentation/equipment calibration and frequency;
- 1.H.6. Identify the sample analysis methods and calibration range; and
- 1.H.7. Summarize the data review and validation procedures.

⁸ The sample for cyanide measurement shall be collected as a grab sample. Various sample preservation and sample stabilization procedures are available that may resolve analytical interferences associated with cyanide analysis of treated wastewater effluent, ASTM Standard Practice D7365-09a. Further, any technique for removal or suppression of interferences may be employed, provided the laboratory demonstrates that it more accurately measures cyanide through quality control measures described in the analytical test method. Any removal or suppression technique not described in D7365-09a or the analytical test method must be documented with supporting data.

⁹ Federal Register, Vol. 77, No. 97, May 18, 2012. Cyanide exists in a variety of forms. It can be free or part of strong or weak complexes with other species. The analytical method employed determines what type of cyanide is measured. Types of cyanide measured include: Total, Available, Amenable to Chlorination, Weak Acid Dissociable, Free, and others.

- 1.I. Failure of Continuous Monitoring Instruments/Devices.** All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. In the event that continuous monitoring equipment is out of service for a period greater than 24 hours, the Discharger shall obtain representative grab samples each day the equipment is out of service. The Discharger shall correct the cause(s) of failure of the continuous monitoring equipment as soon as practicable. The Discharger shall report the period(s) during which the equipment was out of service and if the problem has not been corrected, shall identify the steps which the Discharger is taking or proposes to take to bring the equipment back into service and the schedule for these actions.
- 1.J. Reporting Intervals.** Monitoring results, including noncompliance, shall be reported at intervals and in a manner specified in this MRP. Whenever the Discharger monitors any pollutant more frequently than is required by this Order, the results of this monitoring shall be included in the regular discharge monitoring reports.
- 1.K. Non-operation of Facility and/or No Discharge.** If the Facility is not in operation, or there is no discharge during a required reporting period, the Discharger shall indicate that there has been no activity during the required reporting period in California Integrated Water Quality System (CIWQS).
- 1.L. Electronic Self-Monitoring Reports (eSMRs).** The Discharger shall submit values in eSMR as required to determine compliance with the permit effluent limit requirements (e.g., AMEL, MDEL, percent removals, geomeans, mass loadings, etc.) in the CIWQS Program, as specified below in Section 10.B. The Discharger shall submit the eSMR in the eSMR module in the CIWQS Program.
- 1.M. Discharge Monitoring Report – Quality Assurance (DMR-QA) Study.** The Discharger shall ensure that the results of the Discharge Monitoring Report-Quality Assurance (DMR-QA) Study or the most recent Water Pollution Performance (WPP) Evaluation Study are submitted annually. The DMR-QA or WPP Evaluation Study should be sent to the State Water Board at the following address:

State Water Resources Control Board
Quality Assurance Program Officer
Office of Information Management and Analysis
1001 I Street, Sacramento, CA 95814

2. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
---	INF-001	Wastewater influent to the treatment facility. The sampling station shall be located upstream of any in plant return flows where a representative influent sample to the treatment plant can be obtained.
001	EFF-001	Effluent discharged from the treatment facility into the unnamed tributary to the Central Main Drain; Latitude 32° 49' 03" N and Longitude 115° 34' 50" W.
---	RSW-001	Receiving water (Central Main Drain) monitoring location not to exceed 100 feet upstream from the location where the effluent enters the Central Main Drain; Latitude 32° 49' 06" N and Longitude 115° 34' 44" W.
---	RSW-002	Receiving water (Central Main Drain) monitoring location not to exceed 200 feet downstream from the location where the effluent enters the Central Main Drain, at a point where a plume would be expected; Latitude 32° 49' 06" N and Longitude 115° 34' 40" W.

The North Latitude and West Longitude information in Table E-1 are approximate for administrative purposes.

3. INFLUENT MONITORING REQUIREMENTS

3.A. Monitoring Location INF-001

3.A.1. The Discharger shall monitor influent at INF-001 as follows:

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Flow Meter (Totalizer) Reading	Continuous	See Section I.B of the MRP
Biochemical Oxygen Demand (BOD ₅) (5 day @ 20 Deg. C)	mg/L	24-Hr. Composite	1x/Week	See Section 1.D of the MRP
Biochemical Oxygen Demand (BOD ₅) (5 day @ 20 Deg. C)	lbs/day	Calculated	1x/Week	See Section 1.D of the MRP

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Suspended Solids, Total (TSS)	mg/L	24-Hr. Composite	1x/Week	See Section 1.D of the MRP
Suspended Solids, Total (TSS)	lbs/day	Calculated	1x/Week	See Section 1.D of the MRP

4. EFFLUENT MONITORING REQUIREMENTS

4.A. Monitoring Location EFF-001

The Discharger shall monitor a representative sample of secondary treated wastewater effluent from the discharges from the Monitoring Location EFF-001 as follows. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level (ML):

Table E-3. Effluent Monitoring at EFF-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Flow Meter (Totalizer) Reading	Continuous ¹⁰	See Section I.B of the MRP
pH	Standard Units	Grab	1x/Day	See Section 1.D of the MRP
Temperature	Degree F	Grab	1x/Day	See Section 1.D of the MRP
<i>Escherichia coli</i> (<i>E. coli</i>)	MPN or cfu/100 mL	Grab	5x/Month ¹¹	See Section 1.D of the MRP
BOD ₅	mg/L	24-Hr. Composite ¹²	1x/Week	See Section 1.D of the MRP
BOD ₅	lbs/day	Calculated	1x/Week	See Section 1.D of the MRP

¹⁰ Report total daily flow. The Discharger calculates the daily effluent flow from daily readings taken from the effluent flow totalizer. The Discharger shall also calculate and report the average monthly flow.

¹¹ Five samples equally spaced over a 30-day period with a minimum of one sample per week.

¹² 24-hour composite samples shall be time-proportionate composite samples.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
TSS	mg/L	24-Hr. Composite	1x/Week	See Section 1.D of the MRP
TSS	lbs/day	Calculated	1x/Week	See Section 1.D of the MRP
Dissolved Oxygen	mg/L	Grab	1x/Month	See Section 1.E of the MRP
Total Dissolved Solids	mg/L	24-Hr. Composite	1x/Quarter	See Section 1.D of the MRP
Oil and Grease, Total ¹³	mg/L	Grab	1x/Year	See Section 1.D of the MRP
Oil and Grease, Total	lbs/day	Calculated	1x/Year	See Section 1.D of the MRP
Nitrates, as N	mg/L	24-Hr. Composite	1x/Quarter	See Section 1.D of the MRP
Nitrites, as N	mg/L	24-Hr. Composite	1x/Quarter	See Section 1.D of the MRP
Ammonia, as N	mg/L	24-Hr. Composite	1x/Quarter	See Section 1.D of the MRP
Total Nitrogen, as N	mg/L	24-Hr. Composite	1x/Quarter	See Section 1.D of the MRP
Total Phosphate, as P	mg/L	24-Hr. Composite	1x/Quarter	See Section 1.D of the MRP
Ortho-Phosphate, as P	mg/L	24-Hr. Composite	1x/Quarter	See Section 1.D of the MRP
Hardness, Total (as CaCO ₃)	mg/L	Grab	1x/Quarter	See Section 1.D of the MRP
Turbidity	NTU	Grab	1x/Quarter	See Section 1.E of the MRP
Chronic Toxicity	Pass/Fail	24-Hr. Composite	4x/Year (1x/Quarter)	EPA 821-R-02-013 (Chronic)
Selenium	µg/L	Grab	1x/Month	See Section 1.E of the MRP
Selenium	lbs/day	Calculated	1x/Month	See Section 1.E of the MRP
2,3,7,8-TCDD (Dioxin)	µg/L	Grab	1x/Month	See Section 1.E of the MRP

