

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2016-XXXX

FOR

TESORO VIEJO MASTER MUTUAL WATER COMPANY
TESORO VIEJO WASTEWATER TREATMENT FACILITY
MADERA COUNTY

This Monitoring and Reporting Program (MRP) is required pursuant to California Water Code (CWC) section 13267.

The Discharger shall not implement any changes to this MRP unless and until the Central Valley Water Board adopts, or the Executive Officer issues, a revised MRP. Changes to sample location shall be established with concurrence of Central Valley Water Board staff, and a description of the revised stations shall be submitted for approval by the Executive Officer.

All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. All analyses shall be performed in accordance with **Standard Provisions and Reporting Requirements for Waste Discharge Requirements**, dated 1 March 1991 (Standard Provisions).

Field test instruments (such as pH) may be used provided that the operator is trained in the proper use of the instrument and each instrument is serviced and/or calibrated at the recommended frequency by the manufacturer or in accordance with manufacturer instructions.

Analytical procedures shall comply with the methods and holding times specified in the following: *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater* (EPA); *Test Methods for Evaluating Solid Waste* (EPA); *Methods for Chemical Analysis of Water and Wastes* (EPA); *Methods for Determination of Inorganic Substances in Environmental Samples* (EPA); *Standard Methods for the Examination of Water and Wastewater* (APHA/AWWA/WEF); and *Soil, Plant and Water Reference Methods for the Western Region* (WREP 125). Approved editions shall be those that are approved for use by the United States Environmental Protection Agency or the California Department of Public Health's Environmental Laboratory Accreditation Program. The Discharger may propose alternative methods for approval by the Executive Officer.

If monitoring consistently shows no significant variation in magnitude of a constituent concentration or parameter after at least 12 months of monitoring, the Discharger may request this MRP be revised to reduce monitoring frequency. The proposal must include adequate technical justification for reduction in monitoring frequency.

A glossary of terms used within this MRP is included on page 8.

The Discharger shall monitor the following locations to demonstrate compliance with the requirements of this Order:

Monitoring Location Name	Monitoring Location Description
INF-001	Location where a representative sample of the influent to the Wastewater Treatment Facility (WWTF) can be collected prior to any WWTF return flows or treatment processes.
EFF-001	Location where a representative sample of the effluent from the WWTF can be obtained after all treatment units prior to discharge to the recycled water storage ponds.
F-001	After the MBR unit and prior to disinfection.
PND-001 through PND-00X	Recycled water storage ponds
SPL-001	Source water supply
UVS-001	Ultraviolet light disinfection system
BIO-001	Sludge monitoring

INFLUENT MONITORING

The Discharger shall monitor domestic influent to the WWTF at INF-001 as follows:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Continuous	Flow	mgd	Meter
Monthly	BOD ₅ ¹	mg/L	Grab
Monthly	TSS ²	mg/L	Grab

1. 5-day Biochemical Oxygen Demand at 20°C.

2. Total Suspended Solids.

EFFLUENT MONITORING

The Discharger shall monitor treated effluent from the WWTF at EFF-001 as follows:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Continuous	Flow	mgd	Meter
Daily	Total Coliform Organisms	MPN/100 mL	Grab
Weekly	pH	pH Units	Grab
Weekly	EC	umhos/cm	Grab
Weekly	BOD ₅	mg/L	24-hour composite

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Weekly	TSS	mg/L	24-hour composite
Monthly	Total Dissolved Solids	mg/L	24-hour composite
Monthly	Nitrate as nitrogen	mg/L	24-hour composite
Monthly	Nitrite as nitrogen	mg/L	24-hour composite
Monthly	Ammonia as nitrogen	mg/L	24-hour composite
Monthly	Total Kjeldahl Nitrogen	mg/L	24-hour composite
Monthly	Total Nitrogen	mg/L	Computed
Annually	General Minerals ^{1,3}	various	24-hour composite
Annually	Metals ^{2,3}	various	24-hour composite

1. General minerals analysis shall include, alkalinity (as CaCO₃), bicarbonate (as CaCO₃), boron, calcium, carbonate (CaCO₃), chloride, hardness, iron, magnesium, manganese, nitrate as nitrogen, potassium, sodium, sulfate, and TDS.
2. Metals analysis shall include; antimony, arsenic, barium, beryllium, cadmium, cobalt, copper, lead, mercury, molybdenum, silver, thallium, vanadium, and zinc.
3. Samples collected for metals shall be filtered with a 0.45 micron filter prior to preservation, digestion, and analysis.

FILTRATION UNIT MONITORING

The Discharger shall the monitor the turbidity of the effluent at F-001 as follows:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Continuous ¹	Turbidity	NTU	Meter
Continuous	Filtration rate	gpd/ft ²	Calculation

1. Should the continuous turbidity meter and recorder fail, grab sampling at a minimum frequency of 1.2 hours may be substituted for a period of up to 24 hours.

