

**STATE OF CALIFORNIA  
REGIONAL WATER QUALITY CONTROL  
BOARD CENTRAL COAST REGION**

**STAFF REPORT FOR REGULAR MEETING OF MARCH 7-9, 2017**

Prepared on January 30, 2016

**ITEM NUMBER:** 16

**SUBJECT:** Waste Discharge Requirements and Water Reclamation Requirements for the Pure Water Monterey Advanced Water Purification Project, Monterey Regional Water Pollution Control Agency, Monterey County

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**KEY INFORMATION**

Facility Name: Pure Water Monterey Advanced Water Purification Project  
Facility Owner: Monterey Regional Water Pollution Control Agency  
Location: Two miles north of the city of Marina, Monterey County  
Discharge Type: Advanced treatment of secondary treated sewage, agricultural wash waters, storm water, urban agricultural runoff, and surface and tile drain waters will be injected into the Seaside Basin for groundwater recharge.  
Design Flow: 4.0 MGD  
Current Flow: None  
Treatment Type: Advanced treatment technologies including ozone pretreatment, membrane filtration, reverse osmosis, advanced oxidation, and water product stabilization.  
Disposal: Brine will flow to the MRWPCA's existing ocean outfall.  
Existing Orders: None

**This Action:** Adopt Order No. R3-2017-0003

**SUMMARY**

The Monterey Regional Water Pollution Control Agency (MRWPCA), in partnership with the Monterey Peninsula Water Management District (MPWMD), has developed the "Pure Water Monterey Advanced Water Purification Project" (Project) to deliver an average of 3,500 acre-feet per year (AFY) of purified recycled water to the Seaside Groundwater Basin, in Monterey County.

The Central Coast Water Board will consider prescribing water reclamation requirements for this project. The Central Coast Water Board has consulted with and received recommendations from the State Water Board's Division of Drinking Water regarding the project, as required by law. This staff report describes the project and the proposed water reclamation requirements and monitoring requirements.

This Project will help the California American Water Company (CalAm) to reduce diversions

from the Carmel River. CalAm is under a State Water Resources Control Board (SWRCB) cease and desist order (SWRCB Order No. 2009-0060) to cease over-pumping of the Carmel River. If the Water Board approves this draft Order to allow recycling and groundwater recharge, CalAm will then be able to withdraw 3,500 AFY from groundwater, reducing its dependence upon the Carmel River once the project is completed.

The draft Order sets effluent limits at maximum contaminant limits (MCLs) on a constituent-by-constituent basis and includes an extensive monitoring and reporting program (MRP) to ensure that public health and beneficial uses are protected.

Staff recommends that the Water Board adopt Order No. R3-2017-0003 as proposed.

## **DISCUSSION**

### **Background**

MRWPCA was created in 1972, and currently serves a population of approximately 250,000. MRWPCA provides regional wastewater treatment, disposal, and reclamation facilities for its member entities: Monterey, Pacific Grove, Del Rey Oaks, Sand City, Marina, Salinas, the Seaside County Sanitation District, the Castroville, Moss Landing, and Boronda community services districts, and Fort Ord lands. Each member entity retains ownership and operating and maintenance responsibility for their respective wastewater collection and transport systems.

MRWPCA's proposed Advanced Water Purification Facility (AWPF) will take secondary treated water from its regional treatment plant (RTP) and use advanced treatment technologies to further treat the water to meet Title 22 standards for indirect potable reuse. This highly treated water will then be reinjected into the Seaside Basin's shallow and deep aquifers. Currently wastewater from the RTP consists of undisinfected secondary clarifier effluent that is (1) discharged to the ocean pursuant to National Pollutant Discharge Elimination System (NPDES) Permit (Order No. R3-2014-0013) or (2) used as influent for the co-located Salinas Valley Reclamation Project for production of tertiary recycled water regulated under Order No. 94-82. This proposed Order only addresses water that will be treated at the AWPF and then reinjected into the Seaside Basin.

The goal of the Project is to enable CalAm to reduce its diversions from the Carmel River system by up to 3,500 AFY by injecting the same amount of water produced by the AWPF into the Seaside Basin.

The Project will include a drought reserve component by providing for an additional 200 AFY of product water that will be injected in the Seaside Basin in wet and normal years, up to a total of 1,000 AF. Thus, the Project will inject up to 3,700 AF of product water into the Seaside Basin in some years, rather than the 3,500 AF needed for CalAm supplies. This will result in a "banked" drought reserve. During dry years, less than 3,500 AF of product water will be delivered to the Seaside Basin. CalAm will be able to extract the banked water to make up the difference to its supplies, with the intent that its extractions and deliveries will not fall below 3,500 AFY.

### Groundwater Pumping

In this basin, groundwater extractions occur for both domestic and agricultural supply uses. The Seaside Basin was adjudicated in 2008 due to overdraft and sea water intrusion conditions. The Seaside Groundwater Basin Watermaster reported that for wells within its jurisdiction in 2016, 4,565 AF of water was produced.

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from the Carmel River. CalAm is under a State Water Resources Control Board (SWRCB) cease and desist order (SWRCB Order No. 2009-0060) to cease over-pumping of the Carmel River. CalAm will be able to withdraw 3,500 AFY from groundwater, reducing its dependence upon the Carmel River once the project is completed.

Recycled Water

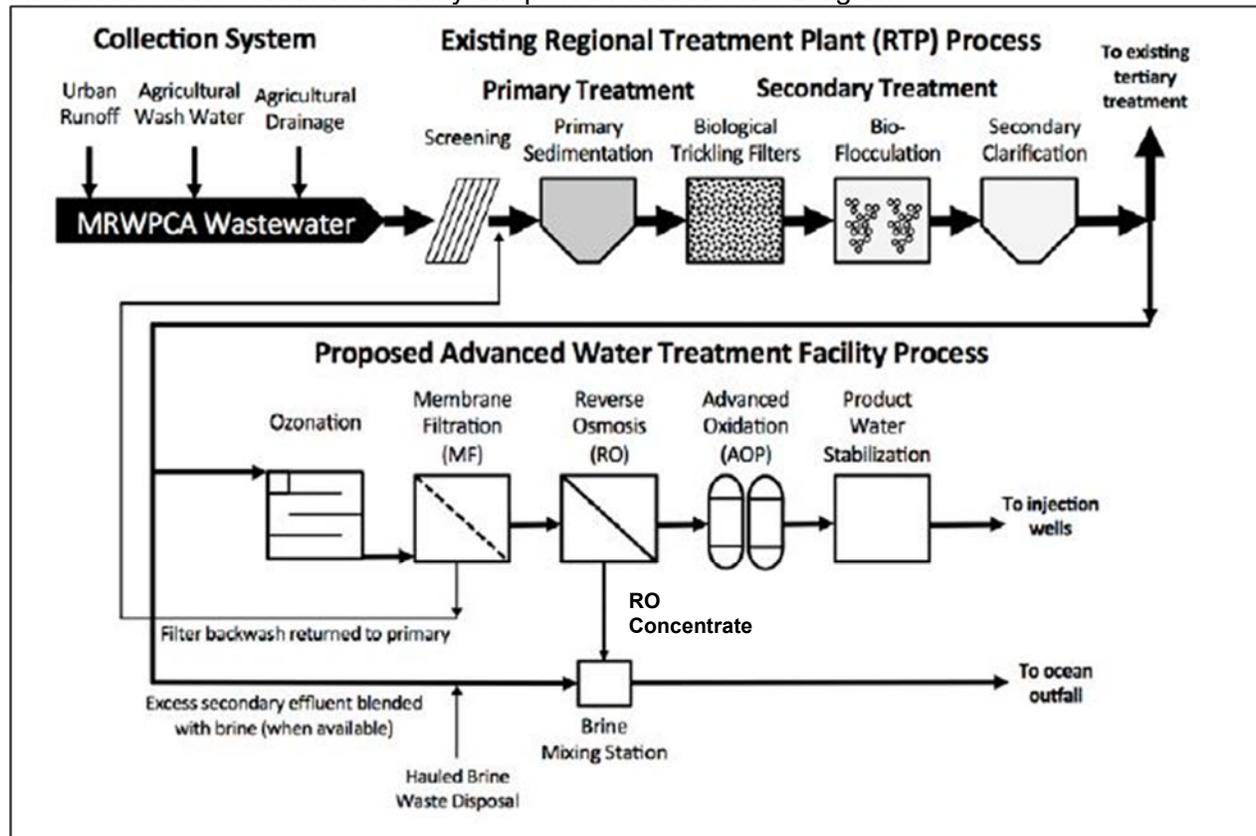
The Project will also result in additional recycled water becoming available for irrigation in the northern Salinas Valley. An existing tertiary recycled water facility at the Regional Treatment Plant (RTP) that is part of the Salinas Valley Reclamation Project (SVRP) will be provided additional source waters (treated first at the RTP) in order to provide supplementary tertiary recycled water for use in agricultural irrigation. It is anticipated that in normal and wet years approximately 4,500 to 4,750 AFY of additional recycled water supply could be created for agricultural irrigation purposes. In drought conditions, the Project could provide up to 5,900 AFY for crop irrigation. This irrigation water is not regulated via this Order.

