Response to Comments

City of Los Angeles
Terminal Island Water Reclamation Plant (TIWRP)
Dominguez Gap Barrier Project
Tentative Waste Discharge Requirements and Water Recycling Requirements

This Table describes all significant comments received from interested persons with regard to the above-mentioned tentative permit. Each comment has a corresponding response and action taken.

Commenter	#	Comment	Response	Action Taken
Comments received from the City of Los Angeles on September 15, 2016.				
City of Los Angeles	1	<u>Order, Table 1, Page 1</u> The tentative permit listed "Los Angeles County Depart of Public Works" as the Owner/Operator. If the "Owner/Operator" refers to the DGBP wells and infrastructure, then "Los Angeles County Depart of Public Works" is correct. If the "Owner/Operator" refers to AWPF, then LASAN requests to change the Owner/Operator to: "City of Los Angeles, Bureau of Sanitation (LASAN)"	"Owner/Operator" in this section refers to the Dominguez Gap Barrier Project wells and infrastructure so the "Los Angeles County Department of Public Works" is correct. To eliminate confusion, all parties to the permit have been placed under one category, "Project Sponsors."	Revisions were made to the permit.
City of Los Angeles	2	<u>Order, Section I.3, Page 4</u> The tentative permit did not describe the two permits under HWRP clearly. LASAN requests to make the paragraph clearer. LASAN proposes the following description: *"The HWRP has two parts which includes nonpotable reuse projects (eg. recycled water for irrigation, dust control, industrial use, and*	Staff agreed.	Revisions were made to the permit.

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		recreational impoundments) throughout the Los Angeles Harbor area and injection of recycled water into the Dominguez Gap Seawater Intrusion Barrier (Barrier). Non-potable reuse is currently regulated under Order No. R4-2003-0025. <u>The Dominguez Gap Barrier Project (DGBP) is currently regulated under Order No. R4-2003-0134 with Amendments.</u> ~~The Harbor Water Recycling-Dominguez Gap Barrier Project~~ <u>HWRP-</u>DGBP is a multi-agency project that reduces the City's reliance on imported water by injecting recycled water from the AWPF into the Barrier."		
City of Los Angeles	3	<u>Order, Section I.5, Page 5</u> The tentative permit uses "discharge" to refer to injection of recycled water. The term "discharge" suggests wastewater which is different and not appropriate. The City considers recycled water as a valuable resource. LASAN requests to change "discharge" in the entire document when referring to recycled water. LASAN proposes to change: "*In response to the request, WRD has been removed as a Project Sponsor because even though WRD purchases the recycled water and knows or should know that the ~~discharge~~ <u>injection</u> of recycled water into the Dominguez Gap is or has occurred, WRD does not have the legal ability to control the discharge*."	The Regional Water Board has consistently recognized recycled water as a valuable resource. In this case, the Regional Water Board is issuing Waste Discharge Requirements and Water Recycling Requirements (WDRs/WRRs) for the injection of advanced treated recycled water to groundwater. Regional Water Boards regulate the discharge of waste that could affect the quality of waters of the state and these WDRs/WRRs ensure that any waste constituents in the recycled water injected into the groundwater will comply with the California Water Code. The term "discharge" is therefore appropriate.	None necessary.

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City of Los Angeles	4	Order, Section I.5, Page 5 In the last sentence of Finding I.5, the tentative permit states that "*WRD has also expressed a commitment to the Project Sponsors to facilitate the implementation of the groundwater monitoring permit requirements.*". LASAN requests to add the following statement on Finding I.5: "*LASAN and WRD are working together to negotiate a 3rd party Agreement to continue these ground monitoring activities, and expects the Agreement to be in-place in December 2017. In the interim, WRD has agreed to provide these services until this Agreement is finalized."*	Staff agreed. The City of Los Angeles, Bureau of Sanitation (LASAN) and the Water Replenishment District of Southern California (WRD) currently have a 3rd party agreement that will expire in December 2017. The Regional Water Board understands that LASAN and WRD will enter into a new agreement if LASAN continues to require WRD's groundwater monitoring services.	Revisions were made to the permit.
City of Los Angeles	5	Order, Section IV.24, Page 5 LASAN request to make the following correction: *"24. …In 2006, the LADPW began injection of 50% recycled water from ~~TIWRP~~ AWPF and 50% potable water into the Barrier."*	Staff agreed. Section IV.24, on page 9 of the Tentative Order, more specifically refers to the recycled water from the Advanced Water Purification Facility (AWPF).	Revisions were made to the permit.
City of Los Angeles	6	Order, Section XIII.9, Page 19 The tentative permit should be consistent in citing the part of the regulation by citing Division Number, Chapter Number, and Article Number, if applicable: LASAN request to make the following correction: "*The recycled water injected into the Barrier shall meet all MCLs and other limits specified in the*	Staff agreed to make references to the California Code of Regulations more specific, if necessary.	Revisions were made to the permit.

