DRAFT

AUTHORIZATION TO DISCHARGE UNDER THE OKLAHOMA POLLUTANT DISCHARGE ELIMINATION SYSTEM

PERMIT NUMBER: OK0021628
ID NUMBER: S20931

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 Enid - City of Enid Water Reclamation Facility
P.O. Box 1768
Enid, OK 73702

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

N½, N½, SW¼ of Section 14,
Township 22 North, Range 6 West, Indian Meridian (I.M.)
Garfield County, Oklahoma
or at 1215 South 42nd Street, Enid, OK 73701

to receiving water: Skeleton Creek to the Cimarron River at the point located at approximately

Latitude: 36° 22' 34.428" N [GPS: NAD 1983 CONUS]
Longitude: 97° 48' 05.584" W [GPS: NAD 1983 CONUS]

Planning Segment No. 620910 (Water Body I.D. No. 620910030170_10)

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 March 4, 2015.

The issuance date of this permit is _____.

This permit shall become effective _____.

This permit and authorization to discharge shall expire at midnight _____.

For the Oklahoma Department of Environmental Quality:

Micheal Jordan, P.E., Manager
Municipal Discharge and Stormwater Permit Section
Water Quality Division

Shellie R. Chard, Director
Water Quality Division

A. Effluent Limitations and Monitoring Requirements (Outfall 001)

Beginning the effective date of the permit through the expiration date of the permit, the permittee is authorized to discharge treated wastewater in accordance with the following limitations:

Effluent Characteristic		Discharge Limitations				Monitoring Requirements	
		Mass Loading (lbs/day)	Concentrations (mg/l unless otherwise specified)			Frequency	Sample Type
		Monthly Avg.	Monthly Avg.	Weekly Avg.	Daily Max.		
Flow (mgd) [STORET: 50050]	Year round	---	Report	---	Report	Daily	Totalized
Carbonaceous Biochemical Oxygen Demand - 5 Day ($CBOD_5$) [STORET: 80082]	Year round	1801.4	18.0	27.0	---	Daily	24-hour composite
Total Suspended Solids [STORET: 00530]	Year round	3002.4	30.0	45.0	---	Daily	24-hour composite
Ammonia (NH_3-N) [STORET: 00610]	Year round	400.3	4.0	6.0	---	Daily [a]	24-hour composite
E. coli (MPN/100 ml) [STORET: 51040]	May – Sep	---	126 [b]	---	406	2/week	Grab
Dissolved Oxygen (DO) [STORET: 00300]	Year round	---	5.0 (Minimum)			Daily	Grab
pH (standard unit) [STORET: 00400]	Year round	---	6.5 – 9.0			Daily	Grab
Cyanide, total (µg/l) [c] [STORET: 00720]	Year round	---	Report			1/month [d]	24-hour composite

[a] Ammonia analysis shall also be performed concurrently with and on all samples collected for WET testing at Outfall 001 (see WET testing requirements in Permit Part I.B). Results from concurrent ammonia analyses for Outfall TX1 may be used in partial fulfillment of ammonia monitoring requirements at Outfall 001.

[b] Monthly data for E. coli is reported as geometric mean of all samples in that month.

[c] If any individual test result is less than the minimum quantification level (MQL) specified in Appendix B of OAC 252:690, a value of zero may be used for DMR calculations and reporting requirements.

[d] Effluent monitoring and reporting for total cyanide are required for the fourth year of the permit only.

Other Year Round Requirements:

- There shall be no discharge of floating solids or visible foam in other than 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 and coat bottoms of water courses or which cause deleterious effects to the biota.
- All monitoring and reporting requirements shall also be in compliance with Part III of this permit.

Sampling Location: Samples taken in compliance with permit limits and monitoring requirements specified above shall be taken at:

Composite Samples: By the auto-sampler at the top of the cascade aerator located in the NW¼, NE¼, SW¼ of Section 14, Township 22 North, Range 6 West, I.M., Garfield County, Oklahoma.

Grab Samples:

pH and DO: At the end of the cascade aerator located in the NW¼, NE¼, SW¼ of Section 14, Township 22 North, Range 6 West, I.M., Garfield County, Oklahoma.

E. coli: At the top of the cascade aerator located in the NW¼, NE¼, SW¼ of Section 14, Township 22 North, Range 6 West, I.M., Garfield County, Oklahoma.

