



## ALASKA POLLUTANT DISCHARGE ELIMINATION SYSTEM

### INDIVIDUAL PERMIT –DRAFT

Permit Number: AK0022543

**ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION**  
**Wastewater Discharge Authorization Program**  
**555 Cordova Street**  
**Anchorage, AK 99501**

In compliance with the provisions of the Clean Water Act (CWA), 33 U.S.C. §1251 et seq., as amended by the Water Quality Act of 1987, P.L. 100-4, this permit is issued under provisions of Alaska Statutes (AS) 46.03; the Alaska Administrative Code (AAC) as amended; and other applicable State laws and regulations. The

#### **MUNICIPALITY OF ANCHORAGE, ANCHORAGE WATER & WASTEWATER UTILITY**

is authorized to discharge from the Eagle River Wastewater Treatment Facility (WWTF) at 15524 Artillery Road, Eagle River, Alaska at the following location(s):

<b>Outfall</b>	<b>Receiving Water or Body</b>	<b>Latitude</b>	<b>Longitude</b>
001A	Eagle River	61.321667 North	149.591944 West

In accordance with the discharge point(s) effluent limitations, monitoring requirements, and other conditions set forth herein:

This permit and authorization shall become effective **DRAFT**

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

The permittee shall reapply for a permit reissuance on or before **DRAFT**, 180 days before the expiration of this permit if the permittee intends to continue operations and discharge(s) at the facility beyond the term of this permit.

The permittee shall post or maintain a copy of this permit to discharge at the facility and make it available to the public, employees, and subcontractors at the facility.

**DRAFT**

Signature

**DRAFT**

Date

**DRAFT**

Printed Name

Program Manager

Title

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## SCHEDULE OF SUBMISSIONS

The Schedule of Submissions summarizes some of the required submissions and activities the permittee must complete and/or submit to the Alaska Department of Environmental Conservation (DEC) during the term of this permit. The permittee is responsible for all submissions and activities even if they are not summarized below.

**Table 1: Schedule of Submissions**

Permit Part	Submittal or Completion	Frequency	Due Date	Submit to <sup>a</sup>
Permit Part 2.4, Appendix A, 3.2	Discharge Monitoring Report (DMR)	Monthly	Must be submitted electronically through the NetDMR system, on or before the 15th day of the following month.	NetDMR
Permit Part 1.4.8	Exceedance of chronic toxicity trigger	As Necessary	Within two weeks of receipt of test results	Compliance
Permit Part 1.6.2.2	Receiving waterbody monitoring location	1/permit cycle	Within 120 days of the effective date of the final permit	Permitting
Permit Part 2.3	Industrial User Survey	1/permit cycle	180 days before expiration of the final permit	Permitting
Appendix A, 1.3	Application for Permit Reissuance	1/permit cycle	180 days before expiration of the final permit	Permitting
Appendix A, 2.4	Reports of compliance or noncompliance with a Compliance Schedule	As required	The report must be submitted no later than 14 days following each schedule date	Compliance
Appendix A, 3.4	Oral notification of noncompliance	As necessary	Within 24 hours from the time the permittee becomes aware of the circumstances of noncompliance	Compliance
Appendix A, 3.4	Written notification of noncompliance	As necessary	Within 5 days after the permittee becomes aware of the circumstances	Compliance
Note: a. See Appendix A, 1.1 for addresses				

## **1.0 LIMITATIONS AND MONITORING REQUIREMENTS**

### **1.1 Discharge Authorization**

- 1.1.1 During the effective period of this permit, the permittee is authorized to discharge pollutants from Outfall 001A specified herein to Eagle River, within the limits and subject to conditions set forth herein. This permit authorizes discharge of only those pollutants resulting from facility processes, waste streams, and operations clearly identified in the permit application process.

### **1.2 Effluent Limits and Monitoring**

- 1.2.1 The permittee must limit and monitor discharges from Outfall 001A as specified in Table 2 and Table 3. All values represent maximum effluent limits, unless otherwise indicated. The permittee must comply with effluent limitations in the table(s) at all times unless otherwise indicated, regardless of monitoring frequency or reporting required by other provisions of this permit.
- 1.2.2 Discharge shall not cause contamination of surface or ground waters, and shall not cause or contribute to a violation of the Alaska Water Quality Standards (AAC) Title 18 (18 AAC 70), except if excursions are authorized in accordance with applicable provisions in 18 AAC 70.200 – 70.240 (e.g. variance, mixing zone).
- 1.2.3 The permittee must not discharge any floating solids, debris, sludge, deposits, foam, scum, or other residues that cause a film, sheen or discoloration on the surface of the receiving water or adjoining shorelines; cause leaching of toxic or deleterious substances; or cause a sludge, solid, or emulsion to be deposited beneath or upon the surface of the water, within the water column, on the bottom, or upon adjoining shorelines.
- 1.2.4 The permittee must collect influent samples prior to the waste stream flowing into the first treatment unit of the wastewater treatment system.
- 1.2.5 The permittee must collect effluent samples from the effluent stream after the last treatment unit before discharge into receiving waters.
- 1.2.6 For all effluent monitoring, the permittee must use a sufficiently sensitive Environmental Protection Agency (EPA) approved test method that quantifies the pollutants to a level lower than applicable limits or water quality standards or use the most sensitive test method available, per Title 40 Code of Federal Regulations (CFR) §136 (Guidelines Establishing Test Procedures for the Analysis of Pollutants), adopted by reference at 18 AAC 83.010(f).
- 1.2.7 Permittees have the option of taking more frequent samples than are required in the permit. These samples must be used for averaging if they are conducted using the Department-approved test methods (generally found in 18 AAC 70 and 40 CFR §136) and if the method detection limit (MDL) is less than the effluent limit.
- 1.2.8 For purposes of reporting on the discharge monitoring report (DMR) for a single sample, if a value is less than the method detection limit (MDL), the permittee must report “less than (<) {numeric value of MDL}” and if a value is less than the minimum level (ML) [also called a reporting limit (RL), practical quantification limit (PQL), or limit of quantitation (LOQ)], the permittee must report “less than (<) {numeric value of ML}.”

