

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2009-____
FOR
BUTTONWILLOW COUNTY WATER DISTRICT
WASTEWATER TREATMENT FACILITY
KERN 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 should 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, the Discharger may request the 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 and a list of the constituents required for the monitoring of Priority Pollutants is included in Table 1, which is on page 9.

INFLUENT MONITORING

Influent samples shall be collected at the inlet of the headworks of the WWTF. Time of collection of the sample shall be recorded. Influent monitoring shall include at least the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Continuous	Flow	mgd	Meter
Weekly	pH	pH Units	Grab
Weekly	EC	µmhos/cm	Grab
Monthly ¹	BOD ₅	mg/L	24-hour composite
Monthly ¹	TSS	mg/L	24-hour composite
Monthly	Monthly Average Discharge Flow	mgd	Computed

¹ Upon completion of the WWTF upgrade, weekly monitoring shall take place for at least three months. If monitoring results shows that there are no significant variations in magnitude of a constituent concentration or parameter, and after approval by the Executive Officer, the monitoring frequency can be reduced back to monthly.

EFFLUENT MONITORING

Effluent samples shall be collected at a point in the system following treatment and before discharge to the effluent storage ponds or Use Area. Time of collection of the sample shall be recorded. Effluent monitoring shall include the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Weekly	pH	pH Units	Grab
Weekly	EC	µmhos/cm	Grab
Monthly ¹	BOD ₅	mg/L	24-hour composite
Monthly ¹	TSS	mg/L	24-hour composite
Monthly ¹	Total Nitrogen	mg/L	Computed
Quarterly	General Minerals	mg/L	24-hour composite
Once every 5 Years ²	Priority Pollutants (see Table 1)	Varies ³	Varies

¹ Upon completion of the WWTF upgrade, weekly monitoring shall take place for at least three months. If monitoring results shows that there are no significant variations in magnitude of a constituent concentration or parameter, and after approval by the Executive Officer, the monitoring frequency can be reduced back to monthly.

² Beginning in January 2010.

³ mg/L or µg/L, as appropriate.

POND MONITORING

Permanent markers (e.g., staff gages) shall be placed in all ponds. The markers shall have calibrations indicating water level at the design capacity and available operational freeboard. Effluent storage pond monitoring shall include at least the following:

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

¹ Should the DO be below 1.0 mg/L during a weekly sampling event, the Discharger shall take all reasonable steps to correct the problem and commence daily DO monitoring in the affected ponds until the problem has been resolved.

² To nearest tenth of a foot

The Discharger shall inspect the condition of the ponds weekly and record visual observations in a bound logbook. Notations shall include observations of whether weeds are developing in the water or along the bank, and their location; whether grease, dead algae, vegetation, scum, or debris are accumulating on the pond surface and their location; whether burrowing animals or insects are present; and the color of the reservoirs (e.g., dark sparkling green, dull green, yellow, gray, tan, brown, etc.). A summary of the entries made in the log shall be included in the subsequent monitoring report.

SOURCE WATER MONITORING

For each source (either well or surface water supply), the Discharger shall calculate the flow-weighted average concentrations for the specified constituents utilizing monthly flow data and the most recent chemical analysis conducted in accordance with Title 22 drinking water requirements. Alternatively, the Discharger may establish representative sampling stations within the distribution system serving the same area as is served by the WWTF.

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Quarterly	Flow-Weighted EC	µmhos/cm	Computed average
Annually	General Minerals	mg/L	Computed average

SLUDGE MONITORING

Sludge shall be sampled for the following constituents:

Arsenic	Copper	Nickel
Cadmium	Lead	Selenium
Molybdenum	Mercury	Zinc

Monitoring shall be conducted: using the methods is “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods” (SW-846), as required in Title 40 of the Code of Federal Regulations (40 CFR), Part 503.8(b)(4). The constituents listed above shall be monitored at the following frequency, depending on volume generated:

<u>Volume Generated (dry metric tons/year)</u>	<u>Frequency</u>
0 to 290	Annually
290 to 1,500	Quarterly
1,500 to 15,000	Bimonthly (six samples per year)
Greater than 15,000	Monthly

The Discharger shall demonstrate that treated sludge (i.e., biosolids) meets Class A or Class B pathogens reduction levels by one of the methods listed in 40 CFR, Part 503.32.

The Discharger shall track and keep records of the operational parameters used to achieve Vector Attraction Reduction requirements in 40 CFR, Part 503.33(b).

USE AREA MONITORING

The Discharger shall perform the routine monitoring and loading calculations for each discrete irrigation area within the Use Area. Data shall be collected and presented in tabular format in accordance with Table 2.

