



REGION 6
1445 ROSS AVENUE
DALLAS, TEXAS 75202-2733

NPDES Permit No TX0127566

**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"),

Freeport LNG Development LP
Freeport LNG Terminal Facility
333 Clay Street, Suite 5050
Houston, TX 77002

is authorized to discharge from a facility located at 1500 Lamar Street, Freeport, Brazoria County, Texas,

from: Outfall 001 at Latitude 28° 55' 58" North, Longitude 95° 18' 52" West,
Outfall 002 at Latitude 28° 56' 05" North, Longitude 95° 18' 56" West,
Outfall 003 at Latitude 28° 55' 54" North, Longitude 95° 18' 48" West,
Outfall 004 at Latitude 28° 55' 46" North, Longitude 95° 18' 58" West,

all to a constructed wetland, thence to the Intracoastal Waterway, thence to the Gulf of Mexico, in the Brazos River Tidal of the Brazos River Basin, Water Body Segment Code No. 1201,

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

This permit supersedes and replaces NPDES Permit No. GM0000002 issued July 11, 2008, with an effective date of August 1, 2008, and an expiration date of July 31, 2013.

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

Issued on

Prepared by

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

Laurence E. Giglio
Environmental Engineer
Permits & Technical Section (6WQ-PP)

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PART I – REQUIREMENTS FOR NPDES PERMITS

SECTION A. LIMITATIONS AND MONITORING REQUIREMENTS

1. Outfall 001 - Final Effluent Limits

During the period beginning the effective date of the permit and lasting and lasting until the expiration date, the permittee is authorized to discharge wastewater from the Air Vaporization Tower to the constructed wetland, thence the Intracoastal Waterway, thence the Gulf of Mexico, in the Brazos River Tidal of the Brazos River Basin, Water Body Segment Code No. 1201. Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	Standard Units		MEASUREMENT FREQUENCY	SAMPLE TYPE
POLLUTANT	MINIMUM	MAXIMUM		
pH	6.5	9.0	Daily (*1)	Grab

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
	lbs/day, unless noted		mg/l, unless noted		MEASUREMENT FREQUENCY	SAMPLE TYPE
POLLUTANT	MON AVG	DAY MAX	MON AVG	DAY MAX		
Flow	Report MGD	Report MGD	N/A	N/A	Daily (*1, 2)	Recording Meter

EFFLUENT CHARACTERISTICS	DISCHARGE MONITORING		MONITORING REQUIREMENTS	
	30-DAY AVG MINIMUM	48-HR MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
WHOLE EFFLUENT TOXICITY (48 Hr. Static Renewal) (*3)	Report	Report	Once/Term (*3)	Grab
<u>Daphnia pulex</u>	Report	Report	Once/Term (*3)	Grab
<u>Pimephales promelas</u>	Report	Report	Once/Term (*3)	Grab

EFFLUENT CHARACTERISTICS POLLUTANT	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS			
	lbs/day, unless noted		mg/l, unless noted		MEASUREMENT FREQUENCY	SAMPLE TYPE		
	MON	AVG	DAY MAX	MON	AVG	DAY MAX		
Aluminum	N/A		N/A	N/A		Report	Once/Term (*4)	Grab
Barium	N/A		N/A	N/A		Report	Once/Term (*4)	Grab
Arsenic	N/A		N/A	N/A		Report	Once/Term (*4)	Grab
Cadmium	N/A		N/A	N/A		Report	Once/Term (*4)	Grab
Chromium	N/A		N/A	N/A		Report	Once/Term (*4)	Grab
Copper	N/A		N/A	N/A		Report	Once/Term (*4)	Grab
Lead	N/A		N/A	N/A		Report	Once/Term (*4)	Grab
Mercury	N/A		N/A	N/A		Report	Once/Term (*4)	Grab
Nickel	N/A		N/A	N/A		Report	Once/Term (*4)	Grab
Selenium	N/A		N/A	N/A		Report	Once/Term (*4)	Grab
Silver	N/A		N/A	N/A		Report	Once/Term (*4)	Grab
Zinc	N/A		N/A	N/A		Report	Once/Term (*4)	Grab
Cyanide	N/A		N/A	N/A		Report	Once/Term (*4)	Grab
Benzene	N/A		N/A	N/A		Report	Once/Term (*4)	Grab
Trichloroethylene	N/A		N/A	N/A		Report	Once/Term (*4)	Grab
Vinyl Chloride	N/A		N/A	N/A		Report	Once/Term (*4)	Grab