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		Drinking Water Quality and Monitoring Requirements in 22 CCR, Division 4, Chapter 15 and other limits, as follows:		
City of Los Angeles	7	Order, Section XIII.9, Page 19 The tentative permit should be consistent in citing the part of the regulation by citing Division Number, Chapter Number, and Article Number, if applicable: LASAN request to make the following correction: "*b. Radionuclides in 22 CCR, Division 4, Chapter 15, Article 5, Table ~~4, sections~~ 64442 and 64443*"	Staff agreed to make references to the California Code of Regulations more specific, if necessary.	Revisions were made to the permit.
City of Los Angeles	8	Order, Section XIII.14, Page 20 LASAN requests clarification on the statement in the tentative permit, *"If the Project Sponsors choose to use one or more wastewater chemicals in lieu of TOC…"* Although the wording comes directly from 22 CCR 60320.218 - Total Organic Carbon Requirements, it is not easily understood. It sounds like it is referring to the use of TOC as a chemical in treating the wastewater. If it means that the project sponsors have an option to "monitor" a different "parameter" in lieu of TOC, it would help to have a clarifying footnote.	22 CCR § 60320.218 gives the Project Sponsors the option of substituting total organic carbon (TOC) monitoring (with the approval of DDW) with monitoring of a chemical (or chemicals) that is quantifiable in the wastewater, recycled water, groundwater, and throughout the treatment process, and has identifiable treatment performance standards as protective of public health as the TOC standards.	None necessary.
City of Los Angeles	9	Order, Section XIV.2, Page 20 The tentative permit should be consistent in citing the part of the regulation by citing Division Number, Chapter Number, and Article Number, if	Staff agreed to make references to the California Code of Regulations more specific, if necessary. Changes to this section are	None necessary.

Commenter	#	Comment	Response	Action Taken
		applicable: LASAN request to make the following correction: "*2. Recycled water shall comply with 22 CCR Division 4, Chapter 3, Article 5.2 – Indirect Potable Reuse: Groundwater Replenishment – Subsurface Application, section §60320.200 through §60320.228 of the Title 22, California Code of Regulations."*	unnecessary since the CCR is already cited at the end of the sentence.	
City of Los Angeles	10	MRP, Section I.1.D, Page MRP-3 The tentative permit states that potable water is added to the chlorine contact tank, which is not correct. The potable water is added at the Blending Tank. LASAN request to make the following correction: "*The blend of recycled water and diluent water (if potable water is added ~~to~~ at the Blending Tank ~~chlorine contact tank~~).".*	Staff agreed.	Revisions were made to the permit.
City of Los Angeles	11	MRP, Section I.13, Page MRP-5 The tentative permits states that, "Compliance with the primary MCLs is based on running annual average except for those pollutants that are acutely toxic such as nitrate, nitrite, nitrate+nitrite, perchlorate, lead, copper, and…" LASAN observes that the tentative permit does not clearly specify the limits for copper, lead, and perchlorate. LASAN requests clarification on the limits on copper, lead, and perchlorate.	If the primary maximum contaminant levels (MCLs) are not based on a running annual average, then they shall be based on the average of four consecutive samples for total nitrogen and on the average of the initial and confirmation sample for copper, lead, and perchlorate. The recycled water limitations for nitrite, nitrate, and nitrate plus nitrite are not required because compliance with nitrogen species is determined from the total nitrogen limitation. To clarify how compliance with the MCLs will be determined (including those	Revisions were made to the permit.