- 1.2.9 For purposes of calculating monthly averages, zero may be assigned for values less than the MDL and the numeric value of the MDL may be assigned for values between the MDL and the ML. If the average value is less than the MDL, the permittee must report “less than (<) {numeric value of MDL}” and if the average value is less than the ML, the permittee must report “less than (<) {numeric value of ML}.” If a value is equal to or greater than the ML, the permittee must report and use the actual value.

**Table 2: Outfall 001A: Effluent Limits and Monitoring Requirements (June 1 - September 30)**

Parameter	Effluent Limits					Monitoring Requirements		
	Units <sup>a</sup>	Daily Minimum	Monthly Average	Weekly Average	Daily Maximum	Sample Location	Sample Frequency	Sample Type
Total Discharge Flow	mgd	N/A	Report	N/A	2.5	Effluent	Continuous	Recorded
Biochemical Oxygen Demand (BOD <sub>5</sub> )	mg/L	N/A	30	45	60	Influent and Effluent <sup>b</sup>	1/Week	24-hour Composite <sup>c</sup>
	lbs/day <sup>d</sup>		625	938	1,251			Calculated
Total Suspended Solids (TSS)	mg/L	N/A	30	45	60	Influent and Effluent	1/Week	24-hour Composite
	lbs/day		625	938	1,251			Calculated
BOD <sub>5</sub> & TSS Minimum Percent (%) Removal	%	N/A	85 <sup>e</sup>	N/A	N/A	Influent and Effluent	1/Month	Calculated
Fecal coliform Bacteria (FC)	FC/100 mL	N/A	20 <sup>f</sup>	N/A	40 <sup>g</sup>	Effluent	1/Week	Grab
pH	SU	6.5	N/A	N/A	8.5	Effluent	5/Week	Grab
Temperature	° C	N/A	N/A	N/A	Report	Effluent	5/Week	Grab
Dissolved Oxygen (DO)	mg/L	N/A	N/A	N/A	Report	Effluent	1/Month	Grab
Total Dissolved Solids (TDS)	mg/L	N/A	N/A	N/A	Report	Effluent	2/Period <sup>j</sup>	24-hour Composite
Cyanide, as free cyanide	µg/L	N/A	N/A	N/A	Report	Effluent	2/Period	Grab
Mercury	µg/L	N/A	N/A	N/A	Report	Effluent	2/Period	Grab
Copper, total recoverable	mg/L	N/A	N/A	N/A	0.026	Effluent	2/Period	24-hour Composite
	lbs/day	N/A	N/A	N/A	0.55			Calculated
Lead, total recoverable	mg/L	N/A	N/A	N/A	0.030	Effluent	2/Period	24-hour Composite
	lbs/day	N/A	N/A	N/A	0.63			Calculated
Zinc, total recoverable	µg/L	N/A	N/A	N/A	Report	Effluent	2/Period	24-hour Composite

Parameter	Effluent Limits					Monitoring Requirements		
	Units <sup>a</sup>	Daily Minimum	Monthly Average	Weekly Average	Daily Maximum	Sample Location	Sample Frequency	Sample Type
<i>Escherichia coli</i> ( <i>E. coli</i> )	cfu/ 100 mL	N/A	126 <sup>f</sup>	N/A	410 <sup>g</sup>	Effluent	1/Month <sup>h</sup>	Grab
Total Nitrate/Nitrite, as N	mg/L	N/A	63.7	N/A	82.4	Effluent	1/Month <sup>i</sup>	24-hour Composite
	lbs/day	N/A	1,328	N/A	1,719			Calculated
Total Ammonia, as N	mg/L	N/A	5.9	N/A	19.7	Effluent	1/Month	24-hour Composite
	lbs/day	N/A	123	N/A	410			Calculated
Whole Effluent Toxicity (WET)	See Permit Section 1.4 for WET requirements					Effluent	1/Alternate Year <sup>k</sup>	24-hour Composite

