



**REGION 6**  
**1445 ROSS AVENUE**  
**DALLAS, TEXAS 75202-2733**

**NPDES Permit No NM0030236**

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**AUTHORIZATION TO DISCHARGE UNDER THE  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**

In compliance with the provisions of the Clean Water Act, as amended, (33 U.S.C. 1251 et. seq; the "Act"),

Cannon Air Force Base  
506 North D.L. Ingram Blvd  
Cannon Air Force Base, NM 88103

is authorized to discharge to receiving waters named North Playa Lake (Outfall 001) and Golf Course Pond (Outfall 002) from a facility located at 100 South D.L. Ingram Blvd, Cannon Air Force Base, Curry County, New Mexico.

The discharge is located on that water at the following coordinates:

Outfall 001: Latitude 34° 23' 15" North, Longitude 103° 18' 00" West  
Outfall 002: Latitude 34° 24' 00" North, Longitude 103° 19' 33" West

in accordance with this cover page and the effluent limitations, monitoring requirements, and other conditions set forth in Part I, Part II, Part III, and Part IV hereof.

This permit shall become effective on

This permit and the authorization to discharge shall expire at midnight,

Issued on

Prepared by

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William K. Honker, P.E.  
Director  
Water Division (6WQ)

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Jim Afghani  
Environmental Engineer  
Permits Section (6WQ-PP)

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## PART I – REQUIREMENTS FOR NPDES PERMITS

### A. LIMITATIONS AND MONITORING REQUIREMENTS

Effluent Limits – 1.13 MGD Facility Design Flow to North Playa Lake (001) and Golf Course Pond (002)

I. Beginning the effective date and lasting through the expiration date of the permit (unless otherwise noted), the permittee is authorized to discharge treated municipal wastewater to outfalls 001 and 002. The discharge limits and monitoring requirements in table 1 shall be carried out at the stated outfalls:

Table 1: Outfalls 001 and 002

| EFFLUENT CHARACTERISTICS   |             | DISCHARGE LIMITATIONS  |                  |                         |            |                         |                 |
|--|-------------|------------------------|------------------|-------------------------|------------|-------------------------|-----------------|
|  |             | lbs./day, unless noted |                  | mg/L, unless noted      |            | MONITORING REQUIREMENTS |                 |
| POLLUTANT  | STORET CODE | 30-DAY AVG             | DAILY MAX        | 30-DAY AVG              | DAILY MAX  | MEASUREMENT FREQUENCY   | SAMPLE TYPE     |
| Dissolved Oxygen (DO)  | 00300       | NA                     | NA               | NA                      | 5 or above | Daily                   | Grab            |
| EFFLUENT CHARACTERISTICS   |             | DISCHARGE MONITORING   |                  | MONITORING REQUIREMENTS |            |                         |                 |
| WHOLE EFFLUENT TOXICITY TESTING (*1)<br>(7-Day Chronic Static Renewal) |             | 30-DAY AVG<br>MINIMUM  | 7-DAY<br>MINIMUM | MEASUREMENT FREQUENCY   |            |                         | SAMPLE TYPE     |
| Ceriodaphnia dubia   |             | Report                 | Report           | 1/3 months (*2)         |            |                         | 24-Hr Composite |
| Pimephales promelas  |             | Report                 | Report           | 1/3 months (*3, 4)      |            |                         | 24-Hr Composite |

Footnotes:

- \*1. Monitoring and reporting requirements begin on the effective date of this permit. See Part II, Whole Effluent Toxicity Testing Requirements for additional WET monitoring and reporting conditions.
- \*2. If all first year (4 test) results pass, then monitoring frequency is reduced to once per six months for years 2 thru 5, the discharge shall be tested at least once in a 6-month period. If any test fails, then frequency returns to 1/quarter for the rest of the permit term.
- \*3. If all 1st year (4 test) results pass, then monitoring frequency is reduced to once per year, the discharge shall be tested at least 6 months apart. If a test frequency is 1x/year or less, the test should occur in winter or springtime when most sensitive juvenile life forms are likely to be present in receiving water and colder ambient temperatures might adversely affect treatment processes. This will generally be defined as between November 1 and April 30.
- \*4. The monitoring frequency for both test species (Ceriodaphnia dubia & Pimephales promelas) shall revert to once per three months on the last day of the permit term.