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			pollutants for which compliance is based on a running annual average), the recycled water limitations in Table 7 were modified and part 13 on page MRP-5 was modified.	
City of Los Angeles	12	MRP, Section II.6, Page MRP-8 In the second sentence of tentative permit MRP, Section II.6, the permit states that "The effluent from each RO train (including each stage) shall be continuously monitored for conductivity." The conductivity meters at the second stages of RO are not required and were not mentioned in the Engineering Report. LASAN requests to make the following correction: *"The effluent from each RO train ~~(including each stage)~~ shall be continuously monitored for conductivity."*	This requirement is based on the State Water Resources Control Board's, Division of Drinking Water (DDW), recommendations in their approval letter of the August 2015 Title 22 Engineering Report dated December 18, 2015 (Attachment A). Recommendation 15.e states: *The Reverse Osmosis (RO) system shall be credited pathogen reduction at this facility in accordance with the amount demonstrated via online monitoring to ensure the integrity of the RO system.* ***TIIRRP AWTF must monitor the effluent of each RO train (including each stage) continuously for conductivity.*** *The daily average and maximum conductivity reading, and the percent of time that the conductivity is greater than 350 micro-Siemens must be reported. The TIIRRP AWTF shall calculate the minimum removal achieved.* The second stage of the RO system treats the reject water from the first stage, and is therefore considered a treatment process of its own. Online conductivity monitoring is required to ensure the integrity of the RO system and confirm that the appropriate pathogen reduction is being achieved.	None necessary.
City of Los Angeles	13	MRP, Section II.7, Page MRP-9	This requirement is based on DDW's recommendations in their approval letter of the	

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		The 0.2 NTU applies to the RO effluent. LASAN requests to make the following correction (typo): *"The microfiltration (MF) membrane effluent and RO product water shall also be monitored for turbidity continuously. The percent of time that the turbidity is greater than 0.2 NTU shall be reported for the ~~MF membrane~~ RO effluent."*	August 2015 Title 22 Engineering Report dated December 18, 2015 (Attachment A). Recommendation 15.c states: ***The micro filtration membrane (MF) effluent shall be monitored for turbidity continuously****. The daily average and maximum turbidity reading and the percent of time that the turbidity is greater than 0.2 NTU needs to be reported.* This requirement is necessary to show that the microfiltration units meet performance standards. Each unit process for which Log Removal Value (LRV) credit is given needs to show independently that it is meeting performance standards, otherwise measuring only one location downstream may mask issues further upstream.	None necessary.
City of Los Angeles	14	MRP, Section III.1.B, Page MRP-9, Table M-1 The tentative permit included new influent monitoring requirements for pH and Total Coliform in Table M-1. The existing permit does not have monitoring requirement for pH and Total coliform. Are there any reasons to have these additional monitoring requirements? a. Currently, pH is being monitored for the raw plant influent and does not change that much through the plant processes because no chemical is added. A chemical (Sulfuric Acid) is being added to the MF filtrate to lower pH for preventing RO membranes from scaling.	The total coliform monitoring for the AWPF influent is required to demonstrate the log reduction credit given to the Terminal Island Water Reclamation Plant (TIWRP). The total coliform monitoring requirement is based on the recommendations in DDW's approval letter of the August 2015 Title 22 Engineering Report dated December 18, 2015 (Attachment A). Recommendation 15.a states: *To demonstrate the log reduction credit given to the TIIRRP Wastewater Treatment Plant (WWTP) and facilities up to the influent of the AWTP, the **WWTP effluent shall be monitored continuously for turbidity and***	None necessary.

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		b. The coliform requirement is for chlorinated tertiary effluent. TIWRP does not chlorinate the tertiary effluent. LASAN requests to remove the pH and Total Coliform in the influent monitoring requirements.	***daily for coliform concentrations.*** *The TIIRRP shall report monthly to the DDW and RWQCB the daily WWTP effluent coliform analysis, the daily WWTP effluent average turbidity, daily WWTP effluent maximum turbidity and the percent of time the WWTP effluent turbidity is greater than 5 NTU.* Since the AWPF influent is equivalent to the TIWRP effluent, total coliform monitoring in the AWPF influent was included in the Tentative Order. The pH monitoring requirement for the AWPF influent is based on DDW recommendation 15j in their approval letter of the August 2015 Title 22 Engineering Report (Attachment A). This recommendation states: *On-line monitoring of **pH**, free chlorine residual, UV dose, UV intensity, flow, and UV transmittance, must be provided at all times.* Since pH is a critical parameter in the approval of the free chlorine radical advanced oxidation process, online pH monitoring is required for the AWPF influent.	