**Project Description**

The AWPf will be located adjacent to the existing RTP and will consist of:

- Supply water pump station
- Ozone pre-treatment
- Low-pressure membrane filtration
- Reverse osmosis treatment
- UV disinfection with advanced oxidation
- Product water stabilization
- Product water pump station

Advanced Water Treatment Facility Simplified Process Flow Diagram

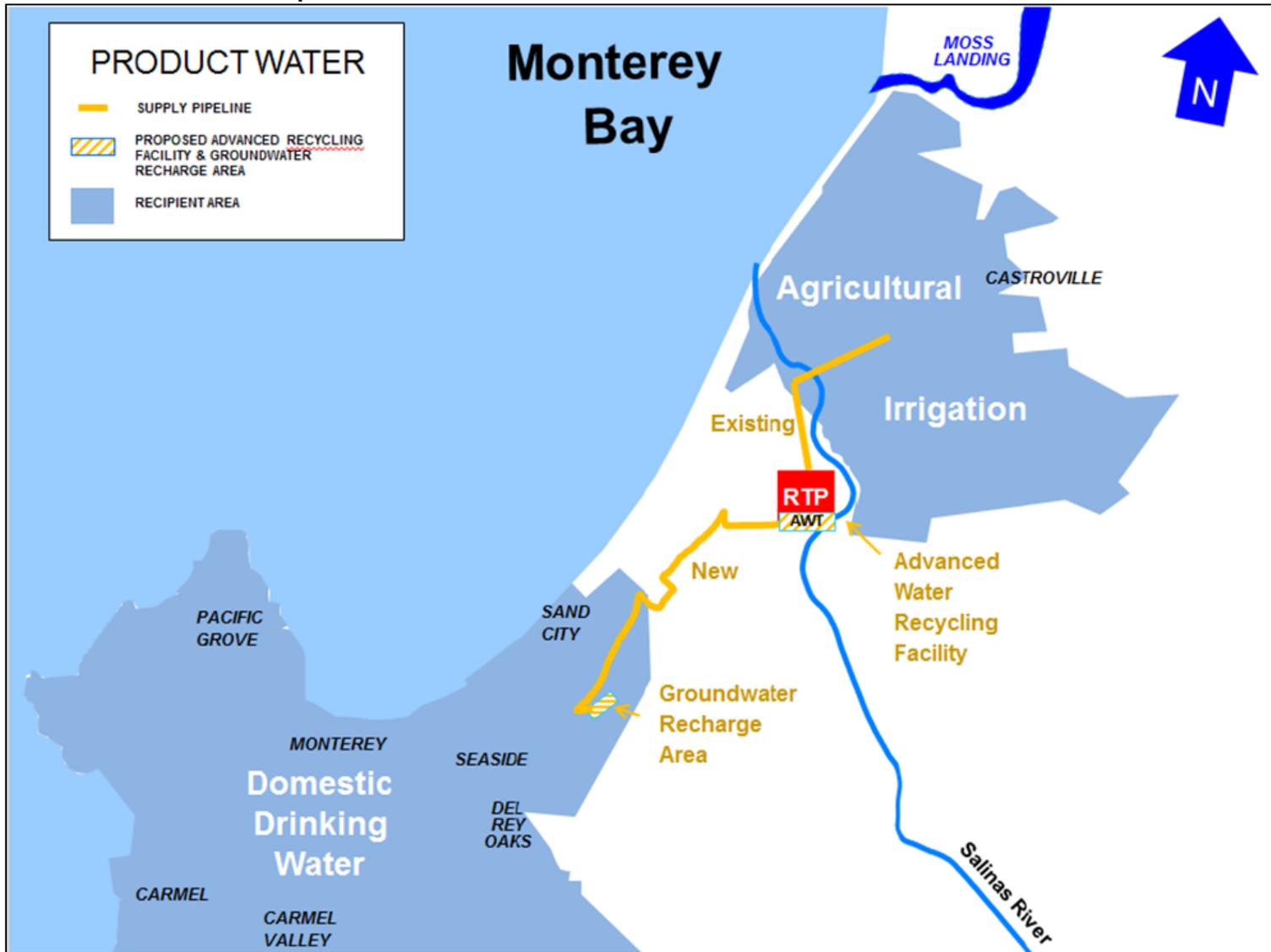


The RTP will treat secondary treated municipal sewage, agricultural wash water from the Salinas Industrial Waste Treatment Facility, storm water flows from the southern part of Salinas, storm water and agricultural runoff from the Reclamation Ditch, and surface and agricultural tile drain waters from the Blanco Drain. The treated water (feed water) is influent to the AWPf.

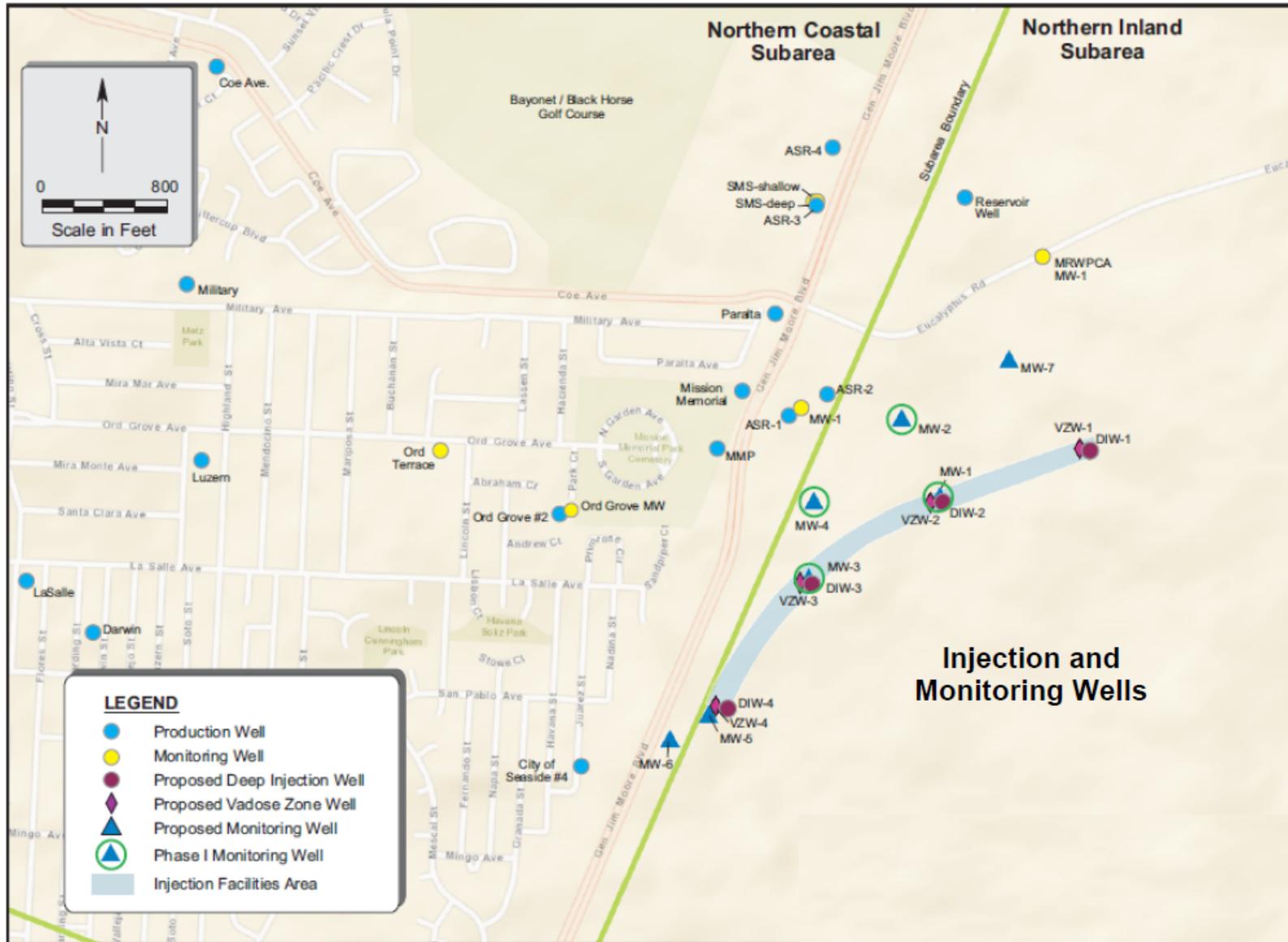
The reverse osmosis concentrate from the AWPf will be sent to MRWPCA's existing ocean outfall for disposal, which is regulated by Central Coast Water Board Order No. R3-2014-0013, NPDES No. CA0048551. Chemical cleaning waste and analytical instrument waste will be routed back to the RTP headworks or trickling filters for treatment. The Central Coast Water Board will update the NPDES permit in the future prior to any wastes from the AWPf being discharged to the ocean to ensure protection of beneficial uses.

Advanced treated water from the AWPf will be conveyed by pipeline to the Seaside Basin for groundwater recharge using both deep injection and vadose zone wells. The injected water will then mix with existing groundwater and be stored for future urban uses, including use as a potable water source.

Facilities Location Map



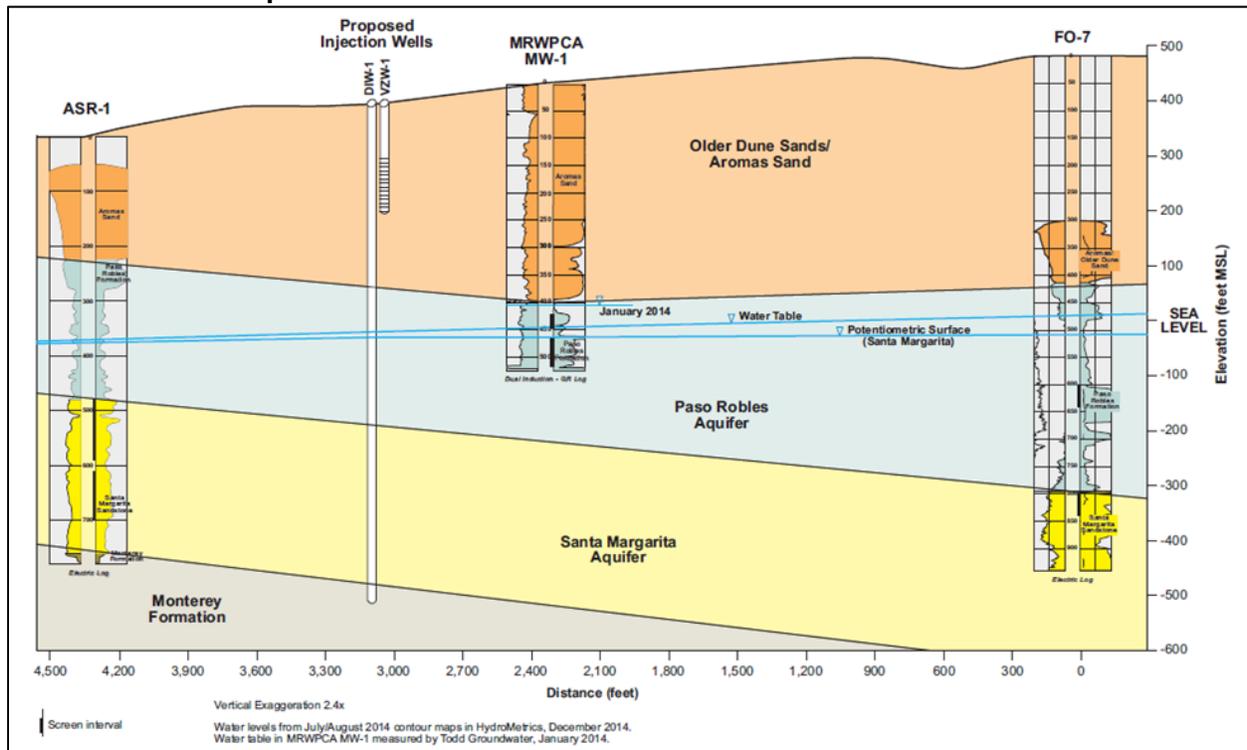
Proposed Injection Wells, Monitoring Wells, and Production Wells