¹³ Total oil and grease shall include the polar and non-polar fraction of oil and grease materials.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
2,3,7,8-TCDD (Dioxin)	lbs/day	Calculated	1x/Month	See Section 1.E of the MRP
Chlordane	µg/L	Grab	2x/Year ^{14,15}	EPA Method 8081A
Chlordane	lbs/day	Calculated	2x/Year	EPA Method 8081A
DDT	µg/L	Grab	2x/Year ^{14,15}	EPA Method 8081A
DDT	lbs/day	Calculated	2x/Year	EPA Method 8081A
4,4'-DDE	µg/L	Grab	2x/Year ^{14,15}	EPA Method 8081A
4,4'-DDE	lbs/day	Calculated	2x/Year	EPA Method 8081A
4,4'-DDD	µg/L	Grab	2x/Year ^{14,15}	EPA Method 8081A
4,4'-DDD	lbs/day	Calculated	2x/Year	EPA Method 8081A
Dieldrin	µg/L	Grab	2x/Year ^{14,15}	EPA Method 8081A
Dieldrin	lbs/day	Calculated	2x/Year	EPA Method 8081A
PCBs	µg/L	Grab	2x/Year ^{14,15}	EPA Method 8081A
PCBs	lbs/day	Calculated	2x/Year	EPA Method 8081A
Toxaphene	µg/L	Grab	2x/Year ^{14,15}	EPA Method 8081A
Toxaphene	lbs/day	Calculated	2x/Year	EPA Method 8081A
Chlorpyrifos	µg/L	Grab	2x/Year ^{14,15}	EPA Method 8141B

¹⁴ At least six months apart

¹⁵ According to the Imperial Valley OC/OP TMDL approved by USEPA on July 9, 2024, NPDES permitted municipalities and facilities are required to begin monitoring of OP compounds, and enhanced monitoring of OC compounds for an initial period of three years. If monitoring results show exceedances no more than once in a three-year period, the discharger can submit a request to the Executive Officer to reduce the monitoring frequency for OC/OP Compounds.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Chlorpyrifos	lbs/day	Calculated	2x/Year	EPA Method 8141B
Diazinon	µg/L	Grab	2x/Year ^{14,15}	EPA Method 8141B
Diazinon	lbs/day	Calculated	2x/Year	EPA Method 8141B
Malathion	µg/L	Grab	2x/Year ^{14,15}	EPA Method 8141B
Malathion	lbs/day	Calculated	2x/Year	EPA Method 8141B
Priority Pollutants ¹⁶	µg/L	24-Hr. Composite ¹⁷ /Grab	1x/Year	See Section 1.E of the MRP

5. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

5.A. Chronic Toxicity Testing

5.A.1. Discharge In-stream Waste Concentration (IWC) for Chronic Toxicity. The chronic toxicity IWC for this discharge is 100 percent effluent.

5.A.2. Sample Volume and Holding Time. The total sample volume shall be determined by the specific toxicity test method used. Sufficient sample volume shall be collected to perform the required toxicity test. All toxicity tests shall be conducted as soon as possible following sample collection. No more than 36 hours shall elapse before the conclusion of sample collection and test initiation.

5.A.3. Test Methods. The Discharger shall conduct the following chronic toxicity tests on effluent samples at the in-stream waste concentration for the discharge in accordance with species and test protocols in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA 821-R-02-013, 2002).

5.A.4. Test Species. The Discharger shall conduct static renewal toxicity tests, with the fathead minnow (*Pimephales promelas*), (Larval Survival and Growth Test Method 1000.0) and the water flea (*Ceriodaphnia dubia*), (Survival and Reproduction Test Method 1002.0); and static tests with the green alga (*Selenastrum capricornutum*), (Growth Test Method 1003.0). In no case shall

¹⁶ All Priority Pollutants as defined by the California Toxics Rule (CTR) codified at 40 CFR section 131.38.

¹⁷ 24-hour composite samples shall be time-proportionate composite samples.

these species be substituted with another test species unless written authorization from the Colorado River Basin Water Board is received.

5.A.5. Species Sensitivity Screening. During the first and fourth years of the permit term, the toxicity testing shall be conducted in two phases, the screening phase and the monitoring phase.

Table E-4. Whole Effluent Toxicity Test Species for Screening

Test(s)	Species	Endpoints	Test Length (days)	Reference	Sample Type
Chronic	Fathead Minnow ¹⁸ (<i>Pimephales promelas</i>)	Larval Survival and Growth	7	EPA 821-R-02-013 (Chronic) EPA Method 1000.0	24-Hr. Composite
Chronic	Water Flea (<i>Ceriodaphnia dubia</i>)	Survival and Reproduction	6-8 ¹⁹	EPA 821-R-02-013 (Chronic) EPA Method 1002.0	24-Hr. Composite
Chronic	Green Alga (<i>Selenastrum capricornutum</i>)	Growth	4	EPA 821-R-02-013 (Chronic) EPA Method 1003.0	24-Hr. Composite

5.A.5.a. For the screening phase, the Discharger shall split a 24-hour composite effluent sample and conduct concurrent toxicity tests using a fish, an invertebrate and an aquatic plant species. The fathead minnow (*Pimephales promelas*), water flea (*Ceriodaphnia dubia*), and green alga (*Selenastrum capricornutum*) are the test species approved by the Colorado River Basin Water Board’s Executive Officer. The screening phase shall be completed after a minimum of one toxicity test has been completed on the three test species.

5.A.5.b. The screening phase is completed by selecting the most sensitive species. The most sensitive species is the fish, invertebrate, or algal species which consistently demonstrates the largest percent effect level at the In-stream Waste Concentration (IWC), where:

$$\text{IWC percent effect level} = \frac{[(\text{Control mean response} - \text{IWC mean response}) \div \text{Control mean response}] \times 100$$

¹⁸ For the fathead minnow and the water flea, the sample should consist of three samples collected on three separate days as noted in the method. The green algae test uses only one sample, as it is a shorter test.

¹⁹ Test duration is determined by production of third brood by control and can be between 6 and 8 days.

