

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

REVISED MONITORING AND REPORTING PROGRAM NO. 5-01-071

FOR
CITY OF MARYSVILLE
WASTEWATER TREATMENT AND RECLAMATION FACILITY
YUBA COUNTY

This Monitoring and Reporting Program (MRP) describes requirements for monitoring domestic wastewater, treated effluent, wastewater storage ponds, land application areas, and groundwater. This MRP is issued pursuant to Water Code Section 13267. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer. Regional Board staff shall approve specific sample station locations prior to implementation of sampling activities.

All samples should be representative of the volume and nature of the discharge or matrix of material sampled. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form. Field test instruments (such as those used to measure pH and dissolved oxygen) may be used provided that:

1. The operator is trained in proper use and maintenance of the instruments;
2. The instruments are field calibrated prior to each monitoring event;
3. The instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and
4. Field calibration reports are submitted as described in the "Reporting" section of the MRP.

INFLUENT MONITORING

Influent flow monitoring shall be performed at the headworks. Influent monitoring shall include the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Daily Flow	gpd	Meter	Continuously ¹	Monthly
Monthly Average Daily Flow	gpd	Calculated	Monthly	Monthly
BOD ²	mg/L	24-hr Composite	Monthly	Monthly

¹ Continuous monitoring requires daily meter reading or automated data acquisition.

² 5-day Biochemical Oxygen Demand.

**EFFLUENT MONITORING
(Discharge to Wastewater Storage Ponds)**

Effluent samples shall be collected before discharge to the wastewater storage ponds and shall be representative of the volume and nature of the discharge. Effluent monitoring shall include the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
BOD	mg/L	Grab	Weekly	Monthly
Total Settleable Solids	mL/L	Grab	Weekly	Monthly
Total Dissolved Solids	mg/L	Grab	Monthly	Monthly
Nitrate as Nitrogen	mg/L	Grab	Monthly	Monthly
Total Kjeldahl Nitrogen	mg/L	Grab	Monthly	Monthly
pH	Standard	Grab	Monthly	Monthly
Standard Minerals ¹	mg/L	Grab	Annually	Annually

¹ Standard Minerals shall include, at a minimum, the following elements/compounds: Boron, Calcium, Chloride, Magnesium, Potassium, Sodium, Sulfate, Total Alkalinity (including alkalinity series), and Hardness.

STORAGE POND MONITORING

Each of the storage ponds shall be sampled for the parameters specified below:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Freeboard	0.1 Feet	Measurement	Weekly	Weekly
Levee Condition	--	Observation	Weekly	Monthly
Odors	--	Observation	Weekly	Monthly
Dissolved Oxygen ¹	mg/L	Grab	Monthly	Monthly
pH	pH units	Grab	Monthly	Monthly

¹ Samples shall be collected at a depth of one foot from each pond in use, opposite the inlet. Samples shall be collected between 0700 and 0900 hours.

TERTIARY RECYCLED WATER MONITORING (Wastewater Discharged to Soccer Fields)

Effluent discharged from the TTU shall be monitored as described below. In addition, monitoring of the land application areas shall be conducted **daily** (during operation) and the results shall be included in the monthly monitoring report. Evidence of erosion, land application area saturation, runoff, or the presence of nuisance conditions shall be noted in the report.

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Flow	Gallons	Continuous	Daily	Monthly
Total Coliform Organisms	MPN/100 mL	Grab	Daily	Monthly
Turbidity ¹	NTU	Continuous	Daily	Monthly
Acreage Applied ²	Acres	Calculated	Daily	Monthly
Application Rate ³	gal/acre•day	Calculated	Daily	Monthly
BOD	mg/L	Grab	Monthly	Monthly
Total Dissolved Solids	mg/L	Grab	Monthly	Monthly

Nitrate as Nitrogen	mg/L	Grab	Monthly	Monthly
Total Kjeldahl Nitrogen	mg/L	Grab	Monthly	Monthly
BOD Loading Rate ³	lbs/acre•day	Calculated	Monthly	Monthly
Total Nitrogen Loading Rate ³	lbs/month	Calculated	Monthly	Monthly
TDS Loading Rate ³	lbs/month	Calculated	Monthly	Monthly

¹ The Discharger shall report the daily average turbidity as well as the total amount of time each day that the turbidity exceeded 5 NTU and the total amount of time each day that the turbidity exceeded 10 NTU.

² Land application areas shall be identified.

³ For each land application area.

RECYCLED WATER MONITORING (Wastewater Discharged to Walnut Orchard)

Effluent discharged to the walnut orchard shall be monitored as described below. In addition, monitoring of the land application areas shall be conducted **daily** (during operation) and the results shall be included in the monthly monitoring report. Evidence of erosion, land application area saturation, runoff, or the presence of nuisance conditions shall be noted in the report.

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Flow	Gallons	Continuous	Daily	Monthly
Total Coliform Organisms	MPN/100 mL	Grab	Daily	Monthly
Acreage Applied ¹	Acres	Calculated	Daily	Monthly
Application Rate ²	gal/acre•day	Calculated	Daily	Monthly
BOD	mg/L	Grab	Monthly	Monthly
Total Dissolved Solids	mg/L	Grab	Monthly	Monthly
Nitrate as Nitrogen	mg/L	Grab	Monthly	Monthly
Total Kjeldahl Nitrogen	mg/L	Grab	Monthly	Monthly
BOD Loading Rate ²	lbs/acre•day	Calculated	Monthly	Monthly
Total Nitrogen Loading Rate ²	lbs/month	Calculated	Monthly	Monthly
TDS Loading Rate ²	lbs/month	Calculated	Monthly	Monthly

¹ Land application areas shall be identified.

² For each land application area or sub-area.