## Proposed Injection Wells, Monitoring Wells, and Production Wells

MRWPCA intends to install four deep injection wells and four in the vadose zone arrayed in pairs, with one deep and one vadose zone (shallow) well in each cluster. Approximately 10% of the highly treated water will be injected into the vadose zone wells and 90% will be injected into the deep wells (Santa Margarita aquifer). A cross-sectional diagram of the aquifers including existing and proposed wells is shown below.

### Seaside Basin Aquifer Cross-Section



**Monitoring Wells** - MRWPCA will construct two monitoring wells down gradient of each injection well cluster. One monitoring well must be located between two weeks and six months travel time and at least 30 days upgradient of the nearest drinking water well, and one monitoring well must be located between each well cluster and the nearest down gradient drinking water well. The monitoring wells will allow samples to be obtained independently from each aquifer and validated as receiving recharge water from the Project.

**Water Supply Wells Near the Injection Area** - Most supply wells near the injection facilities are located in the Northern Coastal Subarea. The closest water supply wells include Seaside No. 4 (operated by the City of Seaside) and two aquifer storage and recovery (ASR) wells, ASR-1 and ASR-2 (operated by the Monterey Peninsula Water Management District for CalAm). Each of these wells is located about 1,000 feet down gradient from a Project injection well.

**Recycled Water Retention Time** - The SWRCB Division of Drinking Water (DDW) has adopted groundwater replenishment regulations for the recharge of recycled water. The DDW regulations contain requirements for underground retention time of recycled water that could also potentially affect well spacing. Recycled water must be retained underground for a

sufficient period of time to identify and respond to any treatment failure so that inadequately treated recycled water does not enter a potable water system (referred to as the response retention time). The response retention time must be at least two months. The 1,000-ft distance between proposed project wells and the closest down gradient production wells is expected to result in a travel time of approximately one year. The Order requires that MRWPCA propose a tracer study to DDW and the Central Coast Water Board and, after the study is approved, to conduct the study to confirm the response retention time.

### Background Water Quality

MRWPCA conducted studies of background water quality and available assimilative capacity in the Seaside Basin as required by the Recycled Water Policy (State Water Resources Control Board Resolution No. 2013-0003). Where there is no salt and nutrient management plan in place, the Recycled Water Policy requires a calculation of the baseline assimilative capacity and then a determination of whether the impacts of the project will exceed that capacity over at least a ten year time frame. Compliance with antidegradation is demonstrated by utilizing less than 10 percent of the available assimilative capacity in a basin/sub-basin.

The four production wells nearest to the proposed injection well array were used to establish existing groundwater water quality and assimilative capacity of the aquifer and sub-aquifers. The most recent five years of data (2011-2016) were analyzed for each production well. Two of the wells draw their water from both the Paso Robles and Santa Margarita aquifers (Ord Grove No. 2 and Paralta). One well draws water exclusively from the Paso Robles aquifer (City of Seaside No. 4), and one well draws exclusively from the Santa Margarita aquifer (ASR-1). See the "Seaside Basin Aquifer Cross-Section" diagram (below). Average five-year constituent concentrations by production well and basin-wide averages are presented in the table below.

**Existing Water Quality in Nearby Production Wells**

| Constituent    | City of Seaside No.4 | ASR-1 | Ord Grove No. 2 | Paralta | Basin-Wide Averages | Maximum Contaminant Limit (MCL) |
|----------------|----------------------|-------|-----------------|---------|---------------------|---------------------------------|
| Aluminum       | 50                   | 50    | 26              | 50      | 42                  | 1,000                           |
| Arsenic        | 1.2                  | 1.8   | 2.0             | 2.5     | 2.1                 | 10                              |
| Barium         | 28                   | 100   | 100             | 100     | 94                  | 1,000                           |
| Boron          | 46                   | 95    | 132             | 96      | 108                 | 750                             |
| Chloride       | 72                   | 63    | 129             | 94      | 103                 | 250                             |
| Chromium-total | 3.6                  | 9.3   | 10              | 10      | 9.1                 | 50                              |
| Chromium VI    | -                    | 1.0   | 0.8             | 2.3     | 1.4                 | 10                              |
| Lead           | 5                    | 3.7   | 5.0             | 5.0     | 4.5                 | 15                              |
| Nitrate as N   | 1.9                  | 0.1   | 1.7             | 0.5     | 1.1                 | 10                              |
| Sodium         | 50                   | 60    | 94              | 79      | 79.7                | 69                              |
| Sulfate        | 13                   | 77    | 63              | 58      | 54.9                | 250                             |
| TDS            | 237                  | 406   | 524             | 435     | 449                 | 500                             |
| TOC            | 0.5                  | 1.0   | 0.6             | 0.6     | 0.7                 | -                               |

\*Source: averages of well water quality data submitted by MRPCA on November 9, 2016

\*Concentrations are in  $\mu\text{g/L}$  except chloride, nitrate, sodium, sulfate, TDS, and TOC, which are mg/L

In addition to the groundwater quality evaluation, MRWPCA constructed a three-dimensional

solute transport model to predict localized and basin-wide groundwater quality changes resulting from the mixing of injected recycled water and ambient groundwater after 25 years. The model analyzed the percentage of assimilative capacity consumed by the Project. The results of the evaluation are presented in the table below.

#### Percentage of Assimilative Capacity Consumed after 25 Years

| Modeled Layer    | Volume-Weighted Average Recycled Water Percentage |                 |                  |             |              |
|------------------|---|-----------------|------------------|-------------|--------------|
|                  | Northern Coastal                                  | Northern Inland | Southern Coastal | Laguna Seca | All Subareas |
| 1                | 0.1%  | 0.0%            | 0.0%             | 0.0%        | 0.0%         |
| 2                | 0.5%  | 2.2%            | 0.0%             | 0.0%        | 1.0%         |
| 3                | 4.0%  | 2.1%            | 0.0%             | 0.0%        | 1.7%         |
| 4                | 2.1%  | 0.6%            | 0.0%             | 0.0%        | 0.8%         |
| 5                | 5.3%  | 7.2%            | 0.0%             | 0.0%        | 3.8%         |
| Paso Robles      | 1.8%  | 1.7%            | 0.0%             | 0.0%        | 1.1%         |
| Santa Margarita  | 5.3%  | 7.2%            | 0.0%             | 0.0%        | 3.8%         |
| All Model Layers | 3.3%  | 4.2%            | 0.0%             | 0.0%        | 2.4%         |

The assimilative capacity in an aquifer is the difference between existing “baseline” water quality concentrations and the respective maximum contaminant limits (MCLs) which if exceeded, would adversely impact the beneficial use(s) of the resource. Assimilative capacity is assessed on a constituent-by-constituent basis. MRWPCA algebraically demonstrated in a technical memorandum dated November 18, 2016, that when effluent limits are equal to the applicable water quality objective for each constituent, the percentage of recycled water present in the aquifer equals the percentage of assimilative capacity consumed. This analysis confirmed that less than 10% of the basin’s assimilative capacity will be utilized by this project and that beneficial uses will be protected. The percentages presented in the table above equal the percentages of assimilative capacity consumed by this project in the Seaside Basin and sub-basins.

#### State Board Division of Drinking Water

State authority to oversee production and reuse of recycled water use is shared by the State Water Board Division of Drinking Water (DDW) and the Regional Water Boards. DDW is the division with the primary responsibility for establishing water recycling criteria under Title 22 of the Code of Regulations to protect the health of the public using the groundwater basins as a source of potable water. One of DDW’s functions is to review and approve Title 22 engineering reports for recycled water projects, including indirect potable reuse projects such as this Project. On October 21, 2016, MRWPCA submitted its final Title 22 engineering report to DDW and the Central Coast Water Board. The final engineering report was accepted by DDW on November 7, 2016, and DDW submitted a letter to the Central Coast Water Board with a list of recommended conditions to properly regulate the Project on November 10, 2016. The proposed Order requires that the Discharger comply with all of DDW’s recommended conditions.