Footnotes:

- *1 When discharging.
- *2 The permittee shall report in writing, the date of their first discharge to all agencies listed in Part III, Section D(4), as well as the NPDES Permits & Technical Section (6WQ-PP), Water Quality Protection Branch, US Environmental Protection Agency, Region 6, 1445 Ross Avenue, Dallas, TX 75202-2733, within five (5) days of the occurrence of the first discharge.
- *3 Once per permit term. 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.
- *4 Once per permit term. The permittee shall sample for these parameters and report the results within 90 days of the first discharge from the facility. Sample results for these parameters shall be reported to all agencies listed in Part III, Section D(4), as well as the NPDES Permits & Technical Section (6WQ-PP), Water Quality Protection Branch, US Environmental Protection Agency, Region 6, 1445 Ross Avenue, Dallas, TX 75202-2733. The permit may be reopened to establish effluent limitations for those parameters that have reasonable potential to exceed Water Quality Standards.

2. Outfall 002 - Final Effluent Limits

During the period beginning the effective date of the permit and lasting and lasting until the expiration date, the permittee is authorized to discharge stormwater from the curbed process area identified as SW Outlet 5 on the site map to the constructed wetland, thence the Intracoastal Waterway, thence the Gulf of Mexico, in the Brazos River Tidal of the Brazos River Basin, Water Body Segment Code No. 1201. Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	Standard Units		MEASUREMENT FREQUENCY	SAMPLE TYPE
POLLUTANT	MINIMUM	MAXIMUM		
pH	6.5	9.0	Once/Week (*1)	Grab

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
	lbs/day, unless noted		mg/l, unless noted		MEASUREMENT FREQUENCY	SAMPLE TYPE
POLLUTANT	MON AVG	DAY MAX	MON AVG	DAY MAX		
Flow	Report MGD	Report MGD	N/A	N/A	Daily (*1, 2)	Estimate (*3)
Oil & Grease	Report	Report	10	15	Once/Week (*1)	Grab
Visible Oil Sheen	N/A	N/A	0 Days (*4)	0 Days (*4)	Daily (*1)	Visual
Total Organic Carbon	Report	Report	Report	Report	Once/Week (*1)	Grab

Footnotes:

- *1 When discharging. Samples are to be collected during the first 30-minutes of discharge.
- *2 The permittee shall report in writing, the date of their first discharge to all agencies listed in Part III, Section D(4), as well as the NPDES Permits & Technical Section (6WQ-PP), Water Quality Protection Branch, US Environmental Protection Agency, Region 6, 1445 Ross Avenue, Dallas, TX 75202-2733, within five (5) days of the occurrence of the first discharge.
- *3 "Estimate" flow measurements shall not be subject to the accuracy provisions established at Part III.C.6. Flow may be estimated using best engineering judgment.
- *4 Record the total number of days where an oil sheen is visible at the outfall. See Part II, Visible Oil Sheen, of the permit.

3. Outfall 003 - Final Effluent Limits

During the period beginning the effective date of the permit and lasting and lasting until the expiration date, the permittee is authorized to discharge stormwater from the Air Vaporization Tower area, LNG tank 1 and the process area identified as SW Outlet 7 on the site map to the constructed wetland, thence the Intracoastal Waterway, thence the Gulf of Mexico, in the Brazos River Tidal of the Brazos River Basin, Water Body Segment Code No. 1201. Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	Standard Units		MEASUREMENT FREQUENCY	SAMPLE TYPE
POLLUTANT	MINIMUM	MAXIMUM		
pH	6.5	9.0	Once/Week (*1)	Grab

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
	lbs/day, unless noted		mg/l, unless noted		MEASUREMENT FREQUENCY	SAMPLE TYPE
POLLUTANT	MON AVG	DAY MAX	MON AVG	DAY MAX		
Flow	Report MGD	Report MGD	N/A	N/A	Daily (*1, 2)	Estimate (*3)
Oil & Grease	Report	Report	10	15	Once/Week (*1)	Grab
Visible Oil Sheen	N/A	N/A	0 Days (*4)	0 Days (*4)	Daily (*1)	Visual
Total Organic Carbon	Report	Report	Report	Report	Once/Week (*1)	Grab

