



SCOTT A. THOMPSON
Executive Director

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

KEVIN STITT
Governor

March 10, 2020

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Rusty Whisenhunt, Director of Public Utilities
City of Lawton
103 SW 4th Street
Lawton, OK 73501

RE: DEQ Application for Renewal, OPDES Permit No. OK0035246
City of Lawton Wastewater Treatment Facility
Facility ID. No.: S-11303

Dear Mr. Whisenhunt:

Your new OPDES permit is enclosed. All public notice requirements have been met and public comment periods have expired. The draft permit received no comments. However, due to recent failure of the whole effluent toxicity testing for the fathead minnow species, the final permit has been revised to extend the trial period of quarterly testing, from one (1) year to two (2) years, before a biomonitoring frequency reduction may be requested if eligible (pass all 8 quarterly tests). The effective and expiration dates of this final permit appear on the cover page.

Should you have any questions regarding the final permit, please contact the Municipal Permits Section at the letterhead address or telephone (405) 702-8100. Should you have any questions regarding compliance with the conditions of this permit, please contact the Municipal Wastewater Enforcement Section at the same address and phone number.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael B. Moe".

Michael B. Moe, P.E., Manager
Municipal Discharge and Stormwater Permit Section
Water Quality Division

MBM/VD/cp CG/WM/ST/PP/BB/BC/DM

Enclosures

c: Evelyn Rosborough, EPA Region 6 (6WQ-CA) w/permit



**AUTHORIZATION TO DISCHARGE UNDER THE
OKLAHOMA POLLUTANT DISCHARGE ELIMINATION SYSTEM****PERMIT NUMBER: OK0035246****ID NUMBER: S-11303****PART I**

In compliance with the Oklahoma Pollutant Discharge Elimination System Act (OPDES Act), Title 27A O.S. § 2-6-201 *et seq.*, and the rules of the State of Oklahoma Department of Environmental Quality (DEQ) adopted thereunder {See OAC 252:606}; the Federal Clean Water Act, Public Law 95-217 (33 U.S.C. 1251 *et seq.*), Section 402; and NPDES Regulations (40 CFR Parts 122, 124, and 403),

City of Lawton
103 SW 4th Street
Lawton, OK 73501

is hereby authorized to discharge treated wastewater from a facility located at approximately

SE¼, SE¼, SW¼, Section 28,
Township 1 North, Range 11 West, Indian Meridian,
Comanche County, Oklahoma
or at 8104 SE 15th Street, Lawton, OK 73501

to receiving waters: Nine Mile Creek, a tributary to East Cache Creek at the point located at approximately:

| Outfalls | Receiving Stream | Latitude ^a | Longitude ^a |
|----------|---|-----------------------|------------------------|
| 001 | Nine Mile Creek, East Cache Creek, Red River | 34° 31' 27.748" N | 98° 21' 53.717" W |
| 002 | Nine Mile Creek, East Cache Creek, Red River | 34° 31' 22.638" N | 98° 21' 44.072" W |
| 003 | Lake Comanche, unnamed tributary to Nine Mile Creek | 34° 31' 23.804" N | 98° 21' 45.358" W |

^a GPS: NAD83

Planning Segment No. 311300 of the Red River Basin

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I, II, III, and IV hereof.

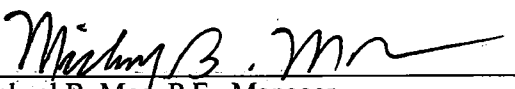
This permit replaces and supersedes the previous permit issued on November 30, 2011.

The issuance date of this permit is March 10, 2020.

This permit shall become effective April 1, 2020.

This permit and authorization to discharge shall expire at midnight March 31, 2025.

For the Oklahoma Department of Environmental Quality:


Michael B. Moe, P.E., Manager
Municipal Discharge and Stormwater Permit Section
Water Quality Division


Shellie R. Chard, Director
Water Quality Division

City of Lawton Wastewater Treatment Facility

A. Effluent Limitations and Monitoring Requirements

During the period beginning the effective date and lasting through date of expiration the permittee is authorized to discharge treated wastewater in accordance with the following limitations:

1. Outfalls 001 and 002 (See explanation for total mass loading below)

| Effluent Characteristics | | Discharge Limitations | | | Monitoring Requirements | |
|---|------------|--|---|---------------------|-------------------------|-------------|
| | | Mass Loading ^a (lb/d) | Concentrations (mg/l unless otherwise specified) | | Frequency | Sample Type |
| | | | Monthly Avg. | Monthly Avg. | | |
| Flow (mgd) ^b [50050] | Year round | Report Monthly Average and Daily Maximum | | | Daily | Totalized |
| Carbonaceous Biochemical Oxygen Demand - 5 Day (CBOD ₅) [80082] | Year round | 1501.2 | 10.0 | 15.0 | Daily | 12-hr Comp |
| Total Suspended Solids (TSS) [00530] | Year round | 2251.8 | 15.0 | 22.5 | Daily | 12-hr Comp |
| Ammonia as N (NH ₃ -N) [00610] | Apr – Oct | 300.2 | 2.0 | 3.0 | Daily | 12-hr Comp |
| | Nov – Mar | 450.4 | 3.0 | 4.5 | | |
| Dichlorobromomethane (µg/l) [32101] | Year round | 1.55 | 10.34 | 15.09 Daily max. | 1/2 Months | 12-hr Comp |
| Selenium, total (µg/l) ^c [01147] | Year round | 0.71 | 4.74 ^d | 8.21 Daily Max. | 2/Month | 12-hr Comp |
| <i>E. Coli</i> (MPN/100 ml) [51040] | May – Sep | --- | 126 Geo. Mean | 406 Daily Max. | 2/Week | Grab |
| Total Residual Chlorine (TRC) [50060] ^e | Year round | --- | Maximum: No Measurable ^f | | Daily | Grab |
| Dissolved Oxygen (DO) [00300] | Apr – Oct | --- | Minimum: 6.5 | | Daily | Grab |
| | Nov – Mar | --- | Minimum: 6.0 | | | |
| pH (standard unit) [00400] | Year round | --- | 6.5 – 9.0 | | Daily | Grab |

^a Total mass loading for discharges through Outfalls 001 and 002.

^b Flow at Outfall 001 shall be totalized measurement. Flow at Outfall 002 (overflow of the holding pond), if/when discharged, can be estimated.

^c Compliance with permit limit is deferred for three (3) years from the effective date of the permit. During this deferment period, the permittee is required to monitor and report.

^d If any individual test result reported by the lab is less than the minimum quantification level (for Selenium) of 5 µg/l, a value of zero (0) may be used for the discharge monitoring report (DMR) requirements.

^e If no chlorine is used for an entire reporting period, the permittee shall report a value of "zero" for the daily maximum and enter "No chlorine used this reporting period" in the comments section on the DMR for that reporting period in lieu of the indicated testing. For any week in which chlorine is used, the indicated testing shall be done until chlorine is no longer in use and at least one subsequent test verifies that the effluent meets the total residual chlorine limit.

^f No measurable is defined as less than 0.1 mg/l.

2. Outfall 003

The permittee may use test results (concentration limits) purportedly reported for Outfall 001 to fulfill the reporting requirements for Outfall 003.

| Effluent Characteristics | | Discharge Limitations | | | Monitoring Requirements | |
|---|------------|--|--|------------------|-------------------------|-------------|
| | | Mass Loading (lb/d) | Concentrations (mg/l unless otherwise specified) | | Frequency | Sample Type |
| | | | Monthly Avg. | Monthly Avg. | | |
| Flow (mgd) ^a [50050] | Year round | Report Monthly Average and Daily Maximum | | | Daily | Totalized |
| Carbonaceous Biochemical Oxygen Demand - 5 Day (CBOD ₅) [80082] | Year round | 500.4 | 10.0 | 15.0 | 5/Week | 12-hr Comp |
| Total Suspended Solids (TSS) [00530] | Year round | 750.6 | 15.0 | 22.5 | 5/Week | 12-hr Comp |
| Ammonia as N (NH ₃ -N) [00610] | Apr – Oct | 100.1 | 2.0 | 3.0 | 5/Week | 12-hr Comp |
| | Nov – Mar | 150.1 | 3.0 | 4.5 | | |
| Dichlorobromomethane (µg/l) [32101] | Year round | 0.52 | 10.34 | 15.09 Daily max. | 1/2 Months | 12-hr Comp |
| Selenium, total (µg/l) ^b [01147] | Year round | 0.24 | 4.74 ^c | 8.21 Daily Max. | 2/Month | 12-hr Comp |
| <i>E. Coli</i> (MPN/100 ml) [51040] | May – Sep | --- | 126 Geo. Mean | 406 Daily Max. | 2/Week | Grab |
| Total Residual Chlorine (TRC) [50060] ^d | Year round | --- | Maximum: No Measurable ^e | | Daily | Grab |
| Dissolved Oxygen (DO) [00300] | Apr – Oct | --- | Minimum: 6.5 | | Daily | Grab |
| | Nov – Mar | --- | Minimum: 6.0 | | | |
| pH (standard unit) [00400] | Year round | --- | 6.5 – 9.0 | | Daily | Grab |

^a Flow at Outfall 003 shall be read/calculated from flow meter installed at the pump station at the effluent splitter basin.

^b Compliance with permit limit is deferred for three (3) years from the effective date of the permit. During this deferment period, the permittee is required to monitor and report.

^c If any individual test result reported by the lab is less than the minimum quantification level (for Selenium) of 5 µg/l, a value of zero (0) may be used for the discharge monitoring report (DMR) requirements.

^d If no chlorine is used for an entire reporting period, the permittee shall report a value of "zero" for the daily maximum and enter "No chlorine used this reporting period" in the comments section on the DMR for that reporting period in lieu of the indicated testing. For any week in which chlorine is used, the indicated testing shall be done until chlorine is no longer in use and at least one subsequent test verifies that the effluent meets the total residual chlorine limit.

^e No measurable is defined as less than 0.1 mg/l.

Other Year Round Requirements (Outfalls 001, 002, and 003)

- There shall be no discharge of floating solids or visible foam except in trace amounts.
- There shall be no discharge of a visible sheen of oil or globules of oil or grease on or in the water. Oil and grease shall not be present in quantities that adhere to stream banks, coat bottoms of water courses, or cause deleterious effects to the biota.
- All monitoring and reporting requirements shall also be in compliance with Part III of this permit.

Sampling Point: Samples taken in compliance with permit limits and monitoring requirements for all outfalls (Outfall 001, 002, and 003) shall be taken at the end of the final treatment unit located in the SE¼, SE¼, SW¼ Section 28, Township 1N, Range 11WIM, Comanche County, Oklahoma.

B. Whole Effluent Toxicity Reporting and Monitoring Requirements

During the period beginning with the effective date and lasting through the expiration date of the permit, the permittee is authorized to discharge from Outfalls TX1, TX2, and TX3 (functionally identical to Outfalls 001, 002, and 003). Such discharge shall be limited and monitored by the permittee as specified below.

The permittee is encouraged to perform required biomonitoring activities as early in the reporting period as is practical so as to ensure sufficient time remains in the reporting period should retests/repeat tests be necessary.

All laboratory analyses for the parameters specified in the biomonitoring section must be performed by a laboratory certified by the Oklahoma Department of Environmental Quality for those parameters.

Whole Effluent Toxicity Limit and Reporting Requirements for *Ceriodaphnia dubia* (Outfalls TX1, TX2, and TX3)

| Effluent Characteristic | | | Reporting/Monitoring Requirements ^a | | |
|---|--------------------------------|--|--|--------------------------------|---------------|
| Test | Critical Dilution ^c | Parameter | 7-day Min | Testing Frequency ^b | Sample Type |
| <i>Ceriodaphnia dubia</i> , 7-day chronic NOEC static renewal, freshwater | 100% | Pass/Fail Survival [TLP3B] | Report | 1/Quarter | 24-hr Comp |
| | | NOEC _L Survival [TOP3B] | Report | | |
| | | % Mortality at Critical Dilution [TJP3B] | Report | | |
| | | Pass/Fail Reproduction [TGP3B] | Report | | |
| | | NOECs Reproduction [TPP3B] | Report | | |
| | | % Coeff of Variation [TQP3B] | Report | | |
| Whole Effluent Toxicity Limit (lowest chronic NOEC _L and/or sublethal NOECs for <i>C. dubia</i>) [STORET 51710] | | | 100% | 1/Quarter ^d | 24-hr Comp |

^a See Part II, Section E, Whole Effluent Toxicity Limit, for additional monitoring and reporting conditions.

^b Quarterly reporting periods commence with the effective date of the permit. A valid WET test shall be reported for *C. dubia* for each reporting period. Results of retests conducted pursuant to prior test failure shall not be submitted on DMRs in lieu of routine test results.

^c All chronic WET testing shall use the dilution series specified in Part II, Section E, Item 1.

^d Results of retests conducted pursuant to prior test failure shall not be submitted on DMRs in lieu of routine test results.

C. dubia whole effluent toxicity limit and monitoring requirements apply beginning the effective date of the permit, and the first reporting period is April 1, 2020 to June 30, 2020.

**Whole Effluent Toxicity Monitoring and Reporting Requirements for Fathead minnow
(Outfalls TX1, TX2, and TX3)**

| Effluent Characteristic | | | Reporting/Monitoring Requirements ^a | | |
|--|--------------------------------|--|--|--------------------------------|-------------|
| Test | Critical Dilution ^c | Parameter | 7-day Min | Testing Frequency ^b | Sample Type |
| <i>Pimephales promelas</i> (Fathead minnow), 7-day chronic NOEC static renewal, freshwater | 100% | Pass/Fail Survival [TLP6C] | Report | 1/Quarter ^d | 24-hr Comp |
| | | NOEC _L Survival [TOP6C] | Report | | |
| | | % Mortality at Critical Dilution [TJP6C] | Report | | |
| | | Pass/Fail Growth [TGP6C] | Report | | |
| | | NOEC _S Growth [TPP6C] | Report | | |
| | | % Coeff of Variation [TQP6C] | Report | | |
| Retesting | Retest #1 [22415] ^e | | Report | As Required ^f | 24-hr Comp |
| | Retest #2 [22416] ^e | | Report | | |

^a See Part II, Section F, Whole Effluent Toxicity Testing, for additional monitoring and reporting conditions.

^b See provision for monitoring frequency reduction after the second year (Part II, Section F, Item 5).

^c All chronic WET testing shall use the dilution series specified in Part II, Section F, Item 1

^d Results of retests conducted pursuant to prior test failure shall not be submitted on DMRs in lieu of routine test results (see Part II, Section F, Item 2.a).

^e Applies according to results of test failure triggering monthly retests.

^f Monthly retesting required only if routine test for reporting period fails. Fill out ONLY these two retest parameters on the retest DMRs, do not change the original results, and put the correct submission date in the lower right hand corner of the DMR.

P. promelas (Fathead minnow) whole effluent toxicity reporting and monitoring requirements apply beginning the effective date, and the first reporting period is April 1, 2020 to June 30, 2020.

Dilution Water and WET Test Acceptability

For Outfall TX1 and Outfall TX2 where the receiving stream (Nine Mile Creek)'s flow is intermittent, OAC 252:690-3-36 states that "...where there is no receiving water available when the sample is collected, permittees must use synthetic dilution water having a pH, hardness, and alkalinity similar to that of the closest downstream perennial water."

For Outfall TX3 where the receiving stream is Comanche Lake, OAC 252:690-3-37 states that "...permittees must use receiving water collected as close to the point of discharge as possible but unaffected by the discharge. Receiving water must be collected outside the regulatory mixing zone for discharges to lakes. If the receiving water control fails to fulfill the test acceptability criteria in OAC 252:690-3-38, the permittee must substitute synthetic dilution water for the receiving water in all subsequent tests, provided:

- (1) a synthetic dilution water control which fulfills the test acceptability requirements in OAC 252:690-3-38 was run concurrently with the receiving water control.
- (2) the test indicating receiving water toxicity was carried out to completion.
- (3) the synthetic dilution water had a pH, hardness and alkalinity similar to that of the receiving water, provided the magnitude of these three parameters did not cause toxicity in the synthetic dilution water.
- (4) the receiving water test must be conducted at the start of each permitting cycle."

Three (3) separate WET tests must be conducted, one (1) for each outfall using different receiving stream water, as indicated above (two WET tests if Outfall TX2 remain inactive). The permittee may use the same effluent sample for those WET tests. In accordance with OAC 252:690-3-38, if a WET test does not meet all of the acceptability requirements of the test method plus those specified above, the permittee must conduct a repeat test for the affected test species within the required reporting period.

WET Testing Summary Reports

The permittee must submit reports of all WET testing initiated, regardless of whether such tests are carried to completion, in accordance with the terms of Item 3 of Sections E and F in Part II of the permit.

Whole Effluent Toxicity Concurrent Testing Requirements

In accordance with OAC 252:690-3-30, if there is reason to believe certain substances may cause or contribute to whole effluent toxicity, the permit may require testing of those substances concurrently with WET testing. Specific concurrent testing requirements for ammonia are described at OAC 252:690-3-25.

Concurrent analyses of ammonia and pH are required for each individual effluent sample collected for chronic WET testing or retesting of the Fathead minnow specie. Reporting of concurrent testing results shall be in accordance with the following requirements. Results shall also be submitted in or concurrently with each WET test report.

Concurrent Effluent Testing for Chronic WET Tests – Reporting Requirements (Outfalls TX1, TX2, and TX3)

| Effluent Characteristic | Concentration | | | Monitoring Requirements | |
|--|---------------|-------------|-----------|-----------------------------------|---|
| | Daily Min | Monthly Avg | Daily Max | Monitoring Frequency ^a | Sample Type |
| Ammonia, (NH ₃ -N) (mg/l) ^{a, b} [STORET 00610] | Report | Report | Report | 1/Quarter | 24-hr Comp ^b |
| pH (std units) ^{a, b} [STORET 00400] | Report | N/A | Report | 1/Quarter | Measured in each composite effluent sample, including static renewals, just prior to first use ^b |

^a Report only those effluent samples collected for WET testing of the Fathead minnow species.

^b Samples collected for WET testing purposes, including static renewals, shall be of sufficient volume to allow for the required concurrent analyses in addition to the WET testing itself.

Two sets of samples for **concurrent analyses** are required for ammonia and pH:

Samples sent directly to a WET testing laboratory shall NOT undergo any preservation other than refrigeration to maintain a temperature at or below 6° C but not frozen prior to arrival and processing at the WET testing laboratory. These results may be used in the table above.

A second concurrent analysis is required for the sample that is sent to the WET testing laboratory and for the table above.

Just prior to the first use of each composite sample for WET testing purposes, the biomonitoring laboratory shall take an adequately-sized portion of each composite sample, acidify it in accordance with preservation requirements in 40 CFR 136, and have it analyzed for ammonia (NH₃-N) at a state certified analytical laboratory. The pH measurement required for the above table must be taken just prior to the acidification step. These pH and ammonia readings should NOT be included in the results for Outfalls 001, 002, and 003.

Samples sent directly to a state certified analytical laboratory must be composite samples that are properly preserved. These results may be included in the results for Outfalls 001, 002, and 003.

Sampling Location: Samples taken in compliance with the monitoring requirements specified above for Outfalls TX1, TX2, and TX3 shall be taken at the same location as for Outfalls 001, 002, and 003.

C. Compliance Schedule

Effluent limits for total selenium are now established in the permit. Data submitted with the application indicates that the permittee may not be able to comply with permit limits; therefore, compliance with permit limits is deferred for three (3) years. During this deferment period the permittee is required to monitor and report for selenium. The permittee should evaluate data from the monitoring requirement, and may need to revise the plant's operation and maintenance routine, or propose revisions to its pretreatment program in order to comply with the newly established limits. Such evaluation or revision of the plant's operation and maintenance routine, pretreatment program, or additional plant improvements, if any, should begin as soon as possible so that compliance with newly established limits can be attained. The permittee is required to complete the following tasks and submit to the DEQ in accordance with the following schedule:

| Task | Due date |
|---|---|
| A. Submit a report with results and evaluation of the monitoring requirement for total selenium | 15 months from the effective date of the permit |
| B. Submit Plan of Actions to reduce selenium from entering the treatment system and to attain compliance with permit limits | 18 months from the effective date of the permit |
| C. Submit engineering report for plant improvements (if needed) | 21 months from the effective date of the permit |
| D. Submit Plans and Specifications for plant improvements (if needed) | 24 months from the effective date of the permit |
| E. Complete plant improvements (if needed) | 33 months from the effective date of the permit |
| F. Attain final compliance with permit limits | 36 months from the effective date of the permit |

D. Reporting of Monitoring Results

Monitoring results shall be reported in accordance with the provisions of Part III.B.5 of the permit. Monitoring results obtained during the previous month shall be summarized and electronically reported on an electronic Discharge Monitoring Report (eDMR) form due to the Oklahoma Department of Environmental Quality, Water Quality Division, Wastewater Compliance Tracking Section no later than the 15th day of the month following the completed monthly test. If no discharge occurs during the reporting period, an eDMR form stating "No Discharge" shall be electronically submitted according to the above schedule. Instructions on how to register as a Preparer or Signatory for eDMRs, as well as how to prepare and submit eDMRs, can be found on DEQ's website at <http://www.deq.state.ok.us/wqdnew/ereporting/index.html>. Assistance is also available by contacting DEQ at (405) 702-8100 or deqreporting@deq.ok.gov.

The first report is due on the 15th of May, 2020.

E. Sanitary Sewer Overflows

Any bypass in the collection system [sanitary sewer overflow (SSO)] shall be reported in accordance with Permit Part III.B.6.