## Proposed Order

The draft Order sets effluent limits at maximum contaminant limits (MCLs) on a constituent-by-constituent basis and includes an extensive monitoring and reporting program (MRP) to ensure that public health and beneficial uses are protected. A pilot plant and demonstration project (reported in the Project's Title 22 approved engineering report) demonstrated that a high level of treatment, resulting in water quality considerably better than MCLs, is possible with the unit processes proposed. MRWPCA argued, however, that more operational flexibility was needed than would have been afforded if effluent limits were set according to the pilot plant's operational results. MRWPCA stated that such flexibility was needed due to the varying nature of the different feed waters entering the RTP and the various operational and equipment choices that were anticipated (e.g., RO membrane selection). MRWPCA demonstrated, in a technical memorandum dated November 18, 2016, that beneficial uses will be protected by setting effluent limits at the MCLs for the individual constituents and ensuring that less than 10 percent of the Seaside Basin's available assimilative capacity will be consumed by the project. Staff agreed and has proposed effluent limitations for the AWTF as follows:

### Reinjected Recycled Water Discharge Limits

| Constituents                 | Units     | Concentration | Monitoring Frequency | Compliance Interval                                   |
|------------------------------|-----------|---------------|----------------------|---|
| *Arsenic                     | mg/L      | 0.01          | Monthly              | Running Annual Average                                |
| *Boron                       | µg/L      | 750           | Monthly              | Running Annual Average                                |
| *Chloride                    | mg/L      | 250           | Monthly              | Running Annual Average                                |
| *Nitrate as N                | mg/L      | 10            | Weekly               | Sample Result: no averaging                           |
| **Nitrogen - Total           | mg/L      | 10            | Twice per Week       | Average of Last 4 Results                             |
| *Sodium                      | mg/L      | 69            | Monthly              | Running Annual Average                                |
| *Sulfate                     | mg/L      | 250           | Monthly              | Running Annual Average                                |
| *TDS                         | mg/L      | 500           | Monthly              | Running Annual Average                                |
| **Total Organic Carbon (TOC) | mg/L      | 0.5           | Weekly               | 20-week running average and average of last 4 results |
| **Total Coliform             | MPN/100mL | <2.2          | Daily                | 7-day Median  |

*\*Limits equal to water quality objectives, except \*\*TOC, total nitrogen, and total coliform, which are Title 22 limits*

With concurrence from DDW, Water Board staff has drafted the proposed Order to reflect a project description that differs in some minor ways from that which was in the Title 22 engineering report approved by DDW on November 10, 2016. MRWPCA will need to update the engineering report for this project to reflect the changes as required in General Requirements #9 of the Order.

### State Water Resources Control Board Policies

The **Sources of Drinking Water Policy** (Resolution No. 88-63) provides that all waters of the state, with certain exceptions, are to be protected as existing or potential sources of municipal and domestic supply. Exceptions include waters with existing high total dissolved solids (i.e., greater than 3,000 mg/L), low sustainable yield (less than 200 gallons per day for a single well), waters with contamination that cannot be treated for domestic use using best management practices or best economically achievable treatment practices, waters within particular municipal, industrial, and agricultural wastewater conveyance and holding facilities, and regulated geothermal ground waters. This proposed Order protects existing or potential sources of drinking water and is therefore consistent with Resolution No. 68-63.

Resolution No. 68-16 established an **antidegradation policy** for the State Water Board and Regional Water Boards. Resolution No. 68-16 requires that existing high quality of waters be maintained unless a change is demonstrated to be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial uses of waters, and will not result in water quality less than that prescribed in applicable policies. Resolution No. 68-16 also requires that waste discharge requirements be prescribed for discharges to high-quality waters that will result in the best practicable treatment or control of the discharge necessary to ensure that a pollution or nuisance will not occur and the highest water quality consistent with maximum benefit to the people of the State will be maintained. The proposed Order is consistent with Resolution No. 68-16 because it conforms to the more recent Recycled Water Policy antidegradation requirements for recycled water projects.

A goal of the **Recycled Water Policy** (Resolution No. 2013-0003) is to increase the beneficial use of recycled water from municipal wastewater sources in a manner consistent with state and federal water quality laws and regulations. The Policy directs the Regional Water Boards to collaborate with generators of municipal wastewater and interested parties in the development of salt and nutrient management plans (SNMPs) to manage the loading of salts and nutrients to groundwater basins in a manner that is protective of beneficial uses, thereby supporting the sustainable use of local waters. No SNMP has been adopted by the Central Coast Water Board for the Seaside Basin to date, and it is not anticipated that an SNMP will be adopted for the Seaside Basin in the foreseeable future.

The Recycled Water Policy states that until such time as a SNMP has been approved by the Water Board and is in effect, compliance with Resolution No. 68-16 for projects that consume less than 10 percent of the available assimilative capacity in a basin/sub-basin may be demonstrated by conducting an antidegradation analysis verifying the use of assimilative capacity.

The proposed Order supports the sustainable use of local waters and confirms that the Project will consume less than 10 percent of available assimilative capacity and is therefore consistent with the Sources of Drinking Water, Recycled Water, and antidegradation policies.

### ENVIRONMENTAL SUMMARY

An environmental impact report (EIR) was prepared for the proposed Pure Water Monterey Advanced Water Purification Project with MRWPCA serving as the lead agency. Public meetings to provide information about the Project and CEQA process were held on May 20 and 21, 2015.

MRWPCA adopted Resolution No. 2015-24 on October 8, 2015, after a public hearing, which certified the final EIR, adopted the CEQA findings, approved mitigation measures and a mitigation monitoring and reporting program, adopted a statement of overriding considerations, and approved the project as modified.

The Central Coast Water Board is a responsible agency pursuant to CEQA (CEQA Guidelines section 15096). The Central Coast Water Board has considered the EIR and makes its own conclusions in this Order on whether and how to approve the water reclamation requirements for the project. The EIR identified three potentially significant environmental effects within the Central Coast Water Board's jurisdiction that can be mitigated to less than significant levels. The three impacts and their associated mitigation measures follow below. The proposed order requires MRWPCA to comply with the mitigation measures specified in the EIR.

**BF-1: Habitat Modification Due to Construction of Diversion Facilities.** Construction of the proposed Reclamation Ditch and Tembladero Slough diversions could indirectly result in habitat modifications for endangered or threatened fish species as a result of construction activities and dewatering the constructions.

**Mitigation Measure BT-1a (see below under Biological Resources: Terrestrial, Impact BT-1) Mitigation Measure BF-1a:** Construction during Low Flow Season. (Applies to Blanco Drain Reclamation Ditch and Tembladero Slough Diversions) Implement Mitigation Measure BT- 1a. Conduct construction of diversion facilities, including the directional drilling under the Salinas River, during periods of low flow outside of the SCCC steelhead migration periods, i.e. between June and November, which would be outside of the adult migration period from December through April and outside of the smolt migration period from March through May.

**Mitigation Measure BF-1b:** Relocation of Aquatic Species during Construction. (Applies to Reclamation Ditch and Tembladero Slough Diversions). Conduct pre-construction surveys to determine whether tidewater gobies or other fish species are present, and if so, implement appropriate measures in consultation with applicable regulatory agencies, which may include a program for capture and relocation of tidewater gobies to suitable habitat outside of work area during construction. Pre-construction surveys shall be consistent with requirements and approved protocols of applicable resource agencies and performed by a qualified fisheries biologist.

**Mitigation Measure BF-1c:** Tidewater Goby and Steelhead Impact Avoidance and Minimization. (Applies to Reclamation Ditch and Tembladero Slough Diversions) To ensure compliance with the federal Endangered Species Act (FESA) and the California Endangered Species Act (CESA), consultation with NMFS/NOAA, USFWS, and CDFW shall be conducted as required, and any necessary take permits or authorizations would be obtained. If suitable habitat for tidewater goby (Tembladero Slough) and steelhead cannot be avoided, any in-stream portions of each project component (where the Proposed Project improvements require in-stream work) shall be dewatered/ diverted. A dewatering/diversion plan shall be prepared and submitted to NMFS, USFWS, and CDFW for review and approval. Specific plan elements are noted below and will be refined through consultation with USFWS, NMFS and CDFW:

- Required Pre-Construction surveys identified in Mitigation Measure BF-1b shall be consistent with requirements and approved protocol of applicable resource agencies and performed by a qualified fisheries biologist.

- All dewatering/diversion activities shall be monitored by a qualified fisheries biologist. The fisheries biologist shall be responsible for capture and relocation of fish species out of the work area during dewatering/diversion installation.
- The project proponents shall designate a qualified representative to monitor on-site compliance of all avoidance and minimization measures. The fisheries biologist shall have the authority to halt any action which may result in the take of listed species.
- Only USFWS/NMFS/CDFW-approved biologists shall participate in the capture and handling of listed species subject to the conditions in the Incidental Take Permits as noted above.
- No equipment shall be permitted to enter wetted portions of any affected drainage channel. All equipment operating within streams shall be in good conditions and free of leaks.
- Spill containment shall be installed under all equipment staged within stream areas and extra spill containment and clean up materials shall be located in close proximity for easy access.
- Work within and adjacent to streams shall not occur between November 1 and June 1 unless otherwise approved by NMFS and the CDFW.
- If project activities could degrade water quality, water quality sampling shall be implemented to identify the pre-project baseline, and to monitor during construction for comparison to the baseline. If water is to be pumped around work sites, intakes shall be completely screen with wire mesh not larger than five millimeters to prevent animals from entering the pump system.
- If any tidewater goby or steelhead are harmed during implementation of the project, the project biologist shall document the circumstances that led to harm and shall determine if project activities should cease or be altered in an effort to avoid further harm to the species.
- Water turbidity shall be monitored by a qualified biologist or water quality specialist during all instream work. Water turbidity shall be tested daily at both an upstream location for baseline measurement and downstream to determine if project activities are altering water turbidity.
- Turbidity measures shall be taken within 50 feet of construction activities to rule out other outside influences. Additional turbidity testing shall occur if visual monitoring indicates an increased in turbidity downstream of the work area. If turbidity levels immediately downstream of the project rise to more than 20 NTUs (Nephelometric Turbidity Units) above the upstream (baseline) turbidity levels, all construction shall be halted and all erosion and sediment control devices shall be thoroughly inspected for proper function, or shall be replaced with new devices to prevent additional sediment discharge into streams. The above mitigation is subject to review and approval for CESA and FESA requirements by approving agencies as identified above and may be modified to further reduce, avoid or minimize impacts to species.

**BF-2: Interference with Fish Migration.** Operation of the Proposed Project would result in changes in stream flows that may interfere with fish migration in the Salinas River and Reclamation Ditch.