Footnotes:

- *1 When discharging. Samples are to be collected during the first 30-minutes of discharge.
- *2 The permittee shall report in writing, the date of their first discharge to all agencies listed in Part III, Section D(4), as well as the NPDES Permits & Technical Section (6WQ-PP), Water Quality Protection Branch, US Environmental Protection Agency, Region 6, 1445 Ross Avenue, Dallas, TX 75202-2733, within five (5) days of the occurrence of the first discharge.
- *3 "Estimate" flow measurements shall not be subject to the accuracy provisions established at Part III.C.6. Flow may be estimated using best engineering judgment.
- *4 Record the total number of days where an oil sheen is visible at the outfall. See Part II, Visible Oil Sheen, of the permit.

4. Outfall 004 - Final Effluent Limits

During the period beginning the effective date of the permit and lasting and lasting until the expiration date, the permittee is authorized to discharge stormwater associated with the Air Vaporization Tower area, LNG tank 2 and tank 3 and the remainder of the process area identified as SW outlet 8 on the site map to the constructed wetland, thence the Intracoastal Waterway, thence the Gulf of Mexico, in the Brazos River Tidal of the Brazos River Basin, Water Body Segment Code No. 1201. Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	Standard Units		MEASUREMENT FREQUENCY	SAMPLE TYPE
POLLUTANT	MINIMUM	MAXIMUM		
pH	6.5	9.0	Once/Week (*1)	Grab

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
	lbs/day, unless noted		mg/l, unless noted		MEASUREMENT FREQUENCY	SAMPLE TYPE
POLLUTANT	MON AVG	DAY MAX	MON AVG	DAY MAX		
Flow	Report MGD	Report MGD	N/A	N/A	Daily (*1, 2)	Estimate (*3)
Oil & Grease	Report	Report	10	15	Once/Week (*1)	Grab
Total Suspended Solids	Report	Report	45	45	Once/Week (*1)	Grab
Visible Oil Sheen	N/A	N/A	0 Days (*4)	0 Days (*4)	Daily (*1)	Visual
Total Organic Carbon	Report	Report	Report	Report	Once/Week (*1)	Grab

Footnotes:

- *1 When discharging. Samples are to be collected during the first 30-minutes of discharge.
- *2 The permittee shall report in writing, the date of their first discharge to all agencies listed in Part III, Section D(4), as well as the NPDES Permits & Technical Section (6WQ-PP), Water Quality Protection Branch, US Environmental Protection Agency, Region 6, 1445 Ross Avenue, Dallas, TX 75202-2733, within five (5) days of the occurrence of the first discharge.
- *3 "Estimate" flow measurements shall not be subject to the accuracy provisions established at Part III.C.6. Flow may be estimated using best engineering judgment.
- *4 Record the total number of days where an oil sheen is visible at the outfall. See Part II, Visible Oil Sheen, of the permit..

FLOATING SOLIDS, VISIBLE FOAM AND/OR OILS

Surface waters shall be maintained so that oil, grease, or related residue will not produce a visible film or globules of grease on the surface or coat the banks or bottoms of the watercourse; or cause toxicity to man, aquatic life, or terrestrial life.

Samples taken in compliance with the monitoring requirements specified above for any outfall shall be taken at the discharge from the final treatment unit prior to the receiving waterbody.

B. SCHEDULE OF COMPLIANCE

The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedule:

NONE

C. MONITORING AND REPORTING (MINOR DISCHARGERS)

1. Monitoring results must be reported to EPA on either the electronic or paper Discharge Monitoring Report (DMR) approved formats. Monitoring results can be submitted electronically in lieu of the paper DMR Form. To submit electronically, access the NetDMR website at www.epa.gov/netdmr and contact the R6NetDMR@epa.gov in-box for further instructions. Until you are approved for Net DMR, you must report on the Discharge Monitoring Report (DMR) Form EPA No. 3320-1 in accordance with the "General Instructions" provided on the form. No additional copies are needed if reporting electronically, however when submitting paper form EPA No. 3320-1, the permittee shall submit the original DMR signed and certified as required by Part III.D.11 and all other reports required by Part III.D. to the EPA and other agencies as required. (See Part III.D.IV of the permit.) Monitoring information shall be submitted quarterly. Each quarterly submittal shall include separate forms for each month of the reporting period.