PERMIT PART II - OTHER PERMIT REQUIREMENTS

A. CONTRIBUTING INDUSTRIES AND PRETREATMENT REQUIREMENTS

1. The permittee shall operate an industrial pretreatment program in accordance with Section 402(b)(8) of the Clean Water Act, the General Pretreatment Regulations (40 CFR Part 403) and the provisions of the subsequently approved industrial pretreatment program submitted by the permittee. A Publicly Owned Treatment Works (POTW) facility is defined in 40 CFR 403.3(o) as any devices and systems used in storage, treatment, recycling and reclamation of municipal sewage and industrial wastes of a liquid nature. It includes sewers, pipes and other conveyances if they convey wastewater to a POTW. The term also means a municipality as defined in the Act, which has jurisdiction over the Indirect Discharges to and from such treatment works. The POTW pretreatment program was approved on March 14, 1983 and modified on June 30, 1992, June 20, 2000, and August 12, 2002 to include program revisions with the incorporation of the latest 40 CFR Part 403 regulations adopted by DEQ effective June 15, 2007, approved on October 23, 2011, and a minor modification approved on August 2, 2013. Any non-substantial modifications [as defined under 40 CFR 403.18(b)] to the POTW pretreatment program received and implemented in accordance with 40 CFR 403.18(d) shall be considered incorporated as of the date of approval by DEQ. The current POTW pretreatment program is hereby incorporated by reference and shall be implemented in a manner consistent with the following requirements:
 - a. Industrial user information shall be updated at a frequency adequate to ensure that all IUs are properly characterized at all times;
 - b. The frequency and nature of industrial user compliance monitoring activities by the permittee shall be commensurate with the character, consistency and volume of waste. However, in keeping with the requirements of 40 CFR 403.8 (f)(2)(v), the permittee must inspect and sample the effluent from each Significant Industrial User at least once a year. This is in addition to any industrial self-monitoring activities;
 - c. The permittee shall enforce and obtain remedies for noncompliance by any industrial users with applicable pretreatment standards and requirements;
 - d. The permittee shall control through permit, order, or similar means, the contribution to the POTW by each Industrial User to ensure compliance with applicable Pretreatment Standards and requirements. In the case of Industrial Users identified as significant under 40 CFR 403.3(t), this control shall be achieved through permits or equivalent individual control mechanisms issued to each such user. Such control mechanisms must be enforceable and contain, at a minimum, the following conditions:
 - (1) Statement of duration (in no case more than five years);
 - (2) Statement of non-transferability without, at a minimum, prior notification to the POTW and provision of a copy of the existing control mechanism to the new owner or operator;
 - (3) Effluent limits based on applicable general pretreatment standards, categorical pretreatment standards, local limits, and State and local law;
 - (4) Self-monitoring, sampling, reporting, notification, and record keeping requirements, including an identification of the pollutants to be monitored, sampling location, sampling frequency, and sample type, based on the applicable general pretreatment standards in 40 CFR 403, categorical pretreatment standards, local limits, and State and local law; and

- (5) Statement of applicable civil and criminal penalties for violation of pretreatment standards and requirements and any applicable compliance schedule. Such schedules may not extend the compliance date beyond federal deadlines.
- e. The permittee shall evaluate, at least once every two years, whether each Significant Industrial User needs a plan to control slug discharges. If the POTW decides that a slug control plan is needed, the plan shall contain at least the minimum elements required in 40 CFR 403.8 (f)(2)(v);
 - f. The permittee shall provide adequate staff, equipment, and support capabilities to carry out all elements of the pretreatment program; and,
 - g. The approved program shall not be modified by the permittee without the prior approval of DEQ.
2. The permittee shall establish and enforce specific limits to implement the provisions of 40 CFR Parts 403.5(a) and (b), as required by 40 CFR Part 403.5(c). Each POTW with an approved pretreatment program shall continue to develop these limits as necessary and effectively enforce such limits.

The permittee shall within sixty (60) days of the effective date of this permit: (1) submit a **WRITTEN CERTIFICATION** that a technical evaluation has demonstrated that the existing technically based local limits (TBLL) are based on current state water quality standards and are adequate to prevent pass through of pollutants, inhibition of or interference with the treatment facility, worker health and safety problems, and sludge contamination, **OR** (2) submit a **WRITTEN NOTIFICATION** that a technical evaluation revising the current TBLL and a draft sewer use ordinance which incorporates such revisions will be submitted within 12 months of the effective date of this permit.

All specific prohibitions or limits developed under this requirement are deemed to be conditions of this permit. The specific prohibitions set out in 40 CFR Part 403.5(b) shall be enforced by the permittee unless modified under this provision.

3. The permittee shall analyze the treatment facility influent and effluent for the presence of the toxic pollutants listed in 40 CFR 122 Appendix D (NPDES Application Testing Requirements) Table II at least 1/6 months and the toxic pollutants in Table III at least 1/6 months. If, based upon information available to the permittee, there is reason to suspect the presence of any toxic or hazardous pollutant listed in Table V, or any other pollutant, known or suspected to adversely affect treatment plant operation, receiving water quality, or solids disposal procedures, analysis for those pollutants shall be performed at least 1/6 months on both the influent and the effluent.

The influent and effluent samples collected shall be composite samples consisting of at least 12 aliquots collected at approximately equal intervals over a representative 24 hour period and composited according to flow. Sampling and analytical procedures shall be in accordance with guidelines established in 40 CFR 136. The effluent samples shall be analyzed to a level as required in item 6 below. Where composite samples are inappropriate, due to sampling, holding time, or analytical constraints, at least 4 grab samples, taken at equal intervals over a representative 24 hour period, shall be taken.

4. The permittee shall prepare annually a list of Industrial Users which during the preceding twelve months were in significant noncompliance with applicable pretreatment requirements. For the purposes of this Part, significant noncompliance shall be determined based upon the more stringent of either criteria established at 40 CFR Part 403.8(f)(2)(vii) [rev. 7/24/90] or criteria established in the approved POTW pretreatment program. This list is to be published annually in the largest daily newspaper in the municipality during the month of March.

In addition, during the **month of March** the permittee shall submit an updated status report to DEQ containing the following information:

- a. An updated list of all significant industrial users. For each industrial user listed the following information shall be included:
 - (1) Standard Industrial Classification (SIC) code and categorical determination;
 - (2) Control document status. Whether the user has an effective control document, and the date such document was last issued, reissued, or modified, (indicate which industrial users were added to the system (or newly identified) within the previous 12 months);
 - (3) A summary of all monitoring activities performed within the previous 12 months. The following information shall be reported:
 - (a) total number of inspections performed;
 - (b) total number of sampling visits made;
 - (4) Status of compliance with both effluent limitations and reporting requirements. Compliance status shall be defined as follows:
 - (5) Compliant (C) - no violations during the previous 12 month period;
 - (6) Non-compliant (NC) - one or more violations during the previous 12 months but does not meet the criteria for significantly non-compliant industrial users;
 - (7) Significant Noncompliance (SNC) - in accordance with requirements described in d. above; and
 - (8) For significantly non-compliant industrial users, indicate the nature of the violations, the type and number of actions taken (notice of violation, administrative order, criminal or civil suit, fines or penalties collected, etc.) and current compliance status. If ANY industrial user was on a schedule to attain compliance with effluent limits, indicate the date the schedule was issued and the date compliance is to be attained;
 - (a) A list of all significant industrial users whose authorization to discharge was terminated or revoked during the preceding 12 month period and the reason for termination;
 - (b) A report on any interference, pass through, upset or POTW permit violations known or suspected to be caused by industrial contributors and actions taken by the permittee in response;
 - (c) The results of all influent and effluent analyses performed pursuant to permit Part II D.3 above;
 - (d) A copy of the newspaper publication of the significantly non-compliant industrial users giving the name of the newspaper and the date published; and
 - (e) The monthly average water quality based effluent concentration necessary to meet the state water quality standards as developed in the approved technically based local limits.

5. The permittee shall provide adequate notice of the following:
 - a. Any new introduction of pollutants into the treatment works from an indirect discharger which would be subject to Sections 301 and 306 of the CWA and/or Sections 40 CFR 405-499 if it were directly discharging those pollutants;
 - b. Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of the permit; and
 - c. Adequate notice shall include information on (i) the quality and quantity of effluent to be introduced into the treatment works, and (ii) any anticipated impact of the change on the quality or quantity of effluent to be discharged from the POTW.
6. All effluent monitoring conducted in accordance with permit Part II A.3 above; shall meet the Minimum Quantification Levels (MQLs) shown in the attached tables (on Page 21).

B. REOPENER CLAUSE

This permit may be reopened for modification or revocation and reissuance to require additional monitoring and/or effluent limitations where actual or potential exceedances of State water quality criteria are determined to be the result of the permittee's discharge to the receiving water(s), or a revised Total Maximum Daily Load is established for the receiving water(s), or when required as technology. Modification or revocation and reissuance of the permit shall follow regulations listed at 40 CFR 124.5.

C. BIOSOLIDS/SEWAGE SLUDGE REQUIREMENTS

Biosolids/sewage sludge disposal practices shall comply with the Federal regulations for landfills, biosolids/sewage sludge, and solid waste disposal established at 40 CFR Part 257, 503, and the DEQ rules governing Sludge Management (OAC 252:515 and OAC 252:606) as applicable.

The biosolids/sewage sludge disposal practices shall also comply with the requirements of the Sludge Disposition Plan, which was approved by the DEQ on June 1, 2009, that allows the permittee to landfill biosolids/sewage sludge at the City of Lawton Municipal Landfill, which is located in Section 30, Township 1 North, Range 11 West, Comanche County, Oklahoma.

The permittee is required to maintain all records relevant to sewage sludge disposal for the life of the permit. These records shall be made available to the DEQ upon request.

The permittee shall give 120 days prior notice to DEQ of any change planned in the sewage sludge disposal practice.

D. POLLUTION PREVENTION REQUIREMENTS

1. The permittee shall institute a program within 12 months of the effective date of the permit (or continue an existing program) directed towards optimizing the efficiency and extending the useful life of the facility. The permittee shall consider the following items in the program:
 - a. The influent loadings, flow, and design capacity;
 - b. The effluent quality and plant performance;
 - c. The age and expected life of the wastewater treatment facility's equipment;

- d. Bypasses and overflows of the tributary sewerage system and treatment works;
 - e. New developments at the facility;
 - f. Operator certification and training plans and status;
 - g. The financial status of the facility;
 - h. Preventative maintenance programs and equipment conditions; and
 - i. An overall evaluation of conditions at the facility.
2. The permittee shall prepare the following information on the biosolids/sewage sludge generated by the facility:
- a. An annual quantitative tabulation of the ultimate disposition of all biosolids/sewage sludge (including, but not limited to, the amount beneficially reused, landfilled, and incinerated).
 - b. An assessment of technological processes and an economic analysis evaluating the potential for beneficial reuse of all biosolids/sewage sludge not currently beneficially reused, including a listing of any steps which would be required to achieve the biosolids/sewage sludge quality necessary to beneficially reuse the biosolids/sewage sludge.
 - c. A description of, including the expected results and the anticipated timing for, all projects in process, in planning, and/or being considered which are directed towards additional beneficial reuse of biosolids/sewage sludge.
 - d. An analysis of one composite sample of the biosolids/sewage sludge collected prior to ultimate re-use or disposal shall be performed for the pollutants listed in Part IV, Element 1, Section III, Table 3.
 - e. A listing of the specific steps (controls/changes) which would be necessary to achieve and sustain the quality of the biosolids/sewage sludge so that the pollutant concentrations in the biosolids/sewage sludge fall below the pollutant concentration criteria listed in Part IV, Element 1, Section III, Table 3.
 - f. A listing of, and the anticipated timing for, all projects in process, in planning, and/or being considered which are directed towards meeting the biosolids/sewage sludge quality referenced in (e) above.

The permittee shall certify in writing, within three years of the effective date of the permit, that all pertinent information is available. This certification shall be submitted to:

Oklahoma Department of Environmental Quality
Water Quality Division
Municipal Permits Section
P. O. Box 1677
707 North Robinson Street
Oklahoma City, Oklahoma 73101-1677

E. WHOLE EFFLUENT TOXICITY TESTING – *Ceriodaphnia dubia*

1. Scope and Methodology

- a. The permittee shall test the effluent for toxicity in accordance with the provisions in this section, which apply individually and separately to the outfalls listed below. No samples or portions of samples from one outfall may be composited with samples or portions of samples from another outfall. The permittee shall biomonitor for *Ceriodaphnia dubia* in accordance with the WET testing frequencies

prescribed in Part I. Intervals between test initiation dates shall be a function of the required testing frequency, as follows:

The permittee is encouraged to perform required biomonitoring activities as early in the reporting period as is practical to ensure sufficient time remains in the reporting period should retests/repeat tests be necessary.

All laboratory analyses for the biomonitoring parameters specified in this permit must be performed by a laboratory certified by the Oklahoma Department of Environmental Quality for those parameters.

Intervals between test initiation dates shall be a function of the required testing frequency, as follows:

- Monthly: No less than 20 days and no more than 40 days.
- Quarterly: No less than 2 months and no more than 4 months.
- Semi-annually: No less than 4 months and no more than 8 months.

APPLICABLE TO OUTFALL(S): 001, 002, and 003

REPORTED ON DMR AS OUTFALL(S): TX1, TX2, and TX3

CRITICAL DILUTION: 100%

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

SAMPLE TYPE: Defined at Part I

TEST SPECIES/METHODS: 40 CFR 136, except for changes required by EPA, Region 6.

Ceriodaphnia dubia chronic static renewal 7-day survival and reproduction test, Method 1002.0, EPA-821-R-02-013 (October 2002), or most recent update thereof. A minimum of ten (10) replicates of a single (1) organism per test chamber, must be used in the control and in each effluent dilution of this test. 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. If this criterion is not met at the end of 8 days, the test must be repeated.

- b. Chronic lethal effect test failure – The NOEC_L (No Observed Lethal Effect Concentration) is defined as the greatest effluent dilution at and below which lethality (toxicity) that is statistically different from the control (0% effluent) at the 95% confidence level does not occur. Chronic lethal test failure (chronic NOEC_L test) is defined as a demonstration of a statistically significant lethal (toxic) effect at test completion to a test species at or below the critical dilution.
- c. Chronic sublethal effect test failure – The NOEC_s (No Observed Sublethal Effect Concentration) is defined as the greatest effluent dilution at and below which sublethality (toxicity: inhibited reproduction in the *Ceriodaphnia dubia* test) that is statistically different from the control (0% effluent) at the 95% confidence level does not occur. Chronic sublethal test failure (chronic NOEC_s test) is defined as a demonstration of a statistically significant sublethal effect at test completion to a test species at or below the critical dilution.
- d. The conditions of this item are effective beginning with the effective date of the WET limit as established in Part 1 of this permit. When the testing frequency stated above is less than monthly and the effluent fails the lethal and/or sublethal endpoint at or below the critical dilution, the permittee shall

be considered in violation of this permit limit and the frequency for the affected species will increase to monthly until such time as compliance with the No Observed Effect Concentration (NOEC: lethal and sublethal) effluent limitation is demonstrated for a period of three consecutive months, at which time the permittee may return to the testing frequency stated in Part I of this permit.

If the permittee cannot pass three tests in a row within the next six months, DEQ will review the test results and may require a Toxicity Identification Evaluation (TIE) be done to determine the cause of the toxicity. If the TIE cannot detect the problem, another Toxicity Reduction Evaluation (TRE) may be required.

A full laboratory report for the failed routine test and all additional tests shall be provided and submitted to DEQ in accordance with procedure outlined in Item 4.

- e. Reopener clause – This permit may be reopened to require chemical specific effluent limits, additional testing, and/or other appropriate actions to address toxicity. Accelerated or intensified testing may be required in accordance with Section 308 of the Clean Water Act.
- f. Upon becoming aware of the failure of any test, the permittee shall notify a DEQ Water Quality Division biomonitoring coordinator immediately, and in writing within 5 working days of the test failure with a summary of the results of and any other pertinent circumstances associated with the failed test.

2. Testing Requirements due to Chronic Lethal and/or Sublethal Test Failure

Upon becoming aware of the failure of any test, the permittee shall notify DEQ Water Quality Division biomonitoring coordinator immediately, and in writing within 5 working days of the test failure with a summary of the results of and any other pertinent circumstances associated with the failed test.

Beginning with the effective date of the WET limit, as established in Part I of this permit, the following testing requirements due to chronic test failure apply:

- a. When there is a lethal and/or sublethal effect test failure for either species during routine testing, at least three additional monthly tests (retests) for the affected species are required. (Part II, Section D.1.d above). The additional tests shall be conducted monthly during subsequent consecutive months until there are three consecutive months of passing tests at which time the frequency of testing shall return to that stated in Part 1 of the permit. The permittee shall not substitute any of the retests for routine toxicity testing.
- b. A full laboratory report for the failed routine test and all additional tests shall be provided and submitted to DEQ in accordance with procedure outlined in Item 4.
- c. If the permittee cannot pass three tests in a row within the next six months, DEQ will review the test results and may require a Toxicity Identification Evaluation (TIE) be done to determine the cause of the toxicity. If the TIE cannot detect the problem, another Toxicity Reduction Evaluation (TRE) may be required.

3. 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:

- (1) The toxicity test control (0% effluent) must have survival equal to or greater than 80%.
- (2) The mean number of *Ceriodaphnia dubia* neonates produced per surviving female in the control (0% effluent) must be 15 or more.
- (3) Sixty (60) percent of the surviving *Ceriodaphnia dubia* females in the control must produce three broods.
- (4) 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.
- (5) The percent coefficient of variation between replicates shall be 40% or less in the critical dilution, unless significant lethal or sublethal effects are exhibited for the young of surviving females in the *Ceriodaphnia dubia* reproduction test.
- (6) As documented at test termination, no more than forty (40) percent of the daphnid test organisms in any replicate of any effluent dilution or in any replicate of the control (0% effluent) shall be male.
- (7) The Percent Minimum Significant Difference (PMSD) shall be in the range of 13-47 for *Ceriodaphnia dubia* reproduction. If the test PMSD is less than 13, 13 may be substituted for the PMSD.

If the above criteria or criteria listed in Item 1.a is not met, the test will be considered invalid. Test failure may not be construed or reported as invalid due to a coefficient of variation value of greater than 40% for replicates tested at the critical dilution. A repeat test shall be conducted and the biomonitoring enforcement coordinator notified, within the reporting period of any test determined to be invalid.

- b. The permittee shall follow the requirements listed below in determining success or failure of a WET test:
 - (1) The statistical analyses in the *Ceriodaphnia dubia* survival test, 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.
 - (2) The statistical analyses in the *Ceriodaphnia dubia* reproduction test, used to determine if there is a 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-03-013, or the most recent update thereof.
 - (3) 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 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_L of not less than the critical dilution for the DMR reporting requirements found in Item 4 below.
- c. The permittee shall use dilution water that meets the following standards:
 - (1) 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 where the toxicity test is conducted on an effluent discharge to a receiving stream classified as intermittent or to a receiving stream with no flow due to zero flow conditions.

- (2) If the receiving water is unsatisfactory as a result of instream toxicity (fails to meet the test acceptance criteria in Item 3.a), the permittee must submit the test results exhibiting receiving water toxicity with the full test report required in Item 4 below and may thereafter 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 was carried out to completion (i.e., 48 hours); and
 - (c) the synthetic dilution water had 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. The permittee shall collect samples that are representative of their effluent by following the criteria listed below:
 - (1) Unless grab sampling is specifically authorized in Part I of the permit, the permittee shall collect three flow-weighted 24-hour composite samples representative of the flows during normal operation from the outfall(s) listed at Item 1.a above. If grab sampling is authorized, all requirements specified below for composite sampling also pertain to grab sampling. In such cases, collection of the grab sample is considered equivalent to collection of the last portion of a composite sample. Unless otherwise specified in Part I of the permit, a 24-hour composite sample consists of a minimum of 12 effluent portions collected at equal time intervals representative of a 24-hour operating day and combined proportional to flow or a sample continuously collected proportional to flow over a 24-hour operating day.
 - (2) The first composite sample shall be used to initiate each test. The permittee must initiate the toxicity test within 36 hours after the collection of the last portion of the first composite sample. Collection of the second and third composite samples must be timed so as to permit an approximately equal use distribution of the three composite samples for daily static renewals. The permittee must collect the composite samples so that the maximum holding time for any effluent sample shall not exceed 72 hours. Samples shall be chilled to maintain a temperature at or below 6° C but not frozen during collection, shipping, and/or storage.
 - (3) 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.
 - (4) If it is anticipated that flow from the outfall being tested may cease prior to collection of the third composite sample, the permittee must ensure that the second composite sample is of sufficient volume to complete the required testing with daily renewal of effluent. The abbreviated composite sample collection duration, the static renewal protocol associated with an abbreviated sample collection, and a summary of the circumstances justifying collection of an abbreviated sample must be adequately documented in the full test report required in Item 4 below. The DEQ reserves the right to require a retest and/or consider the permittee in violation of this permit if the basis offered for justification of an abbreviated sample is insufficient, flawed, or in any way reflects an effort on the part of the permittee to avoid test failure by use of an abbreviated sample.

4. Reporting

- a. The permittee shall retain each full report pursuant to the records retention provisions of Part III of this permit. The permittee shall also submit to the DEQ biomonitoring enforcement coordinator a copy of the full laboratory test reports at TX1, TX2, and TX3 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, including any test which is considered invalid, is terminated early for any reason, or which indicates receiving water toxicity. The reports shall be received no later than the 15th day of the month following the end of the testing period.

As of October 22, 2015, the EPA published the "National Pollutant Discharge Eliminations System (NPDES) Electronic Reporting" final rule, with an effective date of December 21, 2015, which requires the electronic reporting and sharing of Clean Water Act National Pollutant Discharge Elimination System (NPDES) program information. DEQ has developed electronic systems so that NPDES-regulated entities can submit the required electronic DMRs and other reports to DEQ as the initial recipient. Instructions on how to access and use the appropriate electronic reporting tool can be found on DEQ's website at <https://www.deq.ok.gov/water-quality-division/electronic-reporting/>. Assistance is also available by contacting DEQ at (405) 702-8100 or deqreporting@deq.ok.gov.

- b. A valid test for *Ceriodaphnia dubia* (excluding retests) at TX1, TX2, and TX3 must be reported on the DMR for each reporting period specified in Part I of this permit. DMRs must be received by the 15th day of the month following the end of the testing period. The full report for the test (see Item 4.a above) shall be submitted along with the DMR. If a test is determined to be invalid, the repeat test must be conducted in the coinciding testing period; if the first sample of the repeat test is taken after the last day of the final month in a testing period, the facility will be out of compliance with the reporting period. If monthly retesting is required as a result of a WET limit permit violation, the monthly DMR will be reported to TX1A, TX2A, and TX3A. Quarterly testing at TX1Q, TX2Q, and TX3Q shall continue; the facility may substitute a monthly test from TX1A, TX2A, and TX3A for the quarterly report if the test falls within the testing period. If more than one valid test (excluding retests) is performed on a species during a reporting period, the permittee shall report the lowest lethal and/or sublethal test result as the 7-day minimum and the *C. dubia* [51710] result.
- c. If any test results in anomalous NOEC_L or NOEC_S findings (i.e., it indicates an interrupted dose response across the dilution series), DEQ recommends that the permittee contact a DEQ biomonitoring coordinator for a technical review of the test results prior to submitting the full laboratory test report and DMR. A summary of all tests initiated during the reporting period, including invalid tests, repeat tests and retests, shall be attached to the reporting period DMR for DEQ review.