In addition, the Discharger shall inspect the Use Area on a weekly basis. Evidence of erosion, field saturation, runoff, of the presence of nuisance conditions (i.e., flies, ponding, etc.) shall be noted in field logs and included as part of the quarterly monitoring reports.

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

A transmittal letter shall accompany each monitoring report. The transmittal letter shall discuss any violations that occurred during the reporting period and all actions taken or planned for correcting violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions or a time schedule for implementing the corrective actions, reference to the previous correspondence is satisfactory.

The following information is to be included on all monitoring and annual reports, as well as report transmittal letters, submitted to the Central Valley Water Board:

Discharger Name
Facility Name
MRP Number
Contact Information (telephone number and email)

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 Discharger 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. Monitoring data or discussions submitted concerning WWTF performance must also be signed and certified by the chief plant operator. If the chief plant operator is not in direct line of supervision of the laboratory function 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.

A. All Quarterly Monitoring Reports shall include the following:

Wastewater reporting

1. The results of influent, effluent, and pond monitoring specified on page 2 and 3.
2. For each month of the quarter, calculation of the maximum daily flow and the monthly average flow.
3. For each month of the quarter, calculation of the 12-month rolling average EC of the discharge using the EC value for that month averaged with the EC values for the previous 11 months.
4. For each month of the quarter, calculation of the monthly average effluent BOD and TSS concentrations, and calculation of the percent removal of BOD and TSS compared to the influent.
5. A summary of the notations made in the pond monitoring log during each quarter. Copies of log pages covering the quarterly reporting period shall not be submitted unless requested by Central Valley Water Board staff.

Source water reporting

1. For each month of the quarter, calculation of the flow-weighted 12-month rolling average EC of the source water using monthly flow data and the source water EC values for the most recent four quarters.

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

Wastewater treatment facility information

1. The names, certificate grades, and general responsibilities of all persons in charge of wastewater treatment and disposal.
2. The names and telephone numbers of persons to contact regarding the WWTF for emergency and routine situations.
3. 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).
4. A statement 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 reviewed for adequacy.
5. The results of an annual evaluation conducted pursuant to Standard Provision E.4 and a figure depicting monthly average discharge flow for the previous five calendar years.

Solids/Sludge monitoring

1. Annual production totals in dry tons or cubic yards.
2. A description of disposal methods, including the following information related to the disposal methods used. If more than one method is used, include the percentage disposed of by each method.
 - a. For landfill disposal, include: the name and location of the landfill, and the Order number of WDRs that regulate it.
 - b. For land application, include: the location of the site, and the Order number of any WDRs that regulate it.
 - c. For incineration, include: the name and location of the site where incineration occurs, the Order number of WDRs that regulate the site, the disposal method of ash, and the name and location of the facility receiving ash (if applicable).
 - d. For composting, include: the location of the site, and the Order number of any WDRs that regulate it.

Use Area reporting

1. The type of crop(s) grown in the Use Area, and the quantified hydraulic and nitrogen loading rates in accordance with Table 2.
2. A summary of the notations made in the Use Area monitoring log during each quarter. The entire contents of the log do not need to be submitted.

The Discharger shall implement the above monitoring program on the first day of the month following adoption of this Order.

Ordered by: _____
PAMELA C. CREEDON, Executive Officer

(Date)

DMS/DKP: 10/7/2009

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	Samples shall be a flow-proportioned composite consisting of at least eight aliquots.		
Daily	Samples shall be collected at least 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 April and October.		
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	Chloride	Sodium
	Bicarbonate	Hardness	Sulfate
	Calcium	Magnesium	TDS
	Carbonate	Potassium	
	General Minerals analyses shall be accompanied by documentation of cation/anion balance.		