2. Reporting periods shall end on the last day of the months March, June, September, and December.

3. The first Discharge Monitoring Report(s) shall represent facility operations from the effective date of the permit through the last day of the current reporting period.

4. Thereafter, the permittee is required to submit regular quarterly reports as described above and shall submit those reports postmarked no later than the 28th day of the month following each reporting period.

5. NO DISCHARGE REPORTING - If there is no discharge from any outfall during the sampling month, place an "X" in the NO DISCHARGE box located in the upper right corner of the Discharge Monitoring Report.

6. If any daily maximum or monthly 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.

7. Any daily maximum or monthly 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.

D. WATER TREATMENT CHEMICAL PROHIBITION

The permit does not authorize biocides, chlorine, halogens or chemicals containing zinc or chromium in the process wastewater.

PART II - OTHER CONDITIONS**A. MINIMUM QUANTIFICATION LEVEL (MQL)**

See list of MQL's at Appendix A of Part II below. For pollutants listed on Appendix A of Part II below with MQL's, analyses must 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) calculations and reporting requirements.

In addition, any additional pollutant sampling for purposes of this permit, including renewal applications or any other reporting, shall be tested to the MQL shown on the attached Appendix A of Part II. Results of analyses that are less than the listed MQL may be reported as "non detect" (ND).

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.

None

C. GENERAL

1. In accordance with 40 CFR 122.62, the permit may be reopened and modified during the life of the permit if relevant portions of Texas Surface Water Quality Standards and/or Implementation of the Texas Commission on Environmental Quality Standards via Permitting are revised, new water quality standards are established and/or remanded and any other policy, or if procedures and implementation guidelines are adopted by the State that change applicable water quality standards and permit implementation.
2. In accordance with 40 CFR Part 122.62, 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.
3. Sanitary waste is not authorized in this permit.
4. The Brazos River Tidal of the Brazos River Basin, Water Body Segment Code No 1201, is not on the State's currently approved 303(d) list. If a new or revised TMDL is determined for the receiving stream, the permit may be reopened, and new limitations based on the TMDL may be incorporated into the permit.

5. Unless otherwise specified in this permit, monitoring shall be conducted according to the analytical, apparatus and materials, sample collection, preservation, handling, etc., procedures listed at 40 CFR Part 136 in effect on the effective date of this permit. Appendices A, B, and C to 40 CFR Part 136 are specifically referenced as part of this requirement. Amendments to 40 CFR Part 136 promulgated after the effective date of this permit shall supersede these requirements as applicable.

D. STORMWATER POLLUTION PREVENTION

1. This section applies to all stormwater discharges from the facility, either through permitted outfalls or through outfalls which are not listed in the permit or as sheet flow. The purpose of the pollution prevention plan is to identify potential sources of pollution that would reasonably be expected to affect the quality of stormwater and identify the practices that will be used to prevent or reduce the pollutants in stormwater discharges.

2. A visual inspection of the facility shall be conducted and a report made annually as described in Paragraph 4 below.

3. The permittee shall prepare, implement, and maintain a Storm Water Pollution Prevention Plan (SWP3) within six (6) months of the effective date of the final permit. The terms and conditions of the SWP3 shall be an enforceable Part of the permit. If the permittee maintains other plans that contain duplicative information, those plans could be incorporated by reference into the SWP3. Examples of these type plans include, but are not limited to: Spill Prevention Control and Countermeasure Plan (SPCC), Best Management Plan (BMP), Response Plans, etc. EPA document 833-R-92-002 (Storm Water Management for Industrial Activities) may be used as a guidance and may be obtained by writing to the Water Resource Center (RC_4100), U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington D.C. 20460 or by calling (202) 566-1729 or via the Wetlands Helpline (800) 832-7828.

