

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION**

MONITORING AND REPORTING PROGRAM NO. R7-2003-0049
FOR
NILAND SANITARY DISTRICT, OWNER/OPERATOR
NILAND WASTEWATER TREATMENT PLANT
AND
WASTEWATER COLLECTION AND DISPOSAL SYSTEMS
Niland – Imperial County

Location of Discharge: "R" Drain, SW ¼ of Section 9, T11S, R14E, SBB&M

MONITORING

1. The collection, preservation and holding times of all samples shall be in accordance with United States Environmental Protection Agency (USEPA) approved procedures. Unless otherwise approved by the Regional Board's Executive Officer, all analyses shall be conducted by a laboratory certified by the State Department of Health Services. All analyses shall be conducted in accordance with the latest edition of the "Guidelines Establishing Test Procedures for Analysis of Pollutants" (40CFR Part 136), promulgated by the USEPA.
2. Samples shall be collected at the location specified in the Permit. If no location is specified, sampling shall be conducted at the most representative sampling point available.
3. If the facility is not in operation, or there is no discharge during a required reporting period, the discharger shall forward a letter to the Regional Board indicating that there has been no activity during the required reporting period.

INFLUENT MONITORING

The wastewater influent to the treatment plant shall be monitored for the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
20°C BOD ¹ ₅	mg/L ²	24-Hr. Composite	Semi-Monthly ³	Monthly
Suspended Solids	mg/L	24-Hr. Composite	Semi-Monthly	Monthly

¹ BOD₅ –Biochemical Oxygen Demand

² mg/L = Milligrams per Liter

³ Sample to be collected every other calendar week in the month

EFFLUENT MONITORING

Wastewater treatment plant effluent discharged to the "R" Drain shall be monitored for constituents indicated below. A sampling station shall be established at the point of discharge where representative samples of effluent can be obtained:

<u>Constituent</u>	<u>Unit</u>	Type of	<u>Sampling</u>	<u>Reporting</u>	<u>Frequency</u>
Daily Effluent Discharge	MGD ⁴		Flow Meter Reading	Daily ⁵	Monthly
pH			Grab	Daily ⁶	Monthly
Chlorine Residual ⁷	mg/L		Grab	Daily	Monthly
Temperature	°F		Grab	Daily	Monthly
Escherichia Coli (E. Coli)	MPN/100 ml		Grab	Five Samples per month ⁸	Monthly
Copper	µg/L		Grab	Monthly	Monthly
Selenium	µg/L		Grab	Monthly	Monthly
Thallium	µg/L		Grab	Monthly	Monthly
Suspended Solids	mg/L		24-Hr. Composite	Semi-Monthly	Monthly
20°C BOD ₅	mg/L		24-Hr. Composite	Semi-Monthly	Monthly
Hardness (as CaCO ₃)	mg/L		Grab	Semi-Annual ⁹	Semi-Annual
Nitrates as Nitrogen (N)	mg/L		24-Hr. Composite	Semi-Annual	Semi-Annual
Nitrites as N	mg/L		24 Hr. composite	Semi-Annual	Semi-Annual
Ammonia Nitrogen as N	mg/L		24-Hr. Composite	Semi-Annual	Semi-Annual
Total Nitrogen as N	mg/L		24-Hr. Composite	Semi-Annual	Semi-Annual
Total Phosphate as Phosphorus (P)	mg/L		24-Hr. Composite	Semi-Annual	Semi-Annual
Ortho-Phosphate as P	mg/L		24-Hr. Composite	Semi-Annual	Semi-Annual
Total Dissolved Solids	mg/L		24-Hr. Composite	Semi-Annual	Semi-Annual
Volatile Organic Compounds (EPA Methods 624 and 625)	µg/L		Grab	Annually	Annually

⁴ MGD – Million Gallons-Per-Day

⁵ Reported monthly with monthly average daily flow

⁶ Daily (excluding holidays and weekends)

⁷ The discharger may monitor for dechlorinating agent residual and report residual chlorine as nondetectable if the dechlorinating agent is present. A grab sample shall be performed 3 times daily and the average result indicated on the report until continuous sampling begins.