A test is a REPEAT test if it is performed as the result of a previously invalid test. A test is a RETEST if it is performed as the result of a previously failed test, the exception being where the test is the first (valid) test of a reporting period, in which case it is reported as such on the DMR for that period.

(1) The reporting period test summary attached to the DMR shall be organized as follows:

- (a) Invalid tests (basis for test invalidity must be described)
- (b) Valid tests (other than retests) initiated during current reporting period
- (c) Valid retests for tests failed during previous reporting period (if not submitted in the previous reporting-period test summary)

- (d) Valid retests for tests failed during current reporting period.
- (2) The following information shall be listed in the reporting period test summary for each valid test in categories (b) through (d) in Item 4.b(1) above:
 - (a) Test species
 - (b) Date of test initiation at laboratory
 - (c) Results of all concurrent effluent analyses specified in Part I of this permit
 - (d) All test result parameters for the test species specified in Item 4.c below.
- d. The permittee shall report the following results for all VALID toxicity tests (excluding retests) on the DMR(s) for that reporting period in accordance with Item 4.b above and Part III of this permit.
 - (1) Parameter TLP3B: If the *Ceriodaphnia dubia* NOEC_L for survival is less than the critical dilution, report a "1"; otherwise, report a "0".
 - (2) Parameter TOP3B: Report the *Ceriodaphnia dubia* NOEC_L value for survival.
 - (3) Parameter TJP3B: Report the *Ceriodaphnia dubia* percent mortality in the critical dilution at test completion.
 - (4) Parameter TGP3B: If the *Ceriodaphnia dubia* NOEC_S for reproduction is less than the critical dilution, report a "1"; otherwise, report a "0".
 - (5) Parameter TPP3B: Report the *Ceriodaphnia dubia* NOEC_S value for reproduction.
 - (6) Parameter TQP3B: Report the highest coefficient of variation (critical dilution or control) for *Ceriodaphnia dubia* reproduction.
- e. The permittee shall report the results for all toxicity monthly testing on the DMR(s) for the reporting period in which monthly testing is required, which shall be received no later than the 15th day of the month following the end of the monthly period. Results of all required monthly tests shall be reported under TX1A, TX2A, and TX3A of the DMR for the reporting period (see Item 4.b above). If the permittee passes three consecutive tests in the six months after the initial failure, the permittee will return to quarterly testing. If the permittee takes the first sample of the monthly test after the last day of the final month in the monthly period, the facility will be out of compliance with the reporting period. The full laboratory report for the WET tests (see Item 4.a above) shall be submitted along with the retest DMR. Should test failures necessitate the continuation of monthly testing into subsequent reporting periods, the results of the first test in any reporting period will be reported using the parameter STORET codes listed in Items 4.c above. If monthly testing is not required during a given reporting period, the permittee shall leave these DMR fields blank and DMR TX1A, TX2A, and TX3A will not be activated.
- f. Whole effluent toxicity limit – The permittee shall report the lowest of either the NOEC_L or NOEC_S value across these species for the 7-day minimum under STORET No. *C. dubia* [51710] on the DMR for the reporting period in accordance with Part III of this permit.

F. WHOLE EFFLUENT TOXICITY TESTING - *Pimephales promelas* (Fathead minnow)

1. Scope and Methodology

- a. The permittee shall test the effluent for toxicity in accordance with the provisions in this section, which apply individually and separately to the outfalls listed below. No samples or portions of samples from one outfall may be composited with samples or portions of samples from another outfall. The permittee shall biomonitor for *Pimephales promelas* in accordance with the WET testing frequencies prescribed in Part I. Intervals between test initiation dates shall be a function of the required testing frequency, as follows:

The permittee is encouraged to perform required biomonitoring activities as early in the reporting period as is practical to ensure sufficient time remains in the reporting period should retests/repeat tests be necessary.

All laboratory analyses for the biomonitoring parameters specified in this permit must be performed by a laboratory certified by the Oklahoma Department of Environmental Quality for those parameters.

Provisions for performance-based monitoring frequency reductions are contained in Item 5 of this section.

Intervals between test initiation dates shall be a function of the required testing frequency, as follows:

- Monthly: No less than 20 days and no more than 40 days.
- Quarterly: No less than 2 months and no more than 4 months.
- Semi-annually: No less than 4 months and no more than 8 months.

| | |
|---------------------------------------|---|
| APPLICABLE TO OUTFALL(S): | 001, 002, and 003 |
| REPORTED ON DMR AS OUTFALL(S): | TX1, TX2, and TX3 |
| CRITICAL DILUTION: | 100% |
| EFFLUENT DILUTION SERIES (ALL TESTS): | 32%, 42%, 56%, 75%, <u>100%</u> |
| SAMPLE TYPE: | Defined at Part I |
| TEST SPECIES/METHODS: | 40 CFR 136, except for changes required by EPA, Region 6. |

Pimephales promelas (Fathead minnow) chronic static renewal 7-day larval survival and growth test, Method 1000.0, EPA-821-R-02-013 (October 2002), or most recent 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. Chronic lethal effect test failure – The NOEC_L (No Observed Lethal Effect Concentration) is defined as the greatest effluent dilution at and below which lethality (toxicity) that is statistically different from the control (0% effluent) at the 95% confidence level does not occur. Chronic lethal test failure (chronic NOEC_L test) 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. Chronic sublethal effect test failure – The NOEC_s (No Observed Sublethal Effect Concentration) is defined as the greatest effluent dilution at and below which sublethality (toxicity: inhibited growth in the Fathead minnow test) that is statistically different from the control (0% effluent) at the 95% confidence level does not occur. Chronic sublethal test failure (chronic NOEC_s test) is defined as a demonstration of a statistically significant sublethal effect at test completion to a test species at or below the critical dilution.
- d. Reopener clause – 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.

2. Testing Requirements due to Test Failure

Upon becoming aware of the failure of any test, the permittee shall notify DEQ Water Quality Division biomonitoring coordinator immediately, and in writing within 5 working days, of the test failure with a summary of the results of, and any other pertinent circumstances associated with, the failed test.

- a. Whenever there is a test failure for *Pimephales promelas* during routine testing, the frequency of testing for *Pimephales promelas* shall automatically increase to, or continue at, as appropriate, the WET testing frequency prescribed in Part I for the remaining life of the permit. In addition, two (2) additional monthly tests (retests) of *Pimephales promelas* are required. The two additional tests shall be conducted monthly during the next two consecutive months. The permittee shall not substitute either of the two additional tests for routine toxicity testing. A full laboratory report for the failed routine test and both additional tests, if required, shall be prepared and submitted to DEQ in accordance with procedures outlined in Item 4 of this section.
- b. Persistent toxicity – If either of the two additional tests result in an NOEC_L and/or NOEC_s value less than the critical dilution, persistent lethality and/or sublethality is exhibited. Then the permittee shall initiate a Toxicity Reduction Evaluation (TRE) as specified in Item 6 below. The TRE initiation date will be the test completion date of the first failed retest. The permittee may request a temporary exemption to this TRE-triggering criterion only if the permittee is under a compliance schedule defined in an OPDES permit or an enforcement order to effect aquatic toxicity reduction measures.
- c. Intermittent toxicity – If both additional tests result in an NOEC_L and/or NOEC_s value greater than or equal to the critical dilution, persistent lethality and/or sublethality is not exhibited. However, if any routine lethal and/or sublethal effect test failure occurs within 18 months of a prior lethal and/or sublethal effect test failure, intermittent lethality and/or sublethality is exhibited, and the permittee may be required by DEQ to initiate a TRE, as described in Item 6 below, based on the severity and pattern of such lethal and/or sublethal effect over time.
- d. Suspension of retesting requirements during a TRE – Retesting requirements in Item 2.a are temporarily suspended upon submittal of a TRE Action Plan. Such suspension of retesting requirements applies only to the species under evaluation by a TRE and only to the period during which a TRE is being performed.

3. 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:
 - (1) The toxicity test control (0% effluent) must have survival equal to or greater than 80%.

- (2) The mean dry weight of surviving Fathead minnow larvae at the end of the 7 days in the control (0% effluent) must be 0.25 mg per larva or greater.
- (3) The percent coefficient of variation between replicates shall be 40% or less in the control (0% effluent) for the growth and survival endpoints of the Fathead minnow test.
- (4) The percent coefficient of variation between replicates shall be 40% or less in the critical dilution, unless significant lethal or sublethal effects are exhibited for the growth and survival endpoints of the Fathead minnow test.
- (5) The PMSD shall be in the range of 12-30 for Fathead minnow growth. If the test PMSD is less than 12, 12 may be substituted for the the PMSD.

If the above criteria or criteria listed in Item 1.a is not met the test will be considered invalid. Test failure may not be construed or reported as invalid due to a coefficient of variation value of greater than 40% for replicates tested at the critical dilution. A repeat test shall be conducted and the biomonitoring enforcement coordinator notified, within the reporting period of any test determined to be invalid.

- b. The permittee shall follow the requirements listed below in determining success or failure of a WET test:
 - (1) The statistical analyses in the Fathead minnow larval survival and growth test, used to determine if there is a 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 most recent update thereof.
 - (2) 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 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 $NOEC_L$ of not less than the critical dilution for the DMR reporting requirements found in Item 4 below.
- c. The permittee shall use dilution water that meets the following standards:
 - (1) 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 where the toxicity test is conducted on an effluent discharge to a receiving stream classified as intermittent or to a receiving stream with no flow due to zero flow conditions.
 - (2) If the receiving water is unsatisfactory as a result of instream toxicity (fails to meet the test acceptance criteria in Item 3.a), the permittee must submit the test results exhibiting receiving water toxicity with the full test report required in Item 4 below and may thereafter 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 was carried out to completion (i.e., 48 hours); and

- (c) the synthetic dilution water had 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. The permittee shall collect samples that are representative of their effluent by following the criteria listed below:
- (1) Unless grab sampling is specifically authorized in Part I of the permit, the permittee shall collect three flow-weighted 24-hour composite samples representative of the flows during normal operation from the outfall(s) listed at Item 1.a above. If grab sampling is authorized, all requirements specified below for composite sampling also pertain to grab sampling. In such cases, collection of the grab sample is considered equivalent to collection of the last portion of a composite sample. Unless otherwise specified in Part I of the permit, a 24-hour composite sample consists of a minimum of 12 effluent portions collected at equal time intervals representative of a 24-hour operating day and combined proportional to flow or a sample continuously collected proportional to flow over a 24-hour operating day.
 - (2) The first composite sample shall be used to initiate each test. The permittee must initiate the toxicity test within 36 hours after the collection of the last portion of the first composite sample. Collection of the second and third composite samples must be timed so as to permit an approximately equal use distribution of the three composite samples for daily static renewals. The permittee must collect the composite samples so that the maximum holding time for any effluent sample shall not exceed 72 hours. Samples shall be chilled to maintain a temperature at or below 6° C but not frozen during collection, shipping, and/or storage.
 - (3) 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.
 - (4) If it is anticipated that flow from the outfall being tested may cease prior to collection of the third composite sample, the permittee must ensure that the second composite sample is of sufficient volume to complete the required testing with daily renewal of effluent. The abbreviated composite sample collection duration, the static renewal protocol associated with an abbreviated sample collection, and a summary of the circumstances justifying collection of an abbreviated sample must be adequately documented in the full test report required in Item 4 below. The DEQ reserves the right to require a retest and/or consider the permittee in violation of this permit if the basis offered for justification of an abbreviated sample is insufficient, flawed, or in any way reflects an effort on the part of the permittee to avoid test failure by use of an abbreviated sample.

4. Reporting

- a. The permittee shall retain each full report pursuant to the records retention provisions of Part III of this permit. The permittee shall also submit to the DEQ biomonitoring enforcement coordinator a copy of the full laboratory test reports at TX1, TX2, and TX3 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, including any test which is considered invalid, is terminated early for any reason, or which indicates receiving water toxicity. The reports shall be received no later than the 15th day of the month following the end of the testing period.

As of October 22, 2015, the EPA published the “National Pollutant Discharge Eliminations System (NPDES) Electronic Reporting” final rule, with an effective date of December 21, 2015, which requires the electronic reporting and sharing of Clean Water Act National Pollutant Discharge Elimination

System (NPDES) program information. DEQ has developed electronic systems so that NPDES-regulated entities can submit the required electronic DMRs and other reports to DEQ as the initial recipient. Instructions on how to access and use the appropriate electronic reporting tool can be found on DEQ's website at <https://www.deq.ok.gov/water-quality-division/electronic-reporting/>. Assistance is also available by contacting DEQ at (405) 702-8100 or deqreporting@deq.ok.gov.

- b. A valid test for *Pimephales promelas* (excluding retests) at TX1, TX2, and TX3 must be reported on the DMR for 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. An electronic DMR and a copy of the lab report must be received by the 15th day of the month following the end of the testing period.

If a test is determined to be invalid, the repeat test must be conducted in the coinciding quarter; if the first sample of the repeat test is taken after the last day of the final month in a testing period, the facility will be out of compliance with the reporting period. If a lethal and/or sublethal test failure is experienced for *Pimephales promelas*, two (2) monthly WET retests are required during the two-month period following the month in which the test failure is experienced.

If more than one valid test (excluding retests) is performed on a species during a reporting period, the permittee shall report the lowest lethality and sublethality NOEC effluent concentrations for all such tests as the 7-day minimum on the DMR for the reporting period in question, specifying the dates of each test in the comments section of the DMR. Under no circumstance shall the monitoring/reporting period dates at the top of the DMR form be altered.

- c. If any test results in anomalous NOEC_L or NOEC_S findings (i.e., it indicates an interrupted dose response across the dilution series), DEQ recommends that the permittee contact a DEQ biomonitoring coordinator for a technical review of the test results prior to submitting the full test report and DMR. A summary of all tests initiated during the reporting period, including invalid tests, repeat tests and retests, shall be attached to the reporting period DMR for DEQ review.

A test is a REPEAT test if it is performed as the result of a previously invalid test. A test is a RETEST if it is performed as the result of a previously failed test, the exception being where the test is the first (valid) test of a reporting period, in which case it is reported as such on the DMR for that period.

- (1) The reporting period test summary attached to the DMR shall be organized as follows:
- (a) Invalid tests (basis for test invalidity must be described)
 - (b) Valid tests (other than retests) initiated during current reporting period
 - (c) Valid retests for tests failed during previous reporting period (if not submitted in the previous reporting period test summary)
 - (d) Valid retests for tests failed during current reporting period.
- (2) The following information shall be listed in the reporting period test summary for each valid test in categories (b) through (d) in Item 4.b(1) above:
- (a) Test species
 - (b) Date of test initiation at laboratory
 - (c) Results of all concurrent effluent analyses specified in Part I of this permit

- (d) All test result parameters for the test species specified in Item 4.c below.
- d. The permittee shall report the following results for all VALID toxicity tests (excluding retests) on the DMR(s) for that reporting period in accordance with Item 4.b above and Part III of this permit.
- (1) Parameter TLP6C: If the Fathead minnow NOEC_L for survival is less than the critical dilution, report a "1"; otherwise, report a "0".
 - (2) Parameter TOP6C: Report the Fathead minnow NOEC_L value for survival.
 - (3) Parameter TJP6C: Report the Fathead minnow percent mortality in the critical dilution at test completion.
 - (4) Parameter TGP6C: If the Fathead minnow NOEC_S for growth is less than the critical dilution, report a "1"; otherwise, report a "0".
 - (5) Parameter TPP6C: Report the Fathead minnow NOEC_S value for growth.
 - (6) Parameter TQP6C: Report the highest coefficient of variation (critical dilution or control) for Fathead minnow survival and growth.
- e. The permittee shall report the following results for all VALID toxicity retests on the DMR(s) for that reporting period.
- (1) Retest #1 (STORET 22415): If the first monthly retest following failure of a routine test results in an NOEC_L and/or NOEC_S less than the critical dilution, report a "1"; otherwise, report a "0".
 - (2) Retest #2 (STORET 22416): If the second monthly retest following failure of a routine test results in an NOEC_L and/or NOEC_S less than the critical dilution, report a "1"; otherwise, report a "0".

Results of all retests shall be reported on a copy of the DMR for the reporting period (see Item 4.b above) in which the triggering routine test failure is experienced. Such retest results (using STORET codes 22415 and 22416 only) shall be postmarked or received no later than the 15th day of the month following completion of the retest. The full report for the retest (see Item 4.a above) shall be submitted along with the retest DMR. Even if a retest cannot be conducted before the end of the reporting period for which it is required (due to test initiation interval requirements), the retest results shall still be reported for the reporting period in which the triggering test failure is experienced. Under no circumstance shall the monitoring/reporting period dates for a supplemental retest DMR ever be modified. The permittee shall indicate the retest date in the comments section of the supplemental DMR and insert the date the DMR is submitted in the lower right hand corner. In this manner, both retests are reported for the same reporting period as the failed routine test triggering the retests. If retesting is not required during a given reporting period, the permittee shall leave the DMR retest fields blank.

5. Monitoring Frequency Reduction

- a. The permittee may apply for a testing frequency reduction upon the successful completion of the second year of testing for *Pimephales promelas* with no lethal or sublethal effects demonstrated at or below the critical dilution. Certification in accordance with Item 5.b of this section shall be submitted with the application for monitoring frequency reduction. If granted, the monitoring frequency may be

reduced to a minimum of 6 months (once each during the periods June 1 through September 30 and December 1 through March 31) for either test species.

- b. **Certification** – The permittee must certify in writing that no lethal or sublethal test failures have occurred for the species for which the monitoring frequency reduction is being requested and that all tests meet all test acceptability criteria in Item 3.a above. In addition, the permittee must provide a summary of all tests initiated during the period of certification including test initiation dates, species, test acceptability parameters, NOEC_L values, percent mortality at the critical dilution, NOEC_S values, and coefficients of variation for the controls and critical dilutions. If the certification is approvable, DEQ will issue a letter of confirmation of the monitoring frequency reduction. A copy of the confirmation letter will be forwarded to DEQ's Permit Compliance System unit to update the permit reporting requirements. DEQ may refuse to approve the certification if it determines that, during the period for which the certification is submitted, there were errors in meeting test acceptability requirements, errors in statistical interpretation affecting test results reported on DMRs, late submissions of test reports or submissions of substantively incomplete test reports. If the certification is not approved, the permittee shall continue biomonitoring of the affected test species at a frequency of once per quarter until the permit is reissued.
- c. **Lethal and/or sublethal failures after a monitoring frequency reduction** – If any lethal or sublethal endpoint test is failed at any time after the granting of a monitoring frequency reduction, two monthly retests are required for that species in accordance with Item 2 above and the monitoring frequency for the affected test species shall be increased to the WET testing frequency prescribed in Part I until the permit is reissued. If the permittee is performing a TRE this section does not apply.

6. Toxicity Reduction Evaluation (TRE)

- a. Within ninety (90) days of confirming toxicity in the retests for a test species, the permittee shall submit to DEQ a TRE Action Plan and Schedule for conducting a Toxicity Reduction Evaluation (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 and include the following:

- (1) **Specific Activities.** DEQ requires that a thorough audit of the design, operation and maintenance of the entire plant be done at the **outset** of the Toxicity Identification Evaluation (TIE) and/or TRE, rather than later in the process.

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) and "Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I" (EPA-600/6-91/005F), 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.

The documents referenced above may be available through the

National Technical Information Service (NTIS)

U.S. Department of Commerce
National Technical Information Service
5301 Shawnee Rd., Alexandria, VA 22312
orders@ntis.gov
(800) 553-NTIS (6847), or at the

National Service Center for Environmental Publications (NSCEP)

U.S. EPA/NSCEP
P.O. Box 42419
Cincinnati, Ohio 45242-0419
1-(800) 490-9198

E-mail: nscep@bps-lmit.com

- (2) 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 48 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.
- (3) Quality Assurance Plan (e.g., QA/QC implementation, corrective actions, etc.).
- (4) 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 submitting the plan and schedule. The permittee shall assume all risks for failure to achieve the required toxicity reduction.
- c. The permittee shall submit to DEQ a quarterly TRE Activities Report with the Discharge Monitoring Report in months to be specified in their TRE plan, containing the following information:
 - (1) all data and/or substantiating documentation which identifies the pollutant(s) and/or source(s) of effluent toxicity;
 - (2) all studies/evaluations and results on the treatability of the facility's effluent toxicity; and
 - (3) all data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant toxicity at any dilution.

- d. The permittee shall submit to DEQ a Final Report on Toxicity Reduction Evaluation Activities no later than twenty-eight (28) months after confirming toxicity in the retests. The final report shall provide information pertaining to the specific control mechanism selected that will, when implemented, result in reduction of effluent toxicity to a 48-hour LC_{50} effluent value of greater than 100%. The final report will also provide a schedule for implementing the selected control mechanism.
- e. Quarterly testing during the TRE is the minimum monitoring requirement. DEQ recommends that permittees performing a TRE not rely on quarterly testing alone. Failure to identify the specific chemical compound causing toxicity test failure will normally result in a permit limit for whole effluent toxicity per federal regulations at 40 CFR 122.44(d)(1)(v).