B. Whole Effluent Toxicity Reporting and Monitoring Requirements (Outfall TX1)

During the period beginning the effective date of the permit and lasting through the expiration date, the permittee is authorized to discharge from Outfall TX1 (functionally identical to Outfall 001). Such discharges 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 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.

Chronic Whole Effluent Toxicity Reporting and Monitoring Requirements (Outfall TX1)

Effluent Characteristic				Reporting/Monitoring Requirements [a]		
	Test	Critical Dilution [d]	Parameter	7-day Min	Testing Frequency [f]	Sample Type
Routine Testing	*Ceriodaphnia dubia*, 7-day chronic NOEC static renewal, freshwater	100%	Pass/Fail Survival [TLP3B]	Report	1/quarter [e]	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		
	Pimephales promelas (Fathead minnow), 7-day chronic NOEC static renewal, freshwater	100%	Pass/Fail Survival [TLP6C]	Report	1/quarter [e]	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] [b]			Report	As required [c]	24-hr comp
	Retest #2 [22416] [b]			Report		

[a] See Part II, Section E, Whole Effluent Toxicity Testing, for additional monitoring and reporting conditions.
[b] Applies to either or both test species according to results of test failure triggering monthly retests.
[c] Monthly retesting required only if routine test for reporting period (for either species) 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.
[d] All chronic WET testing shall use the dilution series specified in Part II, Section E, Item 1.
[e] 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 E, Item 2.a).
[f] See provision for monitoring frequency reduction after the first year (Part II, Section E, Item 5).

P. promelas (Fathead minnow) whole effluent toxicity reporting and monitoring requirements apply beginning _____, and the first reporting period is _____ to _____.

C. dubia whole effluent toxicity reporting and monitoring requirements apply beginning _____, and the first reporting period is _____ to _____.

WET Testing Summary Reports: Reports of all WET testing initiated, regardless of whether such tests are carried to completion, shall follow the requirements of Part II, Section E, Item 4.

Concurrent Testing Provision for Chronic WET Testing:

Concurrent analyses of ammonia and pH are required for each individual effluent sample collected for chronic WET testing or retesting of the Fathead minnow species. 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 (Outfall TX1)

Effluent Characteristic	Concentration			Monitoring Requirements	
	Daily Min	Monthly Avg	Daily Max	Monitoring Frequency [a]	Sample Type
Ammonia, (NH_3-N) (mg/l) [b,c] [STORET 00610]	Report	Report	Report	1/quarter	24-hr comp [c]
pH (std units) [b,c] [STORET 00400]	Report	N/A	Report	1/quarter	Measured in each composite effluent sample, including static renewals, just prior to first use [c]

[a] See provision for WET testing monitoring frequency reduction after the first year (Part II, Section E, Item 5).
[b] Report only those effluent samples collected for WET testing of the Fathead minnow species.
[c] 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 (NH_3-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 Outfall 001.

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 Outfall 001.

Sampling Location: Samples taken in compliance with the monitoring requirements specified above for Outfall TX1 shall be taken at the auto-sampler located at the top of the cascade aerator in the NW¼, NE¼, SW¼ of Section 14, Township 22 North, Range 6 West, I.M., Garfield County, Oklahoma.

C. Sanitary Sewer Overflows

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

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 email deqreporting@deq.ok.gov.

The first report is due on _____.

E. Category 3 Reclaimed Water

1. Limits and Monitoring Requirements

Beginning the effective date and lasting through the expiration date of the permit, the City of Enid Water Reclamation Facility (the supplier) is authorized to supply Category 3 reclaimed water to Koch Nitrogen Company (the user) for use as make-up water in cooling towers and other closed loop systems owned and operated by Koch Nitrogen Company, in accordance with OAC 252:656 and OAC 252:627, and the following limitations:

Parameter		Limits and Monitoring Requirement [a]	Measurement Frequency	Sampling Location
Flow	Year round	Record (mgd)	Daily [b]	At the point of entry of the distribution system (wet well/pump station)
E. Coli [c]	Year round	Monthly geometric mean < 126 MPN/100 ml [c] Single sample maximum < 406 MPN/100ml [c]	2/week [c]	
$CBOD_5$	Year round	< 20 mg/l	1/week	

[a] When there is no supply of reclaimed water for the entire day, report "0" in the Monthly Operation Report (MOR), and write "No Supply" in the comments column.

[b] In accordance with OAC 252:656-25-2(h), flow measurement shall be accomplished by flow meters, or the calibration of pumps.

[c] Bacteria parameter, limits and monitoring frequency are established to be consistent with effluent limitations and monitoring at Outfall 001.