STORAGE POND MONITORING

The Discharger shall monitor the recycled water storage ponds at PND-001 through PND-00X as follows:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Weekly	Dissolved Oxygen	mg/L	Grab ¹
Weekly	Freeboard	Feet ²	Grab

1. Samples shall be collected at a depth of one foot from the surface of the pond, opposite the inlet. Samples shall be collected between 0700 and 0900 hours.
2. Freeboard shall be monitored to the nearest tenth of a foot.

The Discharger shall inspect the condition of the pond(s) at least once per week and write visual observations in a bound logbook. Notations shall include observations of whether weeds are developing in the water, along the bank, and their location; whether dead algae, vegetation, scum, or debris are accumulating in the pond; and color of water in the pond (e.g., dark sparkling green, dull green, yellow, gray, tan, brown, etc.) A **summary** of the entries made in the log during each month shall be submitted along with the quarterly monitoring report.

SOURCE WATER MONITORING

Source water for the Development shall be monitored at SPL-001. If the source water is from more than one source, the results shall be presented as a flow-weighted average of all sources.

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Quarterly	EC	mg/L	Grab
1/three years ¹	General Minerals ²	various	Grab

1. Sample to be collected and analyzed for general minerals once following start-up of the WWTF than once every three years.
2. General minerals analysis shall include, alkalinity (as CaCO₃), bicarbonate (as CaCO₃), boron, calcium, carbonate (CaCO₃), chloride, hardness, iron, magnesium, manganese, nitrate as nitrogen, potassium, sodium, sulfate, and TDS. Samples collected for metals shall be filtered with a 0.45 micron filter prior to preservation, digestion, and analysis.

ULTRAVIOLET LIGHT DISINFECTION SYSTEM MONITORING

The Discharger shall monitor the Ultraviolet (UV) disinfection system at UVS-001 as follows:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Continuous	Flow	mgd	Meter
Continuous	Number of UV light banks in operation	Number	Meter
Continuous	UV Transmittance	Percent (%)	Meter
Continuous	UV Power setting	Percent (%)	Meter
Continuous	UV Intensity	mW/cm	Meter
Continuous	UV lamp hours of operation	Hours	Meter
Continuous	UV Dose	mW-sec/cm ²	Calculated

In addition, the Discharger shall also monitor the UV disinfection system for any additional parameters in accordance with its UV Disinfection System Operations Plan approved by the State Water Resources Control Board, Division of Drinking Water (DDW).

BIOSOLIDS/SLUDGE MONITORING

To ensure that industrial and other discharges to the WWTF are not interfering with treatment processes, the Discharger shall collect a composite sample of the sludge annually, as set forth by Title 40 CFR Part 503.16. Any Notice of Necessary Information (NANI) form prepared for submittal to the United States Environmental Protection Agency shall be forwarded to the appropriate Regional Water Board.

Composite samples shall be collected at BIO-001 in accordance with the Environmental Protection Agency's *POTW Sludge Sampling and Analysis Guidance Document* (EPA/833B89100, August 1989) and tested for the following metals:

Arsenic	Lead	Nickel
Cadmium	Mercury	Selenium
Copper	Molybdenum	Zinc

The control of pathogens and the reduction of vector attraction shall be achieved in accordance with the Environmental Protection Agency's *Control of Pathogens and Vectors in Sewage Sludge* (EPA/625-R-92/013, July 2003).

Sampling records shall be retained for a minimum of five years. A log shall be kept of sludge quantities generated and of handling, application, and disposal activities. The frequency of entries is discretionary; however, a log should be complete enough to serve as a basis for part of the annual reporting requirements.

REPORTING

All monitoring results shall be reported in **Quarterly Monitoring Reports**, which are due by the first day of the second month after the calendar quarter. Therefore, monitoring reports are due as follows:

- First Quarter Monitoring Report: **1 May**
- Second Quarter Monitoring Report: **1 August**
- Third Quarter Monitoring Report: **1 November**
- Fourth Quarter Monitoring Report: **1 February.**

The Central Valley Water Board has gone to a Paperless Office System. All regulatory documents, submissions, materials, data, monitoring reports, and correspondence should be converted to a searchable Portable Document Format (PDF) and submitted electronically. Documents that are less than 50MB should be emailed to: centralvalleyfresno@waterboards.ca.gov. Documents that are 50MB or larger should be transferred to a disk and mailed to the appropriate regional water board office, in this case 1685 E Street, Fresno, CA, 93706.

To ensure that your submittals are routed to the appropriate staff, the following information block should be included in any email used to transmit documents to this office:

Program: Non-15, WDID: 5B20NC00105, Facility Name: Tesoro Viejo WWTF, Order: R5-2016-XXXX

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner that illustrates clearly, whether the discharge complies with waste discharge requirements. In addition to the details specified in Standard Provision C.3, monitoring information shall include the method detection limit (MDL) and the Reporting limit (RL) or practical quantitation limit (PQL). If the regulatory limit for a given constituent is less

than the RL (or PQL), then any analytical results for that constituent that are below the RL (or PQL) but above the MDL shall be reported and flagged as estimated.