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City of Los Angeles	15	<u>MRP, Section III.2.B, Page MRP-13, Table M-8</u> The tentative permit incorrectly included Corrosivity in Table M-8. Corrosivity is no longer required by the Drinking Water Regulation under Primary MCL, Secondary MCl, NL, or AL. LASAN requests to corrosivity in Table M-8.	Staff agreed. Although the August 2015 Engineering Report (Attachment A) indicates that corrosivity will be monitored in the recycled water, corrosivity is not required to be monitored under 22 CCR, Division 4, Chapter 3, Article 5.2.	Revisions were made to the permit.
City of Los Angeles	16	<u>MRP, Section III.2.D.3-6, Page MRP-14</u> The tentative permit requires for CEC and surrogate removal percentages to be calculated. CECs are for monitoring purposes only. Analytical results are not used for compliance determination since the methods have not been incorporated into 40 CFR Part 136. LASAN requests to remove CECs monitoring "Prior to RO" in Table M-11.	The Order includes Constituents of Emerging Concern (CEC) monitoring and reporting consistent with the State Water Resources Control Board's *Policy for Water Quality Control for Recycled Water* (Recycled Water Policy). The Order does not include limits for CECs; however, the analytical methods need to meet the reporting limits listed in Table M-11. The removal percentages are only required for performance indicator CECs and surrogates to evaluate the operational performance of the treatment process and the effectiveness of the treatment process in removing CECs. Also consistent with the Recycled Water Policy, the Project Sponsors may request removal of the health indicator CECs from the monitoring program if supported by data and a request is submitted for approval by DDW and the Regional Water Board. In addition, this monitoring and reporting requirement is consistent with the August 2015 Engineering Report approved by DDW.	None necessary.

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City of Los Angeles	17	MRP, Section III.2.D.6, Page MRP-15, Table M-11 The tentative permit uses "Reporting Limit" in Table M-11. LASAN requests a definition of "Reporting Limit". Is it is the same as Minimum Reporting Level (MRL)?	Page A-4 of Attachment A of the Recycled Water Policy includes the Reporting Limits for each required CEC monitored. The Reporting Limits are the concentrations at which the analytical method must achieve for monitoring purposes; therefore, they serve the same function as the Minimum Reporting Levels (MRLs).	None necessary.
City of Los Angeles	18	MRP, Section III.2.E.1, Page MRP-16 The tentative permit requires "Project Sponsors shall monitor TIWRP's final effluent continuously for turbidity and daily (7 days per week) for coliform concentrations." LASAN requests to remove this requirement as the monitoring of TIWRP's final effluent is not related to the AWPF's operation. The monitoring is for AWPF's final effluent. LASAN requests to change accordingly: "Project Sponsors shall monitor ~~TIWRP~~AWPF's final effluent continuously for turbidity and daily (7 days per week) for coliform concentrations." In addition, LASAN requests clarification whether "coliform" refers to "total coliform"?	The AWPF treatment system is receiving log reduction credits based on the treatment quality of the TIWRP final effluent. The TIWRP effluent monitoring requirement is based on the recommendations in DDW's approval letter of the August 2015 Title 22 Engineering Report dated December 18, 2015 (Attachment A). Recommendation 15.a states: *To demonstrate the log reduction credit given to the TIIRRP Wastewater Treatment Plant (WWTP) and facilities up to the influent of the AWTP, the* ***WWTP effluent shall be monitored continuously for turbidity and daily for coliform concentrations.*** *The TIIRRP shall report monthly to the DDW and RWQCB the daily WWTP effluent coliform analysis, the daily WWTP effluent average turbidity, daily WWTP effluent maximum turbidity and the percent of time the WWTP effluent turbidity is greater than 5 NTU.* The term "coliform" refers to "total coliform."	None necessary.