II. Beginning the effective date and lasting through the expiration date of the permit (unless otherwise noted), the permittee is authorized to discharge treated municipal wastewater to outfalls 001 and 002. The discharge limits and monitoring requirements in table 2 shall be conducted at the end of chlorine contact chamber (sampling station 003) before treated wastewater is sent to the the above referenced outfalls:

Table 2: Sampling Station 003

| EFFLUENT CHARACTERISTICS                            |             | DISCHARGE LIMITATIONS  |            |                         |              | MONITORING REQUIREMENTS |                         |
|---|-------------|------------------------|------------|-------------------------|--------------|-------------------------|-------------------------|
|   |             | Standard Units         |            |                         |              |                         |                         |
| POLLUTANT   | STORET CODE | MINIMUM                | MAXIMUM    |                         |              | MEASUREMENT FREQUENCY   | SAMPLE TYPE             |
| pH  | 00400       | 6.6                    | 9.0        |                         |              | Daily                   | Instantaneous Grab (*1) |
| EFFLUENT CHARACTERISTICS                            |             | DISCHARGE LIMITATIONS  |            |                         |              | MONITORING REQUIREMENTS |                         |
|   |             | lbs./day, unless noted |            | mg/L, unless noted (*2) |              |                         |                         |
| POLLUTANT   | STORET CODE | 30-DAY AVG             | DAILY MAX  | 30-DAY AVG              | DAILY MAX    | MEASUREMENT FREQUENCY   | SAMPLE TYPE             |
| Flow  | 50050       | Report MGD             | Report MGD | N/A                     | N/A          | Daily                   | Totalizing Meter        |
| Biochemical Oxygen Demand, 5-day                    | 00310       | 283                    | 424        | 30                      | 45           | 1/Week                  | 6-Hr Composite          |
| Biochemical Oxygen Demand, 5-day, minimum % removal | ≥85%        | NA                     | NA         | NA                      | NA           | 1/Week                  | Calculation (*3)        |
| Total Suspended Solids                              | 00530       | 283                    | 424        | 30                      | 45           | 1/Week                  | 6-Hr Composite          |
| Total Suspended Solids minimum % removal            | ≥85%        | NA                     | NA         | NA                      | NA           | 1/Week                  | Calculation (*3)        |
| <i>E. coli</i> Bacteria                             | 51040       | NA                     | NA         | 206 (*4)                | 940 (*4)     | 1/Week                  | Grab                    |
| Dissolved Oxygen (minimum)                          | 00300       | NA                     | NA         | ≥ 5.0                   | ≥ 5.0        | Daily                   | Grab                    |
| Total Residual Chlorine                             | 50060       | NA                     | NA         | NA                      | 11 µg/l (*6) | Daily                   | Instantaneous Grab (*5) |
| Copper, total                                       | 01042       | 0.06                   | 0.06       | 2.26 ug/l               | 2.26 ug/l    | 3/Week                  | Grab                    |
| Silver, total                                       | 01077       | 0.006                  | 0.006      | 0.20 ug/l               | 0.20 ug/l    | 3/Week                  | Grab                    |
| Selenium, total recoverable                         | 01147       | 0.047                  | 0.047      | 5 ug/l                  | 5 ug/l       | 3/Week                  | Grab                    |
| Thallium, total                                     | 01059       | 0.004                  | 0.004      | 0.47 ug/l               | 0.47 ug/l    | 3/Week                  | Grab                    |
| Zinc, total   | 01092       | 0.86                   | 0.86       | 28.05 ug/l              | 28.05 ug/l   | 3/Week                  | Grab                    |
| Total Nitrogen                                      | 00600       | NA                     | NA         | Report                  | Report       | 1/Week                  | Grab                    |
| Total Phosphorus                                    | 00650       | NA                     | NA         | Report                  | Report       | 1/Week                  | Grab                    |

## Footnotes:

- \*1 Analyzed within 15 minutes.
- \*2 See **Appendix A of Part II** of the permit for minimum quantification limits.
- \*3 Percent removal is calculated using the following equation:  
[average monthly influent concentration (mg/l) – average monthly effluent concentration (mg/l)] ÷ [average monthly influent concentration (mg/l)] x 100.
- \*4 Colony forming units (cfu) per 100 ml. Bacteria reporting units must be either cfu/100 mL or most probable number (mpn).
- \*5 The effluent limitation for TRC is the instantaneous maximum grab and cannot be averaged for reporting purposes. Instantaneous maximum is defined in 40 CFR Part 136 as being measured within 15 minutes of sampling.
- \*6 The effluent limitation for TRC is the instantaneous maximum and cannot be averaged for reporting purposes.