MINIMUM QUANTIFICATION LEVELS (MQLs)

| <u>METALS AND CYANIDE</u> | <u>(ug/L)</u> | <u>EPA METHOD</u> |
|---|---------------|--|
| Antimony (Total) ¹ | 60 | 200.7 |
| Arsenic (Total) ¹ | 0.5 | 206.5 200.7 revision 4.4 (1994) 200.8 revision 5.4 (1994) 200.9 revision 2.2 (1994) |
| Beryllium (Total) ¹ | 5 | 200.7 |
| Cadmium (Total) | 1 | 200.7 revision 4.4 (1994) 200.8 revision 5.4 (1994) 200.9 revision 2.2 (1994) |
| Chromium (Total) ¹ | 10 | 200.7 |
| Chromium (3+) ¹ | 10 | 200.7 |
| Chromium (6+) ¹ | 10 | 200.7 |
| Copper (Total) | 1 | 200.7 revision 4.4 (1994) 200.8 revision 5.4 (1994) 200.9 revision 2.2 (1994) |
| Lead (Total) | 0.5 | 200.7 revision 4.4 (1994) 200.8 revision 5.4 (1994) 200.9 revision 2.2 (1994) |
| Mercury (Total) ¹ | 0.05 | 245.1 revision 3.0 (1994) |
| Molybdenum (Total) | 30 | 200.7 |
| Nickel (Total) ¹ [Freshwater] | 10 | 200.7 |
| Nickel (Total) [Marine] | 5 | 200.8 revision 5.4 (1994) 200.9 revision 2.2 (1994) |
| Selenium (Total) ¹ | 5 | 200.7 revision 4.4 (1994) 200.8 revision 5.4 (1994) 200.9 revision 2.2 (1994) |
| Silver (Total) | 0.5 | 200.7 revision 4.4 (1994) 200.8 revision 5.4 (1994) 200.9 revision 2.2 (1994) |
| Thallium (Total) ¹ | 0.5 | 279.2 revision |
| Zinc (Total) ¹ | 20 | 200.7 |
| Cyanide (Total) ¹ | 10 | 335.4 |
| Phenols, (Total) ¹ | 10 | 604 |
| <u>DIOXIN</u> | | |
| 2,3,7,8-Tetrachlorodibenzo- P-Dioxin (TCDD) ^{2,4} | 0.00001 | 1613 |
| <u>VOLATILE COMPOUNDS</u> | | |
| Acrolein ³ | 50 | 624 |
| Acrylonitrile ³ | 50 | 624 |
| Benzene ³ | 10 | 624 |
| Bromoform ⁴ | 10 | 624 |
| Carbon Tetrachloride ⁴ | 10 | 624 |
| Chlorobenzene ⁴ | 10 | 624 |

MINIMUM QUANTIFICATION LEVELS (MQLs)

| | | |
|---|----|-----|
| Chlorodibromomethane ⁴ | 10 | 624 |
| Chloroethane | 50 | 624 |
| 2-Chloroethylvinyl Ether ³ | 10 | 624 |
| Chloroform ⁴ | 10 | 624 |
| Dichlorobromomethane ⁴ | 10 | 624 |
| 1,1-Dichloroethane ⁴ | 10 | 624 |
| 1,2-Dichloroethane ⁴ | 10 | 624 |
| 1,1-Dichloroethylene ⁴ | 10 | 624 |
| 1,2-Dichloropropane ⁴ | 10 | 624 |
| 1,3-Dichloropropylene ⁴ | 10 | 624 |
| Ethylbenzene ⁴ | 10 | 624 |
| Methyl Bromide [Bromomethane] | 50 | 624 |
| Methyl Chloride [Chloromethane] | 50 | 624 |
| Methylene Chloride ⁴ | 20 | 624 |
| 1,1,2,2-Tetrachloroethane ⁴ | 10 | 624 |
| Tetrachloroethylene ⁴ | 10 | 624 |
| Toluene ⁴ | 10 | 624 |
| 1,2-Trans-Dichloroethylene ⁴ | 10 | 624 |
| 1,1,1-Trichloroethane ⁴ | 10 | 624 |
| 1,1,2-Trichloroethane ⁴ | 10 | 624 |
| Trichloroethylene ⁴ | 10 | 624 |
| Vinyl Chloride ⁴ | 10 | 624 |

ACID COMPOUNDS

| | | |
|--|----|-----|
| 2-Chlorophenol ⁴ | 20 | 625 |
| 2,4-Dichlorophenol ⁴ | 20 | 625 |
| 2,4-Dimethylphenol ¹ | 20 | 625 |
| 4,6-Dinitro-o-Cresol | | |
| [12 methyl 4,6-dinitrophenol] ⁴ | 50 | 625 |
| 2,4-Dinitrophenol ⁴ | 50 | 625 |
| 2-Nitrophenol ⁴ | 20 | 625 |
| 4-Nitrophenol ⁴ | 50 | 625 |
| p-Chloro-m-cresol | | |
| [4 chloro-3-methylphenol] ¹ | 20 | 625 |
| Pentachlorophenol ⁴ | 50 | 625 |
| Phenol ⁴ | 20 | 625 |
| 2,4,6-Trichlorophenol ⁴ | 20 | 625 |

BASE/NEUTRAL COMPOUNDS

| | | |
|------------------------------------|----|-----|
| Acenaphthene ⁴ | 20 | 625 |
| Acenaphthylene ⁴ | 20 | 625 |
| Anthracene ⁴ | 20 | 625 |
| Benzidine ³ | 50 | 625 |
| Benzo(a)Anthracene ⁴ | 20 | 625 |
| Benzo(a)Pyrene ⁴ | 20 | 625 |
| 3,4-Benzofluoranthene ⁴ | 20 | 625 |

MINIMUM QUANTIFICATION LEVELS (MQLs)

| | | |
|---|----|-----|
| Benzo(ghi)Perylene | 20 | 625 |
| Benzo(k)Fluoranthene ⁴ | 20 | 625 |
| Bis(2-Chloroethoxy) Methane ⁴ | 20 | 625 |
| Bis(2-Chloroethyl) Ether ⁴ | 20 | 625 |
| Bis(2-Chloroisopropyl) Ether ⁴ | 20 | 625 |
| Bis(2-Ethylhexyl) Phthalate ⁴ | 20 | 625 |
| 4-Bromophenyl Phenyl Ether ⁴ | 20 | 625 |
| Butylbenzyl Phthalate ⁴ | 20 | 625 |
| 2-Chloronaphthalene ⁴ | 20 | 625 |
| 4-Chlorophenyl Phenyl Ether ⁴ | 20 | 625 |
| Chrysene ⁴ | 20 | 625 |
| Dibenzo (a,h) Anthracene | 20 | 625 |
| 1,2-Dichlorobenzene ⁴ | 20 | 625 |
| 1,3-Dichlorobenzene ⁴ | 20 | 625 |
| 1,4-Dichlorobenzene ⁴ | 20 | 625 |
| 3,3'-Dichlorobenzidine | 20 | 625 |
| Diethyl Phthalate ⁴ | 20 | 625 |
| Dimethyl Phthalate ⁴ | 20 | 625 |
| Di-n-butyl Phthalate ⁴ | 20 | 625 |
| 2,4-Dinitrotoluene ⁴ | 20 | 625 |
| 2,6-Dinitrotoluene ⁴ | 20 | 625 |
| Di-n-octyl Phthalate ⁴ | 20 | 625 |
| 1,2-Diphenylhydrazine ³ | 20 | 625 |
| Fluoranthene ⁴ | 20 | 625 |
| Fluorene ⁴ | 20 | 625 |
| Hexachlorobenzene ⁴ | 10 | 625 |
| Hexachlorobutadiene ⁴ | 20 | 625 |
| Hexachlorocyclopentadiene ⁴ | 20 | 625 |
| Hexachloroethane | 20 | 625 |
| Indeno (1,2,3-cd) Pyrene | 20 | 625 |
| (2,3-o-phenylene pyrene) | | |
| Isophorone ⁴ | 20 | 625 |
| Naphthalene ⁴ | 10 | 625 |
| Nitrobenzene ⁴ | 20 | 625 |
| N-nitrosodimethylamine | 50 | 625 |
| N-nitrosodi-n-propylamine | 20 | 625 |
| N-nitrosodiphenylamine | 20 | 625 |
| Phenanthrene ⁴ | 20 | 625 |
| Pyrene ⁴ | 20 | 625 |
| 1,2,4-Trichlorobenzene ⁴ | 20 | 625 |

PESTICIDES

| | | |
|------------------------|------|-----|
| Aldrin ¹ | 0.05 | 608 |
| Alpha-BHC ¹ | 0.05 | 608 |

MINIMUM QUANTIFICATION LEVELS (MQLs)

| | | |
|----------------------------------|------|-----|
| Beta-BHC ¹ | 0.05 | 609 |
| Gamma-BHC (Lindane) ¹ | 0.05 | 608 |
| Delta-BHC ¹ | 0.05 | 608 |
| Chlordane ¹ | 0.2 | 608 |
| 4,4'-DDT ¹ | 0.05 | 608 |
| 4,4'-DDE (p,p-DDX) ¹ | 0.05 | 608 |
| 4,4'-DDD (p,p-TDE) ¹ | 0.05 | 608 |
| Dieldrin ¹ | 0.05 | 608 |
| Alpha-endosulfan ¹ | 0.05 | 608 |
| Beta-endosulfan ¹ | 0.05 | 608 |
| Endosulfan sulfate ¹ | 0.05 | 608 |
| Endrin ¹ | 0.05 | 608 |
| Endrin aldehyde ¹ | 0.05 | 608 |
| Heptachlor ¹ | 0.05 | 608 |
| Heptachlor epoxide ¹ | 0.05 | 608 |
| (BHC-hexachlorocyclohexane) | | |
| PCB-1242 ¹ | 0.25 | 608 |
| PCB-1254 | 0.25 | 608 |
| PCB-1221 | 0.25 | 608 |
| PCB-1232 | 0.25 | 608 |
| PCB-1248 | 0.25 | 608 |
| PCB-1260 | 0.25 | 609 |
| PCB-1016 | 0.25 | 608 |
| PCB, total | 0.25 | 608 |
| Toxaphene ¹ | 0.3 | 608 |

¹ Based on Contract Required Quantitation Level (CRQL) developed pursuant to 40 CFR Part 122

² Dioxin National Strategy

³ No CRQL (Contract Required Quantification Level developed pursuant to 40 CFR Part 122) established

⁴ CRQL basis, equivalent to MQL

MQL based on 3.3 times LOD published in 40 CFR 136, Appendix B

Methods/MQL List modified 6/20/08

FACT SHEET

(Draft of April 4, 2019)

FOR THE DRAFT AUTHORIZATION TO DISCHARGE TO WATERS OF THE UNITED STATES UNDER THE OKLAHOMA POLLUTANT DISCHARGE ELIMINATION SYSTEM (OPDES).

Permit Number: OK0035246

Facility I.D. Number: S-11303

Applicant: City of Lawton
103 SW 4th St
Lawton, OK, OK 73501

Issuing Office: Oklahoma Department of Environmental Quality (DEQ)
Water Quality Division
707 North Robinson
P.O. Box 1677
Oklahoma City, Oklahoma 73101-1677

Prepared By: Vance Doan
Municipal Permits Section
Water Quality Division

Date Prepared: April 4, 2019

Reviewed By: Karen Steele, P.E., Manager
Municipal Discharge and Stormwater Permit Section
Water Quality Division

Michael B. Moe, P.E., Engineering Manager
Wastewater Group
Water Quality Division

In accordance with 40 CFR 124.8 and 124.56, this fact sheet describes the applicant's facility operation and sets forth the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing the draft permit. Also set forth are any calculations or other necessary explanations of the derivation of specific effluent limitations and conditions or standards for sewage sludge use or disposal, including a citation to the applicable performance standard, or standard for sewage sludge use or disposal as required by 40 CFR 122.44. In accordance with 40 CFR 122.44(l), proposed permit limits for reissued permits are based on the more stringent of applicable technology-based limitations, applicable water quality-based limitations, or limitations in the previous permit.

Citations to 40 CFR refer to promulgated regulations listed at Title 40, Code of Federal Regulations. Citations to OAC 252 and OAC 785 refer to promulgated regulations listed at Titles 252 and 785, Oklahoma Administrative Code.

I. PERMITTING BACKGROUND

A. CHRONOLOGY OF PERMITTING ACTIVITIES

The following is a chronology of permitting activities since issuance of the previous OPDES permit:

| | |
|--------------------|---|
| January 8, 2020: | Draft permit package sent to applicant for public notice. |
| December 5, 2019: | Response to comment and draft permit sent to applicant for courtesy review. |
| January 26, 2017: | EPA no objection letter received. |
| January 23, 2017: | Comments on draft permit and fact sheet from applicant received. |
| December 15, 2016: | Draft permit package sent to EPA for review. |
| December 13, 2016: | Draft permit package sent to applicant for courtesy review. |
| July 8, 2016: | Administrative review of permit application completed. |
| July 7, 2016: | Certification of public notice of filing of application received. |
| June 17, 2016: | Notice of incomplete application sent to applicant. |
| May 16, 2016: | OPDES permit application (Form 2M1) received. |
| November 30, 2011: | Previous OPDES permit issued. |

B. PROPOSED PERMITTING ACTION

It is proposed that Permit No. OK0035246, which was effective January 1, 2012, and expired December 31, 2016, and for which application for renewal was timely submitted prior to permit expiration, be reissued for a five year term in accordance with regulations promulgated at 40 CFR 122.46(a) and OAC 252:606-1-3(b).

II. APPLICANT ACTIVITY

A. DESCRIPTION AND LOCATION OF FACILITY

The City of Lawton Wastewater Treatment Plant is located at 8104 SE 15th Street, Lawton, in the SE ¼, SE ¼, SW ¼, Section 28, Township 1 North, Range 11 West, Indian Meridian, Comanche County. Under SIC code 4952, this facility provides biological treatment of domestic sewage for the City of Lawton.

B. WASTEWATER GENERATION AND TREATMENT

1. Treatment Plant

a. Wastewater

The facility's design average daily flow, as stated in the application, is 18.0 million gallons per day (mgd), which is the same as the design flow specified in the facility's State Water Quality Management Plan (208 Plan). Biological treatment of the waste stream into this Publicly Owned Treatment Works (POTW) facility, which is comprised primarily of domestic sewage, is by a trickling filter and activated sludge system. Prior to January 2014, after exiting the final treatment unit, all or portion of the treated wastewater (effluent) was discharged into Nine Mile Creek via Outfall 001, or was diverted into an on-site effluent holding pond. From this on-site effluent holding pond, the effluent was pumped, via Outfall 003, to Lake Comanche for use as cooling water at the Public Service of Oklahoma (PSO) power plant, or was discharged through an overflow structure into Nine Mile Creek via Outfall 002. In January 2014, the City of Lawton and the PSO completed construction of a new pump station and an effluent splitter basin. All effluent from the facility's final treatment unit is diverted into this basin, where it is discharged into Nine Mile Creek via Outfall 001 or is pumped and discharged into Lake Comanche, via Outfall 003, for use as cooling water at the PSO. The City of Lawton is considering

converting and incorporating the on-site holding pond into its plan of a possible water reuse in the future. For the time being, the on-site holding pond is utilized as an effluent equalization basin with possible discharges into Nine Mile Creek via Outfall 002.

b. Biosolids/Sludge

Biosolids/sewage sludge generated from the wastewater treatment process is thickened with polymer, followed by anaerobic digestion, and then dewatered by pressing. The biosolids/sewage sludge is disposed of in the City of Lawton Municipal Landfill in accordance with the Sludge Disposition Plan approved by the DEQ on June 1, 2009.

2. Industrial Contributions

The facility receives significant industrial wastewaters, and has been required to develop and implement an industrial wastewater pretreatment program in accordance with Section 402(b)(8) of the Clean Water Act and the General Pretreatment Regulations per 40 CFR Part 403.

III. DISCHARGE INFORMATION

A. DISCHARGE LOCATION

| | Location | | | Receiving Stream |
|--------------------------|--|--------------------------------|--------------------------------|------------------|
| | Legal Description | Latitude | Longitude | |
| Outfall 001 ^a | SE¼, SE¼, SW¼, Section 28, T1N, R11WIM, Comanche Co., Oklahoma | N 34° 31' 27.748" (GPS: NAD83) | W 98° 21' 53.717" (GPS: NAD83) | Nine Mile Creek |
| Outfall 002 ^b | (same) | N 34° 31' 22.638" (GPS: NAD83) | W 98° 21' 44.072" (GPS: NAD83) | Nine Mile Creek |
| Outfall 003 ^a | (same) | N 34° 31' 23.804" (GPS: NAD83) | W 98° 21' 45.358" (GPS: NAD83) | Lake Comanche |

^a Treated wastewater from the treatment plant is diverted into an effluent splitter basin where it is discharged via Outfall 001 into Nine Mile Creek and/or is pumped/discharged via Outfall 003 into Lake Comanche, a tributary to Nine Mile Creek, for use as cooling water at the Public Service of Oklahoma (PSO) power plant.

^b Outfall 002 is an overflow structure of the on-site effluent (treated wastewater) storage pond.

B. DISCHARGE DESCRIPTION AND CHARACTERISTICS

A summary of biomonitoring (Whole Effluent Toxicity) testing data is provided in Section V.D.1.f(2).

The previous permit had effluent limits for dichlorobromomethane. Discharge monitoring reports show that the pollutant was not detected at DEQ's minimum quantification level; therefore, re-evaluation of permit limits is not needed. The limits for dichlorobromomethane remain the same in the renewed permit.

The previous permit also had effluent monitoring requirements for total dissolved solids and chloride. Effluent data for total dissolved solids and chloride, and any other pollutants detected in the effluent are summarized in the following table:

| Effluent Characteristic | Number of Samples | MQL (µg/l unless otherwise specified) | Concentration (µg/l unless otherwise specified) | |
|-------------------------------|-------------------|--|--|---------|
| | | | Average ^a | Maximum |
| Copper, total | 6 | 10 | 6.17 ^b | 12.00 |
| Selenium, total | 6 | 5 | 4.83 ^b | 9.20 |
| Zinc, total | 6 | 20 | 32.58 | 54.40 |
| Phenols | 6 | 10 | 43.41 ^b | 110.00 |
| Chloride (mg/l) | 15 | --- | 117.23 | 152.0 |
| Total Dissolved Solids (mg/l) | 15 | --- | 785.84 | 956.0 |

^a Where the number of samples is sufficient, the average is calculated as a geometric mean.

^b Data set includes both measurable and unmeasurable data. Unmeasurable data is estimated to be one-half (1/2) the MQL or detection limit.

IV. TECHNOLOGY-BASED EFFLUENT LIMITATIONS AND CONDITIONS

POTWs treating domestic sewage are required by 40 CFR 133 to provide secondary or secondary-equivalent treatment. The Oklahoma definition of secondary treatment, which sets minimum requirements for developing wasteload allocations for municipalities in the State's Water Quality Management Plan (WQMP), is defined at OAC 252:606-5-2(2). The definitions are dependent on the type of treatment system and whether the receiving stream flow is perennial or intermittent. Since the facility is a mechanical plant discharging to an intermittent stream, secondary treatment is defined according to OAC 252:606-5-2(2)(C) as indicated below:

- 5-day Biochemical Oxygen Demand (BOD₅)
A monthly average effluent concentration of 20 mg/l BOD₅
A weekly average effluent concentration of 30 mg/l BOD₅
- Total Suspended Solids (TSS)
A monthly average effluent concentration of 30 mg/l TSS
A weekly average effluent concentration of 45 mg/l TSS
- pH
A pH range between 6.5 and 9.0 standard units, inclusive.

For an influent waste stream composed primarily of domestic sewage, compliance with the 85% minimum monthly average percent removal criteria for BOD₅/CBOD₅ and TSS is implied if the effluent is in compliance with the concentration standards for secondary treatment.

V. WATER QUALITY-BASED EFFLUENT LIMITATIONS AND CONDITIONS

A. GENERAL

Section 101 of the Clean Water Act (CWA) states that "... it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited..." A permit containing technology-based permit limitations alone may not adequately protect the quality of a specific receiving stream. Thus, additional water quality-based effluent limitations and/or conditions are considered in the draft permit using narrative and numerical standards contained in the Oklahoma Water Quality Standards (OWQS), as amended (OAC 785:45), and implementation criteria contained in OAC 785:46 and 252:690, promulgated by the Oklahoma Water Resources Board (OWRB) and Department of Environmental Quality (DEQ), respectively. This is to ensure that no point-source

discharge results in instream aquatic toxicity, a violation of applicable narrative or numerical State water quality standards, or aquatic bioaccumulation which threatens human health.

B. RECEIVING STREAM DESIGNATED USES AND ANTIDegradation PROVISIONS

The facility discharges through Outfalls 001 and 002 to Nine Mile Creek (WBID: 311300020030_00) in Segment 311300 of the Red River Basin. The facility also discharges through Outfall 003 to Lake Comanche for use as cooling water at the PSO power plant. Because Lake Comanche is a tributary to Nine Mile Creek, and is approximately just two (2) miles upstream of Outfalls 001 and 002, any discharge to and from Lake Comanche is eventually a discharge to Nine Mile Creek. Thus, reasonable potential to exceed Nine Mile Creek's water quality standards is evaluated, and is applied to all three outfalls. As designated in Appendix A of the OWQS, the designated beneficial uses of Nine Mile Creek in this stream segment are:

- Fish and Wildlife Propagation (OAC 785:45-5-12)/Warm Water Aquatic Community
- Agriculture (OAC 785:45-5-13)
- Primary Body Contact Recreation (OAC 785:45-5-17)
- Aesthetics (OAC 785:45-5-19)
- Fish Consumption (OAC 785:45-5-20)

Nine Mile Creek is not designated as an Outstanding Resource Water (ORW), High Quality Water (HQW), or Sensitive Water Supply (SWS) in Appendix A of the OWQS. Neither is it designated in Table 1 of Appendix B of the OWQS as an area of ecological and/or recreational significance or in Table 2 of Appendix B as an area containing federally-listed endangered species.

C. WATER QUALITY STANDARDS IMPLEMENTATION

1. Water Quality Standards Implementation Process

To achieve the objectives stated in Section V.A above, each pollutant present at measurable levels in the facility's effluent, for which there are one or more applicable numerical water quality criteria, is screened against the applicable criteria to determine whether the pollutant has reasonable potential (RP) to exceed any of the criteria. The screens are performed in accordance with the OWQS, OWQS implementation criteria in OAC 785:46 and OAC 252:690, and the Continuing Planning Process (CPP) document. In the RP screening process, the 95th percentile effluent concentration, or estimate thereof if the effluent data set is not sufficiently large to determine it directly, is used to compute an instream concentration according to the regulatory mixing zone equations defined in OAC 785:46. The computed instream concentrations are then compared with the applicable criteria to determine whether RP is exhibited. If RP is exhibited, in accordance with 40 CFR 122.44(d)(1)(vi) and OAC 252:690, a wasteload allocation and criterion long term average is computed for each applicable criterion. Water quality-based permit limitations are calculated for each pollutant exhibiting RP for all applicable criteria. The most stringent of the resulting monthly average permit limitations is established in the draft permit for each pollutant requiring such limitations.