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City of Los Angeles	19	MRP, Section III.4, Page MRP-17, Table M-13 The tentative permit requires minimum sampling frequency of "weekly" in Table M-13 should the use of potable water become necessary to supplement recycled water. LASAN requests clarification when the blended water monitoring requirements in Table M-13 begin if the use of potable water is intermittent during the day or during the week (i.e. less than one week).	It is expected that the use of potable water for this project will be intermittent since 100% recycled water is permitted to be injected into the Barrier. For any week that potable water is used to supplement the recycled water supply, the blended water must be monitored for the parameters in Table M-13. If potable water is used to supplement the recycled water for less than one week, this requirement still applies and the blended water must be monitored at least once during that week.	None necessary.
City of Los Angeles	20	MRP, Section IV.4, Page MRP-20 In the existing permit, monthly reports were reverted back to quarterly after one year. However in the tentative permit, in addition to the quarterly reports, monthly reports are also being kept for the duration of the permit. LASAN requests to keep the monthly reports for the first year followed by reverting to quarterly reports to be consistent with the previous practice.	In DDW's approval letter of the August 2015 Engineering Report (Attachment A), DDW recommends monthly reports to ensure compliance with the Groundwater Replenishment Regulations. Monthly reporting is required to ensure the appropriate log removals are being achieved and so that corrective actions can be implemented quickly, if needed, to protect public health and the quality of the groundwater.	None necessary.
City of Los Angeles	21	MRP, Section IV.7.7, Page MRP-21 LASAN request to make the following correction: *"7. TOC results for the RO ~~effluent~~ influent and effluent including the average and maximum, and the percent of time that the TOC is greater than 0.5 mg/L."*	Staff agreed.	Revisions were made to the permit.

Commenter	#	Comment	Response	Action Taken
Comments received from the Water Replenishment District of Southern California (WRD) on September 14, 2016				
WRD	22	<u>Nitrogen Compounds Table M-16, page MRP-19</u> To be consistent with total nitrogen in footnote16, Table M-16 should read "Nitrate-N" and "Nitrite-N."	Staff agreed.	Revisions were made to the permit.
WRD	23	<u>Total Residual Chlorine Groundwater Monitoring</u> We have a letter (see attached) dated June 07, 2010, reducing frequency of some analytes including Total Residual Chlorine to Annual, which was confirmed in the October 14, 2010 adopted Order (attached), so we request keeping the frequency as Annual instead of going back to Quarterly.	Staff agreed. Total chlorine residual was included as a quarterly groundwater monitoring requirement in the DDW-approved August 2015 Engineering Report (Attachment A); however, Order No. R4-2010-0183 amended Order No. R4-2003-0134 and revised the groundwater monitoring requirement for total residual chlorine from quarterly to annually. In addition, quarterly groundwater monitoring is not required in the regulations.	Revisions were made to the permit.
Comments received from the Heal the Bay on September 15, 2016				
Heal the Bay	24	On behalf of Heal the Bay, we submit the following comments in support of the *Proposed Waste Discharge Requirements and Water Recycling Requirements for Harbor Water Recycling Project – Dominguez Gap Barrier Project*. Heal the Bay is an environmental organization with over 15,000 members dedicated to making the coastal waters and watersheds of greater Los Angeles safe, healthy, and clean. We appreciate the opportunity to provide comments on the project.	We thank Heal the Bay for their comments in support of the tentative permit.	None necessary.

Commenter	#	Comment	Response	Action Taken
		We are pleased to see that the City of Los Angeles, Bureau of Sanitation (LASAN) remains committed to expanding their use of recycled water as a reliable source of injection water into the Dominguez Gap Barrier Project to fortify against seawater intrusion. Since 1994, LASAN was prescient enough to see an opportunity as Terminal Island Water Reclamation Plant was sending expensively treated effluent out into the ocean. Upon the allowance of a little more treatment, they could provide treated water that under certain circumstances could become a substitute for valuable potable water. By injecting this treated effluent into the Dominguez Gap starting in 2006, the Terminal Island Water Reclamation Plant successfully began freeing up an additional six million gallons of potable water a day. With the implementation of this second phase, scheduled to be complete in 2017, which doubles the reclamation plant's output from 6 to 12 MGD, LASAN will soon be able to use their recycled water to constitute 100% of their injection well water. This frees up an additional 6 million gallons of potable water a day for a drought-plagued Southern California.		

Attachment A

DDW's Approval Letter for the August 2015 Engineering Report for the Expansion of the Advanced Water Purification Facility

CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

2015 DEC 28 PM 12:22

CALIFORNIA REGIONAL WATER
QUALITY CONTROL BOARD
LOS ANGELES REGION

State Water Resources Control Board
Division of Drinking Water

December 18, 2015

Samuel Unger, Executive Officer
Regional Water Quality Control Board
Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

Dear Mr. Unger

Terminal Island Indirect Reuse Replenishment Project Engineering Report

The State Water Resources Control Board, Division of Drinking Water (DDW), has reviewed *Amended Engineering Report for the Terminal Island Water Reclamation Plant Advanced Water Purification Facility Expansion: Dominguez Gap Barrier Project, dated August 2015* (Title 22 Engineering Report). On November 3, 2015, a Public Hearing was held and no comments were received by the City of Los Angeles or DDW. DDW approves the August 2015 Title 22 Engineering Report and the DDW recommendation to the Los Angeles Regional Water Quality Control Board (RWQCB) is that an initial permit allowing the Terminal Island Project to operate the advanced treatment facility as described in the Engineering Report be issued. The proposed expansion project will be permitted by the RWQCB. DDW provides comments on the project for compliance with the Groundwater Replenishment Regulations.