In accordance with OAC 252:627-5-1(d), the City of Enid Water Reclamation Facility shall complete applicable sections of DEQ Form 627-001 - Water Reuse Monthly Operation Report (MOR) for each month, maintain the MORs at the City of Enid Water Reclamation Facility for three (3) years, and made them available to DEQ upon request.

2. Restrictions for Category 3 Reclaimed Water

The City of Enid shall ensure that Category 3 reclaimed water is only supplied to Koch Nitrogen Company for use as make-up water in cooling towers and other closed loop systems. No Category 3 reclaimed water is used by the City of Enid on public use areas that have high potentials for skin to ground contact.

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. This POTW pretreatment program was approved on October 15, 1984 and modified July 15, 1994, March 1, 2001, and July 26, 2013, to incorporate program revisions to comply with the latest 40 CFR Part 403 regulations adopted by DEQ effective June 15, 2007. 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. The permittee must inspect and sample the effluent from each Significant Industrial User in accordance with 40 CFR 403.8(f)(2)(v). 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(v), this control shall be achieved through individual or general control mechanisms in accordance with 40 CFR 403.8(f)(1)(iii). Both individual and general 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 and/or Best Management Practices based on applicable general and categorical Pretreatment Standards, local limits, and State and local laws;

      (4) Self-monitoring, sampling, reporting, notification and record keeping requirements, including an identification of the pollutants to be monitored (including the process for seeking pollutant waivers in accordance with 403.12(e)(2)), sampling location, sampling frequency, and sample type, based on the applicable general and categorical Pretreatment Standards, local limits, and State and local laws; 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; and

(6) Requirements to control slug discharges, if determined by the POTW to be necessary.

e. The permittee shall evaluate whether each Significant Industrial User needs a plan or other action to control slug discharges in accordance with 40 CFR 403.8(f)(2)(vi);

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 the DEQ.

2. The permittee shall establish and continue to develop and enforce technically based local limits (TBLL) to implement the provisions of 40 CFR Part 403.5. All specific prohibitions or limits developed under this requirement are deemed to be conditions of this permit. The general and specific prohibitions set out in 40 CFR Parts 403.5(a)(1) and (b) shall also be enforced by the permittee unless modified under this provision.

   The permittee shall, within sixty days of the effective date of this permit, (1) submit a WRITTEN CERTIFICATION that a technical evaluation has been performed demonstrating that the existing technically based local limits (TBLL) are based on the 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.

3. The permittee shall analyze, at a minimum 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 annually (once per year) and the toxic pollutants in Table III plus molybdenum at least semi-annually (once per six 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 semi-annually (once per six months) on both the influent and the effluent.

   The influent and effluent samples collected shall be flow-composite samples consisting of at least 12 aliquots collected at approximately equal intervals over a representative 24 hour period. 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, grab samples shall be taken.

4. The permittee shall prepare annually a list of Industrial Users which during the preceding pretreatment year were significantly noncompliant 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)(viii) or criteria established in the approved POTW pretreatment program. This list is to be published annually in a newspaper of general circulation that provides meaningful public notice within the jurisdiction(s) served by the POTW during the month of **December**.

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

   a. An updated list of all Non-significant Categorical Industrial Users defined under 40 CFR 403.3(v)(2) if applicable, Categorical Industrial Users subject to reduced reporting under 40 CFR 403.12(e)(3) if applicable and Significant Industrial Users . For each industrial user listed the following information shall be included:

      (1) Standard Industrial Classification (SIC) or NAISC 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 year);

(3) A summary of all monitoring activities performed within the previous year. The following information shall be reported:

- total number of inspections performed;
- total number of sampling visits made;

(4) Status of compliance with both effluent limitations and reporting requirements. Compliance status shall be defined as follows:

- Compliant (C) - no violations during the previous pretreatment year;
- Non-compliant (NC) - one or more violations during the previous pretreatment year but does not meet the criteria for significant non-compliance;
- Significantly Noncompliant (SNC) - in accordance with requirements described above; and

(5) For significantly noncompliant 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;

b. A list of all significant industrial users whose authorization to discharge was terminated or revoked during the preceding pretreatment year and the reason for termination;

c. 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;

d. A copy of the newspaper publication of the significantly non-compliant industrial users giving the name of the newspaper and the date published;

e. The results of all influent and effluent analyses performed pursuant to above requirements;

f. A comparison of the influent and effluent analyses performed pursuant to above with maximum allowable headworks loadings developed in the approved technically based local limits and water quality based effluent concentrations necessary to meet state water quality standards.