⁸ Five samples equally spaced over a 30-day period with a minimum of one sample per week

⁹ Sample to be collected in December and June

Oil and Grease	mg/L	Composite ¹⁰	Annually	Annually
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RECEIVING WATER MONITORING

All receiving water samples shall be grab samples. Sampling stations shall be as follows:

<u>Station</u>	<u>Description</u>
R-1	Not to exceed 100 feet upstream from the point of discharge. A greater distance may be acceptable provided the discharger submits proper justification that the prescribed distance is inaccessible.
R-2	Not to exceed 25 feet downstream of the discharge pipe outlet.

<u>Constituent</u>	<u>Unit</u>	<u>Station</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Temperature	°F	R-1, R-2	Semi-Annual	Semi-Annual
Chlorine Residual ¹¹	mg/L	R-1, R-2	Semi-Annual	Semi-Annual
Total Suspended Solids	mg/L	R-1, R-2	Semi-Annual	Semi-Annual
Nitrates as Nitrogen (N)	mg/L	R-1, R-2	Semi-Annual	Semi-Annual
Nitrites as N	mg/L	R-1, R-2	Semi-Annual	Semi-Annual
Ammonia Nitrogen as N	mg/L	R-1, R-2	Semi-Annual	Semi-Annual
Total Nitrogen as N	mg/L	R-1, R-2	Semi-Annual	Semi-Annual
Total Phosphate as Phosphorus (P)	mg/L	R-1, R-2	Semi-Annual	Semi-Annual
Ortho-Phosphate as P	mg/L	R-1, R-2	Semi-Annual	Semi-Annual
Dissolved Oxygen	mg/L	R-1, R-2	Semi-Annual	Semi-Annual
pH	----	R-1, R-2	Semi-Annual	Semi-Annual
Hardness (CaCO ₃)	mg/L	R-1, R-2	Semi-Annual	Semi-Annual
Escherichia Coli (E. Coli)	MPN/100 ml	R-1, R-2	Semi-Annual	Semi-Annual
Copper	µg/L	R-1	Quarterly	Quarterly
Selenium	µg/L	R-1	Quarterly	Quarterly
Thallium	µg/L	R-1	Quarterly	Quarterly

¹⁰ Three grab samples collected two hours apart between the hours of 8:00 a.m. through 2:00 p.m. during the day

¹¹ The discharger may monitor for dechlorinating agent residual and report residual chlorine as nondetectable if the dechlorinating agent is present.

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions at Stations R1 and R2. Attention shall be given to the presence or absence of:

- a. Floating or suspended matter
- b. Discoloration
- c. Aquatic life (including plants, fish
shellfish, birds)
- d. Visible film, sheen or coating
- e. Fungi, slime, or objectionable growths
- f. Potential nuisance conditions

In the event that no effluent is present at station R1, no receiving water monitoring data is required for station R1.

Notes on receiving water conditions shall be summarized in the monitoring report.

2,3,7,8- TETRACHLORODIBENZO-P-DIOXIN (TCDD)
EQUIVALENT MONITORING

The discharger shall continue monitoring its effluent for the seventeen (17) 2, 3, 7, 8-tetrachlorodibenzo-p-dioxin equivalents listed in Section 3, Table 4 of the "Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California", (congeners once during the dry weather and once during the wet weather within a period of three consecutive year which began in 2003). The purpose of the monitoring is to assess the presence and amounts of the congeners being discharged to inland surface waters, enclosed bays, and estuaries for the development of a strategy to control these chemicals in a future multi-media approach.

A copy of Table 4 is shown below.