**Footnotes:**

- a. Units: mgd = million gallons per day, mg/L = milligrams per liter, lbs/day = pounds per day [(design flow in million gallons per day (mgd)) x (concentration in mg/L) x 8.34], FC/100 mL = Fecal Coliform per 100 milliliters, SU= standard units, °C= degrees Celsius, µg/L = micrograms per liter, cfu/100 mL = colony forming units per 100 milliliters.
- b. Limits apply to effluent. Report average monthly influent concentration. Influent and effluent composite samples shall be collected during the same 24-hour period.
- c. See APPENDIX C for definition.
- d. lbs/day = concentration (mg/L) x flow (mgd) x 8.34 (conversion factor)
- e. Minimum % Removal = [(monthly average influent concentration in mg/L – monthly average effluent concentration in mg/L) / (monthly average influent concentration in mg/L x 100). The monthly average percent removal must be calculated using the arithmetic mean of the influent value and the arithmetic mean of the effluent value for that month.
- f. If more than one FC bacteria or *E. coli* sample is collected within the reporting period, the average result must be reported as the geometric mean. When calculating the geometric mean, replace all results of zero, 0, with a one, 1. The geometric mean of “n” quantities is the “nth” root of the product of the quantities. For example the geometric mean of 100, 200, and 300 is  $(100 \times 200 \times 300)^{1/3} = 181.7$ .
- g. When only one sample is collected, the effluent limit cannot be exceeded. If ten or more samples are collected during the monthly reporting period, not more than 10% of the samples may exceed the effluent limit.
- h. Monitoring required once per month only during the time period **May-September**. When an *E. coli* sample is taken, a FC sample must be taken concurrently.
- i. Monitoring to be conducted at the same time as monitoring for ammonia.
- j. Monitoring to be conducted a minimum of 60 days apart during the time period June 1 – September 30.
- k. 1 Year (alternating seasons).

**Table 3: Outfall 001A: Effluent Limits and Monitoring Requirements (October 1 - May 31)**

Parameter	Effluent Limits					Monitoring Requirements		
	Units <sup>a</sup>	Daily Minimum	Monthly Average	Weekly Average	Daily Maximum	Sample Location	Sample Frequency	Sample Type
Total Discharge Flow	mgd	N/A	Report	N/A	2.5	Effluent	Continuous	Recorded
Biochemical Oxygen Demand (BOD <sub>5</sub> )	mg/L	N/A	30	45	60	Influent and Effluent <sup>b</sup>	1/Week	24-hour Composite <sup>c</sup>
	lbs/day <sup>d</sup>		625	938	1,251			Calculated
Total Suspended Solids (TSS)	mg/L	N/A	30	45	60	Influent and Effluent	1/Week	24-hour Composite
	lbs/day		625	938	1,251			Calculated
BOD <sub>5</sub> & TSS Minimum Percent (%) Removal	%	N/A	85 <sup>e</sup>	N/A	N/A	Influent and Effluent	1/Month	Calculated
Fecal coliform Bacteria (FC)	FC/100 mL	N/A	20 <sup>f</sup>	N/A	40 <sup>g</sup>	Effluent	1/Week	Grab
pH	SU	6.5	N/A	N/A	8.5	Effluent	5/Week	Grab
Temperature	° C	N/A	N/A	N/A	Report	Effluent	5/Week	Grab
Dissolved Oxygen (DO)	mg/L	N/A	N/A	N/A	Report	Effluent	1/Month	Grab
Total Dissolved Solids (TDS)	mg/L	N/A	N/A	N/A	Report	Effluent	2/Period <sup>j</sup>	24-hour Composite
Cyanide, as free cyanide	µg/L	N/A	N/A	N/A	Report	Effluent	2/Period	Grab
Mercury	µg/L	N/A	N/A	N/A	Report	Effluent	2/Period	Grab
Copper, total recoverable	mg/L	N/A	N/A	N/A	0.025	Effluent	2/Period	24-hour Composite
	lbs/day	N/A	N/A	N/A	0.52			Calculated
Lead, total recoverable	mg/L	N/A	N/A	N/A	0.018	Effluent	2/Period	24-hour Composite
	lbs/day	N/A	N/A	N/A	0.37			Calculated
Zinc, total recoverable	µg/L	N/A	N/A	N/A	Report	Effluent	2/Period	24-hour Composite
<i>Escherichia coli</i> ( <i>E. coli</i> )	cfu/100 mL	N/A	126 <sup>f</sup>	N/A	410 <sup>g</sup>	Effluent	1/Month <sup>h</sup>	Grab
Total Nitrate/Nitrite, as N	mg/L	N/A	44.9	N/A	66.4	Effluent	1/Month <sup>i</sup>	24-hour Composite
	lbs/day	N/A	936	N/A	1,385			Calculated

Parameter	Effluent Limits					Monitoring Requirements		
	Units <sup>a</sup>	Daily Minimum	Monthly Average	Weekly Average	Daily Maximum	Sample Location	Sample Frequency	Sample Type
Total Ammonia, as N	mg/L	N/A	4.7	N/A	11.5	Effluent	1/Month	24-hour Composite
	lbs/day	N/A	98	N/A	240			Calculated
Whole Effluent Toxicity (WET)	See Permit Section 1.4 for WET requirements					Effluent	1/Alternate Year <sup>k</sup>	24-hour Composite