4. The following conditions are applicable to all facilities and shall be included in the SWP3 for the facility.

a. The permittee shall conduct an annual inspection of the facility site to identify areas contributing to the storm water discharge from developed areas of the facility and evaluate whether measures to reduce pollutant loadings identified in the SWP3 are adequate and have been properly implemented in accordance with the terms of the permit or whether additional control measures are needed.

b. The permittee shall develop a site map which includes all areas where stormwater may contact potential pollutants or substances which can cause pollution. Any location where reportable quantities leaks or spills have previously occurred are to be documented in the SWP3. The SWP3 shall contain a description of the potential pollutant sources, including, the type and

quantity of material present and what action has been taken to assure stormwater precipitation will not directly contact the substances and result in contaminated runoff.

c. Where experience indicates a reasonable potential for equipment failure (e.g. a tank overflow or leakage), natural condition of (e.g. precipitation), or other circumstances which result in significant amounts of pollutants reaching surface waters, the SWP3 should include a prediction of the direction, rate of flow and total quantity of pollutants which could be discharged from the facility as a result of each condition or circumstance.

d. The permittee shall maintain for a period of three years a record summarizing the results of the inspection and a certification that the facility is in compliance with the SWP3, and identifying any incidents of noncompliance. The summary report should contain, at a minimum, the date and time of inspection, name of inspector(s), conditions found, and changes to be made to the SWP3.

e. The summary report and the following certification shall be signed in accordance with Part III D. 11 of the permit. The summary report is to be attached to the SWP3 and provided to the Environmental Protection Agency and the Railroad Commission of Texas upon request.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

f. The permittee shall make available to the Department, upon request, a copy of the SWP3 and any supporting documentation.

2. The following shall be included in the SWP3, if applicable.

a. The permittee shall utilize all reasonable methods to minimize any adverse impact on the drainage system including but not limited to:

- i. maintaining adequate roads and driveway surfaces;
- ii. removing debris and accumulated solids from the drainage system; and
- iii. cleaning up immediately any spill by sweeping, absorbent pads, or other appropriate methods.

b. All spilled product and other spilled wastes shall be immediately cleaned up and disposed of according to all applicable regulations, Spill Prevention and Control (SPC) plans or Spill Prevention Control and Countermeasures (SPCC) plans. Use of detergents, emulsifiers, or dispersants to clean up spilled product is prohibited except where necessary to comply with State or Federal safety regulations (i.e., requirement for non-slippery work surface) except where the cleanup practice does not result in a discharge and does not leave residues exposed to future storm events. In all such cases, initial cleanup shall be done by physical removal and chemical usage shall be minimized.

c. All equipment, parts, dumpsters, trash bins, petroleum products, chemical solvents, detergents, or other materials exposed to stormwater shall be maintained in a manner which prevents contamination of stormwater by pollutants.

d. All waste fuel, lubricants, coolants, solvents, or other fluids used in the repair or maintenance of vehicles or equipment shall be recycled or contained for proper disposal. Spills of these materials are to be cleaned up by dry means whenever possible.

e. If applicable, all storage tank installations (with a capacity greater than 660 gallons for an individual container, or 1,320 gallons for two or more containers in aggregate within a common storage area) shall be constructed so that a secondary means of containment is provided for the entire contents of the largest tank plus sufficient freeboard to allow for precipitation. Diked areas should be sufficiently impervious to contain spills.

f. All diked areas surrounding storage tanks or stormwater collection basins shall be free of residual oil or other contaminants so as to prevent the accidental discharge of these materials in the event of flooding, dike failure, or improper draining of the diked area. All drains from diked areas shall be equipped with valves which shall be kept in the closed condition except during periods of supervised discharge.

g. All check valves, tanks, drains, or other potential sources of pollutant releases shall be inspected and maintained on a regular basis to assure their proper operation and to prevent the discharge of pollutants.

h. The permittee shall amend the SWP3 whenever there is a change in the facility or change in the operation of the facility which materially increases the potential for the ancillary activities to result in a discharge of significant amounts of pollutants.

i. The permittee shall assure compliance with all applicable regulations promulgated under 40 CFR Part 257. Management practices required under regulations found in this Part shall be referenced in the SWP3.

j. If the SWP3 proves to be ineffective in achieving the general objectives of preventing the release of significant amounts of pollutants to water of the state, then the specific objectives

and requirements of the SWP3 shall be subject to modification to incorporate revised SWP3 requirements.

3. Facility Specific SWP3 Conditions:

None

E. VISIBLE OIL SHEEN

The visual oil sheen test is used to detect free oil by observing the surface of the receiving water for the presence of a sheen while discharging. The operator must conduct a visual sheen test only at times when a sheen could be observed. This restriction eliminates observations when atmospheric or surface conditions prohibit the observer from detecting a sheen (e.g., overcast skies, rough seas, etc.).