Table 4

<u>Congener</u>	<u>TEF</u>
2,3,7,8- Tetra chlorodibenzo-p-dioxin (CDD)	1
1,2,3,7,8- Penta-CDD	1.0
1,2,3,4,7,8- Hexa-CDD	0.1

1,2,3,6,7,8- Hexa-CDD	0.1
1,2,3,7,8,9- Hexa-CDD	0.1
1,2,3,4,6,7,8- Hepta-CDD	0.01
OctaCDD	0.0001
2,3,7,8- Tetra chlorodibenzofuran (CDF)	0.1
1,2,3,7,8- Penta-CDF	0.05
2,3,4,7,8- Penta-CDF	0.5
1,2,3,4,7,8- Hexa-CDF	0.1
1,2,3,6,7,8- Hexa-CDF	0.1
1,2,3,7,8,9- Hexa-CDF	0.1
2,3,4,6,7,8- Hexa-CDF	0.1
1,2,3,4,6,7,8- Hepta-CDF	0.01
1,2,3,4,7,8,9- Hepta-CDF	0.01
Octa-CDF	0.0001

The discharger shall report for each congener the analytical results of the effluent monitoring, including the quantifiable limit and the Method Detection Limit¹², and the measured or estimated concentration. In addition, the discharger shall multiply each measured or estimated congener concentration by its respective Toxic Equivalent Factors¹³ value and report the sum of these values. This information shall be submitted as part of the discharger's monitoring reports.

OPERATION AND MAINTENANCE

The discharger shall report the following:

<u>Activity</u>	<u>Reporting Frequency</u>
To inspect and document any operation/maintenance problems by inspecting each unit process. In addition, calibration of flow meters and equipment shall be performed in a timely manner and documented.	Annually
The amount of sodium hypochlorite and sodium metabisulfite shall be monitored daily and reported monthly. The units of measurement shall be pounds per day.	Monthly

¹² As determined by the procedure found in 40 CFR 136 (revised as of May 14, 1999)

¹³ Table 4 Toxic Equivalency Factors (TEFs) for 2, 3, 7, 8- TCDD Equivalents, pg. 27, Policy for Implementation of Toxics, Standard for Inland Surface Waters, Enclosed Bays and Estuaries of California, Adopted March 2, 2000

SLUDGE MONITORING

The discharger shall report annually on the quantity, location and method of disposal of all sludge and similar solid materials being produced at the wastewater treatment plant facility. These monitoring and reporting requirements are necessary to determine compliance with Waste Discharge Requirements R7-2003-0049.

The sludge that is generated at the treatment facility shall be sampled and analyzed for the following prior to disposal:

<u>Constituent</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Arsenic	mg/kg ¹⁴	Composite	Annually	Annually
Cadmium	mg/kg	Composite	Annually	Annually
Copper	mg/kg	Composite	Annually	Annually
Lead	mg/kg	Composite	Annually	Annually
Mercury	mg/kg	Composite	Annually	Annually
Molybdenum	mg/kg	Composite	Annually	Annually
Nickel	mg/kg	Composite	Annually	Annually
Selenium	mg/kg	Composite	Annually	Annually
Zinc	mg/kg	Composite	Annually	Annually
Fecal Coliform	MPN/gram	Composite	Annually	Annually

EFFLUENT TOXICITY TESTING

The discharger shall conduct chronic and acute toxicity testing on the effluent as follows:
Minimum

<u>Test</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Frequency of Test</u>
Chronic Toxicity TU _c ¹⁵	24-Hr. Composite	Semi-Annual	Semi-Annual
Acute Toxicity TU _a ¹⁶	24-Hr. Composite or (P or F) ¹⁸ and Percent Survival	Semi- Annual	Semi-Annual

Both test species given below shall be used to measure chronic and acute toxicity:

¹⁴ mg/kg – milligrams per kilogram

¹⁵ Chronic Toxicity Units

¹⁶ Acute bioassay results can be calculated from chronic bioassay test for Pimephales promelas.