Table 1. Priority Pollutant Scan

<u>Inorganics</u> ¹	<u>Organics</u>		
Antimony	Acrolein	3-Methyl-4-Chlorophenol	Hexachlorobenzene
Arsenic	Acrylonitrile	Pentachlorophenol	Hexachlorobutadiene
Beryllium	Benzene	Phenol	Hexachlorocyclopentadiene
Cadmium	Bromoform	2,4,6-Trichlorophenol	Hexachloroethane
Chromium (III)	Carbon tetrachloride	Acenaphthene	Indeno(1,2,3-c,d)pyrene
Chromium (VI)	Chlorobenzene	Acenaphthylene	Isophorone
Copper	Chlorodibromomethane	Anthracene	Naphthalene
Lead	Chloroethane	Benidine	Nitrobenzene
Mercury	2-Chloroethylvinyl Ether	Benzo(a)Anthracene	N-Nitrosodimethylamine
Nickel	Chloroform	Benzo(a)pyrene	N-Nitrosodi-n-Propylamine
Selenium	Dichlorobromomethane	Benzo(b)fluoranthene	N-Nitrosodiphenylamine
Silver	1,1-Dichloroethane	Benzo(g,h,i)perylene	Phenanthrene
Thallium	1,2-Dichloroethane	Benzo(k)fluoranthene	Pyrene
Zinc	1,1-Dichloroethylene	Bis(2-chloroethoxy) methane	1,2,4-Trichlorobenzene
Cyanide	1,2-Dichloropropane	Bis(2-chloroethyl) ether	
Asbestos	1,3-Dichloropropylene	Bis(2-chloroisopropyl) ether	<u>Pesticides</u>
	Ethylbenzene	Bis(2-Ethylhexyl)phthalate	Aldrin
	Methyl Bromide	4-Bromophenyl phenyl ether	alpha-BHC
<u>Dioxin Congeners</u>	Methyl Chloride	Butylbenzyl Phthalate	beta-BHC
2,3,7,8-TCDD	Methylene Chloride	2-Chloronaphthalene	gamma-BHC (Lindane)
1,2,3,7,8-PentaCDD	1,1,2,2-Tetrachloroethane	4-Chlorophenyl Phenyl Ether	delta-BHC
1,2,3,4,7,8-HexaCDD	Tetrachloroethylene (PCE)	Chrysene	Chlordane
1,2,3,6,7,8-HexaCDD	Toluene	Dibenzo(a,h)Anthracene	4,4'-DDT
1,2,3,7,8,9-HexaCDD	1,2-Trans-Dichloroethylene	1,2-Dichlorobenzene	4,4'-DDE
1,2,3,4,6,7,8-HeptaCDD	1,1,1-Trichloroethane	1,3-Dichlorobenzene	4,4'-DDD
OctaCDD	1,1,2-Trichloroethane	1,4-Dichlorobenzene	Dieldrin
2,3,7,8-TetraCDF	Trichloroethylene (TCE)	3,3'-Dichlorobenzidine	alpha-Endosulfan
1,2,3,7,8-PentaCDF	Vinyl chloride	Diethyl phthalate	beta-Endosulfan
2,3,4,7,8-PentaCDF	2-Chlorophenol	Dimethyl phthalate	Endosulfan Sulfate
1,2,3,4,7,8-HexaCDF	2,4-Dichlorophenol	Di-n-Butyl Phthalate	Endrin
1,2,3,6,7,8-HexaCDF	2,4-Dimethylphenol	2,4-Dinitrotoluene	Endrin Aldehyde
1,2,3,7,8,9-HexaCDF	2-Methyl-4,6-Dinitrophenol	2,6-Dinitrotoluene	Heptachlor
2,3,4,6,7,8-HexaCDF	2,4-Dinitrophenol	Di-n-Octyl Phthalate	Heptachlor epoxide
1,2,3,4,6,7,8-HeptaCDF	2-Nitrophenol	1,2-Diphenylhydrazine	Polychlorinated biphenyls
1,2,3,4,7,8,9-HeptaCDF	4-Nitrophenol	Fluoranthene	Toxaphene
OctaCDF		Fluorene	

¹ With the exception of wastewater samples, samples placed in an acid-preserved bottle for metals analysis must first be filtered. If filtering in the field is not feasible, samples shall be collected in unpreserved containers and submitted to the laboratory within 24 hours with a request (on the chain of custody form) to immediately filter then preserve the sample.

² Samples to be analyzed for volatile compounds and phthalate esters shall be grab samples; the remainder shall be 24-hour composite samples.

Table 2. Use Area Monitoring

Recycled Water Monitoring Data For Year: _____								
Parcel No. _____ of _____ acres								
		Water application				Nitrogen application		
		Water required	Effluent used	Other water used	Total irrigation water	As fertilizer	As effluent*	Total nitrogen applied
Month	Crop	(AF)	(AF)	(AF)	(AF)	(lbs/acre)	(lbs/acre)	(lbs/acre)
October								
November								
December								
Subtotal:								
January								
February								
March								
Subtotal:								
April								
May								
June								
Subtotal:								
July								
August								
September								
Subtotal:								
Annual Total:								
* calculated as (AF effluent/acre) x (2.72) x (X mg/l total nitrogen) = lbs nitrogen/acre								