## 2. FLOATING SOLIDS, VISIBLE FOAM AND/OR OILS

There shall be no discharge of floating solids or visible foam in other than trace amounts. There shall be no discharge of visible films of oil, globules of oil, grease or solids in or on the water, or coatings on stream banks or the shoreline.

### **B. SCHEDULE OF COMPLIANCE**

The permittee shall comply with the following schedule of activities for the attainment of state water quality standards-based final effluent limitations for Copper, Silver, Selenium, Thallium and Zinc at sampling station 003 and Dissolved Oxygen at Final Outfalls 001 and 002, where applicable.

- a. Determine exceedance cause(s);
- b. Develop control options, if needed;
- c. Evaluate and select control mechanisms;
- d. Implement corrective action; and
- e. Attain final effluent limitations no later than three (3) years from the permit effective date.

The permittee shall submit quarterly progress reports, to both EPA and New Mexico Environment Department, in accordance with the following schedule. The requirement to submit quarterly progress reports shall expire three (3) years from the permit effective date. No later than 14-days after the date compliance with the copper, silver, selenium, thallium, zinc and dissolved oxygen final limits have been met, the permittee shall submit a written final report both to EPA and the State, stating that compliance has been completed. If at any time during the three-year compliance period the permittee determines that full compliance will not be met within the time allowed, a separate report shall be sent to both EPA and the State stating the explanation for this delay and proposed remedial actions.

#### PROGRESS REPORT DUE DATES

January 1, April 1, July 1 and October 1

### **C. MONITORING AND REPORTING (MAJOR DISCHARGERS)**

The permittee shall effectively monitor the operation and efficiency of all treatment and control facilities and the quantity and quality of the treated discharge. Monitoring results must be reported to EPA electronically. To submit electronically, access the NetDMR website at [www.epa.gov/netdmr](http://www.epa.gov/netdmr), and contact the R6NetDMR@epa.gov in-box for further instructions.

**C. MONITORING AND REPORTING (MAJOR DISCHARGERS)**

The permittee shall effectively monitor the operation and efficiency of all treatment and control facilities and the quantity and quality of the treated discharge.

Monitoring results must be reported to EPA electronically. To submit electronically, access the NetDMR website at [www.epa.gov/netdmr](http://www.epa.gov/netdmr), and contact the R6NetDMR@epa.gov in-box for further instructions.

1. Reporting periods shall end on the last day of the month.
2. The permittee is required to submit regular monthly reports as described above no later than the 15<sup>th</sup> day of the month following each reporting period.
3. The annual sludge report required in part IV of the permit is due on February 19 of each year and covers the previous calendar year from January 1 through December 31.
4. NO DISCHARGE REPORTING: If there are no discharges at outfalls 001 and 002 during the sampling month, place an "X" in the NO DISCHARGE box located in the upper right corner of the Discharge Monitoring Report.
5. If any 30-day average value exceeds the effluent limitations specified in Part I.A, the permittee shall report the excursion in accordance with the requirements of Part III.D.
6. Any 30-day average value reported in the required Discharge Monitoring Report which is in excess of the effluent limitation specified in Part I.A shall constitute evidence of violation of such effluent limitation and of this permit.
7. Other measurements of oxygen demand (e.g., TOC and COD) may be substituted for the five day Biochemical Oxygen Demand (BOD5), or for the five-day Carbonaceous Biochemical Oxygen Demand (CBOD5), as applicable, where the permittee can demonstrate long term correlation of the method with BOD5 or CBOD5 values, as applicable. Details of the correlation procedures used must be submitted and prior approval granted by the permitting authority for this procedure to be acceptable. Data reported must also include evidence to show that the proper correlation continues to exist after approval.
8. The permittee shall submit a copy of an annual summary of the data that results from WET testing to the following agencies:

Field Supervisor  
U.S. Fish and Wildlife Service  
New Mexico Ecological Services Field Office  
2105 Osuna NE  
Albuquerque, NM 87113

EPA:  
Compliance Assurance and Enforcement Division  
Water Enforcement Branch (6EN-W)  
U.S. Environmental Protection Agency, Region 6  
1445 Ross Avenue  
Dallas, TX 75202-2733

New Mexico:  
Program Manager  
Surface Water Quality Bureau  
New Mexico Environment Department  
P.O. Box 5469  
1190 Saint Francis Drive  
Santa Fe, NM 87502-5469