2. Summary of Regulatory Parameters

Regulatory receiving water flows are established in OAC 785:46. Effluent regulatory flows, as well as regulatory effluent and background pollutant concentrations are established in OAC 252:690, Subchapter 3. Definitions and values for these terms are as follows:

a. Effluent and Upstream Receiving Water Regulatory Flows

$Q_{e(D)}$ POTW design flow rate. The flow rate used must be consistent with that in the WQMP. The design flow rate specified in the permit application and the approved design flow for this facility in the State Water Quality Management Plan (WQMP) is 18.0 mgd.

- $Q_{u(7Q2)}$** Upstream 7Q2 flow rate. This is the annual 7-day, 2-year low flow of the receiving stream. Where flow data published in the USGS publication, Statistical Summaries of Streamflow in and near Oklahoma Through 2007 by John M. Lewis and Rachel A. Esralew (<http://pubs.usgs.gov/sir/2009/5135/>), is available, minor adjustments for known upstream or downstream perennial flows, as appropriate, may be utilized to estimate the 7Q2 for a specific location upstream or downstream of the USGS gauging station. If streamflow is intermittent, if USGS 7Q2 data is not available, or if the applicant has not developed a site-specific 7Q2, a default value of 1 cfs (0.6463 mgd) is assumed.
- $Q_{u(LTA)}$** Upstream long-term average flow rate. This is the mean annual flow of the receiving stream. Where flow data published in the USGS publication, Statistical Summaries of Streamflow in and near Oklahoma Through 2007 by John M. Lewis and Rachel A. Esralew (<http://pubs.usgs.gov/sir/2009/5135/>), is available, minor adjustments for known upstream or downstream perennial flows, as appropriate, may be utilized to estimate the mean annual flow for a specific location upstream or downstream of the USGS gauging station. If published mean annual flow data is not available, it may be approximated by multiplying the receiving water's drainage area at the point of discharge by the mean annual runoff per unit area published in the CPP.
- $Q_{u(STA)}$** Upstream short-term average flow rate. This flow rate, used only in the sample standard (SS) agriculture screen, is a function of $Q_{u(LTA)}$. The equation is $Q_{u(STA)} = 0.68 \times Q_{u(LTA)}$.

The facility discharges to Nine Mile Creek, a tributary to the East Cache Creek in the Red River Basin. Because Nine Mile Creek's flow is intermittent, the upstream $Q_{u(7Q2)}$ is assumed to be 0.6463 mgd. For determination of $Q_{u(LTA)}$, the CPP method is used. The drainage area of Nine Mile Creek upstream from the facility's POD, is estimated to be 22 square miles (mi^2). Thus, the $Q_{u(LTA)}$ at the facility's POD is estimated by multiplying the mean annual runoff per unit area (0.21 cfs/ mi^2 or 0.14 mgd/ mi^2) by the stream's drainage area of approximately 22 square miles. This yields a $Q_{u(LTA)}$ value of 2.92 mgd.

| | $Q_{u(7Q2)}$ | $Q_{u(LTA)}$ | $Q_{u(STA)}^a$ |
|----------------------------|--------------|--------------|----------------|
| Upstream flow at POD (mgd) | 0.6463 | 2.92 | 1.99 |

^a $Q_{u(STA)} = 0.68 \times Q_{u(LTA)}$

b. Dilution Ratios (Q^*)

- Q^*** Ratio of effluent flow to stream flow, also known as dilution capacity. The Q^* ratios for municipal discharges, as well as their values, are defined in the following table:

Q^* Values (Outfall 001)

| Q* Ratio | Corresponding Water Quality Screens | Implementation Reference | Value |
|-------------------------|-------------------------------------|--------------------------|---------|
| $Q_{e(D)} / Q_{u(7Q2)}$ | Acute/Chronic Toxicity | OAC 252:690-3-53(1)(B) | 27.8508 |
| $Q_{e(D)} / Q_{u(LTA)}$ | Human Health/Fish Flesh | OAC 252:690-3-66(2) | 6.1644 |
| | Human Health/Fish Flesh and Water | OAC 252:690-3-73(2) | |
| | Raw Water Column | | |
| | Agriculture/Yearly Mean Standard | OAC 252:690-3-81(1)(B) | |
| $Q_{e(D)} / Q_{u(STA)}$ | Agriculture/Sample Standard | OAC 252:690-3-81(2)(B) | 9.0653 |

c. Characterization of Pollutant Effluent Concentrations

For purposes of determining whether water quality-based effluent limitations are required, one of two methods for determining C_{95} is employed, depending on the size of the effluent data set (i.e., number of data points).

C_{95} 95th percentile maximum likelihood effluent concentration for purposes of determining whether effluent limitations are required.

Method 1:

In accordance with OAC 252:690-3-4, at least 10 data points are required to calculate the standard deviation, and in accordance with OAC 252:690-3-8(a), if at least 10 data points are available, C_{95} is calculated directly from the effluent data set, assuming a log-normal distribution, according to the following equation:

$$C_{95} = \text{EXP}(\ln(x)_{\text{avg}} + 1.645 \times s_{\ln(x)})$$

$$\text{where } \ln(x)_{\text{avg}} = \frac{\left(\sum_{i=1}^N \ln(x_i) \right)}{N} \text{ and } s_{\ln(x)} = \sqrt{\frac{N \sum_{i=1}^N (\ln(x_i))^2 - \left(\sum_{i=1}^N \ln(x_i) \right)^2}{N(N-1)}}$$

In the above equations, $\ln(x)_{\text{avg}}$ represents the arithmetic average of the set of log-transformed data points, and $s_{\ln(x)}$ represents the standard deviation of the set of log-transformed data points.

In accordance with OAC 252:690-3-2(1), Robust Regression on Order Statistics (ROS) will be used to estimate the unmeasurable quantities if the data set has at least three measurable data points. However, if the data set has fewer than three measurable data points, Robust ROS will not be used and the DEQ will use ½ of the MQL to estimate the unmeasurable quantities.

Method 2:

In accordance with OAC 252:690-3-8(a), if less than 10 effluent data points are available; C_{95} must be estimated from the mean effluent concentration, as follows:

$$C_{95} = C_{\text{mean}} \times 2.135, \text{ where } C_{\text{mean}} \text{ is calculated as the geometric mean.}$$

In accordance with OAC 252:690-3-2(1), the DEQ will use ½ of the MQL to estimate the unmeasurable quantities for the calculation of C_{mean} .

In accordance with OAC 252:690-3-5, if the geometric mean is not available or cannot be determined, the arithmetic mean may be used in the above equation.

$C_{95(M)}$ 95th percentile maximum likelihood effluent concentration for purposes of determining whether additional effluent monitoring is required.

In accordance with OAC 252:690-3-90, where the effluent data set is comprised of fewer than 10 data points, a determination of whether further effluent monitoring of a pollutant is warranted in the absence of a requirement for effluent limitations by using the "TSD method." The TSD method is based on the methodology in Section 3.3.2 of Technical Support Document for Water Quality-Based Toxics Control, EPA/505/2-90-001. The 95th percentile effluent concentration calculated using the TSD method is referred to as $C_{95(M)}$.

$C_{95(M)}$ is calculated according to the following equation:

$$C_{95(M)} = C_{\max} \times RPF_{95(M)}$$

$RPF_{95(M)}$ is calculated, assuming a log-normal distribution, according to the following equation:

$$RPF_{95(M)} = \frac{\text{EXP} \left(1.645 \sqrt{\ln(1 + CV^2)} - 0.5 \ln(1 + CV^2) \right)}{\text{EXP} \left(z_N \sqrt{\ln(1 + CV^2)} - 0.5 \ln(1 + CV^2) \right)}$$

where z_N is the upper k^{th} percentile of the normal distribution, $k = 0.05^{1/N}$ (for the 95% confidence level), and CV is assumed to equal 0.6.

The values of z_N and the resulting value of $RPF_{95(M)}$ for values of N from 1 to 9 are shown in the following table:

| N | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---------------|--------|--------|--------|--------|-------|-------|-------|-------|-------|
| z_N | -1.645 | -0.760 | -0.336 | -0.068 | 0.124 | 0.272 | 0.390 | 0.489 | 0.574 |
| $RPF_{95(M)}$ | 6.199 | 3.795 | 3.000 | 2.585 | 2.324 | 2.141 | 2.006 | 1.898 | 1.811 |

CV

Relative variability of a data set. In accordance with OAC 252:690-3-7, CV is defined as the standard deviation of a data set divided by its arithmetic average. Where at least 10 effluent data points are available, CV may be determined according to the following equation.

$$CV = \frac{S_x}{C_{\text{avg}}}$$

Where fewer than 10 data points are available, a default CV value of 0.6 is assumed.

Values of C_{95} , $C_{95(M)}$, and CV are summarized for quantifiable pollutants with applicable water quality criteria in the following table:

C_{mean} , C_{max} , C_{95} , $C_{95(M)}$, and CV Values for Quantifiable Pollutants (Outfall 001)

| Effluent Characteristic | No. of Data Points (N) | Concentration ($\mu\text{g/l}$ unless otherwise specified) | | | | CV ^a |
|-------------------------|------------------------|--|----------|------------------|------------------|-----------------|
| | | C_{mean} | C_{95} | C_{max} | $C_{95(M)}$ | |
| Copper, total | 6 | 6.17 | 13.17 | 12.00 | 25.69 | --- |
| Selenium, total | 6 | 4.83 | 10.31 | 9.20 | 19.70 | --- |
| Zinc, total | 6 | 32.58 | 69.56 | 54.40 | 116.47 | --- |
| Phenols | 6 | 43.41 | 92.68 | 110.00 | 235.51 | --- |
| Chloride (mg/l) | 12 | 117.23 | 135.25 | --- ^b | --- ^b | 0.097 |
| TDS (mg/l) | 12 | 785.84 | 890.71 | --- ^b | --- ^b | 0.071 |

^a A coefficient of variation (CV) is calculated only where an effluent data set consists of at least ten data points, of which at least three must be measurable. A CV value of 0.6 is assumed where a data set is of insufficient size to calculate a CV directly (see OAC 252:690-3-7).

^b Sufficient data points are available with which to calculate summary statistics directly from effluent data set. Thus, determination of C_{max} and $C_{95(M)}$ values is unnecessary.

d. Pollutant Background Concentrations

C_b Upstream or background concentration of a pollutant. Site specific data is used where available. Where such data is not available, and in streams where the 7Q2 = 0 in the absence of known upstream toxicants, background concentrations are assumed to be zero. For the agriculture screens, C_b is computed using the segment average YMS and SS values for the receiving stream segment published in Appendix F to OAC 785:45 according to the following equation: $C_b = 2 \times \text{YMS} - \text{SS}$. Background levels are described in the following table:

Background Concentrations of Pollutants Present in Effluent (Outfall 001)

| Pollutant | No. of Data Points (N) | Background Concentration (C_b) ($\mu\text{g/l}$ unless otherwise specified) | Data Source |
|------------------|------------------------|---|-------------|
| Copper, total | --- | Assumed zero ^a | --- |
| Selenium, total | --- | Assumed zero ^a | --- |
| Zinc, total | --- | Assumed zero ^a | --- |
| Phenols | --- | Assumed zero ^a | --- |
| Chlorides (mg/l) | --- | 185 ^b | OAC 785:45 |
| TDS (mg/l) | --- | 781 ^b | OAC 785:45 |

^a No background data available. Background level is assumed to be zero in accordance with OAC 252:690-3-11(c).

^b Background concentration is calculated from segment-averaged YMS and SS criteria in accordance with OAC 252:690-3-16(a). For chlorides, $C_b = 2 \times 232 - 279 = 185 \text{ mg/l}$. For TDS, $C_b = 2 \times 830 - 879 = 781 \text{ mg/l}$.

e. Other Applicable Terminology

$C_{\text{criterion}}$ Numerical water quality criterion for a specific pollutant. For some pollutants, aquatic toxicity criteria are pH- or hardness-dependent. In such cases, in accordance with OAC 785:46-5-8, site-specific pH or hardness data, if available, may be used. If site-specific pH or hardness data is not available, the segment averaged pH or hardness from OAC 785:46, Appendix B, is used. Where a specific pollutant screen exhibits reasonable potential,

$C_{\text{criterion}}$ is used to calculate the wasteload allocation (WLA). Criteria applicable to Outfall 001 are as follows:

Fish and wildlife propagation (F&WP/WWAC) use

C_A : Acute toxicity criterion
 C_C : Chronic toxicity criterion

Fish consumption use

C_{FF} : Human health criterion for the consumption of fish flesh

Agriculture use

C_{YMS} : Yearly mean standard
 C_{SS} : Sample standard

C_d Instream concentration of a specific pollutant, according to the appropriate mixing equation.

D. WATER QUALITY-BASED REQUIREMENTS

1. Criteria for Protection of the Fish and Wildlife Propagation Use

a. DO and DO-Demanding Substances (Outfalls 001, 002, and 003)

OAC 785:45-5-12(f)(1) requires that where DO-demanding substances are present in an effluent at significant levels, a Wasteload Allocation (WLA) must be established according to certain seasonal criteria dependent on the receiving water's aquatic community subcategory. In determining the WLA for DO-demanding substances, the prescribed level of secondary treatment for the facility (see Section IV) is modeled to determine if it meets the aforementioned seasonal criteria. If the model indicates that a more stringent WLA than secondary is required to meet these criteria, the more stringent WLA (often referred to as a "tertiary" level of treatment) will be used once it is granted technical approval by EPA Region 6. It is then promulgated as an amendment to the State WQMP. The approved WLA for DO-demanding substances for this facility at a design average flow of 18.0 mgd is shown in the following table:

DO-Based WLA (Outfall 001)

| Season | Level of Treatment | WLA Parameters (in mg/l) | | | |
|------------------|--------------------|--------------------------|-----|--------------------|-----|
| | | CBOD ₅ | TSS | NH ₃ -N | DO |
| April – October | Tertiary | 10 | 15 | 2 | 6.5 |
| November – March | Tertiary | 10 | 15 | 3 | 6 |

For purposes of establishing permit limitations for DO-demanding substances, the seasonal monthly average limit (MAL) in the draft permit for each effluent characteristic is set equal to the corresponding WLA concentration shown in the table. The corresponding weekly average limit (WAL) is set equal to 1.5 times the seasonal WLA concentration in accordance with 40 CFR 122.45(d)(2).

b. pH (Outfalls 001, 002, and 003)

OAC 785:45-5-12(f)(3) states "pH values shall be between 6.5 and 9.0 in waters designated for fish and wildlife propagation; unless pH values outside that range are due to natural conditions." This pH range is established in the draft permit.

c. Oil and Grease (Outfalls 001, 002, and 003)

In accordance with OAC 758:45-5-12(f)(4), a narrative condition prohibiting the discharge of any visible sheen or globules of oil or grease or in quantities that adhere to stream banks and coat bottoms of water courses or which cause deleterious effects to the biota will be included in the draft permit.

d. Toxicity from Halogenated Oxidants (Outfalls 001, 002, and 003)

The facility utilizes an ultraviolet (UV) system for disinfection of the discharge; however, sodium hypochlorite is also used as a back up to the UV system. OAC 785:46-3-1(c) states "Toxicity from halogens (e.g., chlorine, bromine, and bromo-chloro compounds) will be controlled by dehalogenation rather than WET testing. However, use of dehalogenation shall not exempt an effluent from the WET testing requirements of this Subchapter." Chapter 2, Part III of the CPP implements this narrative criterion as follows: The requirement of OAC 785:46-3-1(c) for dehalogenation is typically implemented as "no measurable amount" in the effluent. For chlorine, "No measurable amount" is defined by the DEQ to be less than 0.1 mg/l.

e. Ammonia Toxicity (Outfalls 001, 002, and 003)

(1) Criterion and Implementation

Interim implementation for controlling ammonia toxicity is described in OAC 785:46 and OAC 252:690. OAC 785:46-5-3(b)(3) states "For regulatory purposes, there is a reasonable potential for chronic toxicity if concentrations of ammonia outside the chronic regulatory mixing zone exceed 6 mg/l." For POTWs, OAC 252:690-3-20 through 3-23 requires that where seasonal DO-based monthly average ammonia limits are established, those limits must be compared with toxicity-based monthly average ammonia limits determined using the interim 6 mg/l chronic toxicity criterion, the conservative substance mixing zone equations for chronic toxicity, and a monitoring frequency of 3 per week.

(2) Determination of Toxicity-Based Limits

Toxicity-based ammonia limits are determined in accordance with OAC 252:690-3-22.

(a) Wasteload Allocation and Criterion Long Term Average Concentration

C_c for ammonia is 6 mg/l and C_b is assumed to be zero. The chronic toxicity wasteload allocation equations for ammonia are as follows:

$$WLA_{NH_3} = 6 \left(\frac{1 + Q^*}{1.94 Q^*} \right), \text{ for } Q^* \leq 0.1823.$$

$$WLA_{NH_3} = 6 (6.17 - 15.51 Q^*), \text{ for } 0.1823 < Q^* < 0.3333.$$

$WLA_{NH_3} = 6 \text{ mg/l}$, for $Q^* \geq 0.3333$.

Q^* for this application is 27.8508, so the third equation is used. Thus, $WLA_{NH_3} = 6 \text{ mg/l}$. WLA_{NH_3} is a short term value and must be converted to a long term average for development of permit limits. LTA_{NH_3} is calculated on a 99% probability basis, and the equation is as follows:

$$LTA_{NH_3} = WLA_{NH_3} \times \text{EXP} \left(0.5 \ln \left(1 + \frac{CV^2}{4} \right) - 2.326 \left(\ln \left(1 + \frac{CV^2}{4} \right) \right)^{0.5} \right),$$

where a CV value of 0.6 is assumed. Thus, $LTA_{NH_3} = 3.16 \text{ mg/l}$.

(b) Permit Limits (Outfalls 001, 002, and 003)

The toxicity-based monthly average limit (MAL_{NH_3}) is calculated on a 95% probability basis, and the daily maximum limit (DML_{NH_3}) is calculated on a 99% probability basis. The monitoring frequency basis is 3/week (or 12/month). The limits equations are as follows:

$$MAL_{NH_3} = LTA_{NH_3} \times \text{EXP} \left(1.645 \left(\ln \left(1 + \frac{CV^2}{N_m} \right) \right)^{0.5} - 0.5 \ln \left(1 + \frac{CV^2}{N_m} \right) \right),$$

where N_m is the per month monitoring frequency.

Thus, based on $N_m = 12$, $MAL_{NH_3} = 4.1 \text{ mg/l}$.

$$DML_{NH_3} = LTA_{NH_3} \times \text{EXP} \left(2.326 \left(\ln \left(1 + CV^2 \right) \right)^{0.5} - 0.5 \ln \left(1 + CV^2 \right) \right)$$

Thus, $DML_{NH_3} = 9.9 \text{ mg/l}$.

(3) Comparison of Toxicity-Based Ammonia Limits with DO-Based Ammonia Limits

In accordance with OAC 252:690-3-23, the most stringent monthly average limit for each season and its associated weekly average or daily maximum limit, as appropriate, is established in the permit.

Comparison of Ammonia Limits (mg/l)

| Type of Limit | Apr – Oct | | | Nov – Mar | | |
|---------------------|-----------------|----------------|---------------|-----------------|----------------|---------------|
| | Monthly Average | Weekly Average | Daily Maximum | Monthly Average | Weekly Average | Daily Maximum |
| DO-Based | 2.0 | 3.0 | --- | 3.0 | 4.5 | --- |
| Toxicity-Based | 4.1 | --- | 9.9 | 4.1 | --- | 9.9 |
| Draft Permit | 2.0 | 3.0 | --- | 3.0 | 4.5 | --- |

(4) Performance-Based Ammonia Monitoring Frequency Reduction

Not applicable.

f. Whole Effluent Toxicity (Outfalls 001, 002, and 003)

(1) Criterion and Implementation

Whole effluent toxicity (WET) testing is the most direct measure of potential aquatic toxicity, since it incorporates the effects of synergism of effluent components and receiving stream water quality characteristics. OAC 785:45-5-12(f)(6)(A) states "Surface waters of the state shall not exhibit acute toxicity and shall not exhibit chronic toxicity outside the chronic regulatory mixing zone. Acute test failure and chronic test failure shall be used to determine discharger compliance with these narrative aquatic life toxics criteria." This narrative toxicity criterion is implemented according to procedures described at OAC 785:46, Subchapter 3, OAC. 252:690-3-17 through 3-43, and Chapter 3 of the CPP.

Two types of WET tests are used to implement the narrative toxicity criterion. The 48-hour acute test is used to protect against acute toxicity, and the 7-day chronic test is used to protect against chronic toxicity outside the chronic regulatory mixing zone. Two test species are used. The vertebrate species is *Pimephales promelas* (Fathead minnow), and the invertebrate species is *Daphnia pulex* (for acute testing) or *Ceriodaphnia dubia* (for chronic testing).

(2) WET Testing Historical Summary

The previous permit required chronic WET limit for the *Ceriodaphnia dubia* specie, and WET testing requirement for the Fathead minnow specie. The WET limits and WET testing requirements applied to all outfalls (TX1, TX2, and TX3). During the previous permit cycle, WET tests were only conducted and reported for Outfall TX1 and TX3, as no discharges occurred at Outfall TX2. Prior to January 2014, two (2) separate WET tests were conducted for Outfall TX1 and TX3 at each testing event due to different effluent's and dilution water's chemical characteristics at and for the two outfalls. Since 2014, due to the fact that the effluent's chemical characteristics are the same at both Outfall TX1 and TX3 (effluent entering the splitter basin), it appears that only one (1) test was conducted and reported for both outfalls at each testing event, or the same dilution (synthetic) water was used for both tests conducted for Outfall TX1 and TX3.

In the following summary table, where a test failed, or would have failed under current test failure criteria, the No Observed Effect (NOEC) concentrations (NOEC_L for lethal effects and NOEC_S for sublethal effects) are shown **underlined in bold face**. (OAC 252:690-3-40 requires that significant sublethal effects at or below the critical dilution also be considered as test failures).

(a) Outfall TX2 (function identical to Outfall 002)

The facility did not discharge from Outfall TX2 during the last permit cycle.