**Mitigation Measure BF-2a:** Maintain Migration Flows. (Applies to the Reclamation Ditch Diversion) Implement BF-1a, BF-1b, and BF-1c. Operate diversions to maintain steelhead migration flows in the Reclamation Ditch based on two criteria – one for upstream adult passage in Jan-Feb-Mar and one for downstream juvenile passage in Apr- May. For juvenile passage, the downstream passage shall have a flow trigger in both Gabilan Creek and at

the Reclamation Ditch, so that if there is flow in Gabilan Creek that would allow outmigration, then the bypass flow requirements, as measured at the San Jon Gage of the Reclamation Ditch, shall be applied (see Hagar Environmental Science, Estimation of Minimum Flows for Migration of Steelhead in the Reclamation Ditch, February 27, 2015, in Appendix G-2, of this Draft EIR and Schaaf & Wheeler, Fish Passage Analysis: Reclamation Ditch at San Jon Rd. and Galiban Creek at Laurel Rd. July 15, 2015 in Appendix CC of this Final EIR). If there is no flow in Gabilan Creek, then only the low flow (minimum bypass flow requirement as proposed in the project description) shall be applied, and these flows for the dry season at Reclamation Ditch as measured at the San Jon USGS gage shall be met. Note: If there is no flow gage in Gabilan Creek, then downstream passage flow trigger shall be managed based on San Jon Road gage and flows. Alternately, as the San Jon weir located at the USGS gage is considered a barrier to steelhead migration and the bypass flow requirements have been developed to allow adult and smolt steelhead migration to have adequate flow to travel past this obstacle, if the weir were to be modified to allow steelhead passage, the mitigation above would not have to be met. Therefore, alternate Mitigation Measure BF-2a has been developed, as follows:

**Mitigation Measure Alternate BF-2a:** Modify San Jon Weir. (Applies to the Reclamation Ditch Diversion) Construct modifications to the existing San Jon weir to provide for steelhead passage. Modifications could include downstream pool, modifications to the structural configuration of the weir to allow passage or other construction, and improvements to remove the impediment to steelhead passage defined above. The above mitigation is subject to compliance with CESA and FESA and appropriate approving agencies may modify the above mitigation to further reduce, avoid, or minimize impacts to species.

#### **HS-4: Operational Surface Water Quality Impacts due to Source Water Diversions.**

Proposed Project diversions would result in water quality benefits due to diversion and treatment of polluted waters; however, rapid water fluctuation from diversions at the Reclamation Ditch could induce erosion and sedimentation in downstream waters.

**Mitigation Measure HS-4:** Management of Surface Water Diversion Operations (Applies to Reclamation Ditch Diversion, only) Rapid, imposed water-level fluctuations shall be avoided when operating the Reclamation Ditch Diversion pumps to minimize erosion and failure of exposed (or unvegetated), susceptible banks. This can be accomplished by operating the pumps at an appropriate flow rate, in conjunction with commencing operation of the pumps only when suitable water levels or flow rates are measured in the water body. Proper control shall be implemented to ensure that mobilized sediment would not impair downstream habitat values and to prevent adverse impacts due to water/soil interface adjacent to the Reclamation Ditch and Tembladero Slough. During planned routine maintenance at the Reclamation Ditch Diversion, maintenance personnel shall inspect the diversion structures within the channel for evidence of any adverse fluvial geomorphological processes (for example, undercutting, erosion, scour, or changes in channel cross-section). If evidence of any substantial adverse changes are noted, the diversion structure shall be redesigned and the project proponents shall modify it in accordance with the new design.

#### **COMPLIANCE HISTORY**

This is a proposed, new facility and therefore has no compliance history. However, the RTP generally has a very good compliance record. Staff identified six violations of its total coliform limit since 2009.

**COMMENTS**

On December 15, 2016, staff distributed the draft waste discharge requirements to the Discharger and an interested parties list consisting of over 1,200 email addresses and over 30 physical addresses. Staff requested that all interested parties submit written comments no later than 5:00 PM on January 20, 2017.

Two comment letters were received within the comment period. Staff has excerpted the comments below and provided a response to each one. Suggested changes to the draft order that staff agrees with are reflected in redline in the draft order.

**Letter #1 from Monterey Regional Water Pollution Control Agency (dated January 19, 2017)**

**Comment #1:** MRWPCA has selected "Advanced Water Purification Facility" as the final name for the PWM advanced water treatment facility. This name is being used in the construction bid documents, public outreach materials, and facility signage. For consistency with the Draft Order and future regulatory correspondence, please change all facility references from the "Advanced Water Treatment Facility (AWTF)" to the "Advanced Water Purification Facility (AWPF)."

**Response #1:** The Central Coast Regional Water Quality Control Board (Water Board) and the Division of Drinking Water (DDW) have no objections to the proposed name change. The project name will be changed throughout the draft Order, in the Monitoring and Reporting Program, and in this staff report.

**Comment #2:** The Draft Order identifies recycled water produced at the AWPF as "product water," "recycled water," and "advanced treated recycled water." For clarity, MRWPCA requests consistent identification as "purified recycled water."

**Response #2:** "Purified recycled water" is not defined in Title 22 water recycling criteria. Recharge Water and Recycled Municipal Wastewater are defined, however. The requested change, to use the term "purified recycled water," is denied.

**Comment #3:** The list of AWPF major components should include the supply water and product water pump stations. These pump stations will be used to collect samples of AWPF influent and purified recycled water. The following changes are requested for completeness.

111.21. Primary Project Components (Page 3)

2. The Advanced Water Treatment Facility (AWTF) has the following major components:

- Supply water pump station
- Ozonation (membrane filtration pretreatment)
- Membrane filtration feed water pump station
- Low Pressure Membrane Filtration (MF)
- Reverse osmosis (RO) feed water pump station
- RO system
- Ultraviolet light (UV) with hydrogen peroxide advanced oxidation process (AOP)
- Post treatment stabilization
- Product water pump station

**Response #3:** Water Board and DDW staff have no objections to including the "Supply water pump station" and the "Product water pump station" to the list of major components. The Draft Order will be revised accordingly.

**Comment #4:** The APWF will produce seven waste streams and the waste solids will be sent to the RTP headworks and/or the RTP thickening process for treatment. The following changes are requested to accurately describe the waste stream production and processing.

111.22. AWTF Design Flows and Waste Streams (Page 4)

The proposed AWTF will have a design capacity to produce 4.0 MGD of purified ~~advanced treated~~ recycled water. The facility will also produce ~~six~~ seven waste streams: ozone injection strainer waste, MF backwash waste, neutralized MF enhanced flux maintenance waste, neutralized MF clean-in-place waste, neutralized RO clean-in-place waste, analytical instrument waste, and RO concentrate. The RO concentrate will be piped to MRWPCA's existing ocean outfall along with secondary wastewater effluent. ~~And~~ and trucked brine. The other AWTF waste streams will be diverted ~~back to the RTP or the headworks or the trickling filters~~ or the RTP sludge thickening process for treatment.

**Response #4:** Water Board and DDW staff have no objections regarding this proposed change, except for the terminology change (see response to comment #2 above). This description is contrary to what is in Title 22 Appendix, page 65 under "AWTF Design Flows and System Waste Streams," which states there are only two waste streams, and MF backwash will go to either the headworks or to the trickling filters. MRWPCA will need to update the Title 22 Appendix with the changes per General Requirement #9 of the Order..

**Comment #5:** The list of constituents presented in Table 1 (page 8) is incomplete and includes numerous mistakes with regards to units, identified goals/objectives, and sources. MRWPCA suggests removal of Table 1 and expanding the narrative description (as needed) to describe the Basin Plan water quality goals and objectives in VIII.A.40. and VIII.A.41.

**Response #5:** The Seaside Groundwater Basin is not specifically addressed in Table 3-8. "Median Ground Water Objectives" in the Basin Plan and therefore many of the water quality goals displayed in Table 1 were taken from the State Boards water quality goals database.

[http://www.waterboards.ca.gov/water\\_issues/programs/water\\_quality\\_goals/](http://www.waterboards.ca.gov/water_issues/programs/water_quality_goals/)

The list of constituents will be revised to only include only those with an effluent limit or those that are constituents of concern in the Seaside Basin. The units in Table 1 are correct.

Table 1 will also be revised to correct the typo for lead (should read 0.2 not 0.02) and to make the origin of the sodium water quality goal clear.

**Comment #6:** The Basin Plan includes general objectives, Municipal and Domestic Supply (MUN) objectives, and Agricultural Supply (AGR) objectives that apply to Seaside Basin groundwater. To correctly identify applicable receiving water requirements in the Draft Order, the following changes are suggested.

VIII.A. Regional Board Water Quality Control Plan (Basin Plan) (Page 10)

46. The Basin Plan contains the following specific water quality objectives for Seaside Basin groundwater:

This Order protects Seaside Basin groundwater water quality objectives and is therefore consistent with the Basin Plan.

**V. Provisions (Page 16)**

1. Injection of the purified advanced treated recycled water shall not cause or contribute to an exceedance of water quality objectives in Seaside Basin

groundwater.

**Response #6:** The Basin Plan calls out water quality objectives for specific beneficial uses in groundwaters, not necessarily specific to the Seaside Basin. Therefore the first requested insertion of “Seaside Basin” will not be made. Water Board and DDW staff have no objections to the other proposed changes, except for the terminology change proposed for page 16 (see response to comment #2 above).

**Comment #7:** The recycled water monitoring requirements in the MRP (Table M-3, Footnote 6) allows weekly analysis of total nitrogen if no problem is detected after 12 months of data collection. The following change is recommended to provide consistency between Table 4 and Table M-3.

**III. Recycled Water Discharge Limits (Page 15)**

| Constituents       | Units | Concentration | Monitoring Frequency                     | Compliance Interval       |
|--------------------|-------|---------------|--|---------------------------|
| **Nitrogen – Total | mg/L  | 10            | Twice per week (or Weekly <sup>1</sup> ) | Average of Last 4 Results |

<sup>1</sup>MRP (Table 3) allows weekly monitoring if no problem is detected after 12 months of data collection.

**Response #7:** The last sentence in the MRP states: “The list of parameters and monitoring frequencies may be adjusted by the Executive Officer if the MRWPCA makes a request and the Executive Officer determines that the modification is adequately supported by statistical trends of monitoring data submitted.” No further changes to the MRP to reflect this statement are necessary at this time.

**Comment #8:** The following changes are needed to correctly reference the CCR Title 22 requirements for groundwater replenishment utilizing subsurface application.