DDW recommends the RWQCB insert the following conditions in the permit:

1. The Terminal Island Indirect Reuse Replenishment Project (TIIRRP) shall comply with Article 5.2 – Indirect Potable Reuse: Groundwater Replenishment – Subsurface Application, Sections 60320.200 through 60320.228 of the Title 22, California Code of Regulations.
2. The TIIRRP advanced water treatment facility (AWTF) shall conduct startup and commissioning testing that meets the requirement in §60320.201. Advanced Treatment Criteria. A test protocol must be submitted for approval prior to commencement of testing.
3. TIIRRP AWTP shall meet the requirements in §60320.122. Operation Optimization and Plan.
4. Per §60320.122. Operation Optimization Plan, prior to operation, TIIRRP shall submit an Operation Optimization Plan for review and approval. At a minimum, the Operation Optimization Plan shall identify and describe the operations, maintenance, analytical methods, monitoring (grab and online) necessary for the GRRP to meet the requirements and the reporting of monitoring results.

5. AWTP commissioning shall validate and confirm the actual setpoints for free chlorine and UV parameters, demonstrating that the advanced oxidation process (AOP) will provide no less than 0.5-log (69 percent) reduction of 1,4-dioxane..
6. TIIRRP shall follow what is described in the approved Operation Optimization Plan.
7. The TIIRRP Operation Optimization Plan shall, at all times, be representative of the current operations, maintenance, and monitoring of the GRRP.
8. TIIRRP AWTF shall provide continuous real-time monitoring and reporting of UV dose and free chlorine residual leaving the AOP.
9. TIIRRP must have alarms as stated in the approved Title 22 Engineering Report. Commissioning shall validate and confirm the actual setpoints and they shall be specified in the Operation Optimization Plan.
10. For reporting, TIIRRP AWTF shall submit to DDW a summary of monthly operational parameters for UV dose and free chlorine residual.
11. TIIRRP shall verify that the recycled municipal wastewater used for a GRRP meets the requirements in §60320.106. Wastewater Source Control.
12. Per §60320.108 (a) Pathogenic Microorganism Control (a), TIIRRP AWTF shall operate the GRRP such that the recycled municipal wastewater used as recharge water receives treatment that achieves at least 12-log enteric virus reduction, 10-log Giardia cyst reduction, and 10-log Cryptosporidium oocyst reduction.
13. If a pathogen reduction in §60320.108 (a) is not met based on the on-going monitoring required pursuant to subsection (c), within 24 hours of being aware TIIRRP shall immediately investigate the cause and initiate corrective actions. TIIRRP shall immediately notify the DDW and Regional Board if the TIIRRP fails to meet the pathogen reduction criteria longer than 4 consecutive hours, or more than a total of 8 hours during any 7-day period. Failures of shorter duration shall be reported to the Regional Board by TIIRRP no later than 10 days after the month in which the failure occurred.
14. Per the approved Title 22 Engineering Report, an initial maximum Recycled Water Contribution (RWC) shall be 1.0.
15. The TIIRRP contains a multi-barrier treatment facility in order to comply with the Groundwater Replenishment Regulations. The following monitoring (grab and online) and reporting requirements will need to be included in the Operation Optimization Plan and reported to the DDW and the RWQCB monthly.
    a. To demonstrate the log reduction credit given to the TIIRRP Wastewater Treatment Plant (WWTP) and facilities up to the influent of the AWTP, the WWTP effluent shall be monitored continuously for turbidity and daily for coliform concentrations. The TIIRRP shall report monthly to the DDW and RWQCB the daily WWTP effluent coliform analysis, the daily WWTP effluent average turbidity, daily WWTP effluent maximum turbidity and the percent of time the WWTP effluent turbidity is greater than 5 NTU.
    b. The TIIRRP shall monitor and report the AWTP influent for turbidity continuously, TOC and total coliform weekly. If a sample of the influent to the AWTP is positive for total coliform, the sample shall be analyzed for *E.coli*. Turbidity measurements shall be recorded every 15 minutes and the daily average and daily maximum shall be reported.