(b) Outfall TX1 (function identical to Outfall 001)

Summary of Chronic WET Test Results by Species
(January 2012 through June 2016)

| <i>Ceriodaphnia dubia</i> | | | | <i>Pimephales promelas</i> (Fathead minnow) | | |
|---------------------------|--------------------------------|--------------------------------|-------|---|--------------------------------|--------------------------------|
| Reporting period | NOEC _L ^a | NOEC _S ^a | 22414 | Reporting period | NOEC _L ^a | NOEC _S ^a |
| 01/12 – 03/12 | 100 | 100 | 100 | 01/12 – 03/12 | 100 | 100 |
| 04/12 – 06/12 | 100 | 100 | 100 | 04/12 – 06/12 | 100 | 100 |
| 07/12 – 09/12 | 100 | 56 | 100 | 07/12 – 09/12 | 100 | 100 |
| Retest 1 | 100 | 100 | 100 | 10/12 – 12/12 | 100 | 100 |
| Retest 2 | 100 | 100 | 100 | 01/13 – 03/13 | 100 | 100 |
| Retest 3 | 100 | 100 | 100 | 03/13 – 08/13 ^b | 100 | 100 |
| 10/12 – 12/12 | 100 | 100 | 100 | 09/13 – 02/14 | 100 | 100 |
| 01/13 – 03/13 | 100 | 100 | 100 | 03/14 – 08/14 | 100 | 100 |
| 04/13 – 06/13 | 100 | 100 | 100 | 09/14 – 02/15 | 100 | 100 |
| 07/13 – 09/13 | 100 | 100 | 100 | 03/15 – 08/15 | 100 | 100 |
| 10/13 – 12/13 | 100 | 100 | 100 | 09/15 – 02/16 | 100 | 100 |
| 01/14 – 03/14 | 100 | 56 | 100 | 03/16 – 08/16 | 100 | 100 |
| Retest 1 | 100 | 100 | 100 | | | |
| Retest 2 | 100 | 100 | 100 | | | |
| Retest 3 | 100 | 100 | 100 | | | |
| 04/14 – 06/14 | 100 | 100 | 100 | | | |
| 07/14 – 09/14 | 100 | 100 | 100 | | | |
| 10/14 – 12/14 | 100 | 100 | 100 | | | |
| 01/15 – 03/15 | 100 | 100 | 100 | | | |
| 04/15 – 06/15 | 100 | 100 | 100 | | | |
| 07/15 – 09/15 | 100 | 100 | 100 | | | |
| 10/15 – 12/15 | 100 | 100 | 100 | | | |
| 01/16 – 03/16 | 100 | 100 | 100 | | | |
| 04/16 – 06/16 | 100 | 100 | 100 | | | |

^a NOECs reported in percent effluent.

^b Monitoring frequency was reduced to 2/year as of March 1, 2013.

(c) Outfall TX3 (function identical to Outfall 003)

Summary of Chronic WET Test Results by Species
(January 2012 through June 2016)

| <i>Ceriodaphnia dubia</i> | | | | <i>Pimephales promelas</i> (Fathead minnow) | | |
|---------------------------|--------------------------------|--------------------------------|---------|---|--------------------------------|--------------------------------|
| Reporting period | NOEC _L ^a | NOEC _S ^a | 22414 | Reporting period | NOEC _L ^a | NOEC _S ^a |
| 01/12 – 03/12 | 100 | 100 | 100 | 01/12 – 03/12 | 100 | 100 |
| 04/12 – 06/12 | 100 | <u>0</u> | 100 | 04/12 – 06/12 | 100 | 100 |
| May 2012 | 100 | 100 | 100 | 07/12 – 09/12 | 100 | 100 |
| June 2012 | 100 | 100 | 100 | 10/12 – 12/12 | 100 | 100 |
| July 2012 | 100 | <u>32</u> | 100 | 01/13 – 03/13 | 100 | 100 |
| August 2012 | 100 | 100 | 100 | 04/13 – 06/13 ^b | 100 | 100 |
| September 2012 | 100 | <u>0</u> | 100 | 07/13 – 08/13 | 100 | 100 |
| October 2012 | 100 | <u>32</u> | 100 | 09/13 – 02/14 | 100 | 100 |
| November 2012 | 100 | 100 | 100 | 03/14 – 08/14 | 100 | 100 |
| December 2012 | 100 | 100 | 100 | 09/14 – 02/15 | 100 | 100 |
| January 2013 | 100 | <u>56</u> | 100 | 03/15 – 08/15 | 100 | 100 |
| February 2013 | 100 | <u>75</u> | 100 | 09/15 – 02/16 | 100 | 100 |
| March 2013 | 100 | 100 | 100 | 03/16 – 08/16 | 100 | 100 |
| April 2013 | 100 | <u>32</u> | 100 | | | |
| May 2013 | 100 | <u>42</u> | 100 | | | |
| June 2013 | 100 | 100 | 100 | | | |
| July 2013 | 100 | <u>56</u> | 100 | | | |
| August 2013 | 100 | <u>56</u> | 100 | | | |
| September 2013 | 100 | <u>0</u> | 100 | | | |
| October 2013 | 100 | <u>32</u> | 100 | | | |
| November 2013 | 100 | 100 | 100 | | | |
| December 2013 | No test | No test | No test | | | |
| January 2014 | 100 | <u>32</u> | 100 | | | |
| February 2014 | 100 | 100 | 100 | | | |
| March 2014 | 100 | 100 | 100 | | | |
| April 2014 | 100 | 100 | 100 | | | |
| 04/14 – 06/14 | 100 | 100 | 100 | | | |
| 07/14 – 09/14 | 100 | 100 | 100 | | | |
| 10/14 – 12/14 | 100 | 100 | 100 | | | |
| 01/15 – 03/15 | 100 | 100 | 100 | | | |
| 04/15 – 06/15 | 100 | 100 | 100 | | | |
| 07/15 – 09/15 | 100 | 100 | 100 | | | |
| 10/15 – 12/15 | 100 | 100 | 100 | | | |
| 01/16 – 03/16 | 100 | 100 | 100 | | | |
| 04/16 – 06/16 | 100 | 100 | 100 | | | |

^a NOECs reported in percent effluent.

^b Monitoring frequency was reduced to 2/year as of March 1, 2013.

(3) Reasonable Potential

(a) Criteria for Reasonable Potential

According to 40 CFR 122.44(d)(1)(v), when the permitting authority determines that a discharge causes, has the reasonable potential (RP) to cause, or contributes to an in-stream excursion above a narrative criterion within an applicable State water quality standard for whole effluent toxicity, the permit must contain effluent limits for whole effluent toxicity.

In accordance with the narrative criteria established in OAC 785:46-3-5 and cited by reference in OAC 252:690-3-18, RP exists whenever persistent lethality is demonstrated. In addition, the OAC 785:46-3-5 states that the permitting authority may deem RP to be demonstrated whenever intermittent toxicity or persistent toxicity occurs. Persistent toxicity (lethality and/or sublethality) is defined in OAC 252:690-1-2 as repeat failure (failure of the routine test plus one of the two monthly retests) of an acute or chronic WET test and intermittent toxicity is defined as two or more lethal or sublethal effect test failures of a routine acute or chronic WET test within any 18-month period. OAC 252:690-3-19(a) requires a toxicity reduction evaluation (TRE) when persistent toxicity is demonstrated. In accordance with OAC 252:690-3-19(b) the effective date of a WET limit for the affected species may be deferred up to three years from the effective date of the permit.

(b) Application of Criteria to the Draft Permit and Permitting Actions

The above summaries of WET testing since the effective date of the previous permit shows two (2) sublethal effects for *C. dubia* at Outfall TX1 and several sublethal effects for *C. dubia* at Outfall TX3. For Outfall TX1, all required retests passed; thus no persistent lethality for *C. dubia* was exhibited. For Outfall TX3, the sublethal failures occurred during the period when blue green algae presented in the effluent holding pond (to supply to the PSO via Outfall 003) and copper sulfate was used for algae control. The facility conducted several toxic identification evaluations (TIE) during this period. While baseline (samples) toxic were inconclusive, the TIEs suspected blue green algae related toxin (microcystin) and copper were the causes of those sublethal failures to *C. dubia*. In January 2014, the facility constructed a new pump station and a splitter basin to replace the broken pump station and effluent holding pond. Effluent from the facility's final treatment unit enters this basin, and is discharged into Nine Mile Creek via Outfall 001, or is immediately pumped to the PSO via Outfall 003. The effluent being supplied to the PSO is no longer impounded. Neither lethal nor sublethal failures occurred after January 2014. WET limits for *C. dubia* were already established in the previous permit. These WET limits shall remain in the renewed permit and are applied to all three (3) outfalls (TX1, TX2, and TX3). For the fathead minnow specie, the above summaries show neither lethal nor sublethal failures during the previous permit cycle. Therefore, no RP to the fatheads is demonstrated. The facility is required to continue biomonitoring (WET testing) for the life of the renewed permit.

Under the previous permit, only lethal effects were considered in terms of test failure. OAC 252:690-3-40 now requires that significant sublethal effects at or below the critical dilution also be considered as test failures.

(4) Whole Effluent Toxicity Testing Requirements

(a) Type of WET Testing Required

In accordance with OAC 252:690-3-31, the type of WET test(s) required is based on the value of Q*, as follows:

Where $Q^* < 0.054$, acute testing only is required.

Where $Q^* > 0.3333$, chronic testing only is required.

Where $0.054 \leq Q^* \leq 0.3333$, both acute and chronic testing are required.

Since Q^* is 27.8508, only chronic testing is required.

(b) Critical Dilutions

The chronic critical dilution (CCD), expressed as percent effluent, is based on the value of Q^* using the following set of equations:

$$CCD = 100 \times \frac{1.94 Q^*}{(1 + Q^*)}, \text{ where } Q^* \leq 0.1823.$$

$$CCD = 100 \times \frac{1}{(6.17 - 15.51 Q^*)}, \text{ where } 0.1823 < Q^* < 0.3333.$$

$$CCD = 100, \text{ where } Q^* \geq 0.3333.$$

Since Q^* for this application is 27.8508, the third equation is used, and the CCD is 100%.

(c) Dilution Series

A 0.75 dilution series is used for all WET testing. Where it is practical to do so, the critical dilution is bracketed. The purpose of doing so is to evaluate dose response both above and below the critical dilution. For critical dilutions between 76% and 95%, OAC 252:690, Appendix D, Table D-2, requires that a 100% effluent dilution be added to the dilution series to bracket the critical dilution. In accordance with OAC 252:690-3-33, the dilution series for each type test are as follows (critical dilutions are shown **underlined in bold face**):

Chronic test: **100%**, 75%, 56%, 42%, 32%, plus a dilution water control.

(d) Frequency of WET Testing

In accordance with OAC 252:690-3-41, the facility will be required to perform quarterly testing of both test species.

For *C. dubia* specie with a WET limit, in accordance with OAC 252:690-3-42(4) quarterly monitoring is required for the life of the permit. For the Fathead minnow specie, in accordance with OAC 252:690-3-42(1) a monitoring frequency reduction to twice a year may be requested after two (2) years from the effective date of the permit (see Permit Part II, Section F.5).

(e) Concurrent Testing Requirements

In accordance with OAC 252:690-3-25, the draft permit will include a provision for concurrent testing of ammonia and pH on all composite samples collected for WET testing of the Fathead minnow specie. The draft permit will not specify any concurrent testing requirements for daphnid testing.

2. Aquatic Toxicity, Human Health and Raw Water Column Criteria for Toxic Substances for Protection of the Fish and Wildlife Propagation, Fish Consumption and Public and Private Water Supply Uses

a. Criteria and Implementation

(1) Aquatic Toxicity – Fish and Wildlife Propagation Use (Outfalls 001, 002, and 003)

Acute and chronic aquatic toxicity numerical criteria are specified at OAC 785:45-5-12(f)(6)(G) and are implemented according to procedures in OAC 785:46, Subchapter 5, OAC 252:690-3-51 through 3-57, and Chapter 3 of the CPP.

Aquatic toxicity numerical criteria are hardness-dependent for certain metals. The equations for calculating hardness-dependent criteria (for those metals present at quantifiable levels in the combined discharge) and the resulting acute and chronic criteria are as follows:

Hardness-dependent Aquatic Toxicity Criteria (µg/l) for Nine Mile Creek

| Effluent Characteristic | Acute Toxicity Criteria | | Chronic Toxicity Criteria | |
|-------------------------|---|--------------------|---|--------------------|
| | Equation | Value ^a | Equation | Value ^a |
| Copper, total | $C_{acute} = e^{(0.9422(\ln(\text{hardness})) - 1.3844)}$ | 48.64 | $C_{chronic} = e^{(0.8545(\ln(\text{hardness})) - 1.386)}$ | 29.74 |
| Zinc, total | $C_{acute} = e^{(0.8473(\ln(\text{hardness})) + 0.8604)}$ | 270.05 | $C_{chronic} = e^{(0.8473(\ln(\text{hardness})) + 0.7614)}$ | 244.59 |

^a Based on a segment-averaged receiving water hardness of 268.3 mg/l.

(2) Protection of Human Health – Fish Consumption Use (Outfalls 001, 002, and 003)

Criteria for the protection of human health for the consumption of fish flesh apply only to receiving waters not designated as habitat-limited aquatic communities. Additional human health/fish flesh criteria are recommended by EPA in the National Recommended Water Quality Criteria (NRWQC). NRWQC criteria are not binding upon individual states, however.

OWQS and NRWQC criteria for the protection of human health for the consumption of fish flesh are specified at OAC 785:45-5-20(b) and Publication No. EPA 822-Z-99-001, respectively, and are implemented according to the procedures in OAC 785:46, Subchapter 7, OAC 252:690-3-64 through 3-70, and Chapter 3 of the CPP.

b. Determination of Reasonable Potential and Wasteload Allocation

(1) Reasonable Potential and WLA Equations

(a) Aquatic Toxicity – Fish and Wildlife Propagation Use (Outfalls 001, 002, and 003)

For determining whether there is reasonable potential to exceed acute toxicity numerical criteria for discharges to streams, OAC 785:46-5-3(b)(2) defines a pollutant's concentration at the edge of the acute regulatory mixing zone (C_d) as:

$$C_d = C_b + \frac{Q_{e(D)}}{64.63} (C_{95} - C_b), \text{ where } Q_{e(D)} \text{ is expressed in mgd.}$$

In order for C_d to fall in the range between C_u and C_{95} , the value for $Q_{e(D)}$ used in the equation must be less than or equal to 64.63 mgd. If the actual $Q_{e(D)} > 64.63$ mgd, a value of 64.63 mgd is used in the reasonable potential equation.

Should a pollutant's acute toxicity screen exhibit reasonable potential, a water quality-based limit is required for that pollutant and a wasteload allocation is calculated for each applicable criterion. For discharges to streams, the acute toxicity wasteload allocation is calculated in accordance with OAC 252:690-3-55(a)(1), as follows:

$$WLA_A = C_b + \frac{64.63}{Q_{e(D)}} (C_A - C_b), \text{ where } Q_{e(D)} \text{ is expressed in mgd.}$$

As with the reasonable potential equation, if the actual $Q_{e(D)} > 64.63$ mgd, a value of 64.63 mgd is used in the WLA equation.

For determining whether there is reasonable potential to exceed chronic toxicity numerical criteria, OAC 785:46-5-3(b)(2) defines a pollutant's maximum concentration at the boundary of the chronic regulatory mixing zone (C_d) as:

$$C_d = C_b + 1.94 Q^* \frac{(C_{95} - C_b)}{(1 + Q^*)}, \text{ for } Q^* \leq 0.1823$$

$$C_d = C_b + \frac{(C_{95} - C_b)}{(6.17 - 15.51 Q^*)}, \text{ for } 0.1823 < Q^* < 0.3333$$

$$C_d = C_{95}, \text{ for } Q^* \geq 0.3333$$

Should a pollutant's chronic toxicity screen exhibit reasonable potential, a water quality-based limit is required for that pollutant and a wasteload allocation is calculated for each applicable criterion. For discharges to streams, the chronic toxicity wasteload allocation is calculated in accordance with OAC 252:690-3-55(a)(1), as follows:

$$WLA_C = C_b + \left(\frac{1 + Q^*}{1.94 Q^*} \right) (C_C - C_b), \text{ for } Q^* \leq 0.1823$$

$$WLA_C = C_b + (6.17 - 15.51 Q^*) (C_C - C_b), \text{ for } 0.1823 < Q^* < 0.3333$$

$$WLA_C = C_C, \text{ for } Q^* \geq 0.3333$$

(b) Protection of Human Health – Fish Consumption Use (Outfalls 001, 002, and 003)

OAC 785:46-7-3(b)(2) defines the reasonable potential equation for a pollutant's instream concentration C_d after complete mixing as follows:

$$C_d = \frac{(C_{95} Q^* + C_b)}{(1 + Q^*)}$$

The human health/fish flesh wasteload allocation is calculated in accordance with OAC 252:690-3-68, as follows:

$$WLA_{FF} = C_{FF} + \frac{(C_{FF} - C_b)}{Q}$$

Should a pollutant's OWQS human health/fish flesh screen exhibit reasonable potential, a water quality-based limit is required for that pollutant and a wasteload allocation is calculated for each applicable criterion. Where a discharge is located less than five miles upstream of a PWS intake (see Section III.A), OAC 252:690-3-68 requires that a human health/fish flesh wasteload allocation equal to the criterion be established for any pollutant detected in the discharge to which a human health/fish flesh criterion applies. Since there is no PWS intake within five miles of this discharge the WLA uses the above equation.

In accordance with EPA Region 6 policy, pollutants are screened for reasonable potential to exceed NRWQC human health/fish flesh consumption criteria and, if reasonable potential is exhibited, effluent monitoring of those pollutants is required as a permit condition in lieu of establishing effluent limitations.

(2) Results of Reasonable Potential Screening

(a) Aquatic Toxicity – Fish and Wildlife Propagation Use (Outfalls 001, 002, and 003)

Results of the acute and chronic toxicity screens for Outfalls 001, 002, and 003, using $Q_{e(D)} = 18.0$ mgd, C_{95} values reflected in Section V.C.2.c, pollutant background levels reflected in Section V.C.2.d, and any hardness-dependent metals criteria reflected in Section V.D.2.a(1), are shown in the table below. Any required WLAs are also shown.

Results of Acute and Chronic Toxicity Screens (Outfall 001)
(concentrations in µg/l unless otherwise specified)

| Effluent Characteristic | Acute Toxicity | | | | Chronic Toxicity | | | |
|-------------------------|----------------|--------|--------------|--------------------|------------------|--------|--------------|---------|
| | C_d | C_A | $C_d > C_A?$ | WLA_A | C_d | C_C | $C_d > C_C?$ | WLA_C |
| Copper, total | 3.67 | 48.64 | No | --- | 13.17 | 29.74 | No | --- |
| Selenium, total | 2.87 | 20.00 | No | 71.81 ^a | 10.31 | 5.00 | Yes | 5.00 |
| Zinc, total | 19.37 | 270.05 | No | --- | 69.60 | 244.59 | No | --- |

^a Even though reasonable potential for selenium to exceed acute toxicity criterion was not demonstrated, a wasteload allocation is required because another applicable criterion (chronic) demonstrated reasonable potential.

(b) Protection of Human Health – Fish Consumption Use (Outfalls 001, 002, and 003)

Results of the OWQS and NRWQC human health/fish flesh screens for Outfalls 001, 002, and 003, using $Q^* = 6.1644$, C_{95} values reflected in Section V.C.2.c, and background levels reflected in Section V.C.2.d, are shown in the table below. Any required OWQS WLAs are also shown.

Results of OWQS and NRWQC Human Health/Fish Flesh Screens (Outfall 001)
(concentrations in $\mu\text{g/l}$ unless otherwise specified)

| Effluent Characteristic | State Human Health/ Fish Flesh Criteria | | | | NRWQC Criteria | | |
|-------------------------|--|----------|-----------------|------------|----------------|-------------|--------------------|
| | C_d | C_{FF} | $C_d > C_{FF}?$ | WLA_{FF} | C_d | C_{NRWQC} | $C_d > C_{NRWQC}?$ |
| Phenols | 79.74 | 860,000 | No | --- | Not Applicable | | |

c. Criterion Long Term Average (LTA) Concentration

(1) Aquatic Toxicity – Fish and Wildlife Propagation Use (Outfalls 001, 002, and 003)

Acute and chronic toxicity criteria LTAs (LTA_A and LTA_C) are calculated for the pollutants requiring water quality-based limits assuming a log-normal distribution and using a 99% probability basis according to the following equations. A CV of 0.6 is assumed when the effluent data set is not sufficiently large to determine a CV directly.

$$LTA_A = WLA_A \times \exp\left(0.5 \ln(1 + CV^2) - 2.326 \sqrt{\ln(1 + CV^2)}\right)$$

$$LTA_C = WLA_C \times \exp\left(0.5 \ln\left(1 + \frac{CV^2}{4}\right) - 2.326 \sqrt{\ln\left(1 + \frac{CV^2}{4}\right)}\right)$$

Acute and chronic criterion LTAs are compared in the following table to determine the more stringent LTA (referred to as LTA_{TOX}) for the purpose of developing toxicity-based permit limitations.

Comparison of Acute and Chronic Toxicity Criteria LTAs (Outfall 001)
(concentrations in $\mu\text{g/l}$ unless otherwise specified)

| Effluent Characteristic | LTA_A | LTA_C | Controlling Toxicity LTA (LTA_{TOX}) |
|-------------------------|---------|---------|--|
| Selenium, total | 23.06 | 2.64 | 2.64 (Chronic) |

(2) Protection of Human Health – Fish Consumption Use (Outfalls 001, 002, and 003)

For the human health/fish flesh criterion, $LTA_{FF} = WLA_{FF}$. Because reasonable potential to exceed water quality standard was not demonstrated and no WLA_{FF} was calculated, determination of LTA_{FF} is not needed.

d. Permit Limitations

(1) Aquatic Toxicity – Fish and Wildlife Propagation Use (Outfalls 001, 002, and 003)

Aquatic toxicity-based monthly average limits (MAL_{TOX}) are calculated on a 95% probability basis, and aquatic toxicity-based daily maximum limits (DML_{TOX}) are calculated on a 99% probability basis. In accordance with OAC 252:690-3-89, a monitoring frequency (N_m) of 2/month is utilized, and a CV of 0.6 is assumed. The permit limit equations are:

$$MAL_{TOX} = LTA_{TOX} \times \exp \left(1.645 \sqrt{\ln \left(1 + \frac{CV^2}{N_m} \right)} - 0.5 \ln \left(1 + \frac{CV^2}{N_m} \right) \right)$$

$$DML_{TOX} = LTA_{TOX} \times \exp \left(2.326 \sqrt{\ln (1 + CV^2)} - 0.5 \ln (1 + CV^2) \right)$$

The resulting toxicity-based permit limitations for Outfall 001 are shown the following table:

Aquatic Toxicity-Based Permit Limitations (Outfalls 001, 002, and 003)

| Effluent Characteristic | No. of samples per month (N_m) | Effluent Limitations ($\mu\text{g/l}$ unless otherwise specified) | |
|-------------------------|------------------------------------|---|-------------------------------|
| | | Monthly Average (MAL_{TOX}) | Daily Maximum (DML_{TOX}) |
| Selenium, total | 2 | 4.74 | 8.21 |

Based on the effluent analytical data provided with the permit application, the facility may not be able to comply with newly established limits for selenium without addition improvement or other strategies to reduce/eliminate selenium in the discharge. Therefore, compliance with effluent limits for selenium shall be delayed for three (3) years from the effective date of the permit. During this period, the facility is required to monitor and report.