**VI. State Water Resources Control Board Division of Drinking Water (DDW) Requirements (Pages 18 to 19)**

- 3. The Project AWTF shall be operated to meet the requirements in section 60320.122.60320.222 Operation Optimization and Plan.
- 4. As required by Title 22 section 60320.122. 60320.222 (Operation Optimization Plan), prior to operation, MRWPCA shall submit an Operation Optimization Plan for review and approval to DDW and the Central Coast Water Board.
- 11. MRWPCA shall verify that the recycled municipal wastewater used for the Project meets the requirements in Title 22 section 60320.106 60320.206. Wastewater Source Control.
- 12. Pursuant to Title 22 section 60320.108 60320.208 (a) Pathogenic Microorganism Control (a), MRWPCA shall operate the Project such that the recycled municipal wastewater used as recharge water receives...
- 13. If a pathogen reduction in Title 22 section 60320.108 60320.208 (a) is not met based on the on-going monitoring required pursuant to subsection (c), within 24 hours of being aware, MRWPCA. ..

**Response #8:** Water Board and DDW staff have no objections to the proposed citation revisions. Appropriate changes will be made to the draft Order.

**Comment #9:** MRWPCA is planning to measure total organic carbon (TOC) removal through reverse osmosis (RO) during commissioning and operation of the AWPf in order to determine if it can be used as a surrogate for pathogen removal instead of electrical conductivity. MRWPCA is planning to submit a report to DDW and the Central Coast Water Board after sufficient comparative data have been collected. If the results suggest that TOC can be used instead of conductivity, then MRWPCA is planning to ask for a revision to the permit to allow for TOC monitoring of the RO feed and RO combined permeate instead of conductivity. Accordingly, the following change is requested for the Draft Order.

**VI.15. State Water Resources Control Board Division of Drinking Water (DDW) Requirements (Page 19)**

- b. 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. MRWPCA must monitor the effluent of each RO train (including each stage) continuously for conductivity at the AWTF. The daily average and maximum conductivity reading, and the percent of time that the reduction of conductivity is less than 1.0 log removal must be reported. The MRWPCA shall calculate the minimum removal achieved at the AWTF. An alternative surrogate may be utilized if approved by the Division of Drinking Water and the Central Coast Water Board.

**111.1. Reporting Requirements (Page MRP-8)**

- c. The Reverse Osmosis (RO) system will be credited for virus, Giardia cysts and Cryptosporidium oocysts based upon reduction demonstrated via an approved surrogate, such as conductivity. MRWPCA shall monitor conductivity continuously in both the RO feed and RO permeate of each RO train, in order to demonstrate membrane integrity and a conductivity. The daily average and maximum conductivity reading and percent of time that the reduction of conductivity is less than 1.0 log removal must be reported. The report shall include calculation of minimum removal achieved at the AWTF. An alternative surrogate may be utilized (e.g., TOC) if approved by the Division of Drinking Water and the Central Coast Water Board. The proposal to change surrogates may also include different monitoring locations (e.g., combined RO permeate instead of train RO permeate), if approved by DDW and the Central Coast Water Board.

**Response #9:** Water Board and DDW staff have no objections to the proposed revisions. Appropriate changes will be made to the draft Order. Revisions to the MRP may be approved by the Central Coast Water Boards Executive Officer.

**Comment #10:** AWPf commissioning may demonstrate that the 1,4-dioxane removal requirement is achieved at an ultraviolet light transmittance (UVT) other than 95o/o minimum. To allow for this possibility, and to be consistent with the other advanced oxidation process (AOP) requirements, MRWPCA requests the following change.

**VI.15.f. State Water Resources Control Board Division of Drinking Water (DDW) Requirements (Page 20)**

- ii. UV transmittance less than 95%, or a new setpoint approved by DDW after the AOP commissioning.

**Response #10:** DDW does not accept this proposed change. An RO system that is operating properly should have a UVT 97%-98%. UVT less than 95% is not acceptable. In addition, MRWPCA's Title 22 Engineering Report was approved based on the proposed criteria of a minimum UVT of 95% for advanced oxidation feed water quality, UV AOP system design criteria, and full scale commissioning (Section 3.2.6.5 – 3.2.6.7). The proposed change is denied.

**Comment #11:** A startup 30-day report has not been required for other all other groundwater replenishment projects except for the Cambria Community Services District Emergency Water Treatment Facility Recycle Water Re-injection Project. Given that the PWM project is not an emergency project and production of this report is an unnecessary burden, MRWPCA requests the requirements for a startup 30-day report be removed from the Draft Order.

#### 1.1. Submittal of Reports (Page MRP-3)

##### a. Startup 30-day report:

~~The Discharger must evaluate and field validate any operating assumptions for the AWTF (quality of water supplies, membrane filter backwash discharge, membrane filtrate discharge, and stabilized reverse osmosis product water re injection) and compare the pre project assumptions to documented operating data. The Discharger must submit a report detailing differences between documented operating values and assumed concentrations/conditions. The report must be submitted within 10 days following the first 30 days of AWTF operation.~~

**Response #11:** Water Board and DDW staff have no objections to the proposed revisions. The requested changes will be made to the draft Order.

**Comment #12:** Chloramine removal has had inconsistent results as a surrogate for UV/AOP performance when hydroxyl radicals are present, such as in the AWPf UV/AOP system. MRWPCA requests the following changes until the industry has more clearly demonstrated the benefit of measuring chloramine removal through UV/AOP. The UV/AOP performance will be assessed through the measurements of flowrate, UV intensity, UVT, and hydrogen peroxide.

##### 111.1.d. Monthly Reports (Page MRP-9)

i. For AOP (UV and hydrogen peroxide at the AWTF), MRWPCA shall report the calculated daily hydrogen peroxide dose (based on the pump speed and bulk feed concentration). ~~and percent reduction based on daily average of chloramine (via total residual chlorine) measured upstream and downstream of the AOP.~~

**Response #12:** Water Board and DDW staff have no objections to the proposed revisions. The requested changes will be made to the draft Order.

**Comment #13:** The combined effluent from the waste equalization (EQ) basins is metered, which includes drainage from the chemical area, RO clean-in-place (CIP) waste, RO flush waste, MF strainer backwash, MF CIP/enhanced flux maintenance (EFM) waste, overflow from the MF filtrate tank, and MF backwash waste. Accordingly, MRWPCA requests the following changes to the flow volume reporting requirements:

##### 111.2. Quarterly Reports (Page MRP-10)

a. The volume of:

- AWTF Influent- Secondary effluent from the RTP.
- ~~Membrane filter (MF) backwash~~ Waste EQ effluent discharged into the RTP.
- ~~Purified Fully treated~~ recycled water injected into the Seaside Basin.
- RO concentrate sent to the ocean outfall.
- If no water was pumped, the report shall so state.

**Response #13:** Water Board and DDW staff have no objections to the proposed changes, except for the terminology change (see response to comment #2 above). The proposed changes to the draft Order will be made with the exception of the proposed change to “Purified” in the second bullet point.

**Comment #14:** The following changes are needed to correctly describe the monitoring locations required for quarterly reporting. The constituents to be monitored are details in Tables M-2 and M-3 of the Draft Order.

**111.2.a. Quarterly Reports (Page MRP-10)**

ii. All analytical results of samples collected during the monitoring period at of the following locations:

- AWTF Influent,
- MF feed water conductivity,
- MF Pressure Decay Tests,
- RO feed product water conductivity,
- Chlorine concentrations at the injection 'Nell heads,
- Purified recycled water RO recycled water injected to the Seaside Basin,
- Groundwater.

**Response #14:** Water Board and DDW staff have no objections to the proposed changes, except for the terminology change (see response to comment #2 above). The proposed changes to the draft Order will be made with the exception of the proposed substitution of “Purified” in the sixth bullet point for “RO.”

**Comment # 15:** There are no known domestic wells in the vicinity of the injection wells. The nearest downgradient wells are municipal and irrigation supply wells. CCR Title 22 data should be collected and reported for the public drinking water supply well that is closest to the injection wells and the following language is suggested to clarify the requirement.

**111.3. Annual Summary Report (Page MRP-11)**

f. Title 22 drinking water quality data for the nearest drinking ~~domestic~~ water supply well;

**Response # 15:** Water Board and DDW staff have no objections to the proposed revisions. The requested changes will be made to the draft Order.

**Comment # 16:** The source waters will be blended with RTP influent prior to treatment at the RTP. Clarified secondary effluent from the RTP will be sampled as AWPf influent. Accordingly, MRWPCA requests the following changes to correctly describe the AWPf influent monitoring location.

**IV.1. AWTF Influent Monitoring (Page MRP-13)**

b. The influent sampling station is located before ~~water from any of the various-sources~~ clarified secondary effluent from the RTP enters the ozone pretreatment system of the AWTF. Influent samples shall be obtained on the same day that stabilized purified ~~RO~~ recycled water samples are obtained...

**Response # 16:** Water Board and DDW staff have no objections to the proposed changes, except for the terminology change (see response to comment #2 above). The proposed changes to the draft Order will be made with the exception of the proposed insertion of the term “Purified.”

**Comment # 17:** The Draft Order establishes several new monitoring locations and significantly expands the frequency and list of monitored constituents for MRWPCA. Considerable investments will be undertaken to obtain/install sampling equipment, collect representative samples, and analyze/report sample results as prescribed by the Draft Order provisions. In

2013, the State Water Resources Control Board adopted a resolution to "identify and implement measures to reduce costs of compliance while maintaining water quality protection and improving regulatory program outcomes" (Resolution No. 2013-0029). In accordance with this resolution, MRWPCA requests review and consolidation of monitoring requirements as MRWPCA's other permits are modified to include the AWPf treatment train and/or changed influent or effluent quality.

**Response # 17:** Water Board and DDW staff have no objection regarding this proposed change as long as all Title 22 related monitoring requirements for this project are met, and all required reports for this project are submitted. Review and consolidation of monitoring requirements will be evaluated as other permits are modified.