Table E-5. Example of Screening Table for Chronic Test

Species	Endpoints	Mean Control Response	Mean Response at IWC (100% effluent)	% effect at IWC (100% effluent)	Most Sensitive Species
Fathead Minnow	Larval Survival	10	10	$(10 - 10)/10 \times 100 = 0\%$	---
Fathead Minnow	Growth	0.41	0.363	$(0.41 - 0.363)/0.41 \times 100 = 11.5\%$	---
Water Flea	Survival	10	9	$(10-9)/10 \times 100 = 10\%$	---
Water Flea ²⁰	Reproduction	33.4	26.7	$(33.4 - 26.7)/33.4 \times 100 = 20\%$	Highest % effect represents most sensitive species
Green Alga	Growth	197.3	170.1	$(197.3 - 170.1)/197.3 \times 100 = 13.8\%$	---

5.A.5.c. After the screening phase, the Discharger shall then continue to conduct toxicity testing during the monitoring phase using the single, most sensitive species until the next screening phase. An example of a sensitivity comparison is shown in Table E-5.

5.A.6. Quality Assurance and Additional Requirements. Quality assurance measures, instructions, and other recommendations and requirements are found in the test methods manual previously referenced. Additional requirements are below.

5.A.6.a. The discharge is subject to determination of “Pass” or “Fail” from a chronic toxicity test using the Test of Significant Toxicity (TST) statistical t-test approach described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010), Appendix A, Figure A-1 and Table A-1 (Chronic Freshwater and East Coast Methods) and Appendix B, Table B-1.

²⁰ In this example, the water flea represents the most sensitive species. Chronic tests for the water flea shall be conducted as required by measuring and reporting the endpoints for survival and reproduction during the monitoring phase.

5.A.6.b. The null hypothesis (Ho) for the TST statistical approach is:

Mean discharge IWC response $\leq 0.75 \times$ Mean control response.

A test result that rejects this null hypothesis is reported as “Pass.” A test result that does not reject this null hypothesis is reported as “Fail.”

5.A.6.c. The relative “Percent Effect” at the discharge IWC is defined and reported as:

Percent Effect = ((Mean control response – Mean discharge IWC response) / Mean control response) x 100.

This is a t-test (formally Student’s t-Test), a statistical analysis comparing two sets of replicate observations, i.e., a control and IWC. The purpose of this statistical test is to determine if the means of the two sets of observations are different (i.e., if the IWC or receiving water concentration differs from the control, the test result is “Pass” or “Fail”). The Welch’s t-test employed by the TST statistical approach is an adaptation of Student’s t-test and is used with two samples having unequal variances.

5.A.6.d. If the effluent toxicity test does not meet all test acceptability criteria (TAC) specified in the referenced test method in EPA/821-R-02-013 (see Table E-6), then the Discharger must resample and re-test within 14 days.

Table E-6. TAC Specified in EPA/821-R-02-013

Species and End Points	EPA/821-R-02-013 Test Method	Test Acceptability Criteria (TAC)
Fathead Minnow <i>Larval Survival and Growth</i>	1000.0, Table 1	80% or greater survival in controls; average dry weight per surviving organism in control chambers equals or exceeds 0.25 mg. (required)
Water Flea <i>Survival and Reproduction</i>	1000.2, Table 3	80% or greater survival of all control organisms and an average of 15 or more young per surviving female in the control solutions. 60% of surviving control females must produce three broods. (required)
Green Algae <i>Growth</i>	1000.3, Table 3	Mean cell density of at least 1 X 10 ⁶ cells/mL in the controls; and variability (CV%) among control replicates less than or equal to 20%. (required)

5.A.6.e. Dilution water and control water shall be laboratory water prepared and used as specified in the test methods manual. If dilution water and control water is different from test organism culture water, then a second control using culture water shall also be used.

5.A.6.f. The Discharger shall perform toxicity tests on final effluent samples. Chlorine in the final effluent sample may be removed prior to conducting toxicity tests in

order to simulate the dechlorination process at the Facility. However, ammonia shall not be removed from the effluent sample prior to toxicity testing, unless explicitly authorized by the Executive Officer.

5.A.6.g. A pH drift during a toxicity test may contribute to artifact toxicity when pH-dependent toxicants (e.g., ammonia, metals) are present in the effluent. To determine whether pH drift is contributing to artifact toxicity, the Discharger shall conduct side-by-side toxicity tests as described in section 11.3.6.1 of *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA/821/R-02/013, 2002).

The Discharger can confirm toxicity due to pH drift when the Discharger observes no toxicity above the chronic WET permit limit or trigger in the treatments controlled at the pH of the effluent. Upon this confirmation, the Discharger shall request and, upon written approval by the Colorado River Basin Water Board’s Executive Officer, the Discharger may use the procedures outlined in section 11.3.6.2 of the chronic freshwater test methods manual to control effluent sample pH during the toxicity test.

5.A.7. Discharge Collected at Monitoring Stations. The Discharger shall conduct chronic toxicity testing on the most sensitive species on the final effluent measured at Monitoring Location EFF-001 as follows:

Table E-7. Whole Effluent Toxicity Test Species

Test(s)	Species	Sample Type	Minimum Sampling Frequency
Chronic	Fathead Minnow (<i>Pimephales promelas</i>)	24-Hr. Composite	4x/Year (1x/Quarter)
Chronic	Water Flea (<i>Ceriodaphnia dubia</i>)	24-Hr. Composite	4x/Year (1x/Quarter)
Chronic	Green Alga (<i>Selenastrum capricornutum</i>)	24-Hr. Composite	4x/Year (1x/Quarter)

5.A.8. Accelerated Monitoring Requirements. Accelerated monitoring (known as compliance test) for chronic toxicity is triggered when a chronic toxicity test, analyzed using the TST approach, results in “Fail” and the testing meets all test acceptability criteria. Once the Discharger becomes aware of this result, the Discharger shall implement an accelerated monitoring schedule within seven calendar days for the *Ceriodaphnia dubia* test, and within 5 calendar days for both the *Pimephales promelas* and *Selenastrum capricornutum* tests. The Discharger must initiate one or two accelerated monitoring as MMEL

compliance test within the same calendar month. If the first MMEL compliance test results in a “Fail” at the IWC, then the second MMEL compliance test is waived. The MMEL for chronic toxicity is exceeded and reasonable potential will be recorded when half or more of all the independent chronic toxicity tests, initiated within the same calendar month and analyzed using the TST statistical approach, result in “Fail.”

5.A.9. Initiation of Toxicity Reduction Evaluation (TRE). A TRE is required when a non-stormwater NPDES Discharger has any combination of two or more MDET or MMET violations within a single calendar month or within two consecutive routine monitoring events. In addition, if other information indicates toxicity (e.g., results of additional monitoring, results of monitoring at a higher concentration than the IWC, fish kills, intermittent recurring toxicity), then a TRE is required. A TRE may also be required when there is no effluent available to complete a routine monitoring test, or MMET compliance test.