**Footnotes:**

- a. Units: mgd = million gallons per day, mg/L = milligrams per liter, lbs/day = pounds per day [(design flow in million gallons per day (mgd)) x (concentration in mg/L) x 8.34], FC/100 mL = Fecal Coliform per 100 milliliters, SU= standard units, °C= degrees Celsius, µg/L = micrograms per liter, cfu/100 mL = colony forming units per 100 milliliters.
- b. Limits apply to effluent. Report average monthly influent concentration. Influent and effluent composite samples shall be collected during the same 24-hour period.
- c. See APPENDIX C for definition.
- d. lbs/day = concentration (mg/L) x flow (mgd) x 8.34 (conversion factor).
- e. Minimum % Removal = [(monthly average influent concentration in mg/L – monthly average effluent concentration in mg/L) / (monthly average influent concentration in mg/L x 100). The monthly average percent removal must be calculated using the arithmetic mean of the influent value and the arithmetic mean of the effluent value for that month.
- f. If more than one FC bacteria or *E. coli* sample is collected within the reporting period, the average result must be reported as the geometric mean. When calculating the geometric mean, replace all results of zero, 0, with a one, 1. The geometric mean of “n” quantities is the “nth” root of the product of the quantities. For example the geometric mean of 100, 200, and 300 is  $(100 \times 200 \times 300)^{1/3} = 181.7$ .
- g. When only one sample is collected, the effluent limit cannot be exceeded. If ten or more samples are collected during the monthly reporting period, not more than 10% of the samples may exceed the effluent limit.
- h. Monitoring required once per month only during the time period **May-September**. When an *E. coli* sample is taken, a FC sample must be taken concurrently.
- i. Monitoring to be conducted at the same time as monitoring for ammonia.
- j. Monitoring to be conducted a minimum of 120 days apart during the time period October 1 – May 31.
- k. 1 Year (alternating seasons).

### 1.3 Additional Monitoring

#### 1.3.1 Design Flow Greater Than 0.1 MGD

- 1.3.1.1 The permittee shall perform the additional effluent testing in the Alaska Pollutant Discharge Elimination System (APDES) Application Form 2A, Section 11 as well as all applicable supplemental monitoring listed in Section 12. The permittee shall submit the results of the additional testing with their application for reissuance of this APDES permit. The permittee shall consult and review Form 2A, Section 11 upon permit issuance to ensure that the required monitoring in the application will be completed prior to submitting a request for permit reissuance. Form 2A may be found at the following site:

<http://dec.alaska.gov/water/wwdp/index.htm>.

- 1.3.1.2 The permittee shall perform effluent monitoring three times in the first four and one half years of the permit term. Each monitoring event shall be conducted in a different calendar year and in a different season. Monitoring for the parameters contained in this permit may be used to satisfy this specific monitoring requirement as long as the “different calendar year and season” criteria as described in Form 2A are met.



- 1.3.1.3 The permittee is responsible for all submissions and activities required on application Form 2A, even if not summarized here.

#### 1.4 Whole Effluent Toxicity (WET) Testing Requirements

- 1.4.1 The permittee shall conduct chronic toxicity WET tests on 24-hour composite effluent samples from Outfall 001A. Testing shall be conducted in accordance with Sections 1.4.2 through 1.4.13.
- 1.4.2 The permittee shall commence annual testing within the first calendar year after the effective date of this permit. The annual testing shall alternate seasons as defined in Permit Section 1.2 Table 2 and Table 3 (June 1 – September 30 and October 1 – May 31). If a yearly test is taken between June 1 and September 30, the next yearly sampling shall be done between October 1 and May 31.
- 1.4.3 Effluent samples shall be taken after the last treatment unit prior to discharge. Split samples shall be taken in order to analyze for the chemical and physical parameters required in Permit Section 1.2, Tables 2 and 3. When the timing of sample collection coincides with that of the monitoring required in Permit Section 1.2, Tables 2 and 3, analysis of the split sample will fulfill requirements of Permit Section 1.2, Tables 2 and 3.
- 1.4.4 The permittee must conduct WET tests on the 24-hour composite effluent samples using one vertebrate and one invertebrate species as follows:
- 1.4.4.1 During the first year of discharge, permittees must conduct short-term tests with the water flea, *Ceriodaphnia dubia*, (survival and reproduction test) and the fathead minnow, *Pimephales promelas*, (larval survival and growth test). For all subsequent tests, testing shall be conducted using the more sensitive species. If no toxicity is observed in the chosen species, testing shall be conducted on *Pimephales promelas*.
- 1.4.4.2 Static renewal or flow-through toxicity tests systems may be used.
- 1.4.4.3 Presence of chronic toxicity must be determined and concurrent testing with reference toxicants must be conducted. Both the reference toxicant and effluent tests must meet all test acceptability criteria as specified in [\*Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms\*](#), Fourth Edition (EPA/821-R-02-013, October 2002). If test acceptability is not achieved, the permittee must retest as soon as possible.
- 1.4.4.4 In addition to chronic toxicity testing, *Pimephales promelas* must also be evaluated for acute toxicity effects 96 hours into the 7 day chronic test. If *Ceriodaphnia dubia* is the more sensitive species as described in 1.4.4.1, acute toxicity evaluation for *Pimephales promelas* is not required
- 1.4.4.5 Results must be reported for *Pimephales promelas* in TUC, where TUC = 100/no observed effect concentration (NOEC), and in TUA, where TUA = 100/lethal concentration (LC)<sub>50</sub>. Results for *Ceriodaphnia dubia* must be reported in TUC. See Appendix C for a definition of NOEC and LC<sub>50</sub>.
- 1.4.5 The permittee shall identify and report the following endpoints:
- 1.4.5.1 The no observable effect concentration (NOEC);
- 1.4.5.2 Chronic toxic units (TUC);
- 1.4.5.3 The Inhibition Concentration 25% (IC<sub>25</sub>);

1.4.5.4 The Lethal Concentration 50% (LC<sub>50</sub>).

1.4.6 There are no chronic toxicity effluent limits for this discharge. For this discharge, a mixing zone is authorized and the chronic WET permit triggers are any one test result greater than 7.3 TUC between June 1 and September 30 or greater than 5.1 TUC between October 1 and May 31. Results shall be reported in TUC, where  $TUC = 100/NOEC$ . This permit requires additional toxicity testing (See Section 1.4.11) if a chronic WET permit trigger is exceeded.