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; and

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.

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 tables on pages 14 through 17.

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 sludge disposal shall also comply with the requirements of the amended Sludge Disposition Plan approved by the Department of Environmental Quality on September 30, 2004 that allows the permittee to landfill biosolids/sewage sludge at the City of Enid Landfill (Landfill Permit No. 3524006), which is located in the NE¼ of Section 29, Township 22 North, Range 6 West, I.M., Garfield County, Oklahoma.

The permittee is required to maintain all records relevant to sewage 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.

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 of the permit.

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 of the permit.

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. CHRONIC WHOLE EFFLUENT TOXICITY TESTING

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* or *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

REPORTED ON DMR AS OUTFALL(S):	TX1
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 consisting of a single (1) organism each 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.

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 reproduction in the *Ceriodaphnia dubia* test or 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 *Ceriodaphnia dubia* or *Pimephales promelas* during routine testing, the frequency of testing for the affected species 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 the affected species 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 NOECs 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 NOECs 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 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 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.

(5) 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 and for the survival and growth endpoints of the Fathead minnow test.

(6) 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 and for the growth and survival endpoints of the Fathead minnow test.

(7) As documented at test termination, no more than forty (40) percent of the *Ceriodaphnia dubia* test organisms in the control (0% effluent) or any effluent dilution shall be male.

(8) 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.

(9) 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 for toxicity 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 most recent update thereof.

(2) The statistical analyses in the *Ceriodaphnia dubia* reproduction test and 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.

(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 two 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 the requirements listed 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 effluent sample shall be used to initiate each test. The permittee must collect the composite samples so that the maximum holding time for any effluent sample shall not exceed 36 hours. The permittee must have initiated the toxicity test within 36 hours after the collection of the last portion of the first composite sample. Samples shall be chilled to 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 second effluent sample, the permittee must ensure that the first composite effluent sample is of sufficient volume to complete the required testing with daily renewal of effluent. The abbreviated effluent 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 of this section. 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 provide a full laboratory report of the results of all tests conducted pursuant to this section in accordance with the Report Preparation Section of EPA-821-R-02-012 for every valid or invalid toxicity test initiated, whether carried to completion or not, including any test which is considered invalid, is terminated early for any reason, or which indicates receiving water toxicity. The permittee shall retain each full report pursuant to the records retention provisions of Part III of this permit. The permittee shall submit to DEQ full laboratory test reports for all tests initiated, regardless of whether the tests are carried to completion. The reports shall be postmarked or received no later than the 15th day of the month following completion of the test.

b. A valid test for each species (excluding retests) 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. A DMR must be postmarked or received by the 15th day of the month following-completion of any valid test to DEQ. The full report for the test (see Item 4.a above) shall be submitted along with the DMR. If a lethal and/or sublethal test failure is experienced for either test species, two copies of the blank retest section of the DMR for the applicable reporting period shall be made in advance of completing and submitting the DMR so that the retest DMR copies may be used to report results of the required retests.

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.

Ceriodaphnia dubia

(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.

Pimephales promelas (Fathead minnow)

(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 for either test species results in an $NOEC_L$ and/or NOECs 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 for either test species results in an $NOEC_L$ and/or NOECs 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 first year of testing for one or both test species 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)

	MQL (µg/l)	EPA METHOD
METALS AND CYANIDE		
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
DIOXIN		
2,3,7,8-Tetrachlorodibenzo-P-Dioxin (TCDD)[2,4]	0.00001	1613
VOLATILE COMPOUNDS		
Acrolein[3]	50	624
Acrylonitrile[3]	50	624
Benzene[3]	10	624
Bromoform[4]	10	624

MINIMUM QUANTIFICATION LEVELS (MQLs)

	MQL (µg/l)	EPA METHOD
Carbon Tetrachloride[4]	10	624
Chlorobenzene[4]	10	624
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

MINIMUM QUANTIFICATION LEVELS (MQLs)

	MQL (µg/l)	EPA METHOD
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
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-Chloronapthalene[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 (2.3-o-phenylene pyrene)	20	625
Isophorone[4]	20	625
Naphthalene[4]	10	625
Nitrobenzene[4]	20	625

MINIMUM QUANTIFICATION LEVELS (MQLs)

	MQL (µg/l)	EPA METHOD
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
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] (BHC-hexachlorocyclohexane)	0.05	608
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 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