5.B. Toxicity Reduction Evaluation (TRE) Process

5.B.1. Preparation of a TRE Work Plan. The Discharger shall prepare and submit a copy of the Discharger’s Toxicity Reduction Evaluation (TRE) work plan to the Colorado River Basin Water Board for approval within 90 days of the effective date of this permit. If the Executive Officer does not disapprove the work plan within 60 days, the work plan shall become effective. The Discharger shall use USEPA manual EPA/833B-99/002 (municipal) as guidance, or most current version. This work plan shall describe the steps that the Discharger intends to follow if toxicity is detected. At a minimum, the work plan shall include:

- 5.B.1.a.** A description of the investigation and evaluation techniques that will be used to identify potential causes and sources of toxicity, effluent variability, and treatment system efficiency.
- 5.B.1.b.** A description of the Facility’s methods of maximizing in-house treatment efficiency and good housekeeping practices, and a list of all chemicals used in the operation of the Facility, and
- 5.B.1.c.** If a Toxicity Identification Evaluation (TIE) is necessary, an indication of the person who would conduct the TIEs (i.e., an in-house expert or an outside contractor).

5.B.2. Preparation and Implementation of Detailed TRE Work Plan. If one of the accelerated toxicity tests described in Section 5.A.8, above, results in “Fail,” the Discharger shall immediately initiate the TRE Work Plan developed pursuant to Section 5.B.1 in accordance with USEPA guidance provided in manuals EPA/600/2-88/070 (industrial) or EPA/833B-99/002 (municipal) and, within 30 days, submit to the Colorado River Basin Water Board a Detailed TRE Work Plan, which shall follow the generic TRE Work Plan revised as appropriate for this toxicity event. It shall include the following information, and comply with any additional conditions set by the Executive Officer:

- 5.B.2.a.** Further actions by the Discharger to investigate, identify, and correct the causes of toxicity.
- 5.B.2.b.** Actions the Discharger will take to mitigate the effects of the discharge and prevent the recurrence of toxicity.
- 5.B.2.c.** A schedule for these actions, progress reports, and the final report.
- 5.B.3. Toxicity Investigation Evaluation (TIE) Implementation.** The Discharger may initiate a TIE as part of a TRE to identify the causes of toxicity using the same species and test methods and, as guidance, the procedures recommended by the USEPA, which include the following:
- 5.B.3.a.** *Toxicity Identification Evaluations: Characterization of Chronically Toxic Effluents, Phase I* (EPA/600/6-91/005F, 1992);
- 5.B.3.b.** *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures* (EPA/600/6-91/003, 1991);
- 5.B.3.c.** *Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/080, 1993); and
- 5.B.3.d.** *Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/081, 1993).
- 1) Many recommended TRE elements parallel required or recommended efforts for source control, pollution prevention, and storm water control programs. TRE efforts should be coordinated with such efforts. As toxic substances are identified or characterized, the Discharger shall continue the TRE by determining the sources and evaluating alternative strategies for reducing or eliminated the substances from the discharge. All reasonable steps shall be taken to reduce toxicity to levels consistent with toxicity evaluation parameters.
 - 2) The Discharger shall continue to conduct routine effluent monitoring for compliance determination purposed while the TIE and/or TRE process is taking place. Additional accelerated monitoring and TRE work plans are not required once a TRE has begun.
 - 3) The Colorado River Basin Water Board recognizes that toxicity may be episodic and identification of causes and reduction of sources of toxicity may not be successful in all cases. The TRE may be ended at any stage if monitoring finds there is no longer toxicity.
 - 4) The Board may consider the results of any TIE/TRE studies in an enforcement action.
- 5.B.4. Evaluation of Ammonia Toxicity.** For discharges where ammonia has been identified as a cause of toxicity, the Discharger shall calculate the response threshold on the basis of unionized and total ammonia. The Discharger shall run a parallel test with ammonia in lab water to evaluate if the lab water and the

effluent responses are the same (i.e., no matrix effect). In future WET testing, where ammonia toxicity is hypothesized as the cause, the Discharger has the following three options to evaluate whether ammonia is causing the toxicity:

- 5.B.4.a.** If toxicity in lab water is similar to that in the effluent, the Discharger shall conduct a parallel test with ammonia spiked into lab water. Toxicity endpoints are compared on the basis of unionized ammonia. If the endpoints are the same, then the implication is ammonia is responsible for toxicity and no further action is required, or
- 5.B.4.b.** If toxicity in lab water is not similar to that in the effluent, the Discharger shall conduct a parallel test with effluent, maintaining pH at a level that maintains the unionized fraction below the toxic threshold. If no toxicity is observed in the pH-controlled sample, the implication is that ammonia is responsible for toxicity and no further action is required; or
- 5.B.4.c.** Without using comparative tests, calculate toxicity in the sample on the basis of unionized ammonia and compare the result to data generated in the TIE; if the results support the hypothesis that ammonia explains toxicity, then no further action is required.
- 5.B.4.d.** However, if ammonia is not identified as the toxicant, the Discharger shall take action as described in Section 5.A.8 (Accelerated Monitoring Schedule) of this MRP.

5.B.5. Evaluation of Ionic Imbalances or Elevated TDS Toxicity. For discharges where ionic imbalance or elevated TDS has been identified as a cause of toxicity, the Discharger shall conduct the following concurrent tests to characterize the contribution of ionic imbalance or elevated TDS to effluent toxicity. Based on the test results, toxicity should be either quantitatively recovered in synthetic effluent that mimics ionic imbalance or elevated TDS or eliminated by adding selected ions to the effluent to address deficiencies. Thus, in future WET testing, where ionic imbalance or elevated TDS is hypothesized as contributing to toxicity, the Discharger has the following two options to evaluate whether ionic imbalance or elevated TDS is causing the toxicity:

- 5.B.5.a.** Conducting a parallel test with synthetic effluent that mimics the ionic imbalance or TDS concentration; or
- 5.B.5.b.** Conducting a parallel test with effluent spiked with deficient ion(s). Using these approaches, if ionic imbalance or elevated TDS is shown to account for toxicity, the Discharger shall document the results and findings in the monitoring report and no further testing is required. However, if the parallel tests do not account for toxicity, the Discharger shall take action as described in Section 5.A.8. Accelerated Monitoring Schedule of this MRP.

5.C. Reporting of Toxicity Monitoring Results

5.C.1. The Discharger shall submit either a summary page or the full laboratory report for all toxicity testing as an attachment to CIWQS for the reporting period (e.g., monthly, quarterly, semi-annually or annually) and provide the data (i.e., Pass/Fail) in the PET tool for uploading into CIWQS. The laboratory report shall include:

- 5.C.1.a.** The valid toxicity test results for the TST statistical approach, reported as “Pass” or “Fail” and “Percent Effect” at the toxicity IWC for the discharge, the dates of sample collection and initiation of each toxicity test, all results for effluent parameters monitored concurrently with the toxicity test(s); and progress reports on TRE investigations.
- 5.C.1.b.** The statistical analysis used in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010) Appendix A, Figure A-1 and Table A-1, and Appendix B, Table B-1.
- 5.C.1.c.** Statistical program (e.g., TST calculator, CETIS, etc.) output results, including graphical plots, for each toxicity test.