¹⁷ Acute Toxicity Units

¹⁸ Pass or Fail when using a t-test

<u>Species</u>	<u>Effect</u>	<u>Test Duration (Days)</u>	<u>Reference</u> ¹⁹
Fathead Minnow (<u>Pimephales promelas</u>)	Larval Survival and Growth	7	EPA/821-r-02-013 (Chronic) EPA/821-R-02-012 (Acute)
Water Flea (<u>Ceriodaphnia dubia</u>)	Survival and Reproduction	7	EPA/821-r-02-013 (Chronic) EPA/821-R-02-012 (Acute)

Toxicity Test References:

1. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, EPA/821-R-02-012, October, 2002 or subsequent editions.
2. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water for Freshwater Organisms, Fourth Edition, EPA/821-R-02-013, October 2002 or subsequent editions.
3. Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the National Pollutant Discharge Elimination System Program, EPA 833-R-00-003, June 2000.
4. Method Guidance and Recommendations for Whole Effluent Testing, EPA 821-B-00-004, July 2000.
5. Clarifications Regarding Flexibility in 40 CFR Part 136 Whole Effluent Toxicity (WET) Test Methods, memorandum dated April 10, 1996 from Tudor Davies, Director of the EPA Office of Water's Office of Science and Technology.

QUALITY ASSURANCE

Dilution and control waters may be obtained from an unaffected area of receiving waters. Synthetic (standard) dilution is an option and may be used if the above source is suspected to have toxicity greater than 1.0 TU_c.

A series of at least five dilutions and a control shall be tested for chronic toxicity testing and may be used for acute toxicity testing. The series shall include the following concentrations: 12.5, 25, 50, 75, and 100 percent effluent.

For the acute toxicity testing using a t-test, two dilutions shall be used, i.e., 100 percent effluent and a control (when a t-test is used instead of an LC50).

If organisms are not cultured in-house, concurrent testing with a referenced toxicant shall be conducted. Where organisms are cultured in-house, monthly reference toxicant testing is sufficient. Reference toxicant tests also shall be conducted using the same test conditions as the effluent toxicity tests (e.g., same test duration, etc.).

If either the reference toxicant test or effluent test does not meet all test acceptability criteria (TAC) as specified in the toxicity test references, then the permittee must re-sample and retest within 14 days or as soon as possible.

¹⁹ Additional references are listed in the Toxicity Test References section.

DEFINITION OF TOXICITY

Chronic toxicity measures sublethal effect (e.g., reduced growth, reproduction) to experimental test organisms exposed to an effluent or ambient waters compared to that of the control organisms.

Chronic toxicity shall be measured in TU_c , where $TU_c = 100/NOEC$. The no observed effect concentration (NOEC) is the highest concentration of toxicant to which organisms are exposed in a chronic test that causes no observable adverse effect on the test organisms (e.g., the highest concentration of toxicant to which the values for the observed responses are not statistically significantly different from the controls).

Acute toxicity is a measure of primarily lethal effects that occur over a ninety-six (96) hour period. Acute toxicity for Pimephales promelas can be calculated from the results of the chronic toxicity test for Pimephales promelas and reported along with the results of each chronic test. Acute toxicity for Ceriodaphnia dubia cannot be calculated from the results of the chronic toxicity test for Ceriodaphnia dubia because the test design is not amenable to calculation of a lethal concentration (LC50) value as needed for the acute requirement.

Acute toxicity shall be measured in Tu_a , where $Tu_a = 100/LC50$ or as pass/fail using a t-test. LC50 is the toxicant concentration that would cause death in 50 percent of the test organisms.

REPORTING OF BIOASSAY RESULTS

The discharger shall submit the analysis and results of the toxicity tests, including any accelerated testing, in toxicity units with the discharge monitoring reports for the month in which the last test is conducted.

The results of the chronic toxicity testing (chronic toxicity units) shall be reported along with the statement that the bioassay results passed or failed and whether toxicity is indicated in the 100 percent effluent.

1. The results of the acute toxicity testing shall be reported along with a statement that the bioassay results passed or failed and whether toxicity is indicated in the 100 percent effluent.