c. The micro filtration membrane (MF) effluent shall be monitored for turbidity continuously. The daily average and maximum turbidity reading and the percent of time that the turbidity is greater than 0.2 NTU needs to be reported.

d. Membrane integrity testing (MIT) shall be performed on each of the MF membrane units, a minimum of once every 24 hours of operation.

   i. The log removal value (LRV) for Cryptosporidium shall be calculated and the value reported after the completion of each MIT.

   ii. The MIT shall have a resolution that is responsive to an integrity breach on the order of 3 µm or less.

   iii. Calculations of the LRV shall be based on a pressure decay rate (PDR) value with an ending pressure that provides a resolution of 3 µm or less.

   iv. The MIT shall have a sensitivity to verify a LRV equal to or greater than 4.0.

e. The Reverse Osmosis (RO) system shall be credited pathogen reduction at this facility in accordance with the amount demonstrated via online monitoring to ensure the integrity of the RO system. TIIRRP AWTF must monitor the effluent of each RO train (including each stage) continuously for conductivity. The daily average and maximum conductivity reading, and the percent of time that the conductivity is greater than 350 micro-Siemens must be reported. The TIIRRP AWTF shall calculate the minimum removal achieved.

f. The RO effluent will be monitored for TOC via grab sample weekly and reported in the monthly report. The RO influent and effluent will be monitored for TOC online and reported in the monthly report. The daily average and maximum TOC reading and the percent of time that the TOC is greater than 0.5 mg/L must be reported.

g. In accordance with the Recycled Water Policy, NDMA and Sucralose are performance surrogates for RO and shall be analyzed quarterly both prior to the RO and after RO prior to the AOP.

h. The UV/peroxide system shall be operated, as has been designed, to meet the groundwater recharge regulations, providing a minimum 0.5-log reduction of 1,4-dioxane. The UV system is a Wedeco K reactor, which was pilot-tested. Based upon this testing, the UV dose was expected to be 920 mJ/cm^2 or higher. AOP commissioning will validate and confirm the actual setpoints for free chlorine and UV parameters

i. The UV system must be operated with online monitoring and built-in automatic reliability features that must trigger automatic diversion of effluent to waste by the following critical alarm setpoints.

   i. UV dose less than 920 mJ/cm^2, or a new setpoint approved by DDW after the AOP commissioning.

   ii. UV transmittance less than 95%

   iii. complete UV reactor failure

   iv. Free chlorine residual less than 2.0 mg/L, or a new setpoint approved by DDW after the AOP commissioning.

j. On-line monitoring of pH, free chlorine residual, UV dose, UV intensity, flow, and UV transmittance, must be provided at all times. Flow meters, pH meters, free

chlorine residual analyzers, UV intensity sensors, and UV transmittance monitors must be properly calibrated.

k. At least monthly, all duty UV intensity sensors must be checked for calibration against a reference UV intensity sensor.

l. The UV transmittance meter must be inspected and checked against a reference bench-top unit weekly to document accuracy.

m. The monitoring and reliability features, including automatic shutdown capability, shall be demonstrated to DDW during a plant inspection prior to final approval.

n. Based on the calculation of log reduction achieved daily by the entire treatment facility, from the WWTP to the public water supply wells, the TIIRRP will report a "Yes" or "No" for each day as to whether the necessary log reductions (12-logs virus, 10-logs for Giardia and Cryptosporidium) have been achieved. An overall log reduction calculation will be provided only for those days when a portion of the treatment facility does not achieve the necessary log reductions.

o. TIIRRP shall sample the monitoring wells as specified in the approved Operation Optimization Plan. TIIRRP shall take these samples monthly for the first year of operation. TIIRRP may request, from DDW, a reduction in this monitoring after the first year.

16. The TIIRRP shall submit the required annual and five-year reports per Section 60320.228.

Should you have any questions regarding the content of this letter, please feel free to contact me at (brian.bernados@waterboards.ca.gov; 619.525.4497) or Randy Barnard (randy.barnard@waterboards.ca.gov; 619.525.4022).

Sincerely,

Brian Bernados

Brian Bernados, P.E.
Technical Specialist

Cc Kurt Souza, Chief, Southern California Section

Mark A. Starr, TIWRP Manager
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