**Comment # 18:** MRWPCA requests the following changes to the AWPf influent monitoring requirements (Table M-2, Page MRP-14). These constituent concentrations are not required to assess compliance with CCR Title 22 and are not required to evaluate AWPf performance. To demonstrate compliance with the CCR Title 22 requirement for oxidized wastewater (Section 60301.650), MRWPCA proposes to use TSS and either TOC or CBOD<sub>5</sub>. If ultraviolet light transmittance (UVT) must be monitored, then MRWPCA requests the type of sample be changed from metered to grab sample as a UVT meter is not included in the project design. The shortened list of influent monitoring requirements is consistent with permits issued recently for other groundwater replenishment subsurface application projects (e.g., Dominguez Gap Barrier Project, Order No. R4-2016-0334 ).

- Delete Ammonia
- Change BOD<sub>5</sub> to CBOD<sub>5</sub> (for consistency with NPDES permit requirements)
- Delete Boron
- Delete Chloride
- Delete Nitrate
- Delete Nitrite
- Delete Total Nitrogen
- Delete Sodium
- Delete Sulfate
- Delete Total coliform
- Delete Total dissolved solids (TDS)
- Delete Total Kjeldahl nitrogen (TKN)
- Delete Ultraviolet light transmittance (UVT)
- Change the TOG sample type from 24-hour composite to grab (if demonstrate grab sampling is representative)
- Allow use of Non-Purgeable Organic Carbon (NPOC) for TOG measurement and reporting (based on comparison monitoring currently underway by MRWPCA)

**Response # 18:** Water Board staff notes that the Dominguez Gap Barrier Project has been in operation since 2003 and has an established data-driven track record. The Barrier project is composed of 94 injection wells and 257 observation wells, substantially larger than the Pure Water project, and the monitoring program for that project has been revised multiple times, after data was acquired and the project's track record established. Accordingly, we agree to change the UVT type of sample from metered to grab, to change the BOD<sub>5</sub> requirement to CBOD<sub>5</sub>, to change the TOC sample type from 24-hour composite to grab (if MRWPCA demonstrates grab sampling is representative), and to allow use of Non-Purgeable Organic Carbon (NPOC) for TOC measurement and reporting (based on comparison monitoring currently). The request to shorten the list of influent monitoring requirements is denied at this time. However, the draft order allows the Executive Officer to change the influent monitoring requirements after a good plant-performance data set is acquired.

**Comment # 19:** MRWPCA notes that all other approved subsurface application groundwater replenishment projects in California are required to monitor less frequently for inorganics with primary MCLs, constituents/parameters with secondary MCLs, radioactivity, regulated organic chemicals, disinfection byproducts, and constituents with notification levels. The monthly monitoring requirements specified in the Draft Order will add significant costs to the project. For constituents without recycled water discharge limits, MRWPCA will propose a reduction in monitored constituents and frequencies after the first full year of data collection. The following language is suggested to outline a process for compiling/reviewing data, proposing new monitoring frequencies, and receiving approval from DDW and the Central Coast Water Board.

**IV.2. Recycled Water (AWTF) Discharge Limit Monitoring (Page MRP-14)**

a. Advanced treated recycled water monitoring is required to:

- i. Determine compliance with the Permit conditions;
- ii. Identify operational problems and aid in improving facility performance; and,
- iii. Provide information on recycled water characteristics and flows for use in interpreting water quality and biological data.

Samples shall be collected downstream of the last chemical injection point, with the exception of constituents specified in Tables M-12 and M-13. Should the need for a change in the sampling station(s) arise in the future, the MRWPCA shall seek approval of the proposed station by the Executive Officer prior to use.

Table M-3 shall constitute the recycled water monitoring program. After the first full year of monitoring, MRWPCA shall compile results and submit a revised monitoring program to DDW and Central Coast Water Board for review and approval.

**Response # 19:** Water Board and DDW staff have no objections to the proposed changes.

**Comment # 20:** MRWPCA requests the following changes to the recycled water monitoring requirements (Tables M-3 and M-4, Pages MRP-15 to MRP-16). Chlorine residual is not utilized for pathogen removal credit. However, if chlorine monitoring is required, MRWPCA suggests changing the constituent to total chlorine instead of free chlorine, as the chlorine species will be present as chloramines. UV dose and UVT will be monitored and reported based on requirements specified in the approved Operation Optimization Plan (OOP). MRWPCA is switching to a new analytical method for total nitrogen (ASTM D8083, pending publication) that does not require use of the TKN digestion process. As a result, TKN monitoring will become unnecessary and the results will no longer be relevant for total nitrogen calculations. The list of regulated organic chemicals contain volatile compounds that are better represented by collecting grab samples rather than 24-hour composite samples. Disinfection byproducts (DBP) will not be representative of the recycled water discharge concentrations if collected in a 24-hour composite sampler because DBP concentrations will increase as a result of longer chlorine contact times in the sampler. As allowed by CCR Title 22 Section 64432(a)(2), Chromium VI monitoring is not required if Total Chromium is monitored and the detection limit for purposes of reporting (DLR) is less than 0.01 mg/L.

- Delete free chlorine residual (or change to total chlorine residual)
- Delete UV dose
- Delete UVT
- Delete TKN
- Change the total nitrogen sample type from 24-hour composite to grab
- Change the nitrate sample type from 24-hour composite to grab
- Change the regulated organic chemical sample type from 24-hour composite to grab
- Change the disinfection byproduct sample type from 24-hour composite to grab
- Delete Chromium VI (Table M-4)

- Change the TOC sample type from 24-hour composite to grab (if demonstrate grab sampling is representative)
- Allow use of Non-Purgeable Organic Carbon (NPOC) for TOC measurement and reporting (based on comparison monitoring currently underway by MRWPCA)

**Response # 20:** Water Board and DDW staff agree with the proposed change from free chlorine to total chlorine. Water Board and DDW staff agree with the proposed change to a new analytical method for total nitrogen once the new method is approved by ELAP. All analytical data must be produced at an ELAP-accredited lab. Water Board and DDW staff agree with the proposed sampling method changes from 24- hour composite to grab. Water Board and DDW staff do not agree with the proposed changes which would delete UV dose and UVT. Additionally, we do not accept the proposal to use NPOC in lieu of TOC measurement and reporting. The appropriate revisions will be made to the draft Order.

**Comment # 21:** Chloramine removal has had inconsistent results a surrogate for UV dose when hydroxyl radicals are present, such as in the AWPf UV/AOP system. MRWPCA requests the following changes for AOP reporting. Until the industry has more clearly demonstrated the benefit of chloramine removal through UV/AOP, the UV dose at the AWPf will be calculated from the flowrate, UV intensity, and UVT.

IV.2.d. Evaluation of Pathogenic Microorganism Removal (Page MRP-22)

- ii. Advanced Oxidation Process (AOP) - (UV and hydrogen peroxide at the AWPf): For each day of operation, MRWPCA shall report the calculated daily peroxide dose (based on the peroxide pump speed and bulk feed concentration), ~~percent reduction based on daily average of chloramine (via total residual chlorine) measured upstream and downstream of AOP,~~ and the applied UV power shall be reported. For UV, MRWPCA shall report the UV system dose (expressed as greater than a certain threshold such as 300 millijoules/cm<sup>2</sup>), UV transmittance (daily minimum, maximum, and average), UV intensity for each reactor (daily minimum, maximum, and average) and the total UV power applied; and

**Response # 21:** Water Board and DDW staff have no objections to the proposed revisions. The requested changes will be made to the draft Order.

**Comment # 22:** The groundwater monitoring program prescribed by the Draft Order significantly expands the approach detailed in the approved Engineering Report. MRWPCA estimates that implementing the Draft Order groundwater monitoring requirements will cost \$110,000 more each year than originally budgeted for the Engineering Report program. MRWPCA requests a process to modify groundwater monitoring parameters and frequencies after the first full year of injection well operation. The following changes are suggested to outline a process for compiling/reviewing data, proposing a new monitoring program, and receiving approval from DDW and the Central Coast Water Board.

**IV.4.a. Groundwater Monitoring (Page MRP-24)**

The MRWPCA shall implement the following groundwater monitoring program as described in Tables M-14, M-15, and M-16 when the injection wells begin operation. Some constituents may be eligible for reduced monitoring due to the consistent historic lack of detection and/or other hydrogeologic basis, upon approval by the Executive Officer. After the first full year of monitoring, MRWPCA shall compile results and submit a revised monitoring program to DDW and Central Coast Water Board for review and approval.

**Response # 22:** Priority Toxic Pollutants (40 CFR 131.38) are required to be monitored quarterly for a minimum of two years before MRWPCA can request a reduction in monitoring to

once a year with DDW approval based on DDW's review of the most recent two years of results of monitoring (Title 22 section 60320.220(a),(c)). MRWPCA must collect two samples prior to GRRP operation and at least one sample each quarter after operation begins to monitoring for total nitrogen, nitrate, nitrite, and contaminants in table 64449-A and 64449-B at wells meeting Title 22 section 60320.226(a)(1) and 60320.226(a)(2) that receive recharge water within one year's travel time to the wells. Title 22 section 60320.226(e) allows for the reduction of monitoring if approved by DDW. Approval will be based upon review of the most recent two years of monitoring results. Also, please see the response to comment #7 above. Therefore the requested changes in the groundwater monitoring program are denied and MRWPCA will need to revise the Title 22 Engineering Report to reflect the groundwater monitoring required in the draft Order.

**Comment # 23:** The following monitoring requirements are already specified in Table M-3 and can be deleted as a separate section of the MRP. Section 60320.201 does not include a requirement for collecting the first effluent sample within the first five days of operation.

**VI. Other Monitoring Requirements (Page MRP-32)**

**"Section 60320.201. Advanced Treatment Criteria"**

~~(i) Each month a project sponsor shall collect samples (grab or composite) representative of the effluent of the advanced treatment process and have the samples analyzed for contaminants having MCLs and notification levels (NLs). After 12 consecutive months with no results exceeding an MCL or NL, a project sponsor may apply for a reduced monitoring frequency. The reduced monitoring frequency shall be no less than quarterly. Monitoring conducted pursuant to this subsection may be used in lieu of the monitoring (for the same contaminants) required pursuant to sections 60320.212 and 60320.220. The first sample of the effluent needs to be collected in the first five days of operation of the AWTF.~~

**Response # 23:** Water Board and DDW staff have no objections to the proposed revisions. The requested changes will be made in the draft Order.