GROUNDWATER MONITORING

Prior to construction and/or sampling of any groundwater monitoring wells, the Discharger shall submit plans and specifications to the Board for review and approval. Once installed, all new wells shall be added to the MRP and shall be sampled and analyzed according to the schedule below.

Prior to sampling, the groundwater elevations shall be measured and the wells shall be purged at least three well volumes until temperature, pH and electrical conductivity have stabilized. Depth to groundwater shall be measured, and groundwater elevation calculated to the nearest 0.01 feet. Samples

shall be collected using standard EPA methods. Groundwater monitoring shall include, at a minimum, the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling and Reporting Frequency</u>
Depth to Groundwater	0.01 Feet	Measurement	Quarterly
Groundwater Elevation	0.01 Feet	Measurement	Quarterly
Gradient	Ft./Ft.	Calculated	Quarterly
Gradient Direction	Degrees	Calculated	Quarterly
Total Dissolved Solids	mg/L	Grab	Quarterly
Nitrate as Nitrogen	mg/L	Grab	Quarterly
Total Kjeldahl Nitrogen	mg/L	Grab	Quarterly
PH	pH units	Grab	Quarterly
Total Coliform Organisms	MPN/100 ml	Grab	Quarterly
Trihalomethanes	µg/L	Grab	Quarterly
Boron	mg/L	Grab	Quarterly
Iron	mg/L	Grab	Quarterly
Manganese	mg/L	Grab	Quarterly
Chloride	mg/L	Grab	Quarterly
Sodium	mg/L	Grab	Quarterly
Standard Minerals ¹	mg/L	Grab	Annually

¹ Standard Minerals shall include, at a minimum, the following elements/compounds: Calcium, Magnesium, Potassium, Sulfate, Total Alkalinity (including alkalinity series), and Hardness.

SLUDGE MONITORING

Prior to the removal of sludge from any pond, a composite sample shall be collected in accordance with EPA's POTW Sludge Sampling and Analysis Guidance Document (August 1989) and tested for the following metals: cadmium, copper, nickel, chromium, lead, and zinc.

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

REPORTING

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g., effluent, pond, etc.), and reported analytical result for each sample are readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with waste discharge requirements and spatial or temporal trends, as applicable. The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall be reported to the Regional Board.

As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all Groundwater Monitoring Reports shall be prepared under the direct supervision of a Registered Engineer or Geologist and signed by the registered professional.

A. Monthly Monitoring Reports

Daily, weekly, and monthly monitoring data shall be reported in monthly monitoring reports. Monthly reports shall be submitted to the Regional Board on the **1st day of the second month following sampling** (i.e. the January Report is due by 1 March). At a minimum, the reports shall include:

1. Results of influent, effluent, storage pond, tertiary recycled water to soccer fields, and recycled water to orchard monitoring;
2. A comparison of monitoring data to the discharge specifications and an explanation of any violation of those requirements. Data shall be presented in tabular format; and
3. If requested by staff, copies of laboratory analytical report(s);
4. A calibration log verifying calibration of all hand-held monitoring instruments and devices used to comply with the prescribed monitoring program.

B. Quarterly Monitoring Reports

The Discharger shall establish a quarterly sampling schedule for groundwater monitoring such that samples are obtained approximately every three months. Quarterly monitoring reports shall be submitted to the Board by the **1st day of the second month after the quarter** (i.e. the January-March quarterly report is due by May 1st) and may be combined with the monthly report. The Quarterly Report shall include the following:

1. Results of groundwater monitoring;
2. A narrative description of all preparatory, monitoring, sampling, and analytical testing activities for the groundwater monitoring. The narrative shall be sufficiently detailed to verify compliance with the WDR, this MRP, and the Standard Provisions and Reporting Requirements. The narrative shall be supported by field logs for each well documenting depth to groundwater; parameters measured before, during, and after purging; method of purging; calculation of casing volume; and total volume of water purged;
3. Calculation of groundwater elevations, an assessment of groundwater flow direction and gradient on the date of measurement, comparison of previous flow direction and gradient data, and discussion of seasonal trends if any;
4. A narrative discussion of the analytical results for all groundwater locations monitored including spatial and temporal trends, with reference to summary data tables, graphs, and appended analytical reports (as applicable);
5. A comparison of monitoring data to the groundwater limitations and an explanation of any violation of those requirements;
6. Summary data tables of historical and current water table elevations and analytical results;

7. A scaled map showing relevant structures and features of the facility, the locations of monitoring wells and any other sampling stations, and groundwater elevation contours referenced to mean sea level datum;
8. Copies of laboratory analytical report(s) for groundwater monitoring.

C. Annual Report

An Annual Report shall be prepared as the fourth quarter monitoring report. The Annual Report will include all monitoring data required in the monthly/quarterly schedule. The Annual Report shall be submitted to the Regional Board by **1 February** each year. In addition to the data normally presented, the Annual Report shall include the following:

1. The contents of the regular groundwater monitoring report for the last sampling event of the year;
2. If requested by staff, tabular and graphical summaries of all data collected during the year;
3. An evaluation of the groundwater quality beneath the wastewater treatment facility;
4. A discussion of compliance and the corrective actions taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the waste discharge requirements;
5. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program;
6. Summary of information on the disposal of sludge and/or solid waste;
7. The results from annual monitoring of the effluent and groundwater;
8. The results from any sludge monitoring required by the disposal facility;
9. A copy of the certification for each certified wastewater treatment plant operator working at the facility and a statement about whether the Discharger is in compliance with Title 23, CCR, Division 3, Chapter 26; and
10. A forecast of influent flows predicted for the next year.

The Discharger shall begin the implementation of the above monitoring program on 1 November 2004.

Ordered by: _____
THOMAS R. PINKOS, Executive Officer

(Date)