1.4.7 The WET testing on each organism shall consist of a series of at least 5 dilutions and a control, specific to the season when the sample was collected.

1.4.7.1 For summer, the following dilution series is required: 54.8%, 27.4%, 13.7%, 6.8%, 3.4%, and a control (0%).

1.4.7.2 For winter, the following dilution series is required: 78.4%, 39.2%, 19.6%, 9.8%, 4.9%, and a control (0%).

#### 1.4.8 Quality Assurance

1.4.8.1 All quality assurance and statistical analyses shall be in accordance with [\*Quality Assurance Guidelines for Biological Testing\*](#), EPA/600/4-78-043, [\*Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition \(EPA/821-R-02-013, October 2002\)\*](#), and other EPA Region 10 approved protocols.

1.4.8.2 The permittee shall make every effort to have the toxicity tests initiated within thirty-six hours of sample collection. If this is not possible, the permittee must document that the delivery time cannot be met. In no case should more than seventy-two hours elapse between sample collection and use of the sample. The sample must be held at 0-6 °C, from sample collection until test preparation.

1.4.8.3 To the extent practicable, control and dilution water should be receiving water. If the dilution water used is different from the culture water, a second control using culture water shall also be used. For purpose of this paragraph, “receiving water” means water collected from Eagle River upstream from the permittee’s discharge. In no case shall water that has not met test acceptability criteria be used as dilution water.

1.4.8.4 For static renewal testing, the effluent water used in toxicity tests must be renewed daily. However, a fresh 24-hour composite sample need only be collected every other day (i.e., days 1, 3, and 5).

#### 1.4.9 Accelerated testing.

1.4.9.1 Initial investigation: If the permittee demonstrates through an evaluation of facility operations that the cause of the exceedance is known and corrective actions have been implemented, only one accelerated test is necessary. If toxicity exceeding the chronic toxicity trigger in Section 1.4.8 is detected in this test, then the Toxicity Reduction Evaluation (TRE) requirements in Section 1.4.12 shall apply, or

1.4.9.2 If chronic toxicity is detected above the triggers, and no initial investigation is conducted or no cause is determined by an initial investigation, then the permittee must conduct four more biweekly tests over an eight week period. This accelerated testing must be initiated within two weeks of receipt of the test results that indicate exceedance.

1.4.9.3 The permittee must notify DEC of the exceedance in writing with two weeks of receipt of the test results. The notification must include the following information:

1.4.9.3.1 A status report on any actions required by the permit, with a schedule for actions not yet completed;

1.4.9.3.2 A description of any additional actions the permittee has taken or will take to investigate and correct the cause(s) of the toxicity, and;

1.4.9.3.3 Where no actions have been taken, a discussion of the reasons for taking no action;

1.4.9.4 If none of the four accelerated tests exceed the toxicity trigger, the permittee may return to the normal testing frequency. If any of the four accelerated tests exceed the chronic toxicity trigger, then the TRE requirements of Section 1.4.12 shall apply.

#### 1.4.10 Toxicity Reduction Evaluation and Toxicity Identification Evaluation.

1.4.10.1 If the chronic toxicity trigger is exceeded during accelerated testing under Section 1.4.11, the permittee must initiate a TRE in accordance with [\*Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants\*](#) (EPA/833/B-99/002, 1999) within two weeks of the receipt of the test results showing an exceedance. At a minimum, the TRE must include:

1.4.10.1.1 Further actions to investigate and identify the cause of toxicity;

1.4.10.1.2 Actions the permittee will take to mitigate the impact of the discharge and to prevent recurrence of toxicity; and

1.4.10.1.3 A schedule for these actions.

1.4.10.2 The permittee may initiate a Toxicity Identification Evaluation (TIE) as part of the TRE process. Any TIE must be performed in accordance with EPA guidance manuals: [\*Toxicity Identification Evaluation; Characterization of Chronically Toxic Effluents, Phase I\*](#) (EPA/600/6-91/005F, 1992); [\*Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity\*](#) (EPA/600R-92/080, 1993); and [\*Methods for Aquatic Toxicity Identification Evaluations, Phase III: Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity\*](#) (EPA-600/R-92/081, 1993).