#### **D. CONTRIBUTING INDUSTRIES**

The following pollutants may not be introduced into the treatment facility:

1. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limited to, waste-streams with a closed cup flashpoint of less than 140 degrees Fahrenheit or 60 degrees Centigrade using the test methods specified in 40 CFR 261.21;
2. Pollutants which will cause corrosive structural damage to the POTW, but in no case discharges with pH lower than 5.0, unless the works are specifically designed to accommodate such discharges;
3. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW, resulting in Interference;
4. Any pollutant, including oxygen demanding pollutants (e.g., BOD), released in a discharge at a flow rate and/or pollutant concentration which will cause Interference with the POTW;

5. Heat in amounts which will inhibit biological activity in the POTW resulting in Interference but in no case heat in such quantities that the temperature at the POTW treatment plant exceeds 40 degrees Centigrade (104 degrees Fahrenheit) unless the Approval Authority, upon request of the POTW, approves alternate temperature limits;
6. Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;
7. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems; and
8. Any trucked or hauled pollutants, except at discharge points designated by the POTW.

#### **E. OVERFLOW REPORTING**

The permittee shall report all overflows with the DMR submittal. These reports shall be summarized and reported in tabular format. The summaries shall include: date, time, duration, location, estimated volume, and cause of the overflow. They shall also include observed environmental impacts from the overflow; actions taken to address the overflow; and, the ultimate discharge location if not contained (e.g., storm sewer system, ditch, and tributary).

Overflows that endanger health or the environment shall be orally reported to EPA at (214) 665-6595 and NMED Surface Water Quality Bureau at (505) 827-0187, within 24 hours from the time the permittee becomes aware of the circumstance. A written report of overflows that endanger health or the environment shall be provided to EPA and NMED Surface Water Quality Bureau within 5 days of the time the permittee becomes aware of the circumstance.

#### **F. POLLUTION PREVENTION REQUIREMENTS**

The permittee shall institute a program within 12 months of the effective date of the permit (or continue an existing one) directed towards optimizing the efficiency and extending the useful life of the facility. The permittee shall maintain a written report on site summarizing such activities per Part III of the permit. The following items shall be considered in the program:

- The influent loadings, flow and design capacity;
- The effluent quality and plant performance;
- The age and expected life of the wastewater treatment facility's equipment;
- Bypasses and overflows of the tributary sewerage system and treatment works;
- New developments at the facility;
- Operator certification and training plans and status;
- The financial status of the facility;
- Preventative maintenance programs and equipment conditions and;
- An overall evaluation of conditions at the facility.

## **PART II - OTHER CONDITIONS**

### **A. MINIMUM QUANTIFICATION LEVEL (MQL)**

The permittee shall use sufficiently sensitive EPA-approved analytical methods (under 40 CFR part 136 or required under 40 CFR chapter I, subchapters N or O) when quantifying the presence of pollutants in a discharge for analyses of pollutants or pollutant parameters under the permit. In case the approved methods are not sufficiently sensitive to the limits, the most sufficiently sensitive methods (lowest minimum levels) must be used as defined under 40 CFR 122.44(i)(1)(iv)(A). The following pollutants may not have EPA approved methods with a published ML at or below the effluent limit, if specified:

| <b>POLLUTANT</b>        | <b>CAS Number</b> | <b>STORET Code</b> |
|-------------------------|-------------------|--------------------|
| Total Residual Chlorine | 7782-50-5         | 50060              |
| Cadmium                 | 7440-43-9         | 01027              |
| Silver                  | 7440-22-4         | 01077              |
| Thallium                | 7440-28-0         | 01059              |
| Cyanide                 | 57-12-5           | 78248              |
| Dioxin (2,3,7,8-TCDD)   | 1764-01-6         | 34675              |
| 4, 6-Dinitro-0-Cresol   | 534-52-1          | 34657              |
| Pentachlorophenol       | 87-86-5           | 39032              |
| Benzidine               | 92-87-5           | 39120              |
| Chrysene                | 218-01-9          | 34320              |
| Hexachlorobenzene       | 118-74-1          | 39700              |
| N-Nitrosodimethylamine  | 62-75-9           | 34438              |
| Aldrin                  | 309-00-2          | 39330              |
| Chlordane               | 57-74-9           | 39350              |
| Dieldrin                | 60-57-1           | 39380              |
| Heptachlor              | 76-44-8           | 39410              |
| Heptachlor epoxide      | 1024-57-3         | 39420              |
| Toxaphene               | 8001-35-2         | 39400              |

For pollutants listed on Appendix A of Part II with MQL's, analyses *may* be performed to the listed MQL. If any individual analytical test result is less than the MQL listed, a value of zero (0) may be used for that pollutant result for the Discharge Monitoring Report (DMR) reporting requirements.