Laboratory analysis reports do not need to be included in the monitoring reports; however, the laboratory reports must be retained for a minimum of three years in accordance with Standard Provision C.3.

All monitoring reports shall comply with the signatory requirements in Standard Provision B.3. For a Discharger conducting any of its own analyses, reports must also be signed and certified by the chief of the laboratory.

All monitoring reports that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1.

In the future, the State or Central Valley Water Board may notify the Discharger to electronically submit and upload monitoring reports using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site <http://www.waterboards.ca.gov/ciwqs/index.html> or similar system. Electronic submittal to CIWQS, when implemented, will meet the requirements of our Paperless Office System.

A. All Quarterly Monitoring Reports shall include the following:

Wastewater Reporting:

1. Tabulated results of influent and effluent monitoring specified on pages 2 and 3. The table shall include the running 7-day median total coliform calculation, and maximum coliform detection.
2. For each month of the quarter, calculation of the maximum daily flow, monthly average flow, and cumulative annual flow.
3. For each month of the quarter, calculation of the average monthly effluent BOD₅, TSS, total nitrogen, and EC.

Filtration Unit Reporting:

1. The maximum daily turbidity measured at F-001.
2. If the turbidity measured at F-001 is ever greater than 0.5 NTU, the amount of time the turbidity is greater than 0.5 NTU shall be reported.
3. The maximum daily filtration rate.

Storage Pond Reporting:

4. The results of the routine monitoring specified on page 3.

Source Water Reporting:

1. The results of the source water monitoring specified on page 4. If multiple sources are used the Discharger, shall calculate the flow-weighted average concentrations for the specified constituents. Results must include supporting calculations, if required.

Ultraviolet Light Disinfection Reporting:

1. For each day of the month, the minimum UV operations dose, and minimum UV transmittance.
2. Results of any additional monitoring required by DDW.

B. Fourth Quarter Monitoring Reports, in addition to the above, shall include the following:

Facility Information:

1. The names and general responsibilities of all persons in charge of wastewater treatment and disposal, include telephone numbers of persons to contact regarding the discharge for emergency and routine situations.
2. A statement certifying when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who performed the calibrations (Standard Provision C.4).
3. A statement on whether the current operation and maintenance manual, sampling plan, and contingency plan, reflect the WWTF as currently constructed and operated, and the dates when these documents were last review for adequacy.

Biosolids/Sludge Monitoring Reporting:

1. Annual production totals in dry tons or cubic yards.
2. A description of disposal methods, including location, and Order number of regulatory permit (if appropriate). If more than one method is used, include the percentage disposed of by each method.
3. Include results of monitoring specified on pages 4 and 5.
4. Include a demonstration that off-site disposal of biosolids is consistent with Title 27, division 2.

The Discharger shall implement the above monitoring program following start-up of the WWTF.

Ordered by: _____

PAMELA C. CREEDON, Executive Officer

(Date)

GLOSSARY

BOD ₅	Five-day biochemical oxygen demand
CBOD	Carbonaceous BOD
DO	Dissolved oxygen
EC	Electrical conductivity at 25° C
FDS	Fixed dissolved solids
NTU	Nephelometric turbidity unit
TKN	Total Kjeldahl nitrogen
TDS	Total dissolved solids
TSS	Total suspended solids
Continuous	The specified parameter shall be measured by a meter continuously.
24-Hour Composite	Unless otherwise specified or approved, samples shall be a flow-proportioned composite consisting of at least eight aliquots.
Daily	Samples shall be collected every day.
Twice Weekly	Samples shall be collected at least twice per week on non-consecutive days.
Weekly	Samples shall be collected at least once per week.
Twice Monthly	Samples shall be collected at least twice per month during non-consecutive weeks.
Monthly	Samples shall be collected at least once per month.
Bimonthly	Samples shall be collected at least once every two months (i.e., six times per year) during non-consecutive months
Quarterly	Samples shall be collected at least once per calendar quarter. Unless otherwise specified or approved, samples shall be collected in January, April, July, and October.
Semiannually	Samples shall be collected at least once every six months (i.e., two times per year). Unless otherwise specified or approved, samples shall be collected in March and September.
Annually	Samples shall be collected at least once per year. Unless otherwise specified or approved, samples shall be collected in October.
mg/L	Milligrams per liter
mL/L	Milliliters [of solids] per liter
µg/L	Micrograms per liter
µmhos/cm	Micromhos per centimeter
mgd	Million gallons per day
MPN/100 mL	Most probable number [of organisms] per 100 milliliters
General Minerals	Analysis for General Minerals shall include at least the following:
	Alkalinity (as CaCO ₃) Carbonate (as CaCO ₃) Magnesium Sodium
	Bicarbonate (as CaCO ₃) Chloride Manganese Sulfate
	Boron Hardness Nitrate TDS
	Calcium Iron Potassium
	General Minerals analyses shall be accompanied by documentation of cation/anion balance.