#### 1.4.11 Reporting of Chronic Toxicity Monitoring Results

1.4.11.1 The permittee shall submit the results of the toxicity tests with the DMR following the month in which the results are received. The complete laboratory reports shall be submitted as attachments to the DMR and shall include the following:

1.4.11.1.1 The dates of sample collection and initiation of each toxicity test;

1.4.11.1.2 All toxicity test results;

1.4.11.1.3 All results for effluent parameters monitored concurrently with the toxicity test(s);

1.4.11.1.4 Effluent flow rate at the time of sample collection; and

1.4.11.1.5 All raw data and statistical analyses from the tests, including reference toxicant data.

- 1.4.11.2 The permittee shall submit results of any accelerated testing, under Permit Section 1.4.9, within two weeks of receipt of results from the laboratory. The full report must be submitted within four weeks of receipt of results from the laboratory. If an initial investigation indicates the source of toxicity and accelerated testing is unnecessary, the result of the investigation must be submitted with the DMR for the month following completion of the investigation.

## 1.5 Mixing Zone

- 1.5.1 In accordance with state regulations at 18 AAC 70.240, separate summer and winter mixing zones for total nitrate/nitrite, dissolved oxygen, copper, lead, temperature, total dissolved solids, and WET are authorized in Eagle River for the discharge.
- 1.5.2 Size.
- 1.5.2.1 During summer conditions, from June 1 through September 30, the following mixing zone sizes and dilution factor are authorized for the parameters listed in Section 1.5.1.
- 1.5.2.1.1 The chronic mixing zone for the discharge has a dilution factor of 7.3 and is defined as the area extending downstream from the diffuser with a length of 169 feet and a maximum width of 13 feet. The shape of the summer chronic mixing zone is roughly rectangular and follows the downstream course of Eagle River.
- 1.5.2.1.2 The acute mixing zone for the discharge for copper has a dilution factor of 3.6 and is defined as the area extending downstream from the diffuser with a length of 39 feet and a maximum width of 4.1 feet.
- 1.5.2.2 During winter conditions, from October 1 through May 31, the following mixing zone sizes and dilution factors are authorized for the parameters listed in Section 1.5.1.
- 1.5.2.2.1 The chronic mixing zone for the discharge has a dilution factor of 5.1 and is defined as the area extending downstream from the diffuser with a length of 790 feet and a maximum width of 26 feet. The shape of the winter chronic mixing zone is roughly rectangular and follows the downstream course of Eagle River.
- 1.5.2.2.2 The acute mixing zone for the discharge for copper has a dilution factor of 1.9 and is defined as the area extending downstream from the diffuser with a length of 55 feet and a maximum width of 9.4 feet.

## 1.6 Receiving Waterbody Monitoring

- 1.6.1 The permittee must conduct receiving water monitoring. Receiving water monitoring must start within 180 days of the effective date of the permit and continue for the duration of the permit.
- 1.6.2 One receiving waterbody monitoring station must be established in Eagle River.
- 1.6.2.1 The receiving waterbody monitoring location must represent ambient conditions in Eagle River. The location must be located upstream of Outfall 001A, outside of the influence of the facility discharge and of the Glenn Highway stormwater flow.

- 1.6.2.2 The permittee must seek written approval of the receiving water monitoring station from DEC within 120 days of the effective date of the permit. Failure to obtain DEC approval of the location of the receiving water monitoring station does not relieve the permittee of the receiving water monitoring requirement.
- 1.6.3 To the extent practicable, receiving water sample collection must occur on the same day as effluent sample collection for the 2/Year parameters specified in Tables 2 and 3.
- 1.6.4 Receiving water monitoring samples must be analyzed for the parameters listed in Table 4.

**Table 4 : Receiving Waterbody Monitoring Requirements**

Parameter	Units <sup>a</sup>	Sample Frequency	Sample Type
pH	SU	Twice per season <sup>b</sup>	Grab
Temperature	° C	Twice per season <sup>b</sup>	Grab
Hardness as CaCO <sub>3</sub>	mg/L	Twice per season <sup>b</sup>	Grab
Footnotes: a. Units: SU= standard units, °C= degrees Celsius, mg/L = milligrams per liter, b. Summer season: June 1 – September 30; Winter season: October 1 – May 31.			

- 1.6.5 Receiving water monitoring results must be submitted to DEC with the DMR for the month following sample collection. At a minimum, the report must include:
- 1.6.5.1 Sample location;
- 1.6.5.2 Dates of sample collection and analyses;
- 1.6.5.3 Results of sample analyses; and
- 1.6.5.4 Relevant quality assurance/quality control (QA/QC) information.

## 2.0 SPECIAL CONDITIONS

### 2.1 Quality Assurance Project Plan

- 2.1.1 The permittee must develop, implement and maintain a quality assurance project plan (QAPP) for all monitoring required by this permit. The QAPP must be developed and implemented within 180 days of the effective date of this permit. Any existing QAPP for the facility may be reviewed and modified under this section.
- 2.1.2 The QAPP must be designed to assist in planning for the collection and analysis of all samples in support of the permit and to help explain data anomalies whenever they occur.
- 2.1.3 The permittee may use either the generic [DEC Wastewater Treatment Facility Quality Assurance Project Plan](#) (DEC QAPP) or must develop a facility-specific QAPP. Some facility specific information is required to complete the QAPP when using the generic DEC QAPP.