The observer must be positioned on land, relative to both the discharge point and current flow at the time of discharge, such that the observer can detect a sheen should it surface down current from the discharge. For discharges that have been occurring for at least 15 minutes previously, observations may be made any time thereafter. For discharges of less than 15 minutes duration, observations must be made during both discharge and at 5 minutes after discharge has ceased.

The observation shall be made on a daily log, maintained at the site, and be made available to EPA inspectors or their designees. At the end of each DMR reporting period, sum the number of days a visible sheen was observed, and record this value on the DMR.

F. 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

REPORTED ON DMR AS FINAL OUTFALL: 001

CRITICAL DILUTION (%): 100

EFFLUENT DILUTION SERIES (%):	32, 42, 56, 75, 100
SAMPLE TYPE:	Defined at PART I
TEST SPECIES/METHODS:	40 CFR Part 136

Daphnia pulex acute static renewal 48 hour definitive toxicity test using EPA-821-R-02-012, 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.

Pimephales promelas (Fathead minnow) acute static renewal 48 hour definitive toxicity test using EPA-821-R-02-012, 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.

b. The NOEC (No Observed Lethal Effect Concentration) is defined as the greatest effluent dilution at and below which lethality that is statistically different from the control (0% effluent) at the 95% confidence level does not occur. Acute test failure is defined as a demonstration of a statistically significant lethal effect at test completion to a test species at or below the critical dilution.

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. This permit does not establish requirements to automatically increase the WET testing frequency after a test failure, or to begin a toxicity reduction evaluation (TRE) in the event of multiple test failures. However, upon failure of any WET test, the permittee must report the test results to EPA, in writing within 5 business days of notification the test failure. EPA will review the test results and determine the appropriate action necessary, if any.

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 90%.

ii. The percent coefficient of variation between replicates shall be 40% or less in the control (0% effluent) for: *Daphnia pulex* survival test; and Fathead minnow survival test.

iii. The percent coefficient of variation between replicates shall be 40% or less in the critical dilution, unless significant lethal effects are exhibited for: *Daphnia pulex* survival test; and Fathead minnow survival test.

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 *Daphnia pulex* survival test and the Fathead minnow survival 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-02-012 or the most recent update thereof.

If the conditions of Test Acceptability are met in Item 3.a above and the percent survival of the test organism is equal to or greater than 90% 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 DMR reporting requirements found in Item 4 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 instream toxicity (fails to fulfill the test acceptance criteria of Item 3.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 (**GRAB samples authorized for this test**)

i. The permittee shall collect two **grab** samples on consecutive days from the outfall(s) listed at Item 1.a above. The first grab sample shall be used to initiate the WET tests on Day 1.

ii. The permittee shall use the second **grab** sample for the 24 hour renewal of each dilution concentration for both tests. The permittee must collect the **grab** 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 **grab** sample. Samples shall be chilled to 4 degrees Centigrade during collection, shipping, and/or storage.

iii. The permittee must collect the **grab** 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 **grab** 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 **grab** sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report required in Item 4 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-02-012, 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 on the DMR 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 biomonitoring data for each species is to be recorded on the DMR for each reporting period. The data submitted should reflect the LOWEST Survival 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 to the DMR for EPA review.

c. The permittee shall report the following results of each valid toxicity test on the subsequent monthly DMR for that reporting period in accordance with PART III.D.4 of this permit. Submit retest information clearly marked as such with the following month's DMR. Only results of valid tests are to be reported on the DMR.

i. *Pimephales promelas* (Fathead minnow)

(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. TEM6C.

(B) Report the NOEC value for survival, Parameter No. TOM6C.

(C) Report the highest (critical dilution or control) Coefficient of Variation, Parameter No. TQM6C.

ii. *Daphnia pulex*

(A) If the NOEC for survival is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TEM3D

(B) Report the NOEC value for survival, Parameter No. TOM3D.

(C) Report the highest (critical dilution or control) Coefficient of Variation, Parameter No. TQM3D.

d. Enter the following codes on the DMR for retests only:

i. For retest number 1, Parameter 22415, enter a "1" if the NOEC for survival 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 is less than the critical dilution; otherwise, enter a "0."