5.C.2. TRE/TIE results. The Colorado River Basin Water Board shall be notified no later than 30 days from completion of each aspect of TRE/TIE analyses. Prior to the completion of the final TIE/TRE report, the Discharger shall provide status updates in the monthly monitoring reports, indicating which TIE/TRE steps are underway and which steps have been completed.

5.C.2.a. Any additional QA/QC documentation or any additional chronic toxicity-related information, upon written request from the Colorado River Basin Water Board.

6. LAND DISCHARGE MONITORING REQUIREMENTS - Not Applicable

7. RECYCLING MONITORING REQUIREMENTS - Not Applicable

8. RECEIVING WATER MONITORING REQUIREMENTS

8.A. Monitoring Location RSW-001

8.A.1. The Discharger shall monitor Central Main Drain at RSW-001 as follows. If no receiving water is present at RSW-001, no receiving water monitoring data is required for station RSW-001 and the monitoring report shall state that no water was available.

Table E-8. Receiving Water Monitoring Requirements – RSW-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
pH	Standard Units	Grab	1x/Month	See Section 1.E of the MRP

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Temperature	Degree F	Grab	1x/Month	See Section 1.E of the MRP
Dissolved Oxygen	mg/L	Grab	1x/Month	See Section 1.E of the MRP
Total Dissolved Solids	mg/L	Grab	1x/Month	See Section 1.E of the MRP
Hardness (as CaCO ₃)	mg/L	Grab	1x/Month	See Section 1.E of the MRP
Turbidity	NTU	Grab	1x/Quarter	See Section 1.E of the MRP
Nitrates, as N	mg/L	Grab	1x/Month	See Section 1.E of the MRP
Nitrites, as N	mg/L	Grab	1x/Month	See Section 1.E of the MRP
Ammonia, as N	mg/L	Grab	1x/Month	See Section 1.D of the MRP
Total Nitrogen, as N	mg/L	Grab	1x/Month	See Section 1.D of the MRP
Total Phosphate, as P	mg/L	Grab	1x/Month	See Section 1.E of the MRP
Ortho-Phosphate, as P	mg/L	Grab	1x/Month	See Section 1.E of the MRP
Chlordane	µg/L	Grab	2x/Year	EPA Method 8081A
DDT	µg/L	Grab	2x/Year	EPA Method 8081A
4,4'-DDE	µg/L	Grab	2x/Year	EPA Method 8081A
4,4'-DDD	µg/L	Grab	2x/Year	EPA Method 8081A
Dieldrin	µg/L	Grab	2x/Year	EPA Method 8081A
PCBs	µg/L	Grab	2x/Year	EPA Method

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
				8081A
Toxaphene	µg/L	Grab	2x/Year	EPA Method 8081A
Chlorpyrifos	µg/L	Grab	2x/Year	EPA Method 8141B
Diazinon	µg/L	Grab	2x/Year	EPA Method 8141B
Malathion	µg/L	Grab	2x/Year	EPA Method 8141B
Priority Pollutants ²¹	µg/L	Grab	1x/Year	See Section 1.E of the MRP

8.B. Monitoring Location RSW-002

8.B.1. The Discharger shall monitor Central Main Drain at RSW-002 as follows. If no receiving water is present at RSW-002, no receiving water monitoring data is required for station RSW-002 and the monitoring report shall state that no water was available.

Table E-9. Receiving Water Monitoring Requirements – RSW-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
pH	Standard Units	Grab	1x/Month	See Section 1.E of the MRP
Temperature	Degree F	Grab	1x/Month	See Section 1.E of the MRP
Dissolved Oxygen	mg/L	Grab	1x/Month	See Section 1.E of the MRP
Total Dissolved Solids	mg/L	Grab	1x/Month	See Section 1.E of the MRP
Nitrates, as N	mg/L	Grab	1x/Month	See Section 1.E of the MRP

²¹ All Priority Pollutants as defined by the California Toxics Rule (CTR) codified at 40 CFR section 131.38.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Nitrites, as N	mg/L	Grab	1x/Month	See Section 1.E of the MRP
Ammonia, as N	mg/L	Grab	1x/Month	See Section 1.D of the MRP
Total Nitrogen, as N	mg/L	Grab	1x/Month	See Section 1.D of the MRP
Total Phosphate, as P	mg/L	Grab	1x/Month	See Section 1.E of the MRP
Ortho-Phosphate, as P	mg/L	Grab	1x/Month	See Section 1.E of the MRP

8.C. Visual Monitoring

8.C.1. In conducting the receiving water sampling, a log shall be kept of the receiving water conditions at Monitoring Locations RSW-001 and RSW-002. Notes on receiving water conditions shall be summarized in the monthly monitoring report and when data is submitted electronically via the SMR module in the CIWQS Program, data shall be reported in the “Attachments” section. Attention shall be given to the presence or absence of:

- 8.C.1.a.** Floating or suspended matter,
- 8.C.1.b.** Discoloration,
- 8.C.1.c.** Aquatic life (including plants, fish, shellfish, birds),
- 8.C.1.d.** Visible film, sheen, or coating,
- 8.C.1.e.** Fungi, slime, or objectionable growths, and
- 8.C.1.f.** Potential nuisance conditions.

9. OTHER MONITORING REQUIREMENTS

9.A. Pretreatment Monitoring

In the event that significant industrial wastewater is being discharged to the wastewater treatment facility, then the Discharger shall provide the Colorado River Basin Water Board with an annual report describing the pretreatment program activities over the previous twelve (12) month period and it shall include:

1. A summary of actions taken by the Discharger which ensures industrial-user compliance;
2. An updated list of industrial users (by SIC categories) which were issued permits, and/or enforcement orders; and

3. The name and address of each user that received a revised discharge limit.

In the event that an approved pretreatment program is required, the discharge shall submit a pretreatment program submittal to obtain pretreatment approval.

10. REPORTING REQUIREMENTS

10.A. General Monitoring and Reporting Requirements

The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.

- 10.A.1.** The Discharger shall report the results of chronic toxicity testing, TRE, and TIE as required in Section 5, "Effluent Toxicity Testing."

- 10.A.2.** The results of any analysis taken more frequently than required using analytical methods and/or monitoring procedures and performed at the locations specified in this MRP shall be reported to the Colorado River Basin Water Board.

- 10.A.3.** The Discharger shall ensure laboratory analytical results are consistent with the requirements contained in 40 C.F.R. part 136 with regard to significant figures. 40 C.F.R. part 136 specifies for some analytical methods, the number of significant figures to which measurements are made.

- 10.A.4.** If there is no discharge during any reporting period, the report shall so state.

10.B. Electronic Self-Monitoring Reports (eSMRs)

- 10.B.1.** The Discharger shall submit electronic Self-Monitoring Reports (eSMRs) using the State Water Board's CIWQS Program website:

<http://www.waterboards.ca.gov/ciwqs/index.html>. The CIWQS website will provide additional information for eSMR submittal in the event there will be a planned service interruption for electronic submittal.

- 10.B.2.** The Discharger shall maintain sufficient staffing and resources to ensure it submits eSMRs for the duration of the term of this permit including any administrative extensions. This includes provision of training and supervision of individuals (e.g., Discharger personnel or consultant) on how to prepare and submit eSMRs.