In addition, any additional pollutant sampling for purposes of this permit, including renewal applications or any other reporting, may be tested to the MQL, permit limit(s) or the state WQS. Results of analyses that are less than the listed MQL, permit limit(s) or the state WQS may be reported as "non-detect."

Upon written approval by the EPA Region 6 NPDES Permits Branch (6WQ-P), the effluent specific MQL may be utilized by the permittee for all future DMR reporting requirements until/or unless changes are required for adoption of a lower MQL.

**B. 24-HOUR ORAL REPORTING: DAILY MAXIMUM LIMITATION VIOLATIONS**

Under the provisions of Part III.D.7.b. (3) of this permit, violations of daily maximum limitations for the following pollutants shall be reported orally to EPA Region 6, Compliance and Assurance Division, Water Enforcement Branch (6EN-W), Dallas, Texas, and concurrently to NMED within 24 hours from the time the permittee becomes aware of the violation followed by a written report in five days.

*E. coli* Bacteria, TRC, Copper, Selenium, Silver, Thallium and Zinc

**C. PERMIT MODIFICATION AND REOPENER**

In accordance with 40 CFR Part 122.44(d), the permit may be reopened and modified during the life of the permit if relevant portions of the New Mexico's Water Quality Standards for Interstate and Intrastate Streams are revised, or new State of New Mexico water quality standards are established and/or remanded.

In accordance with 40 CFR Part 122.62(s)(2), the permit may be reopened and modified if new information is received that was not available at the time of permit issuance that would have justified the application of different permit conditions at the time of permit issuance. Permit modifications shall reflect the results of any of these actions and shall follow regulations listed at 40 CFR Part 124.5.

**D. WHOLE EFFLUENT TOXICITY TESTING (48-HOUR ACUTE NOEC FRESHWATER)**

*It is unlawful and a violation of this permit for a permittee or his designated agent, to manipulate test samples in any manner, to delay sample shipment, or to terminate or to cause to terminate a toxicity test. Once initiated, all toxicity tests must be completed unless specific authority has been granted by EPA Region 6 or the State NPDES permitting authority.*

1. SCOPE AND METHODOLOGY

- a. The permittee shall test the effluent for toxicity in accordance with the provisions in this section.

APPLICABLE TO FINAL OUTFALL(S): 001; 002

REPORTED AS FINAL OUTFALL: 001; 002

CRITICAL DILUTION (%): 100%

EFFLUENT DILUTION SERIES (%): 32%, 42%, 56%, 75%, 100%

COMPOSITE SAMPLE TYPE: Defined at PART I

TEST SPECIES/METHODS: 40 CFR Part 136

Pimephales promelas chronic static renewal 7-day larval survival and growth test, Method 1000.0, using EPA 821 R 02 013, or the latest update thereof. A minimum of five (5) replicates with eight (8) organisms per replicate must be used in the control and in each effluent dilution of this test.

Ceriodaphnia dubia chronic static renewal 7-day survival and reproduction test, method 1002.0, using EPA 821 R 02 013, or the latest update thereof. This test should be terminated when 60% of the surviving females in the control produce three broods or at the end of eight days, whichever comes first.

- b. The NOEC (No Observed Effect Concentration) is defined as the greatest effluent dilution at and below which no significant effect is demonstrated. The Lowest Observed Effect Concentration (LOEC) is defined as the lowest effluent dilution at which a significant effect is demonstrated. Significant effect is herein defined as statistically significant difference at the 95% confidence level between the survival, reproduction, or growth of the test organism(s) in a specified effluent dilution compared to the survival, reproduction, or growth of the test organism(s) in the control (0% effluent).
- c. This permit may be reopened to require whole effluent toxicity limits, chemical specific effluent limits, additional testing, and/or other appropriate actions to address toxicity.
- d. Test failure is defined as a demonstration of statistically significant lethal and/or sub-lethal effects to a test species at or below the effluent critical dilution.