(2) Protection of Human Health – Fish Consumption Use (Outfalls 001, 002, and 003)

Human health/fish flesh-based monthly average limits (MAL_{FF}) are equal to the respective criterion long term averages, and daily maximum limits (DML_{FF}) are calculated on a 99% probability basis. The permit limit equations are as follows:

$$MAL_{FF} = LTA_{FF}$$

$$DML_{FF} = LTA_{FF} \times \exp \left(\frac{2.326 \sqrt{\ln (1 + CV^2)} - 0.5 \ln (1 + CV^2)}{1.645 \sqrt{\ln \left(1 + \frac{CV^2}{N_m} \right)} - 0.5 \ln \left(1 + \frac{CV^2}{N_m} \right)} \right)$$

Because reasonable potential to exceed water quality standard was not demonstrated and no LTA_{FF} was calculated, determination of permit limits is not needed.

3. Mineral Constituent Criteria for Protection of the Agriculture Use (Outfalls 001, 002, and 003)

a. General

Yearly mean standard (YMS) and sample standard (SS) criteria for surface waters designated for the Agriculture use are described in OAC 785:45-5-13 and Appendix F thereto. Both sets of numerical criteria are implemented according to the screening procedures in OAC 785:46, Subchapter 9. OAC 785:46-9-3 specifies that for POTW discharges, the regulatory flows for implementing YMS criteria are $Q_{e(D)}$ and $Q_{u(LTA)}$. For implementing SS criteria, the regulatory flows are $Q_{e(D)}$ and $Q_{u(STA)}$.

For this permit, mineral constituent's background concentrations (C_b) are derived from the site-specific YMS and SS criteria for Nine Mile Creek as specified in OAC 785:45, as follows:

$$C_b = YMS - (SS - YMS) = 2 YMS - SS$$

For chlorides, $C_b = 2 \times 499 - 624 = 374$ mg/l.

For TDS, $C_b = 2 \times 1680 - 2100 = 1260$ mg/l.

b. Reasonable Potential

(1) Yearly Mean Standard

OAC 785:46-9-5(b) and (c) define a POTW discharge's instream pollutant concentration $C_{d(YMS)}$, after complete mixing, as follows:

$$C_{d(YMS)} = \frac{(C_{95} Q^* + C_b)}{(1 + Q^*)}, \text{ where } Q^* = Q_{e(D)} / Q_{u(LTA)}$$

In accordance with OAC 785:46-9-4 for chlorides, $C_{d(YMS)}$ is compared against the higher of the YMS criterion or 250 mg/l. For TDS, $C_{d(YMS)}$ is compared against the higher of the YMS criterion or 700 mg/l. The results of the YMS reasonable potential screen are shown in the following table:

Results of Yearly Mean Standard Screen for Effluent Limits (Outfalls 001, 002, and 003)
(concentrations in mg/l)

| Effluent Characteristic | C_{mean} | C_{95} | C_b | $C_{d(YMS)}$ | Criterion | | | $C_{d(YMS)} > C_{YMS}$ |
|-------------------------|------------|----------|-------|--------------|-----------|---------|--------------------------------|------------------------|
| | | | | | C_{YMS} | Default | Maximum (C_{YMS} , Default) | |
| Chlorides | 117 | 135 | 374 | 167 | 499 | 250 | 499 | No |
| TDS | 786 | 891 | 1260 | 942 | 1680 | 700 | 1680 | No |

(2) Sample Standard

OAC 785:46-9-5(b) and (d) define a POTW discharge's instream pollutant concentration $C_{d(SS)}$, after complete mixing, as follows:

$$C_{d(SS)} = \frac{(C_{95} Q^* + C_b)}{(1 + Q^*)}, \text{ where } Q^* = Q_{e(D)} / Q_{u(STA)}$$

For chlorides, $C_{d(ss)}$ is compared against the higher of the SS criterion or 250 mg/l. For TDS, $C_{d(ss)}$ is compared against the higher of the SS criterion or 700 mg/l. The results of the SS reasonable potential screen are shown in the following table:

Results of Sample Standard Screen for Effluent Limits (Outfalls 001, 002, and 003)
(concentrations in mg/l)

| Effluent Characteristic | C_{mean} | C_{95} | C_b | $C_{d(ss)}$ | Criterion | | | $C_{d(ss)} > C_{ss}$ |
|-------------------------|------------|----------|-------|-------------|-----------|---------|---------------------------|----------------------|
| | | | | | C_{ss} | Default | Max (C_{ss} , Default) | |
| Chlorides | 117 | 135 | 374 | 159 | 624 | 250 | 624 | No |
| TDS | 786 | 891 | 1260 | 927 | 2100 | 700 | 2100 | No |

c. Wasteload Allocation (WLA) and Criterion Long Term Average (LTA) Concentrations

The results of the screening indicate that reasonable potentials at Outfalls 001, 002, and 003 for TDS to exceed either YMS or SS criteria are not demonstrated. Thus, determination of wasteload allocations is not needed.

d. Permit Limitations

None. Monthly monitoring and report requirements in the previous are hereby discontinued.

4. Bacterial Criteria for Protection of the Primary Body Contact Recreation and Public and Private Water Supply Uses

The previous permit contained effluent limits for fecal coliform. However, fecal coliform is no longer used as an indicator for bacterial criteria and has been deleted from Oklahoma's Water Quality Standards as of September 12, 2014. In accordance with the revised OAC 252:690-3-86, either E. coli or enterococci are now the only valid bacteriological indicators. The draft permit will contain effluent limitations for E. coli (in place of fecal coliform), unless the facility requests the DEQ in writing to specify enterococci, instead.

a. Bacteria Limitation – Primary Body Contact Recreation Use (Outfalls 001, 002, and 003)

- In accordance with OAC 252:690-3-86(a)(2), the draft permit shall have a E. Coli monthly average limit (MAL) of 126/100 ml, expressed as a geometric mean, and a daily maximum limit (DML) of 406/100 ml for the "recreational period" from May 1 through September 30.
- In accordance with OAC 252:690-3-89(a)(3)(A), the draft permit shall have a bacteria monitoring frequency of two per week.

b. Total Coliform – Public and Private Water Supply Use (Outfalls 001, 002, and 003)

In accordance with OAC 252:690-3-78, total coliform criteria are applied where a discharge is within five miles upstream of a public water supply intake or within five miles of such an intake in a lake. Since there is no intake within five miles downstream of the discharge, total coliform limit is not required.

5. Criteria for Protection of the Aesthetics Use (Outfalls 001, 002, and 003)

a. General

Nutrient loading in Oklahoma's surface waters, particularly of phosphorus, has become an area of concern. OAC 785:45-5-9(d) states "Nutrients from point source discharges or other sources shall not cause excessive growth of periphyton, phytoplankton, or aquatic macrophyte communities which impairs any existing or designated beneficial use." This narrative criteria is echoed in the State of Oklahoma's general antidegradation policy as applied to beneficial uses (OAC 785:45-3-2(d)) as "No water quality degradation which will interfere with the attainment or maintenance of an existing or designated beneficial use shall be allowed."

b. Nutrient Limitations and Monitoring Requirements

The previous permit for the facility contained no nitrate or phosphorus limits or reporting requirements. According to data published by the OWRB in its Beneficial Use Monitoring Program (BUMP) 2013 Final Report, the trophic condition of the Red River downstream of the facility is stable. Thus, in the judgment of the permit writer, monitoring of effluent nutrient levels is not warranted at this time. The permit will, however, contain a narrative condition for control of solids to protect the Aesthetics use.

c. Floatable Solids and Foam

In accordance with OAC 785:45-5-9(b), a narrative condition prohibiting the discharge of floating solids or visible foam in other than trace amounts will be included in the permit.

E. MONITORING REQUIREMENTS

1. Effluent Monitoring Requirements (Outfalls 001, 002, and 003)

a. General

In accordance with OAC 252:690-3-90, where reasonable potential to exceed an applicable criterion is not exhibited, the background is unknown and there are fewer than 10 effluent data points to characterize the effluent, further effluent monitoring may be warranted based on use of the TSD method for computing $C_{95(M)}$ (see Section V.C.2.c). The TSD procedure accounts for the inherent uncertainty in characterizing an effluent distribution from a small data set.

b. Applicability

Water quality-based limitations are required for selenium. All other pollutants detectable in the discharge which have State of Oklahoma water quality criteria are screened for reasonable potential using $C_{95(M)}$ in place of C_{95} to determine which of them may require effluent monitoring (see Section V.C.2.c).

c. Results of Reasonable Potential Screening Using $C_{95(M)}$

Where C_d , calculated using $C_{95(M)}$ in place of C_{95} , exceeds an applicable criterion for a pollutant, a short term effluent monitoring requirement (sufficient to collect a minimum of ten data points) is established in the permit for that pollutant in accordance with OAC 252:690-3-90(a). Reasonable potential may then be reassessed with the larger effluent data set and the permit reopened, if necessary, to add appropriate effluent limitations. Results of the reasonable potential screens using $C_{95(M)}$ are shown in the following tables:

(1) Aquatic Toxicity Criteria

Results of Acute and Chronic Toxicity RP Screens using $C_{95(M)}$ (Outfalls 001, 002, and 003)
(concentrations in $\mu\text{g/l}$ unless otherwise specified)

| Effluent Characteristic | Acute Toxicity | | | Chronic Toxicity | | |
|-------------------------|----------------|-------------|--------------------|------------------|---------------|----------------------|
| | C_d | C_{acute} | $C_d > C_{acute}?$ | C_d | $C_{chronic}$ | $C_d > C_{chronic}?$ |
| Copper, total | 7.16 | 48.64 | No | 25.69 | 29.74 | No |
| Zinc, total | 32.44 | 270.05 | No | 116.47 | 244.59 | No |

(2) Human Health/Fish Flesh Criteria

Results of Human Health/Fish Flesh RP Screen Using $C_{95(M)}$ (Outfalls 001, 002, and 003)
(concentrations in $\mu\text{g/l}$ unless otherwise specified)

| Effluent Characteristic | C_d | C_{FF} | $C_d > C_{FF}?$ |
|-------------------------|--------|----------|-----------------|
| Phenols | 202.64 | 860,000 | No |

(3) YMS and SS Agriculture Criteria

None.

2. Background Monitoring Requirements (Monitoring Point 999)

OAC 252:690-3-10 requires that, where available, background levels be included in reasonable potential assessments and in calculating wasteload allocations.

a. Assessment for Aquatic Toxicity, Human Health, and Raw Water Column Criteria

In general, if water quality-based limits derived from aquatic toxicity, human health, or raw water column criteria are established in a permit for a pollutant based on an assumed zero background (or a partial background data set consisting of less than 10 data points), background monitoring for that pollutant will be required. There are two exceptions to this requirement, both of which exclude background concentration as a component in the wasteload allocation equation. These exceptions are as follows:

- where permit limits are based on a chronic toxicity criterion in an effluent-dominated discharge situation, and
- where permit limits are based on a raw water column or human health/fish flesh and water criterion and the associated wasteload allocation was set equal to that criterion because the discharge is in close proximity to a PWS intake.

Where permit limits for a pollutant are not required and the background is unknown (assumed zero), background monitoring may be justified for the purpose of reassessing whether there is reasonable potential to exceed an applicable criterion. In such cases, OAC 252:690-3-12 requires that the background trigger to criterion (BT/C) ratio be used to determine whether background monitoring is warranted for a pollutant. The trigger background concentration for a criterion is defined in OAC 252:690-1-2 as "the background concentration necessary to trigger reasonable potential for a substance to exceed an applicable criterion given a specified mean effluent concentration." As described in

Appendix J of OAC 252:690, the procedure involves calculating a BT/C ratio for each applicable criterion and comparing each such ratio with an associated threshold value, $(BT/C)_{max}$, which is a function of the magnitude of each criterion. Where the BT/C ratio > 1.0 , the C_{95} concentration is less than the criterion and there is no possibility of exhibiting reasonable potential to exceed that criterion at any background level which is less than or equal to the criterion. Where the BT/C ratio ≤ 1.0 , the C_{95} concentration is at least as high as the criterion and, depending on the magnitude of the criterion, background monitoring may be justified. If the BT/C ratio $\leq (BT/C)_{max}$ for any of the applicable criteria for a pollutant, then background monitoring for that pollutant is required. In order for $(BT/C)_{max}$ to be appropriately more sensitive to criteria of smaller magnitude, at which a measurable background level of a pollutant may have a relatively greater impact in the determination of reasonable potential, the value of the $(BT/C)_{max}$ threshold value function increases as the magnitude of a criterion decreases within the range of 1 to 1000 $\mu\text{g/l}$.

(1) Calculation of $(BT/C)_{max}$

The value of $(BT/C)_{max}$ for each applicable criterion is an inverse function of the criterion's magnitude with two break points (or "hinges"), one at 1.0 $\mu\text{g/l}$ and the other at 1,000.0 $\mu\text{g/l}$. It is calculated as follows:

$$(BT/C)_{max} = 1.0, \text{ where the criterion } \leq 1.0 \mu\text{g/l}.$$

$$(BT/C)_{max} = \frac{1}{2^{\log(\text{criterion})}}, \text{ where the criterion } > 1.0 \mu\text{g/l and } \leq 1,000.0 \mu\text{g/l}.$$

$$(BT/C)_{max} = 0.125, \text{ where the criterion } > 1,000.0 \mu\text{g/l}.$$

(2) Calculation of BT/C Ratios

Background trigger concentrations are first calculated for all applicable criteria and the BT/C concentration is then calculated by dividing the criterion-specific background trigger concentration by the applicable criterion. Values of $Q_{e(D)}$, Q^* , C_{95} , C_A , C_C , C_{FF} , C_{FFW} , and C_{Raw} are as previously defined.

(a) Acute Toxicity Criteria

$$BT/C_{Acute} = \frac{\left(\frac{64.63 C_A - Q_{e(D)} C_{95}}{64.63 - Q_{e(D)}} \right)}{C_A}, \text{ where } Q_{e(D)} < 64.63 \text{ mgd}.$$

BT/C_{Acute} is not defined for values of $Q_{e(D)} \geq 64.63 \text{ mgd}$.

(b) Chronic Toxicity Criteria

For discharges to streams, the following equations are used:

$$BT/C_{Chronic} = \frac{\left(\frac{(1 + Q^*) C_C - 1.94 Q^* C_{95}}{1 - 0.94 Q^*} \right)}{C_C}, \text{ where } Q^* \leq 0.1823$$

$$BT/C_{\text{Chronic}} = \frac{\left(\frac{(6.17 - 15.51 Q^*) C_C - C_{95}}{5.17 - 15.51 Q^*} \right)}{C_C}, \text{ where } 0.1823 < Q^* < 0.3333$$

BT/C_{Chronic} is not defined for $Q^* \geq 0.3333$ (effluent-dominated discharge situations), since the background level is not a component of the chronic toxicity reasonable potential equation.

(c) Human Health/Fish Flesh Criteria

$$BT/C_{\text{FF}} = \frac{(1 + Q^*) C_{\text{FF}} - Q^* C_{95}}{C_{\text{FF}}}$$

(3) Summary of Background Monitoring Requirements

Summary of Background Monitoring Requirements (Outfall 999)

| Effluent Characteristic | Effluent limit required? | Background assumed zero? | BT/C ratio procedure applicable? | BT/C Ratio Assessment | | | | Background monitoring required? |
|-------------------------|--------------------------|--------------------------|----------------------------------|-----------------------|------------|-----------------------|--|---------------------------------|
| | | | | Type Criterion | BT/C Ratio | $(BT/C)_{\text{max}}$ | $BT/C \text{ ratio} \leq (BT/C)_{\text{max}}?$ | |
| Copper, total | No | Yes | Yes | Acute | >1 | 0.311 | No | No |
| | | | | Chronic | N/A | 0.360 | N/A | |
| Silver, total | Yes (Chronic toxicity) | Yes | No | --- | --- | --- | --- | No |
| Zinc, total | No | Yes | Yes | Acute | >1 | 0.185 | No | No |
| | | | | Chronic | N/A | 0.191 | N/A | |
| Phenols | No | Yes | Yes | FF | >1 | 0.125 | No | No |

F. BIOSOLIDS/SEWAGE SLUDGE REQUIREMENTS

Biosolids/sewage sludge disposal practices shall comply with the Federal regulations for landfills, biosolids/sewage sludge, and solid waste disposal established at 40 CFR Part 257, 503, and the DEQ rules governing Sludge Management (OAC 252:515 and OAC 252:606) as applicable.

The biosolids/sewage sludge disposal practices shall also comply with the requirements of the Sludge Disposition Plan, which was approved by the DEQ on June 1, 2009, that allows the permittee to landfill biosolids/sewage sludge at the City of Lawton Municipal Landfill, which is located in Section 30, Township 1 North, Range 11 West, Comanche County, Oklahoma.

The permittee is required to maintain all records relevant to biosolids/sewage sludge disposal for the life of the permit. These records shall be made available to the ODEQ upon request.

The permittee shall give 120 days prior notice to DEQ of any change planned in the biosolids/sewage sludge disposal practice.

G. 303(d) LIST

The facility discharges into Nine Mile Creek (WBID: 311300020030_00) in Segment 311300 of the Red River Basin. Nine Mile Creek is not listed in the 303(d) List in the Appendix C of the 2014 Integrated Report as an impaired waterbody. Therefore, additional monitoring requirements are not established in the permit. A reopener clause is provided in the permit for the purpose of incorporating provisions of the Total Maximum Daily Load (TMDL) after it is completed and approved.

H. ANTIDEGRADATION REQUIREMENTS

Because no antidegradation restrictions are listed in Appendix A of the OWQS for the stream segment of Nine Mile Creek, to which the facility discharges (see Section V.B), implementation of the State's antidegradation policy, as described at OAC 785:46, Subchapter 13, indicates that no special requirements beyond Tier 1 protection (maintenance and protection of designated uses, as herein described) are necessary.

I. PROTECTION OF ENDANGERED AND THREATENED SPECIES AND CRITICAL HABITAT

The stream segment of Nine Mile Creek, to which the facility discharges, is considered by the U.S. Fish and Wildlife Service (USFWS) to be a sensitive area for endangered or threatened species. Since there is no proposed increase in the facility's design average daily flow nor a change in location of the point of discharge (POD), no adverse impact on endangered or threatened species or their critical habitat is expected.

VI. GROUNDWATER PROTECTION

For municipal facilities, permits issued through the Water Quality Division's Construction Permit Section for plant design and construction (pursuant to the requirements of OAC 252:656) and land application of non-industrial wastewater and/or biosolids (pursuant to the requirements of OAC 252:621 and OAC 252:606, respectively) are considered sufficient to protect groundwater quality.

VII. DRAFT PERMIT EFFLUENT LIMITATIONS

A. GENERAL

In accordance with 40 CFR 122.44(a), (d) and (l), pollutant limitations and monitoring requirements are established in the draft permit based on the more stringent of technology-based, water quality-based, or previous permit requirements. Both concentration and mass (loading) limits are established unless it is impractical to specify loading limits because of the units in which concentration limits are expressed (e.g., standard units for pH). Such loading limitations are calculated using the facility's design average daily flow according to the following equation:

$$\text{Mass loading limit (in lbs/day)} = \text{Concentration limit (in mg/l)} \times Q_{e(D)} \text{ (in mgd)} \times 8.34$$

The facility's approved design average daily flow of 18.0 mgd is used to calculate all loading limits for discharges into Nine Mile Creek (Outfalls 001 and 002 combined). For Outfall 003, which discharges into Comanche Lake, a historically recorded flow of 6.0 mgd is used.

B. EFFLUENT LIMITATIONS

The following limitations and monitoring requirements apply for the periods indicated.

1. Concentration Limitations and Reporting Requirements (Outfalls 001, 002, and 003)

Due to the fact that effluent's characteristics are now expected to be the same at Outfall 001 and Outfall 003, limits as stated in the facility's approved 208 Plan, and from any water quality-based reasonable potential evaluations, are applied to both outfalls. The permittee may use test results purportedly reported for Outfall 001 to fulfill the reporting requirements for Outfall 003. For Outfall 002, historical discharge monitoring reports show that this outfall has been inactive and could be eliminated once the permittee decide to utilize the holding pond for water reuse purposes in the future. For the time being, these same concentration limits (shown in table below) are also applied to Outfall 002.

| Effluent Characteristics ^a | | WQS | | Previous Permit | | Draft Permit | |
|--|------------|-------------------------------------|------------------|-------------------------------------|------------------|-------------------------------------|------------------|
| | | Monthly Average | Weekly Average | Monthly Average | Weekly Average | Monthly Average | Weekly Average |
| Carbonaceous Biochemical Oxygen Demand – 5 Days (CBOD ₅) | Year round | 10.0 | 15.0 | 10.0 | 15.0 | 10.0 | 15.0 |
| Total Suspended Solids (TSS) | Year round | 15.0 | 22.5 | 15.0 | 22.5 | 15.0 | 22.5 |
| Ammonia as N (NH ₃ -N) ^b | Apr – Oct | 2.0 | 3.0 | 2.0 | 3.0 | 2.0 | 3.0 |
| | Nov – Mar | 3.0 | 4.5 | 3.0 | 4.5 | 3.0 | 4.5 |
| Dichlorobromomethane (µg/l) | Year round | 10.34 | 15.09 Daily Max. | 10.34 | 15.09 Daily Max. | 10.34 | 15.09 Daily Max. |
| Selenium, total (µg/l) ^c | Year round | 4.74 ^d | 8.21 Daily Max. | --- | | 4.74 ^d | 8.21 Daily Max. |
| E. Coli (MPN/100 ml) ^e | May – Sep | 126 Geo. Mean | 406 Daily Max. | Fecal Coliform Limits | | 126 Geo. Mean | 406 Daily Max. |
| Total Residual Chlorine (TRC) ^f | Year round | Maximum: No Measurable ^g | | Maximum: No Measurable ^g | | Maximum: No Measurable ^g | |
| Dissolved Oxygen | Apr – Oct | Minimum: 6.5 | | Minimum: 6.5 | | Minimum: 6.5 | |
| | Nov – Mar | Minimum: 6.0 | | Minimum: 6.0 | | Minimum: 6.0 | |
| pH (standard unit) | Year round | 6.5 – 9.0 | | 6.5 – 9.0 | | 6.5 – 9.0 | |
| Chloride | Year round | --- | | Report | | --- | |
| Total Dissolved Solids | Year round | --- | | Report | | --- | |

^a Units are mg/l, unless otherwise specified.