- 10.B.3.** The Discharger shall report in the eSMR the results for all monitoring specified in this MRP under Sections 3 through 9. The Discharger shall submit monthly, quarterly, semi-annual, and annual eSMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. eSMRs are to include all new monitoring results obtained since the last eSMR was submitted. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the eSMR.

- 10.B.4.** Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-10. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Beginning	Monitoring Period	SMR Due Date
Continuous	January 2, 2025	All	Submit with monthly eSMR
Daily 1x/Day	January 2, 2025	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	Submit with monthly eSMR
Weekly 1x/Week	January 2, 2025	Sunday through Saturday	Submit with monthly eSMR
Monthly 1x/Month	January 2, 2025	1 st day of calendar month through last day of calendar month	First day of second month from end of monitoring period
Quarterly 1x/Quarter 4x/Year	January 2, 2025	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	May 1 August 1 November 1 February 1
Annually 1x/Year	January 2, 2025	January 1 through December 31	March 1

10.B.5. Reporting Protocols. The Discharger shall follow the procedure in 40 C.F.R. part 136 when reporting the results of analytical determinations of chemical constituents in a sample using the following reporting protocols:

10.B.5.a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample). For reporting concentration and calculated values in the PET tool follow these instructions:

- 1) Reporting Concentration - Under the “Qualifier” column select “=” and under the “Result” column report the result (concentration).
- 2) Reporting Calculated Values - Under the “Qualifier” column select “=” and under the “Result” column report the result (calculated value).

10.B.5.b. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported under the "Qualifier" column as "DNQ" (Detected, but Not Quantified). For the purposes of data collection, the laboratory shall write the estimated chemical concentration under the "Result" column next to DNQ. The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (\pm a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory. For reporting concentration and calculated values in the PET tool follow these instructions:

- 1) Reporting Concentration – Under the "Qualifier" column select "DNQ," under the "Result" column report the estimated chemical concentration. In addition, the MDL shall be reported under the "MDL" column and the ML shall be reported under the "ML" column.
- 2) Reporting Calculated Values – Under the "Qualifier" column select "<," under the "Result" column report the calculated value or in the case of mass loading report the average monthly effluent limitation for mass loading.

10.B.5.c. Sample results less than the laboratory's MDL shall be reported as "ND" (Not Detected). For reporting concentration and calculated values in the PET tool follow these instructions:

- 1) Reporting Concentration – Under the "Qualifier" column select "ND" and report the MDL under the "MDL" column.
- 2) Reporting Calculated Values - Under the "Qualifier" column select "<," under the "Result" column report the calculated value (Flow, MGD x 8.34 x MDL (use correct units)) or in the case of mass loading report the average monthly effluent limitation for mass loading.

10.B.5.d. Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

10.B.6. Multiple Sample Data. If the Permit an AMEL, AWEL, or MDEL for pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

- 10.B.6.a.** The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
- 10.B.6.b.** The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.
- 10.B.7. Formatting of eSMRs.** The Discharger shall submit eSMRs in accordance with the following requirements:
- 10.B.7.a.** The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the Facility is operating in compliance with interim and/or final effluent limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.
- 10.B.7.b.** The Discharger shall attach a cover letter to the eSMR. The information contained in the cover letter shall clearly identify violations of the WDRs; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation. In addition, the Discharger shall add these violations into CIWQS.
- 10.B.7.c.** The Discharger shall upload the Whole Effluent Toxicity Test result page or entire report for the reporting period under the attachment tab for the reporting period.
- 10.B.7.d.** The Discharger shall upload the laboratory reports for the analysis of the priority pollutant for the reporting period under the attachment tab for the reporting period. The Discharger shall evaluate the results with the criteria and notify the Colorado River Basin Regional Board of any exceedance of the criteria.

10.C. Discharge Monitoring Reports (DMRs)

- 10.C.1.** DMRs are USEPA reporting requirements. The Discharger shall electronically certify and submit DMRs together with eSMRs using the Electronic Self-Monitoring Reports module eSMR 2.5 or any upgraded version. Electronic DMR submittal shall be in addition to electronic eSMR submittal. Information about electronic DMR submittal is available at the [DMR website](http://www.waterboards.ca.gov/water_issues/programs/discharge_monitoring) at: (http://www.waterboards.ca.gov/water_issues/programs/discharge_monitoring).
- 10.C.1.a.** The Discharger can obtain and analyze a DMR-QA sample as part of the DMR-QA study; or

10.C.1.b. The Discharger can submit the results of the most recent Water Pollution Performance Evaluation Study from their own laboratories or their contract laboratories.

The Discharger shall submit annually the results of the DMR-QA Study or the results of the most recent Water Pollution Performance Evaluation Study to the State Water Board’s Quality Assurance Officer who will send the DMR-QA Study results or the results of the most recent Water Pollution Performance Evaluation Study to USEPA’s DMR-QA Coordinator and Quality Assurance Manager.

The key components of the study are listed below.

- 1) The study period is the entire 12 months of each calendar year. However, participation earlier in the year would allow for extra time in the event that sample retesting is necessary.
- 2) Laboratories may use the same sample data that is normally generated under their certification/accreditation obligations.
- 3) Please submit electronic data files along with PDF copies from the approved Proficiency Testing (PT) vendors. The vendor will provide electronic data files (CSV) in the form of the standard EPA data file transfer protocols for uploading into the State Water Board database for this study. You are responsible for ensuring the testing data is received by the State Water Board.

10.D. Other Reports

10.D.1. Biosolids Reporting. The Discharger shall submit an annual biosolids report electronically (<https://cdx.epa.gov/>) to USEPA Region 9 Biosolids Coordinator and the Colorado River Basin Water Board by February 19 of each year for the period covering the previous calendar year (Attachment H, 1.14).

10.D.2. Special Studies. The Discharger shall report the results of any special studies required by Special Provisions – 6.C.2. The Discharger shall report the progress in satisfaction of compliance schedule dates specified in Special Provisions – 6.C.7. The Discharger shall submit reports with reports with the eSMR scheduled to be submitted on or immediately following the report due date.