REPORTING OF A TOXICITY IDENTIFICATION EVALUATION AND/OR RESULTS OF THE TOXICITY REDUCTION EVALUATION WORKPLAN

1. If a Toxicity Identification Evaluation (TIE) is conducted the discharger shall submit the results of the TIE with the discharge monitoring reports for the month in which the final report is completed.
2. If the Toxicity Reduction Evaluation (TRE) Workplan has been initiated, the discharger shall report on the progress of the actions being taken and include this information with each monthly monitoring report.

PRETREATMENT

In the event that significant industrial wastewaters are being discharged to the wastewater treatment facility, then the discharger shall provide the Regional Board with an annual report describing the pretreatment program activities over the previous twelve (12) month period and it shall include:

- a. A summary of actions taken by the discharger which ensures industrial-user compliance;
- b. An updated list of industrial users (by SIC categories) which were issued permits, and/or enforcement orders, and a status of compliance for each user; and
- c. The name and address of each user that received a revised discharge limit.

REPORTING

1. The discharger shall arrange the data in tabular form so that the specified information is readily discernible. The data shall be summarized in such a manner as to clearly illustrate whether the facility is operating in compliance with waste discharge requirements.
2. The discharger shall report with each sample result the applicable Minimum Level (as described in the California Toxics Policy) and the laboratory current Method Detection Limit, as determined by the procedure in 40 CFR 136 (revised as of May 14, 1999).
3. The discharger shall report the results of acute and chronic toxicity testing, TRE and TIE as required in the previous section entitled, "Effluent Toxicity Testing".
4. Records of monitoring information shall include:
 - a. The date, exact place, and time of sampling or measurement(s);
 - b. The individual(s) who performed the sampling or measurement(s);
 - c. The date(s) analyses were performed;
 - d. The individual(s) who performed the analyses;
 - e. The analytical techniques or method used; and
 - f. The results of such analyses.
5. The results of any analysis take, more frequently than required at the locations specified in this Monitoring and Reporting Program shall be reported to the Regional Board.
6. Monitoring reports shall be certified under penalty of perjury to be true and correct, and shall contain the required information at the frequency designated in this monitoring report.
7. Each report shall contain the following statement:

"I declare under the penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations".
8. A duly authorized representative of the discharger may sign the documents if:
 - a. The authorization is made in writing by the person described above;
 - b. The authorization specified an individual or person having responsibility for the overall operation of the regulated disposal system; and
 - c. The written authorization is submitted to the Regional Board's Executive Officer.

9. Reporting of any failure in the facility (wastewater treatment plant, and collection and disposal systems) shall be as described in Provision No. 11. Results of any analysis performed as a result of a failure of the facility shall be provided within ten (10) days after collection of the samples.
10. The discharger shall attach a cover letter to the Discharge Monitoring Report. The information contained in the cover letter shall clearly identify violations of the WDRs, discuss corrective actions taken or planned and the proposed time schedule of corrective actions. Identified violations should include a description of the requirement that was violated and a description of the violation.
11. Daily, semi-weekly and monthly monitoring reports shall be submitted to the Regional Board by the 15th day of the following month. Quarterly monitoring reports shall be submitted to the Regional Board by January 15, April 15, July 15, and October 15, of each year. Semi-Annual Reports shall be submitted to the Regional Board by January 15 and July 15 of each year. Annual monitoring reports shall be submitted to the Regional Board by January 15 of each year.
12. Submit monitoring reports to:

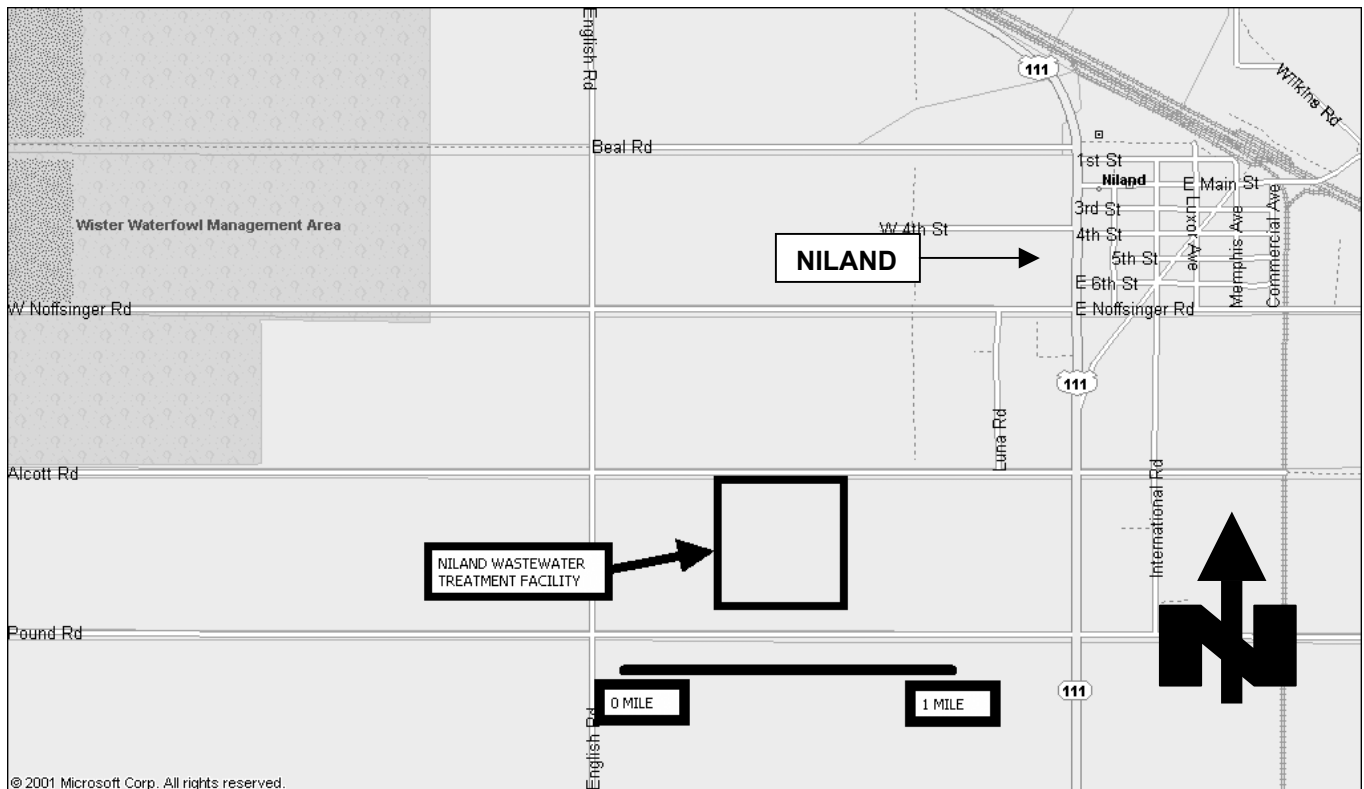
California Regional Water Quality Control Board
Colorado River Basin Region
73-720 Fred Waring, Suite 100
Palm Desert, CA 92260
13. A copy of the monitoring report shall also be sent to:

Regional Administrator
U.S. Environmental Protection Agency
Region 9, Attn: 65/MR, W-3
75 Hawthorne Street
San Francisco, CA 94105

Ordered by: _____
Executive Officer

Date

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION**



SITE MAP

**NILAND SANITARY DISTRICT
WASTEWATER TREATMENT PLANT
AND
WASTEWATER COLLECTION AND DISPOSAL SYSTEMS
Niland – Imperial County
Discharge Location - "R" Drain, SW ¼ of Section 9, T11S, R14E, SBB&M**

Board Order No. R7-2003-0049