## 2. REQUIRED TOXICITY TESTING CONDITIONS

### a. Test Acceptance

The permittee shall repeat a test, including the control and all effluent dilutions, if the procedures and quality assurance requirements defined in the test methods or in this permit are not satisfied, including the following additional criteria:

- i. Each toxicity test control (0% effluent) must have a survival equal to or greater than 80%.

- ii. The mean number of *Ceriodaphnia dubia* neonates produced per surviving female in the control (0% effluent) must be 15 or more.
- iii. Sixty (60%) of the surviving control females must produce three broods.
- iv. The mean dry weight of surviving *Pimephales promelas* larvae at the end of the 7 days in the control (0% effluent) must be 0.25 mg per larva or greater.
- v. The percent coefficient of variation between replicates shall be 40% or less in the control (0% effluent) for: the young of surviving females in the *Ceriodaphnia dubia* reproduction test; the growth and survival endpoints of the Fathead minnow test.
- vi. The percent coefficient of variation between replicates shall be 40% or less in the critical dilution, unless significant lethal or nonlethal effects are exhibited for: the young of surviving females in the *Ceriodaphnia dubia* reproduction test; the growth and survival endpoints of the Fathead minnow test.
- vii. A PMSD range of 13-47 for *Ceriodaphnia dubia* reproduction;
- viii. A PMSD range of 12-30 for Fathead minnow growth.

Test failure may not be construed or reported as invalid due to a coefficient of variation value of greater than 40%. A repeat test shall be conducted within the required reporting period of any test determined to be invalid.

b. Statistical Interpretation

For the *Ceriodaphnia dubia* survival test, the statistical analyses used to determine if there is a significant difference between the control and the critical dilution shall be Fisher's Exact Test as described in EPA 821 R 02 013, or the most recent update thereof.

For the *Pimephales promelas* larval survival and growth test and the *Ceriodaphnia dubia* reproduction test, the statistical analyses used to determine if there is a statistically significant difference between the control and the critical dilution shall be in accordance with the methods for determining the No Observed Effect Concentration (NOEC) as described in EPA 821 R 02 013 or the most recent update thereof.

If the conditions of Test Acceptability are met in Item 2.a above and the percent survival of the test organism is equal to or greater than 80% in the critical dilution concentration and all lower dilution concentrations, the test shall be considered to be a passing test, and

the permittee shall report an NOEC of not less than the critical dilution for the reporting requirements found in Item 3 below.

c. Dilution Water

i. Dilution water used in the toxicity tests will be receiving water collected as close to the point of discharge as possible but unaffected by the discharge. The permittee shall substitute synthetic dilution water of similar pH, hardness, and alkalinity to the closest downstream perennial water for;

- (A) toxicity tests conducted on effluent discharges to receiving water classified as intermittent streams; and
- (B) toxicity tests conducted on effluent discharges where no receiving water is available due to zero flow conditions.

ii. If the receiving water is unsatisfactory as a result of in stream toxicity (fails to fulfill the test acceptance criteria of Item 2.a), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:

- (A) a synthetic dilution water control which fulfills the test acceptance requirements of Item 3.a was run concurrently with the receiving water control;
- (B) the test indicating receiving water toxicity has been carried out to completion (i.e., 48 hours);
- (C) the permittee includes all test results indicating receiving water toxicity with the full report and information required by Item 4 below; and
- (D) the synthetic dilution water shall have a pH, hardness, and alkalinity similar to that of the receiving water or closest downstream perennial water not adversely affected by the discharge, provided the magnitude of these parameters will not cause toxicity in the synthetic dilution water.

d. Samples and Composites

i. The permittee shall collect a minimum of three flow weighted composite samples from the outfall(s) listed at Item 1.a above.

- ii. The permittee shall collect a second and third composite sample for use during the 24 hour renewal of each dilution concentration for both tests. The permittee must collect the composite samples so that the maximum holding time for any effluent sample shall not exceed 36 hours. The permittee must have initiated the toxicity test within 36 hours after the collection of the last portion of the first composite sample. Samples shall be chilled to 6 degrees Centigrade during collection, shipping, and/or storage.
- iii. The permittee must collect the composite samples such that the effluent samples are representative of any periodic episode of chlorination, biocide usage or other potentially toxic substance discharged on an intermittent basis.
- iv. If the flow from the outfall(s) being tested ceases during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum number of effluent portions and the sample holding time are waived during that sampling period. However, the permittee must collect an effluent composite sample volume during the period of discharge that is sufficient to complete the required toxicity tests with daily renewal of effluent. When possible, the effluent samples used for the toxicity tests shall be collected on separate days. The effluent composite sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report required in Item 3 of this section.