10.D.3. Operations and Maintenance Report. The Discharger shall report the following as shown in Table E-11:

Table E-11. Operations and Maintenance Report

Activity	Reporting Frequency
To inspect and document the operation and maintenance of the UV disinfection system, including but not limited to, inspection, cleaning, and bulb replacement. The Discharger shall provide a certification statement in the annual report that inspections and documentation of inspections and operations/maintenance problems have been completed.	1x/Year

Activity	Reporting Frequency
To inspect and document any operation/maintenance problems by inspecting each unit process. The Discharger shall provide a certification statement in the annual report that inspections and documentation of inspections and operations/maintenance problems have been completed.	1x/Year
Calibration of flow meters and mechanical equipment shall be performed in a timely manner and documented. The Discharger shall provide a certification statement in the annual report that the calibration of flow meters and mechanical equipment has been conducted and documentation of such calibrations is maintained.	1x/Year
The Discharger shall maintain documentation of all logbooks (operation and maintenance), chain of custody sheets, laboratory and sampling activities as stated in Standard Provisions Sections 4 and 5 (Attachment D). The Discharger shall provide a certification statement in the annual report that maintenance of logbooks, chain of custody sheets, and laboratory and sampling activities as required is being implemented.	1x/Year
The Discharger shall conduct an annual review and evaluation of priority pollutant sampling results collected each year to evaluate the impact on surface water quality and provide this evaluation in the annual report.	1x/Year

ATTACHMENT D – STANDARD PROVISIONS

1. STANDARD PROVISIONS – PERMIT COMPLIANCE

1.A. Duty to Comply

1.A.1. The Discharger must comply with all of the terms, requirements, and conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act and the California Water Code and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; denial of a permit renewal application; or a combination thereof. (40 Code of Federal Regulations (C.F.R.) § 122.41(a); Wat. Code, §§ 13261, 13263, 13265, 13268, 13000, 13001, 13304, 13350, 13385.)

1.A.2. The Discharger shall comply with effluent standards or prohibitions established under section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. § 122.41(a)(1).)

1.B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. (40 C.F.R. § 122.41(c).)

1.C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 C.F.R. § 122.41(d).)

1.D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order. (40 C.F.R. § 122.41(e).)

1.E. Property Rights

1.E.1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g).)

1.E.2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 C.F.R. § 122.5(c).)

1.F. Inspection and Entry

The Discharger shall allow the Colorado River Basin Water Board, State Water Board, USEPA, and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (33 U.S.C. § 1318(a)(4)(B); 40 C.F.R. § 122.41(i); Wat. Code, §§ 13267, 13383):

- 1.F.1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(B)(i); 40 C.F.R. § 122.41(i)(1); Wat. Code, §§ 13267, 13383);
- 1.F.2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(2); Wat. Code, §§ 13267, 13383);
- 1.F.3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (33 U.S.C. § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(3); Wat. Code, §§ 13267, 13383); and
- 1.F.4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the Clean Water Act or the Water Code, any substances or parameters at any location. (33 U.S.C. § 1318(a)(4)(B); 40 C.F.R. § 122.41(i)(4); Wat. Code, §§ 13267, 13383.)

1.G. Bypass

1.G.1. Definitions

- 1.G.1.a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 122.41(m)(1)(i).)
- 1.G.1.b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 C.F.R. § 122.41(m)(1)(ii).)

1.G.2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance 1.7.3, 1.7.4, and 1.7.5 below. (40 C.F.R. § 122.41(m)(2).)

1.G.3. Prohibition of bypass. Bypass is prohibited, and the Colorado River Basin Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. § 122.41(m)(4)(i)):

- 1.G.3.a.** Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));
- 1.G.3.b.** There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and
- 1.G.3.c.** The Discharger submitted notice to the Colorado River Basin Water Boards required under Standard Provisions – Permit Compliance 1.7.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C).)
- 1.G.4.** The Colorado River Basin Water Board may approve an anticipated bypass, after considering its adverse effects, if the Colorado River Basin Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance 1.7.3 above. (40 C.F.R. § 122.41(m)(4)(ii).)

1.G.5. Notice

- 1.G.5.a. Anticipated bypass.** If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible, at least 10 days before the date of the bypass. As of December 21, 2020, all notices must be submitted electronically by the Discharger to the initial recipient, as defined in 40 C.F.R. section 127.2(b), in compliance with this section and 40 C.F.R. part 3 (including, in all cases, subpart D of part 3), section 122.22, and 40 C.F.R. part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of part 127, the Discharger may be required to report electronically if specified by a particular permit or if required to do so by state law. (40 C.F.R. § 122.41(m)(3)(i).)
- 1.G.5.b. Unanticipated bypass.** The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting 5.5 below (24-hour notice). As of December 21, 2020, all notices must be submitted electronically by the Discharger to the initial recipient, as defined in 40 C.F.R. section 127.2(b), in compliance with this section and 40 C.F.R. part 3 (including, in all cases, subpart D of part 3), section 122.22, and 40 C.F.R. part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of part 127, the Discharger may be required to report electronically if specified by a particular permit or if required to do so by state law. (40 C.F.R. § 122.41(m)(3)(ii).)

1.H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed

treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 C.F.R. § 122.41(n)(1).)

- 1.H.1. Effect of an upset.** An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance 1.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2).)
- 1.H.2 Conditions necessary for a demonstration of upset.** A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. § 122.41(n)(3)):
- 1.H.2.a.** An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));
- 1.H.2.b.** The permitted facility was, at the time, being properly operated (40 C.F.R. § 122.41(n)(3)(ii));
- 1.H.2.c.** The Discharger submitted notice of the upset as required in Standard Provisions – Reporting 5.E.2.b below (24-hour notice) (40 C.F.R. § 122.41(n)(3)(iii)); and
- 1.H.2.d.** The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance 1.C above. (40 C.F.R. § 122.41(n)(3)(iv).)
- 1.H.3. Burden of proof.** In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. § 122.41(n)(4).)

2. STANDARD PROVISIONS – PERMIT ACTION

2.A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 C.F.R. § 122.41(f).)

2.B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 C.F.R. § 122.41(b).)

2.C. Transfers

This Order is not transferable to any person except after notice to the Colorado River Basin Water Board. The Colorado River Basin Water Board may require modification or revocation and reissuance of the Order to change the name of the

Discharger and incorporate such other requirements as may be necessary under the Clean Water Act and the Water Code. (40 C.F.R. §§ 122.41(l)(3), 122.61.)

3. STANDARD PROVISIONS – MONITORING

- 3.A.** Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 C.F.R. § 122.41(j)(1).)
- 3.B.** Monitoring must be conducted according to test procedures approved under 40 C.F.R. part 136 for the analyses of pollutants unless another method is required under 40 C.F.R. chapter 1, subchapter N. Monitoring must be conducted according to sufficiently sensitive test methods approved under 40 C.F.R. part 136 for the analysis of pollutants or pollutant parameters or as required under 40 C.F.R. chapter 1, subchapter N. For the purposes of this paragraph, a method is sufficiently sensitive when:
- 3.B.1.** The method minimum level (ML) is at or below the level of the most stringent effluent limitation established in the permit for the measured pollutant or pollutant parameter, and either the method ML is at or below the level of the most stringent applicable water quality criterion for the measured pollutant or pollutant parameter or the method ML is above the applicable water quality criterion but the amount of the pollutant or pollutant parameter in the facility's discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge; or
- 3.B.2.** The method has the lowest ML of the analytical methods approved under 40 C.F.R. part 136 or required under 40 C.F.R. chapter 1, subchapter N for the measured pollutant or pollutant parameter. In the case of pollutants or pollutant parameters for which there are no approved methods under 40 C.F.R. part 136, or otherwise required under 40 C.F.R. chapter 1, subchapter N, monitoring must be conducted according to a test procedure specified in this Order for such pollutants or pollutant parameters. (40 C.F.R. §§ 122.21(e)(3), 122.41(j)(4), 122.44(i)(1)(iv).)