- 2.1.4 Throughout all sample collection and analysis activities, the permittee must use DEC-approved Quality Assurance/Quality Control and chain-of-custody procedures, as described in the *Requirements for Quality Assurance Project Plans* (EPA/QA/R-5, March 2001) at [https://www.epa.gov/sites/production/files/2016-06/documents/r5-final\\_0.pdf](https://www.epa.gov/sites/production/files/2016-06/documents/r5-final_0.pdf) and *Guidance for Quality Assurance Project Plans* (EPA/QA/G-5, December 2002) at <https://www.epa.gov/sites/production/files/2015-06/documents/g5-final.pdf>. The QAPP must be prepared in the format specified in these documents.
- 2.1.5 At a minimum, a QAPP must include:
- 2.1.5.1 Details on number of samples, type of sample containers, preservation of samples, holding times, analytical methods, analytical detection and quantitation limits for each target compound, type and number of quality assurance field samples, precision and accuracy requirements, sample preparation requirements, sample shipping methods, and laboratory data delivery requirements;
  - 2.1.5.2 Maps indicating the location of each sampling point;
  - 2.1.5.3 Qualification and training of personnel; and
  - 2.1.5.4 Name, address, and telephone number of all laboratories used by or proposed to be used by the permittee.
- 2.1.6 The permittee must amend the facility specific QAPP whenever sample collection, sample analysis, or other procedure addressed by the QAPP is modified.
- 2.1.7 An electronic or physical copy of the QAPP must be kept on site and made available to DEC upon request.

## 2.2 Industrial User Survey

- 2.2.1 A list of those industries or businesses that discharge and/or have the potential to discharge (i.e. a spill to the collection system) non-domestic wastewater to Eagle River WWTF's collection system must be submitted with Form 2A when applying for permit reissuance.
- 2.2.2 The industries or businesses should be categorized as significant industrial user (SIU) or minor industrial user (MIU). See Appendix C for definitions of these categories.
- 2.2.3 The list must include the following:
- 2.2.3.1 The business name and address
  - 2.2.3.2 A description of the non-domestic process including products manufactured or services performed and potential pollutants
  - 2.2.3.3 The Standard Industrial Classification (SIC) <http://siccode.com/en/siccode/list/directory> or North American Industry Classification System (NAICS) [http://www.naics.com/complete-naics-business-resource-list/ code\(s\)](http://www.naics.com/complete-naics-business-resource-list/code(s)) for each activity type
  - 2.2.3.4 Estimate of non-domestic wastewater discharged into the facility's wastewater treatment collection system in gallons per day and whether the discharge is continuous or intermittent

- 2.2.4 Those industries or businesses that are not connected to the collection system or that solely discharge domestic equivalent wastewater are not considered sources of non-domestic wastewater and may be excluded from the list that is submitted to DEC. However, a list of the domestic equivalent industries or businesses should be maintained by Eagle River WWTF and made available to DEC upon request.
- 2.2.5 For domestic equivalents, the list should include the following:
- 2.2.5.1 The business name and address
  - 2.2.5.2 A description of products manufactured or services performed and potential pollutants
- 2.2.6 DEC may request additional information regarding wastewater contributions from specific industries or businesses in order to verify categorization as an SIU, MIU, or domestic equivalent, and to determine whether a pretreatment program should be developed and/or if pretreatment requirements should be included in Eagle River WWTF's wastewater discharge permit.

### **2.3 Operation and Maintenance Plan**

- 2.3.1 In addition to requirements specified in Appendix A, Part 1.6 of this permit (Proper Operation and Maintenance), the permittee shall develop and implement an Operation and Maintenance (O&M) Plan for the wastewater treatment facility. The O&M Plan must be developed and implemented within 180 days of the effective date of this permit. The O&M Plan shall be retained on site and made available on request to DEC.
- 2.3.2 The permittee shall ensure that the O&M Plan includes appropriate best management practices (BMPs), and the plan must be reviewed annually. BMPs include measures that prevent or minimize the potential for the release of pollutants to Eagle River. Documentation of annual O&M Plan review by the permittee shall be retained on-site and made available to DEC upon request.
- 2.3.3 The permittee shall develop or update a description of pollution prevention measures and controls appropriate for the facility and implement such controls. The appropriateness and priorities of controls in the O&M Plan shall reflect identified potential sources of pollutants at the facility. The description of BMPs shall address to the extent practicable, the following minimum components:
- 2.3.3.1 Spill prevention and control;
  - 2.3.3.2 Optimization of chemical usage;
  - 2.3.3.3 Preventative maintenance program;
  - 2.3.3.4 Minimization of pollutant inputs from industrial users;
  - 2.3.3.5 Research, development and implementation of a public information and education program to control the introduction of household hazardous materials to the sewer system; and
  - 2.3.3.6 Water conservation.
- 2.3.4 The permittee's facility operators must be certified in accordance with the provisions of 18 AAC 74.



## 2.4 Electronic Reporting (E-Reporting) Rule

### 2.4.1 E-Reporting Rule for DMRs (Phase I).

The permittee must submit DMR data electronically through NetDMR per Phase I of the E-Reporting Rule (40 CFR 127) upon the effective date of the Permit. Authorized persons may access permit information by logging into the NetDMR Portal (<https://cdxnodengn.epa.gov/oeca-netdmr-web/action/login>). DMRs submitted in compliance with the E-Reporting Rule are not required to be submitted as described in Appendix A – Standard Conditions unless requested or approved by the Department. Any DMR data required by the Permit that cannot be reported in a NetDMR field (e.g. mixing zone receiving water data, etc), shall be included as an attachment to the NetDMR submittal. DEC has established an e-Reporting Information website at <https://dec.alaska.gov/water/compliance/electronic-reporting-rule> that contains general information about this new reporting format. Training materials and webinars for NetDMR can be found at <https://netdmr.zendesk.com/home>.