### 3. REPORTING

- a. The permittee shall prepare a full report of the results of all tests conducted pursuant to this Part in accordance with the Report Preparation Section of EPA 821 R 02 013, for every valid or invalid toxicity test initiated, whether carried to completion or not. The permittee shall retain each full report pursuant to the provisions of PART III.C.3 of this permit. The permittee shall submit full reports upon the specific request of the Agency. For any test which fails, is considered invalid or which is terminated early for any reason, the full report must be submitted for agency review.
- b. A valid test for each species must be reported during each reporting period specified in PART I of this permit unless the permittee is performing a TRE which may increase the frequency of testing and reporting. Only ONE set of bio-monitoring data for each species is to be recorded for each reporting period. The data submitted should reflect the LOWEST lethal and/or sub-lethal results for each species during the reporting period. All invalid tests, repeat tests (for invalid tests), and retests (for tests previously failed) performed during the reporting period must be attached for EPA review.

- c. The permittee shall report the following results of each valid toxicity test. Submit retest information, if required, clearly marked as such. Only results of valid tests are to be reported.
- i. Ceriodaphnia dubia (Water flea)
- (A) If the No Observed Effect Concentration (NOEC) for survival is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TLP3B.
  - (B) Report the NOEC value for survival, Parameter No. TOP3B.
  - (C) Report the LOEC value for survival, Parameter No. TXP3B
  - (D) Report the NOEC value for reproduction, Parameter No. TPP3B
  - (E) Report the LOEC value for reproduction, Parameter No. TYP3B
  - (F) If the NOEC for reproduction is less than the critical dilution, enter a '1'; otherwise, enter a '0' for Parameter No. TGP3B.
  - (G) Report the highest (critical dilution or control) Coefficient of Variation, Parameter No. TQP3B.
- ii. Pimephales promelas (Fathead Minnow)
- (A) If the NOEC for survival is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TLP6C.
  - (B) Report the NOEC value for survival, Parameter No. TOP6C.
  - (C) Report the LOEC value for survival, Parameter No. TXP6C
  - (D) Report the NOEC value for growth, Parameter No. TPP6C
  - (E) Report the LOEC value for growth, Parameter No. TYP6C
  - (F) If the NOEC for growth is less than the critical dilution, enter a '1'; otherwise, enter a '0' for Parameter No. TGP6C.
  - (G) Report the highest (critical dilution or control) Coefficient of Variation, Parameter No. TQP6C.
- d. If retests are required, enter the following codes:
- i. For retest number 1, Parameter 22415, enter a "1" if the NOEC for survival, reproduction and/or growth is less than the critical dilution; otherwise, enter a "0."
- ii. For retest number 2, Parameter 22416, enter a "1" if the NOEC for survival, reproduction and/or growth is less than the critical dilution; otherwise, enter a "0."

- iii. For retest number 3, Parameter 51443, enter a “1” if the NOEC for survival, reproduction and/or growth is less than the critical dilution; otherwise, enter a “0.”

4. PERSISTENT TOXICITY

The requirements of this subsection apply only when a toxicity test demonstrates significant lethal and/or sub-lethal effects at or below the critical dilution. Significant toxic effects, are herein defined as a statistically significant difference at the 95% confidence level between the survival, growth or reproduction of the appropriate test organism in a specified effluent dilution and the control (0% effluent). If the initial WET test conducted fails, the permittee will conduct three retest. The purpose of retests is to determine the duration of a toxic event. A test that meets all test acceptability criteria and demonstrates significant toxic effects does not need additional confirmation. Such testing cannot confirm or disprove a previous test result. If any valid test demonstrates significant lethal and/or sub-lethal effects to a test species at or below the critical dilution, the frequency of testing for this species is automatically increased to once per quarter with no option for frequency reduction.

a. Part I Testing Frequency Other than Monthly

The permittee shall conduct a total of three (3) additional tests for any species that demonstrates significant lethal effects at or below the critical dilution. The three additional tests shall be conducted monthly during the next three consecutive months. If testing on a quarterly basis, the permittee may substitute one of the additional tests in lieu of one routine toxicity test. A full report shall be prepared for each test required by this section in accordance with the procedures outlines in Item 3 of this section and submitted with the period discharge monitoring report (DMR) to the permitting authority for review.