**NON-SUBSTANTIVE COMMENTS**

**NS Comment #24:**

**111.21. Primary Project Components (Page 3)**

1. The following source waters will be treated to secondary standards at the RTP:

- Sewage from the MRWPCA member entities

**VIII.A. Regional Water Quality Control Plan (Basin Plan) (Page 8)**

43. Four wells were used to establish existing groundwater water quality and assimilative capacity of the aquifer and sub-aquifers. The most recent five years of data (2011-2016) were analyzed for each well and the data are presented in Table 2. Two of the wells draw their water from both the Paso Robles and Santa Margarita aquifers (Ord Grove No. 2 and Paralta). One well draws water exclusively from the Paso Robles aquifer (City of Seaside No. 4) and one well draws exclusively from the Santa Margarita aquifer (ASR-1).

**Response # 24:** Water Board and DDW staff have no objections to the proposed revisions. The requested change will be made to the draft Order.

**NS Comment #25: Table 2 - Existing Groundwater Quality in the Seaside Basin (Page 9)**

Footnote Change

\*Concentrations are in µg/L except chloride, nitrate, sodium, sulfate, TDS,

and TOC, which are mg/L

**Response # 25:** Water Board and DDW staff have no objections to the proposed revisions. The requested change will be made to the draft Order.

**NS Comment #26: V. Provisions (Page 18)**

11. The DDW conditions that are not explicitly included in this Order are incorporated herein by this reference, and are enforceable requirements of this Order. Any violation of a term in this Order that is identical to a DDW condition will constitute a single violation.

**Response # 26:** Water Board and DDW staff have no objections to the proposed revisions. The requested change will be made to the draft Order.

**NS Comment #27: VI. State Water Resources Control Board Division of Drinking Water (DDW) Requirements (Page 20)**

Redundant. Delete or merge with requirement in VI.2. on Page 18.

~~17. MRWPCA must submit for approval a draft AOP commissioning and testing protocol, to demonstrate the AOP will provide no less than 0.5 log (69 percent) reduction of 1,4 dioxane.~~

**Response # 27:** DDW does not accept this proposed change. This requirement is necessary to demonstrate compliance with Title 22 section 60320.201(d).

**NS Comment #28: VI. State Water Resources Control Board Division of Drinking Water (DDW) Requirements (Page 20)**

Merge requirement VI.19 with requirement VI.4: As required by Title 22 section 60320.4Z22. (Operation Optimization Plan), prior to operation, MRWPCA shall submit an Operation Optimization Plan for review and approval to DDW and the Central Coast Water Board. At a minimum, the Operation Optimization Plan shall identify and describe the operations, maintenance, analytical methods, monitoring (grab and online) necessary for the Project to meet the requirements and the reporting of monitoring results. MRWPCA must submit a draft of the Operation Optimization Plan prior to the construction and commissioning. This draft Operation Optimization Plan can be amended and finalized after the completion of full-scale commissioning and startup testing. A final Operation Optimization Plan must be submitted to DDW 90 days after completion of startup operations.

**Response # 28:** In the proposed text, the commenter is referring to VI.18 instead of VI.19. Water Board and DDW staff have no objections to combining VI.4 and VI.18 and the correction on Title 22 section reference to "60320.222." The requested change will be made to the draft Order.

**NS Comment #29: Figure 1 - Location of MRWPCA's RTP, AWTF, and Injection Wells (Page 23)**

Change "RTF" to "RTP"

**Response # 29:** The requested change will be made to the draft Order.

**NS Comment #30: 111.1. Monthly Reports (Page MRP-9)**

g. MRWPCA shall monitor the RO effluent for TOC via grab sample weekly and report in the monthly report. MRWPCA shall also monitor RO influent and effluent for TOC online and report monthly. 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.

**Response # 30:** The requested change will be made to the draft Order.

**NS Comment #31: 111.2.a. Quarterly Reports (Page MRP-10)**

vii. A summary of operational concerns describing changes in reporting conditions, including

influent, MF filtrate, RO permeate recycled water, UV/AOP water, and groundwater monitoring results, since the last report.

**Response # 31:** The requested change will be made to the draft Order.

**NS Comment #32: 111.3.c. Annual Reports (Page MRP-11)**

- ii. a summary of any corrective actions and/or suspensions of surface subsurface application of recycled water resulting from a violation; and

**Response # 32:** The requested change will be made to the draft Order.

**NS Comment #33: IV.2.d. Evaluation of Pathogenic Microorganism Removal (Page MRP-22)**

- i. For the purpose of demonstrating that the necessary log reductions are achieved at the AWTF, MRWPCA shall report the daily average and maximum turbidity, percent of time more than 5 nephelometric turbidity units (NTU), and daily coliform results associated measured in the • with the WRP(s) purified recycled water (as specified in Table M-3);

**Response # 33:** Water Board and DDW staff have no objections to the proposed changes, except for the terminology change (see response to comment #2 above). The term “purified” will not be included in the revision.

**NS Comment #34: IV.4. Groundwater Monitoring (Page MRP-22)**

Cite as Title 22 requirement. Delete unnecessary, incomplete language.

- a. As required by Title 22, Section 60320.226, Prior to operating any injection well, a-MRWPCA shall site and construct at least two monitoring wells downgradient of the injection well§, such that:
  - (1) at least one monitoring well is located;
    - (A) no less than two weeks but no more than six months of travel time from through the saturated zone affected by the injection wells, and
    - (B) at least 30 days upgradient of the nearest drinking water well;
  - (2) in addition to the well(s) in paragraph (1) and after consultation with DDW, at least one monitoring well is located between the injection wells and the nearest downgradient drinking water well; and (3) samples from the monitoring wells in paragraphs (1) and (2) can be;
    - (A) obtained independently from each aquifer, initially receiving the water used as a source of drinking water supply, that will receive the injection wells recharge water, and
    - (B) validated as receiving recharge water from the injection wells.
  - (b) In addition to the monitoring required pursuant to section 60320.1i20, from each monitoring 'Nell in subsection (a)(1 ), and each monitoring well in subsection (a)(2) that has recharge water located within one year travel time of the well(s), a project

**Response # 34:** Water Board and DDW staff have no objections to the proposed changes. The requested changes will be made to the draft Order.

**NS Comment #35: IV.4. Groundwater Monitoring (Page MRP-23)**

- Siting an additional downgradient well between the Injection Facilities and the nearest downgradient potable water supply (in addition to the downgradient monitoring well used to demonstrate retention time, as described in the bullet point above).

**Response # 35:** Water Board and DDW staff have no objections to the proposed change. The requested change will be made to the draft Order.

**Letter #2 from California American Water** (dated January 20, 2017)

**Comment #1:** The Final WDRs should clearly specify the required treatment processes. Condition IV.2 of the Draft Order prohibits "bypass, discharge, or delivery to the use area of inadequately treated recycled water." California American Water notes that the Draft Order does not specify what is "adequate treatment." In Order RB-2004-002, the Division of Drinking Water (then the Department of Health Services) specified in Condition 3 of the DHS findings the treatment processes that must be followed for the Orange County Water District Groundwater Replenishment Project. To ensure no ambiguity in the treatment processes that will protect the Seaside Basin, California American Water suggests that Condition IV.2 of the Draft Order be revised to mimic DHS Condition 3 of Order RB-2004-002.

**Response # 1:** Title 22 now specifies in each applicable section what adequate treatment is for that process or constituent. No changes are necessary.

**Comment #2:** The Final WDRs should require maintaining the industrial pretreatment program. Industrial pretreatment programs are important to protecting the beneficial uses of treated wastewater, whether discharged to the ocean or used as a potable water supply. The Regional Board should include a condition in the Final WDRs requiring MRWPCA to maintain and appropriate industrial pretreatment program.

**Response # 2:** Industrial pretreatment is an NPDES program requirement and is not addressed by this permit. MWRPCA's NPDES permit does require industrial pretreatment. No changes are necessary.

**Comment #3:** The Final WDRs should require drinking water methods be used for testing. Condition 11.4. of the Monitoring Program allows MRWPCA to choose between either drinking water laboratory methods or wastewater laboratory methods. Because the Project effluent will be used to augment an important regional drinking water source, California American Water recommends that preference be given to drinking water methods where an appropriate drinking water method exists, rather than giving discretion to choose the test method. This way results from the Project can be compared with results of drinking water tests conducted by water purveyors without concern that the test method may cause variability in the results (i.e., allows an "apples-to-apples" comparison).

**Response # 3:** Title 22, section 60320.204 describes sample methods allowed. Primary and secondary MCL contaminants must be sampled with drinking water methods. Others must be described in an approved Operation Optimization Plan. No changes are necessary.

**Comment #4:** The Final WDRs should require water purveyors using the Seaside Basin as a drinking water source to be notified of violations in addition to the Regional Board. Condition V.3. of the Draft Order requires MRWPCA to notify the Regional Board within 24 hours of any violation or adverse conditions that results from using recycled from the Project. California American Water requests that the Final WDRs be modified in two ways. First, the time for notification should be require the MRWPCA to provide notice "as soon as they become aware of the circumstances, but no later than 24 hours." Second, in addition to providing timely notice to the Regional Board, MWRPCA should also notify all water purveyors drawing potable water from the Seaside Basin of the same information provided to the Regional Board immediately following notification to the Regional Board. This will allow water purveyors to take any action they deem appropriate to monitor and protect their potable water supplies.

**Response # 4:** Water Board and DDW staff have no objections to these proposed changes. The requested changes will be made to the draft Order.

**ATTACHMENTS**

1. Draft Order No. R3-2017-0003
2. Letter from Monterey Regional Water Pollution Control Agency, dated January 19, 2017
3. Letter from California American Water, dated January 20, 2017

**RECOMMENDATION**

Adopt Order No. R3-2017-0003 as proposed.