^b A typographical error was identified in the previous permit. In accordance with the approved WLA (208 Plan) for the facility ammonia as N (NH₃-N) is required, instead of total ammonia.

^c Compliance with permit limit is deferred for three (3) years from the effective date of the permit. During this deferment period, the permittee is required to monitor and report.

^d If any individual test result reported by the lab is less than the minimum quantification level (for Selenium) of 5 µg/l, a value of zero (0) may be used for the discharge monitoring report (DMR) requirements.

^e Reporting unit, as Most Probable Number (MPN)/100 ml, was selected by the permittee on December 30, 2019.

^f If no chlorine is used for an entire reporting period, the permittee shall report a value of "zero" for the daily maximum and enter "No chlorine used this reporting period" in the comments section on the DMR for that reporting period in lieu of the indicated testing. For any week in which chlorine is used, the indicated testing shall be done until chlorine is no longer in use and at least one subsequent test verifies that the effluent meets the total residual chlorine limit.

^g No measurable is defined as less than 0.1 mg/l.

2. Monthly Average Mass Loadings (lbs/d) and Reporting Requirements

a. Outfalls 001 and 002 Combined

| Effluent Characteristics | | WQS | Previous Permit | Draft Permit |
|-----------------------------------|------------|--|--|---|
| | | Monthly Average | Monthly Average | Monthly Average |
| Flow (mgd) ^a | Year round | Report Monthly Average and Daily Maximum | Report 30-Day Average and Daily Maximum ^b | Report Monthly Average and Daily Maximum ^b |
| CBOD ⁵ | Year round | 1501.2 | 1501.2 | 1501.2 |
| TSS | Year round | 2251.8 | 2251.8 | 2251.8 |
| Ammonia as N (NH ₃ -N) | Apr – Oct | 300.2 | 300.2 | 300.2 |
| | Nov – Mar | 450.4 | 450.4 | 450.4 |
| Dichlorobromomethane | Year round | 1.55 | 1.55 | 1.55 |
| Selenium, total | Year round | 0.71 | --- | 0.71 |

^a Flow shall be measured daily by totalized measurement at Outfall 001. Flow at Outfall 002 (overflow of the holding pond), if/when discharged, can be estimated.

^b Monitoring and reporting for flow is revised as Monthly Average and Daily Maximum, instead of 30-Day Average and Daily Maximum, to be consistent with monitoring and reporting requirements for other parameters.

b. Outfall 003

| Effluent Characteristics | | WQS | Previous Permit | Draft Permit |
|-----------------------------------|------------|--|--|---|
| | | Monthly Average | Monthly Average | Monthly Average |
| Flow (mgd) ^a | Year round | Report Monthly Average and Daily Maximum | Report 30-Day Average and Daily Maximum ^b | Report Monthly Average and Daily Maximum ^b |
| CBOD ₅ | Year round | 500.4 | 500.4 | 500.4 |
| TSS | Year round | 750.6 | 1501.2 ^c | 750.6 |
| Ammonia as N (NH ₃ -N) | Apr – Oct | 100.1 | 100.1 | 100.1 |
| | Nov – Mar | 150.1 | 150.1 | 150.1 |
| Dichlorobromomethane | Year round | 0.52 | 0.52 | 0.52 |
| Selenium, total | Year round | 0.24 | --- | 0.24 |

^a Flow at Outfall 003 shall be read/calculated daily from flow meter installed at the pump station at the effluent splitter basin.

^b Monitoring and reporting for flow is revised as Monthly Average and Daily Maximum, instead of 30-Day Average and Daily Maximum, to be consistent with monitoring and reporting requirements for other parameters.

^c Mass loading in the previous permit was calculated based on modified TSS concentration limit of 30 mg/l, which became effective on August 12, 2002. As of January 2014, the effluent being supplied to the PSO is pumped from the same newly constructed splitter basin where the effluent is also discharged to Nine Mile Creek via Outfall 001. The same chemical characteristics are expected for both Outfall 001 and Outfall 003. Thus, mass loading limit for Outfall 003 is now based on the concentration of 15 mg/l stated in the facility's approved wasteload allocation (208 Plan).

3. Monitoring Frequencies and Sample Types

a. Evaluation for Performance-Based Monitoring Frequency Reductions

Not applicable for this permit cycle.

b. Monitoring Requirements and Sample Types

(1) Outfall 001 and Outfall 002

| Effluent Characteristic | | Previous Permit | | Draft Permit | |
|--|------------|-----------------------|-----------------|-----------------------|-----------------|
| | | Measurement Frequency | Sample Type | Measurement Frequency | Sample Type |
| Flow | Year round | Daily | Totalized | Daily | Totalized |
| CBOD ₅ | Year round | Daily | 12-hr Composite | Daily | 12-hr Composite |
| TSS | Year round | Daily | 12-hr Composite | Daily | 12-hr Composite |
| Ammonia as N (NH ₃ -N) ^a | Year round | Daily | 12-hr Composite | Daily | 12-hr Composite |
| Dichlorobromomethane | Year round | 1/2 Months | 12-hr Composite | 1/2 Months | 12-hr Composite |
| Selenium, total | Year round | --- | | 2/Month | 12-hr Composite |
| E. Coli | May - Sep | 2/Week | Grab | 2/Week | Grab |
| Total Residual Chlorine (TRC) | Year round | Daily | Grab | Daily | Grab |
| Dissolved Oxygen (DO) | Year round | Daily | Grab | Daily | Grab |
| pH | Year round | Daily | Grab | Daily | Grab |

^a Ammonia analysis shall also be performed concurrently with and on all samples collected for WET testing at Outfall 001 and Outfall 002 (see WET testing requirements for Outfall TX1 and Outfall TX2 in Section VII.C below). Results from concurrent ammonia analyses for Outfall TX1 and Outfall TX2 may be used in partial fulfillment of ammonia monitoring requirements at Outfall 001 and Outfall 002.

(2) **Outfall 003**

| Effluent Characteristic | | Previous Permit | | Draft Permit | |
|--|------------|-----------------------|-----------------|-----------------------|-----------------|
| | | Measurement Frequency | Sample Type | Measurement Frequency | Sample Type |
| Flow | Year round | Daily | Totalized | Daily | Totalized |
| CBOD ₅ | Year round | 5/Week | 12-hr Composite | 5/Week | 12-hr Composite |
| TSS | Year round | 5/Week | 12-hr Composite | 5/Week | 12-hr Composite |
| Ammonia as N (NH ₃ -N) ^a | Year round | 5/Week | 12-hr Composite | 5/Week | 12-hr Composite |
| Dichlorobromomethane | Year round | 1/2 Months | 12-hr Composite | 1/2 Months | 12-hr Composite |
| Selenium, total | Year round | --- | | 2/Month | 12-hr Composite |
| <i>E. Coli</i> | May - Sep | 2/Week | Grab | 2/Week | Grab |
| Total Residual Chlorine (TRC) | Year round | Daily | Grab | Daily | Grab |
| Dissolved Oxygen (DO) | Year round | Daily | Grab | Daily | Grab |
| pH | Year round | Daily | Grab | Daily | Grab |

^a Ammonia analysis shall also be performed concurrently with and on all samples collected for WET testing at Outfall 003 (see WET testing requirements for Outfall TX3 in Section VII.C below). Results from concurrent ammonia analyses for Outfall TX3 may be used in partial fulfillment of ammonia monitoring requirements at Outfall 003.

C. BIOMONITORING OUTFALL (OUTFALLS TX1, TX2, and TX3)

Outfall TX1, TX2, and TX3 are designated for biomonitoring reporting purposes. They are functionally identical to Outfalls 001, 002, and 003.

1. Previous Permit

The previous permit required chronic WET Limit for the *C. dubia* specie and chronic WET testing for the Fathead minnow specie. The WET limit and WET testing requirements are re-stated/summarized in the following table:

**Previous Permit's WET Limit, Reporting, and Monitoring Requirements
(Outfalls TX1, TX 2, and TX3)**

| Effluent Characteristic | | | Reporting/ Monitoring Requirements | | |
|--|-------------------|--|------------------------------------|-------------------|-------------|
| Test | Critical Dilution | Parameter | 7-day Min | Testing Frequency | Sample Type |
| <i>Ceriodaphnia dubia</i> , 7-day chronic NOEC static renewal, freshwater | 100% | Pass/Fail Survival [TLP3B] | Report | 1/Quarter | 24-hr Comp |
| | | NOEC _L Survival [TOP3B] | Report | | |
| | | % Mortality at Critical Dilution [TJP3B] | Report | | |
| | | Pass/Fail Reproduction [TGP3B] | Report | | |
| | | NOEC _s Reproduction [TPP3B] | Report | | |
| | | % Coeff of Variation [TQP3B] | Report | | |
| <i>Pimephales promelas</i> (Fathead minnow), 7-day chronic NOEC static renewal, freshwater | 100% | Pass/Fail Survival [TLP6C] | Report | 1/Quarter | 24-hr Comp |
| | | NOEC _L Survival [TOP6C] | Report | | |
| | | % Mortality at Critical Dilution [TJP6C] | Report | | |
| | | Pass/Fail Growth [TGP6C] | Report | | |
| | | NOEC _s Growth [TPP6C] | Report | | |
| | | % Coeff of Variation [TQP6C] | Report | | |
| Whole Effluent Toxicity (lowest chronic NOEC _L and/or sublethal NOECs for <i>C. dubia</i>) [22414] | | | 100% | 1/Quarter | 24-hr Comp |

2. Draft Permit

During the period beginning with the effective date and lasting through the expiration date of the permit, the permittee is authorized to discharge from Outfalls TX1, TX2, and TX3 (functionally identical to Outfalls 001, 002, and 003). Such discharge shall be limited and monitored by the permittee as specified below.

The permittee is encouraged to perform required biomonitoring activities as early in the reporting period as is practical so as to ensure sufficient time remains in the reporting period should retests/repeat tests be necessary.

All laboratory analyses for the parameters specified in the biomonitoring section must be performed by a laboratory certified by the Oklahoma Department of Environmental Quality for those parameters.

**Whole Effluent Toxicity Limit, Reporting, and Monitoring Requirements for *Ceriodaphnia dubia*
(Outfalls TX1, TX2, and TX3)**

| Effluent Characteristic | | | Reporting/Monitoring Requirements | | |
|---|-------------------|--|-----------------------------------|--------------------------------|-------------|
| Test | Critical Dilution | Parameter | 7-day Min | Testing Frequency ^a | Sample Type |
| <i>Ceriodaphnia dubia</i> , 7-day chronic NOEC static renewal, freshwater | 100% | Pass/Fail Survival [TLP3B] | Report | 1/Quarter | 24-hr Comp |
| | | NOEC _L Survival [TOP3B] | Report | | |
| | | % Mortality at Critical Dilution [TJP3B] | Report | | |
| | | Pass/Fail Reproduction [TGP3B] | Report | | |
| | | NOEC _s Reproduction [TPP3B] | Report | | |
| | | % Coeff of Variation [TQP3B] | Report | | |
| Whole Effluent Toxicity Limit (lowest chronic NOEC _L and/or sublethal NOECs for <i>C. dubia</i>) [STORET 22414] | | | 100% | 1/Quarter | 24-hr Comp |

^a Quarterly reporting periods commence with the effective date of the permit. A valid WET test shall be reported for *C. dubia* for each reporting period.

C. dubia whole effluent toxicity limit and monitoring requirements apply beginning the effective date of the permit, and the first reporting period is April 1, 2020 to June 30, 2020.

**Whole Effluent Toxicity Reporting and Monitoring Requirements for Fathead minnow
(Outfalls TX1, TX2, and TX3)**

| Effluent Characteristic | | | Reporting/Monitoring Requirements | | |
|--|--------------------------------|--|-----------------------------------|--------------------------|-------------|
| Test | Critical Dilution | Parameter | 7-day Min | Testing Frequency | Sample Type |
| <i>Pimephales promelas</i> (Fathead minnow), 7-day chronic NOEC static renewal, freshwater | 100% | Pass/Fail Survival [TLP6C] | Report | 1/Quarter | 24-hr Comp |
| | | NOEC _L Survival [TOP6C] | Report | | |
| | | % Mortality at Critical Dilution [TJP6C] | Report | | |
| | | Pass/Fail Growth [TGP6C] | Report | | |
| | | NOEC _s Growth [TPP6C] | Report | | |
| | | % Coeff of Variation [TQP6C] | Report | | |
| Retesting | Retest #1 [22415] ^a | | Report | As Required ^b | 24-hr Comp |
| | Retest #2 [22416] ^a | | Report | | |

^a Applies according to results of test failure triggering monthly retests.

^b Monthly retesting required only if routine test for reporting period fails. Fill out ONLY these two retest parameters on the retest DMRs, do not change the original results, and put the correct submission date in the lower right hand corner of the DMR.

P. promelas (Fathead minnow) whole effluent toxicity reporting and monitoring requirements apply beginning the effective date, and the first reporting period is April 1, 2020 to June 30, 2020.

Dilution Water and WET Test Acceptability

For Outfall TX1 and Outfall TX2 where the receiving stream (Nine Mile Creek)'s flow is intermittent, OAC 252:690-3-36 states that "...where there is no receiving water available when the sample is collected, permittees must use synthetic dilution water having a pH, hardness, and alkalinity similar to that of the closet downstream perennial water."

For Outfall TX3 where the receiving stream is Comanche Lake, OAC 252:690-3-37 states that "...permittees must use receiving water collected as close to the point of discharge as possible but unaffected by the discharge. Receiving water must be collected outside the regulatory mixing zone for discharges to lakes. If the receiving water control fails to fulfill the test acceptability criteria in OAC 252:690-3-38, the permittee must substitute synthetic dilution water for the receiving water in all subsequent tests, provided:

- (1) a synthetic dilution water control which fulfills the test acceptability requirements in OAC 252:690-3-38 was run concurrently with the receiving water control.
- (2) the test indicating receiving water toxicity was carried out to completion.
- (3) the synthetic dilution water had a pH, hardness and alkalinity similar to that of the receiving water, provided the magnitude of these three parameters did not cause toxicity in the synthetic dilution water.
- (4) the receiving water test must be conducted at the start of each permitting cycle."

Three (3) separate WET tests must be conducted, one (1) for each outfall using different receiving stream water, as indicated above, for each outfall (two WET tests if Outfall TX2 remain inactive). The permittee may use the same effluent sample for those WET tests. In accordance with OAC 252:690-3-38, if a WET test does not meet all of the acceptability requirements of the test method plus those specified above, the permittee must conduct a repeat test for the affected test species within the required reporting period.

WET Testing Summary Reports

The permittee must submit reports of all WET testing initiated, regardless of whether such tests are carried to completion, in accordance with the terms of Item 3 of Sections E and F in Part II of the permit.

Whole Effluent Toxicity Concurrent Testing Requirements

In accordance with OAC 252:690-3-30, where there is reason to believe certain substances may cause or contribute to whole effluent toxicity, the permit may require testing of those substances concurrently with WET testing. Specific concurrent testing requirements for ammonia are described at OAC 252:690-3-25.

Concurrent analyses of ammonia and pH are required for each individual effluent sample collected for chronic WET testing or retesting of the Fathead minnow specie. Reporting of concurrent testing results shall be in accordance with the following requirements. Results shall also be submitted in or concurrently with each WET test report.

Concurrent Effluent Testing for Chronic WET Tests – Reporting Requirements (Outfalls TX1, TX2, and TX3)

| Effluent Characteristic | Concentration | | | Monitoring Requirements | |
|--|---------------|-------------|-----------|-----------------------------------|---|
| | Daily Min | Monthly Avg | Daily Max | Monitoring Frequency ^a | Sample Type |
| Ammonia, (NH ₃ -N) (mg/l) ^{a, b} [STORET 00610] | Report | Report | Report | 1/Quarter | 24-hr Comp ^b |
| pH (std units) ^{a, b} [STORET 00400] | Report | N/A | Report | 1/Quarter | Measured in each composite effluent sample, including static renewals, just prior to first use ^b |

^a Report only those effluent samples collected for WET testing of the Fathead minnow species.

^b Samples collected for WET testing purposes, including static renewals, shall be of sufficient volume to allow for the required concurrent analyses in addition to the WET testing itself.

Two sets of samples for **concurrent analyses** are required for ammonia and pH:

Samples sent directly to a WET testing laboratory shall NOT undergo any preservation other than refrigeration to maintain a temperature at or below 6° C but not frozen prior to arrival and processing at the WET testing laboratory. These results may be used in the table above.

A second concurrent analysis is required for the sample that is sent to the WET testing laboratory and for the table above.

Just prior to the first use of each composite sample for WET testing purposes, the biomonitoring laboratory shall take an adequately-sized portion of each composite sample, acidify it in accordance with preservation requirements in 40 CFR 136, and have it analyzed for ammonia (NH₃-N) at a state certified analytical laboratory. The pH measurement required for the above table must be taken just prior to the acidification step. These pH and ammonia readings should NOT be included in the results for Outfalls 001, 002, and 003.

Samples sent directly to a state certified analytical laboratory must be composite samples that are properly preserved. These results may be included in the results for Outfalls 001, 002, and 003.

D. COMPLIANCE SCHEDULE

Effluent limits for total selenium are now established in the permit. Data submitted with the application indicates that the permittee may not be able to comply with permit limits; therefore, compliance with permit limits is deferred for three (3) years. During this deferment period the permittee is required to monitor and report. The permittee should evaluate data from the monitoring requirement, and may need to revise the plant's operation and maintenance routine, or propose revisions to its pretreatment program in order to comply

with the newly established limits. Such evaluation or revision of the plant's operation and maintenance routine, pretreatment program, or additional plant improvements, if any, should begin as soon as possible so that compliance with newly established limits can be attained. The permittee is required to complete the following tasks and submit to the DEQ in accordance with the following schedule:

| Task | Due Date |
|---|---|
| A. Submit a report with results and evaluation of the monitoring requirement for total selenium | 15 months from the effective date of the permit |
| B. Submit Plan of Actions to reduce selenium from entering the treatment system and to attain compliance with permit limits | 18 months from the effective date of the permit |
| C. Submit engineering report for plant improvements (if needed) | 21 months from the effective date of the permit |
| D. Submit Plans and Specifications for plant improvements (if needed) | 24 months from the effective date of the permit |
| E. Complete plant improvements (if needed) | 33 months from the effective date of the permit |
| F. Attain final compliance with permit limits | 36 months from the effective date of the permit |

VIII. SUMMARY OF CHANGES FROM PREVIOUS PERMIT

The following changes were made in the draft permit relative to the previous OPDES permit:

- Water quality-based limits for selenium have been added.
- Fecal coliform limits have been replaced by *E. coli* limits due to change in State's regulations.
- Monitoring requirements for chloride and total dissolved solids have been discontinued.
- Minimum Quantification Levels (MQL) for priority pollutants have been updated.

IX. ADMINISTRATIVE RECORD

The following sources were used to prepare the draft permit and constitute a part of its administrative record:

A. APPLICATIONS

OPDES Permit Application No. OK0035246 (Form 2M1), received May 16, 2016.

B. CLEAN WATER ACT CITATIONS

Sections 301, 303(d), 305(b), 402(a), and 402(o).

C. 40 CFR CITATIONS

40 CFR Parts 122, 124, and 136.

D. STATE LAW, STANDARDS, AND RULES AND REGULATIONS

Oklahoma Pollutant Discharge Elimination System (OPDES) Act, 27A O.S. §2-6-201 *et seq.*

OAC 252:606, Discharge Standards (DEQ).
OAC 252:690, Water Quality Standards Implementation (DEQ).
OAC 785:45, Oklahoma Water Quality Standards (OWRB).
OAC 785:46, OWQS Implementation (OWRB).
Oklahoma Continuing Planning Process (CPP) Document (DEQ).

E. MISCELLANEOUS

- Category 5 303(d) list, in Appendix C of the 2014 Integrated Report.
- 2013 Beneficial Use Monitoring Program (BUMP) Report (OWRB).
- WQMP amendment dated January 2, 1997, incorporating approved WLA for DO-demanding substances.
- Permit file, OPDES Permit No. OK0035246, including selected biomonitoring laboratory reports.
- Integrated Compliance Information System (ICIS-OPDES), January 2012 through June 2016.
- EPA Region 6 revision to Post Third Round Biomonitoring Policy, dated June 30, 2000.
- USGS publication, Statistical Summaries of Streamflow in and near Oklahoma Through 2007 by John M. Lewis and Rachel A. Esralew (<http://pubs.usgs.gov/sir/2009/5135/>).
- Part III and IV of OPDES Permit No. OK0035246.

X. REVIEW BY OTHER AGENCIES AND FINAL DETERMINATION

A draft permit and draft public notice will be sent to the District Engineer, Corps of Engineers, State Historical Preservation Office and to the Field Supervisor of the U.S. Fish and Wildlife Service upon the publication of the notice. If comments are received from these agencies or other State or Federal agencies with jurisdiction over fish, wildlife, or public health, the permit may be denied or additional conditions may be included in accordance with regulations promulgated at 40 CFR 124.59.

The public notice describes the procedures for the formulation of final determinations.