- b. If persistent lethality is demonstrated by failure of one or more retest, the permittee shall initiate Toxicity Reduction Evaluation (TRE) requirements as specified in Item 5 of this section. If persistent sub-lethality is demonstrated by failure of two or more retest, the permittee shall initiate Toxicity Reduction Evaluation (TRE) requirements. The permittee shall notify EPA in writing within 5 days of the failure of any retest, and the TRE initiation date will be the test completion date of the first failed retest for lethal TREs or second failed retest for sub-lethal TREs. A TRE may also be required due to a demonstration of intermittent lethal effects at or below the critical dilution, or for failure to perform the required retests. The provisions of Item 4.a are suspended upon submittal of the TRE Action Plan.

5. TOXICITY REDUCTION EVALUATION (TRE)
  - a. Within ninety (90) days of confirming lethality and/or sub-lethality in the retests, the permittee shall submit a Toxicity Reduction Evaluation (TRE) Action Plan and Schedule for conducting a TRE. The TRE Action Plan shall specify the approach and methodology to be used in performing the TRE. A Toxicity Reduction Evaluation is an investigation intended to determine those actions necessary to achieve compliance with water quality based effluent limits by reducing an effluent's toxicity to an acceptable level. A TRE is defined as a step wise process which combines toxicity testing and analyses of the physical and chemical characteristics of a toxic effluent to identify the constituents causing effluent toxicity and/or treatment methods which will reduce the effluent toxicity. The TRE Action Plan shall lead to the successful elimination of effluent toxicity at the critical dilution and include the following:
    - i. Specific Activities. The plan shall detail the specific approach the permittee intends to utilize in conducting the TRE. The approach may include toxicity characterizations, identifications and confirmation activities, source evaluation, treatability studies, or alternative approaches. When the permittee conducts Toxicity Characterization Procedures the permittee shall perform multiple characterizations and follow the procedures specified in the documents "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures" (EPA 600/6-91/003) or alternate procedures. When the permittee conducts Toxicity Identification Evaluations and Confirmations, the permittee shall perform multiple identifications and follow the methods specified in the documents "Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081), as appropriate.
    - ii. Sampling Plan (e.g., locations, methods, holding times, chain of custody, preservation, etc.). The effluent sample volume collected for all tests shall be adequate to perform the toxicity test, toxicity characterization, identification and confirmation procedures, and conduct chemical specific analyses when a probable toxicant has been identified; Where the permittee has identified or suspects specific pollutant(s) and/or source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical specific analyses for the identified and/or suspected pollutant(s) and/or source(s) of effluent toxicity. Where toxicity was demonstrated within 24 hours of test initiation, each composite sample shall be analyzed independently. Otherwise the permittee may

- substitute a composite sample, comprised of equal portions of the individual composite samples, for the chemical specific analysis;
- iii. Quality Assurance Plan (e.g., QA/QC implementation, corrective actions, etc.); and
  - iv. Project Organization (e.g., project staff, project manager, consulting services, etc.).
- b. The permittee shall initiate the TRE Action Plan within thirty (30) days of plan and schedule submittal.
- c. The permittee shall submit a quarterly TRE Activities Report, with the Discharge Monitoring Report in the months of January, April, July and October, containing information on toxicity reduction evaluation activities including:
- i. any data and/or substantiating documentation which identifies the pollutant(s) and/or source(s) of effluent toxicity;
  - ii. any studies/evaluations and results on the treatability of the facility's effluent toxicity; and
  - iii. any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant toxicity at the critical dilution. A copy of the TRE Activities Report shall also be submitted to the state agency.
- d. The permittee shall submit a Final Report on Toxicity Reduction Evaluation Activities no later than twenty eight (28) months from confirming toxicity in the retests, which provides information pertaining to the specific control mechanism selected that will, when implemented, result in reduction of effluent toxicity to no significant toxicity at the critical dilution. The report will also provide a specific corrective action schedule for implementing the selected control mechanism. A copy of the Final Report on Toxicity Reduction Evaluation Activities shall also be submitted to the state agency.
- e. Quarterly testing during the TRE is a minimum monitoring requirement. EPA recommends that permittees required to perform a TRE not rely on quarterly testing alone to ensure success in the TRE, and that additional screening tests be performed to capture toxic samples for identification of toxicants. Failure to identify the specific chemical compound causing toxicity test failure will normally result in a permit limit for whole effluent toxicity limits per federal regulations at 40 CFR 122.44(d)(1)(v).