

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

REVISED MONITORING AND REPORTING PROGRAM NO. 97-249

FOR  
LAKE COUNTY SANITATION DISTRICT  
ASSESSMENT DISTRICT NO. 2-2  
MIDDLETOWN WASTEWATER TREATMENT FACILITY  
LAKE COUNTY

This monitoring and reporting program (MRP) incorporates requirements for monitoring of the wastewater treatment plant. 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.

All wastewater samples should be representative of the volume and nature of the discharge. The time, date, and location of each grab sample shall be recorded on the chain of custody form. Process wastewater flow monitoring shall be conducted continuously using a flow meter and shall be reported in cumulative gallons per day.

Field test instruments (such as pH and dissolved oxygen) may be used provided that:

1. The operator is trained in the proper use of the instrument;
2. The instruments are field calibrated at the frequency recommended by the instrument manufacturer or at the frequency recommended by an industry standard;
3. 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 this MRP.

**INFLUENT MONITORING**

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Flow	gpd	Continuous	Daily	Monthly
BOD <sub>5</sub> <sup>1</sup>	mg/L	Grab	Monthly	Monthly

<sup>1</sup> 5-day, 20°C Biochemical Oxygen Demand.

**EFFLUENT MONITORING**

Effluent samples shall be collected downstream from the last treatment pond, and prior to discharge to the effluent storage pond. Effluent monitoring shall include at least the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Total Coliform Organisms <sup>1</sup>	MPN/100 mL <sup>2</sup>	Grab	Weekly <sup>3</sup>	Monthly
Chlorine Residual	mg/L	Grab	Weekly <sup>3</sup>	Monthly

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
BOD <sub>5</sub> <sup>4</sup>	mg/L	Grab	Twice Monthly	Monthly
Settleable Solids	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
Specific Conductivity@ 25°C	µmhos/cm	Grab	Monthly	Monthly
Standard Minerals <sup>5</sup>	mg/L	Grab	Annually	Annually

<sup>1</sup> Using a minimum of 10 tubes or two dilutions.

<sup>2</sup> Most probable number per 100 ml.

<sup>3</sup> During irrigating of the land application area.

<sup>4</sup> 5-day, 20°C Biochemical Oxygen Demand.

<sup>5</sup> Standard Minerals shall include the following: boron, calcium, iron, manganese, magnesium, potassium, sodium, chloride, total alkalinity (including alkalinity series), and hardness.

### POND MONITORING

Each of the wastewater treatment ponds and the effluent storage pond shall be monitored for the parameters specified below.

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Dissolved Oxygen <sup>1,4</sup>	mg/L	Grab	Weekly	Monthly
pH <sup>4</sup>	pH units	Grab	Weekly	Monthly
Freeboard	0.25 feet	Observation	Weekly	Monthly
Berm Seepage <sup>2</sup>	NA	Observation	Weekly	Monthly
Odors <sup>3</sup>	--	Observation	Weekly	Monthly

<sup>1</sup> 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.

<sup>2</sup> Reservoir containment levees shall be observed for signs of seepage or surfacing water along the exterior toe of the levees and dam. If surfacing water is found, then a sample shall be collected and tested for total coliform organisms and total dissolved solids.

<sup>3</sup> The presence of strong or unusual odors shall be reported.

<sup>4</sup> Hand held meter may be used.

### LAND APPLICATION AREA MONITORING

Monitoring of the land application area shall be conducted **daily** during irrigating and the results shall be included in the monthly monitoring report. Evidence of erosion, saturation, irrigation runoff, or the presence of nuisance conditions shall be noted in the report. Effluent monitoring results shall be used in calculations to ascertain loading rates at the application area. Monitoring of the land application area shall include the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Flow	Gallons	Continuous	Daily	Monthly
Local Rainfall	Inches	Observation	Daily	Monthly
Acreage Applied <sup>1</sup>	Acres	Calculated	Daily	Monthly
Application Rate <sup>2</sup>	gal/acre/day	Calculated	Daily	Monthly
BOD <sub>5</sub> Loading Rate <sup>2</sup>	lbs/acre/day <sup>3</sup>	Calculated	Monthly	Monthly
Total Nitrogen Loading Rate <sup>2</sup>	lbs/acre/month <sup>4</sup>	Calculated	Monthly	Monthly
Total Dissolved Solids Loading Rate <sup>2</sup>	lbs/acre/month <sup>4</sup>	Calculated	Monthly	Monthly

<sup>1</sup> Land application areas shall be identified.  
<sup>2</sup> For each land application area.  
<sup>3</sup> Report 7-day average and maximum daily loading.  
<sup>4</sup> Report monthly total and cumulative annual to date.

The entire irrigated area shall be periodically inspected during or immediately following an irrigation event to identify any equipment malfunction or other circumstances that might allow irrigation runoff to leave the irrigation area and/or create ponding conditions that violate the Waste Discharge Requirements. A daily log of these inspections shall be kept at the facility and made available for review upon request.