4. STANDARD PROVISIONS – RECORDS

- 4.A.** The Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Colorado River Basin Water Board Executive Officer at any time. (40 C.F.R. § 122.41(j)(2).)
- 4.B.** Records of monitoring information shall include:
- 4.B.1.** The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));

- 4.B.2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));
 - 4.B.3. The date(s) analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));
 - 4.B.4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));
 - 4.B.5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and
 - 4.B.6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)
- 4.C. Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):
- 4.C.1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and
 - 4.C.2. Permit applications and attachments, permits and effluent data. (40 C.F.R. § 122.7(b)(2).)

5. STANDARD PROVISIONS – REPORTING

5.A. Duty to Provide Information

The Discharger shall furnish to the Colorado River Basin Water Board, State Water Board, or USEPA within a reasonable time, any information which the Colorado River Basin Water Board, State Water Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Colorado River Basin Water Board, State Water Board, or USEPA copies of records required to be kept by this Order. (40 C.F.R. § 122.41(h); Wat. Code, §§ 13267, 13383.)

5.B. Signatory and Certification Requirements

- 5.B.1. All applications, reports, or information submitted to the Colorado River Basin Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with Standard Provisions – Reporting 5.2.2, 5.2.3, 5.2.4, 5.2.5, and 5.2.6 below. (40 C.F.R. § 122.41(k).)
- 5.B.2. All permit applications shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate

information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. (40 C.F.R. § 122.22(a)(1).)

- 5.B.2.a.** All permit applications shall be signed by a general partner or the proprietor, respectively. (40 C.F.R. § 122.22(a)(2).)
- 5.B.2.b.** All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA). (40 C.F.R. § 122.22(a)(3).)
- 5.B.3.** All reports required by this Order and other information requested by the Colorado River Basin Water Board, State Water Board, or USEPA shall be signed by a person described in Standard Provisions – Reporting 5.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
- 5.B.3.a.** The authorization is made in writing by a person described in Standard Provisions – Reporting 5.B.2 above (40 C.F.R. § 122.22(b)(1));
- 5.B.3.b.** The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. § 122.22(b)(2)); and
- 5.B.3.c.** The written authorization is submitted to the Colorado River Basin Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3).)
- 5.B.4.** If an authorization under Standard Provisions – Reporting 5.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting 5.B.3 above must be submitted to the Colorado River Basin Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 122.22(c).)
- 5.B.5.** Any person signing a document under Standard Provisions – Reporting 5.B.2 or 5.B.3 above shall make the following certification:
- “I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate,

and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.” (40 C.F.R. § 122.22(d).)

- 5.B.6.** Any person providing the electronic signature for documents described in Standard Provisions – 5.2.1, 5.2.2, or 5.2.3 that are submitted electronically shall meet all relevant requirements of Standard Provisions – Reporting 5.2 and shall ensure that all relevant requirements of 40 C.F.R. part 3 (Cross-Media Electronic Reporting) and 40 C.F.R. part 127 (NPDES Electronic Reporting Requirements) are met for that submission. (40 C.F.R § 122.22(e).)

5.C. Monitoring Reports

- 5.C.1.** Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 C.F.R. § 122.41(l)(4).)
- 5.C.2.** Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Colorado River Basin Water Board or State Water Board. As of December 21, 2016, all reports and forms must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting 5.10 and comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 122.41(l)(4)(i).)
- 5.C.3.** If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 C.F.R. part 136, or another method required for an industry-specific waste stream under 40 C.F.R. chapter 1, subchapter N, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or reporting form specified by the Colorado River Basin Water Board or State Water Board. (40 C.F.R. § 122.41(l)(4)(ii).)
- 5.C.4.** Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. § 122.41(l)(4)(iii).)

5.D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date. (40 C.F.R. § 122.41(l)(5).)

5.E. Twenty-Four Hour Reporting

- 5.E.1.** The Discharger shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A report shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if

the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (i.e., combined sewer overflow, sanitary sewer overflow, or bypass event), type of overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volume untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the event, and whether the noncompliance was related to wet weather.

As of December 21, 2020, all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events must be submitted to the Colorado River Basin Water Board and must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting 5.10 The reports shall comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. The Colorado River Basin Water Board may also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 C.F.R. § 122.41(l)(6)(i).)

- 5.E.2.** The following shall be included as information that must be reported within 24 hours:
- 5.E.2.a.** Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(A).)
- 5.E.2.b.** Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(B).)
- 5.E.3.** The Colorado River Basin Water Board may waive the above required written report on a case-by-case basis if an oral report has been received within 24 hours. (40 C.F.R. § 122.41(l)(6)(ii)(B).)

5.F. Planned Changes

The Discharger shall give notice to the Colorado River Basin Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 C.F.R. § 122.41(l)(1)):

- 5.F.1.** The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 C.F.R. § 122.41(l)(1)(i)); or
- 5.F.2.** The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 C.F.R. § 122.41(l)(1)(ii).); or
- 5.F.3.** The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are

subject neither to effluent limitations in this Order nor to notification requirements under section 122.42(a)(1) (see Additional Provisions—Notification Levels 7.1.1). (40 C.F.R. § 122.41(l)(1)(ii).)

5.G. Anticipated Noncompliance

The Discharger shall give advance notice to the Colorado River Basin Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order's requirements. (40 C.F.R. § 122.41(l)(2).)

5.H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting 5.3, 5.4, and 5.5 above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting 5.5 above. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in Standard Provision – Reporting 5.5 and the applicable required data in appendix A to 40 C.F.R. part 127. The Colorado River Basin Water Board may also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 C.F.R. § 122.41(l)(7).)

5.I Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in a permit application or in any report to the Colorado River Basin Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information. (40 C.F.R. § 122.41(l)(8).)

5.J. Identification of the Initial Recipient for Electronic Reporting Data

The owner, operator, or the duly authorized representative is required to electronically submit NPDES information specified in appendix A to 40 C.F.R. part 127 to the initial recipient defined in 40 C.F.R. section 127.2(b). USEPA will identify and publish the list of initial recipients on its website and in the Federal Register, by state and by NPDES data group [see 40 C.F.R. section 127.2(c)]. USEPA will update and maintain this listing. (40 C.F.R. § 122.41(l)(9).)

6. STANDARD PROVISIONS – ENFORCEMENT

6.A. The Colorado River Basin Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13268, 13385, 13386, and 13387.

7. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

7.A. Non-Municipal Facilities – Not Applicable

7.B Publicly Owned Treatment Works (POTWs)

All POTWs shall provide adequate notice to the Colorado River Basin Water Board of the following (40 C.F.R. § 122.42(b)):

- 7.B.1.** Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to sections 301 or 306 of the Clean Water Act if it were directly discharging those pollutants (40 C.F.R. § 122.42(b)(1)); and
- 7.B.2.** Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order. (40 C.F.R. § 122.42(b)(2).)
- 7.B.3.** Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW. (40 C.F.R. § 122.42(b)(3).)