### SLUDGE MONITORING

In accordance with EPA's POTW Sludge Sampling and Analysis Guidance Document, August 1989, a composite sample of sludge shall be collected when removed from the treatment and effluent storage ponds and tested for the following metals:

Cadmium	Copper	Nickel
Chromium	Lead	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.

### GROUNDWATER MONITORING

The groundwater monitoring program shall begin in the fourth quarter of 2004. Prior to construction and/or sampling of any additional groundwater monitoring wells, the Discharger shall submit plans and specifications to the Regional 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. Existing wells to be monitored are MW-1, MW-2, MW-3, and MW-4.

Prior to sampling, the groundwater elevations shall be measured and each well shall be purged at least three well volumes until temperature, pH and electrical conductivity have stabilized. Depth to groundwater shall be measured to the nearest 0.01 feet. Samples shall be collected using standard EPA methods. Groundwater monitoring shall include, at a minimum, the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency<sup>4</sup></u>	<u>Reporting Frequency<sup>4</sup></u>
Depth to Groundwater	0.01 feet	Measurement	Quarterly	Quarterly
Groundwater Elevation <sup>1</sup>	0.01 feet	Calculated	Quarterly	Quarterly
Gradient	feet/feet	Calculated	Quarterly	Quarterly
Gradient Direction	Degrees	Calculated	Quarterly	Quarterly
pH <sup>2</sup>	pH units	Grab	Quarterly	Quarterly
Specific Conductivity@ 25°C	µmhos/cm	Grab	Quarterly	Quarterly
Total Coliform Organisms	MPN/100 mL	Grab	Quarterly	Quarterly
Total Dissolved Solids	mg/L	Grab	Quarterly	Quarterly
Nitrate as Nitrogen	mg/L	Grab	Quarterly	Quarterly
Total Kjeldahl Nitrogen	mg/L	Grab	Quarterly	Quarterly
Standard Minerals <sup>3</sup>	mg/L	Grab	Annually	Annually

<sup>1</sup> Groundwater elevation shall be determined based on depth-to-water measurements from a surveyed measuring point elevation on the well.

<sup>2</sup> Hand held field meter may be used.

<sup>3</sup> Standard Minerals shall include the following: boron, calcium, iron, manganese, magnesium, potassium, sodium, chloride, total alkalinity (including alkalinity series), and hardness.

<sup>4</sup> Beginning with the fourth quarter 2004.

## REPORTING

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g., process wastewater effluent, groundwater well, 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 in the next scheduled monitoring report.

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

**A. Monthly Monitoring Reports**

Monthly reports shall be submitted to the Regional Board by the **1<sup>st</sup> day of the second month** following the end of the reporting period (i.e. the August monthly report is due by 1 October). Monthly reports for the months of March, June, September, and December may be submitted as part of the Quarterly Monitoring Report, if desired. The monthly reports shall include the following:

1. Results of influent, effluent, pond, and land application 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;
3. If requested by staff, copies of laboratory analytical report(s); and
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**

Beginning with the fourth quarter of 2004, 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 Regional Board by the **1<sup>st</sup> day of the second month after the quarter** (i.e. the January-March quarterly report is due by May 1<sup>st</sup>) 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. The narrative shall be sufficiently detailed to verify compliance with the WDRs, 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 the casing volume; and total volume of water purged;
3. Calculation of groundwater elevations, an assessment of the groundwater flow direction and gradient on the date of measurement, comparison to previous flow direction and gradient data, and discussion of seasonal trends, if any;
4. A narrative discussion of the analytical results for all media and 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 discharge specifications, groundwater limitations, and surface water limitations, and 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 other sampling stations, and groundwater elevation contours referenced to mean sea level datum; and
8. Copies of laboratory analytical report(s) for groundwater monitoring.

**C. Annual Monitoring Reports**

An Annual Report shall be prepared as the fourth quarter monitoring report and shall include all monitoring data required in the monthly/quarterly schedule. The Annual Report shall be submitted to the Regional Board by **1 February of each year** and 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. Data for monitoring the effluent, groundwater, and supply water performed on an annual basis;
4. An evaluation of the groundwater quality beneath the facility;
5. An evaluation of the performance of the wastewater treatment system, as well as a forecast of the flows anticipated in the next year;
6. Verification of appropriate employee training for all personnel involved in operation and maintenance of wastewater treatment system;
7. A discussion of compliance and the corrective action taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the waste discharge requirements; and
8. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program.
9. Results of a thorough pond liner inspection performed once yearly when the water level is the lowest. Describe all problems found, repairs made, repairs needed, and scheduled repair/replacement dates.

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A letter transmitting the self-monitoring reports shall accompany each report. Such a letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain a statement by the discharger, or the discharger's authorized agent, under penalty of perjury, that to the best of the signer's knowledge the report is true, accurate and complete.

The Discharger shall implement the above monitoring program as of the date of this Order.

Ordered by:

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THOMAS R. PINKOS, Executive Officer

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(Date)