### 2.4.2 E-Reporting Rule for Other Reports (Phase II).

Phase II of the E-Reporting rule will integrate electronic reporting for all other reports required by the Permit (e.g., Annual Reports and Certifications) and implementation is expected to begin December 2020. Permittees should monitor DEC's E-Reporting Information website (<https://dec.alaska.gov/water/compliance/electronic-reporting-rule>) for updates on Phase II of the E-Reporting Rule and will be notified when they must begin submitting all other reports electronically. Until such time, other reports required by the Permit may be submitted in accordance with Appendix A – Standard Conditions.

## 2.5 Identification Sign(s)

The permittee shall continue to post a sign or signs on the shoreline adjacent to the Outfall 001A discharge point. Signs must include the name and contact telephone number for the facility, identify the permit number, the type of discharge (secondary treated domestic wastewater), state the approximate location and size of the mixing zone, warn users of the area to exercise caution and that certain activities, such as harvesting of aquatic life for raw consumption, should not take place in the mixing zone.

## 2.6 Removed Substances

Collected screenings, grit, solids, scum, and other facility residuals, or other pollutants removed in the course of treatment or control of water and wastewaters shall be disposed of in a Department approved manner and method in accordance with 18 AAC 60, such as to prevent any pollution from such materials from entering navigable waters.



**APPENDIX A**  
**STANDARD CONDITIONS**  
**APDES INDIVIDUAL PERMIT**  
**PUBLICLY OWNED TREATMENT WORKS**

## Appendix B Acronyms

The following acronyms are common terms that may be found in an Alaska Pollutant Discharge Elimination System (APDES) permit.

18 AAC 15	Alaska Administrative Code. Title 18 Environmental Conservation, Chapter 15: Administrative Procedures
18 AAC 70	Alaska Administrative Code. Title 18 Environmental Conservation, Chapter 70: Water Quality Standards
18 AAC 72	Alaska Administrative Code. Title 18 Environmental Conservation, Chapter 72: Wastewater Disposal
18 AAC 83	Alaska Administrative Code. Title 18 Environmental Conservation, Chapter 83: Alaska Pollutant Discharge Elimination System

All chapters of Alaska Administrative Code, Title 18 are available at the Alaska Administrative Code database <http://dec.alaska.gov/commish/regulations/>

40 CFR	<a href="#">Code of Federal Regulations Title 40: Protection of Environment</a>
AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
APDES	Alaska Pollutant Discharge Elimination System
AS	Alaska Statutes
AS 46.03	Alaska Statutes Title 46, Chapter 03: Environmental Conservation. Available at <a href="http://www.legis.state.ak.us/default.htm">http://www.legis.state.ak.us/default.htm</a>
BOD <sub>5</sub>	Biochemical Oxygen Demand, 5-day
BMP	Best Management Practice
CFR	Code of Federal Regulations
COD	Chemical Oxygen Demand
Cu	Copper
CWA	Clean Water Act
DMR	Discharge Monitoring Report
DO	Dissolved Oxygen
EPA	U.S. Environmental Protection Agency
FC	Fecal coliform Bacteria
GPD or gpd	Gallons per day
GPY or gpy	Gallons per year
Hg	Mercury
IC <sub>25</sub>	Inhibition Concentration 25%
I/I	Infiltration and Inflow

a) See 18 AAC 83  
b) See 18 AAC 70.990  
c) See 18 AAC 72.990  
d) See 40 CFR Part 136

e) See EPA Technical Support Document  
f) See Standard Methods for the Examination of Water and Wastewater 18th Edition  
g) See EPA Permit Writers Manual  
h) See 40 CFR 403.3(v)

LC <sub>50</sub>	Lethal Concentration 50%
MDL	Method Detection Limit
mg/L	Milligrams per Liter
MGD or mgd	Million gallons per day
MIU	Minor Industrial User
ML	Minimum Level
MLLW	Mean Lower Low Water
MZ	Mixing Zone
N/A	Not Applicable
Ni	Nickel
NOEC	No Observed Effect Concentration
Pb	Lead
POTW	Publicly Owned Treatment Works
PQL	Practical Quantification Limit
QA	Quality Assurance
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
QC	Quality Control
RL	Reporting Limit
RWC	Receiving Water Concentration
Se	Selenium
SIU	Significant Industrial User
SU	Standard Units
TIE	Toxicity Identification Evaluation
TRC	Total Residual Chlorine
TRE	Toxicity Reduction Evaluation
TSS	Total Suspended Solids
TUc	Toxic Unit, Chronic
µg/L	Micrograms per Liter
U.S.C.	United States Code
WQS	Water Quality Standards
WWTF	Wastewater Treatment Facility
Zn	Zinc

a) See 18 AAC 83

b) See 18 AAC 70.990

c) See 18 AAC 72.990

d) See 40 CFR Part 136

e) See EPA Technical Support Document

f) See Standard Methods for the Examination of Water and Wastewater 18th Edition

g) See EPA Permit Writers Manual

h) See 40 CFR 403.3(v)

## Appendix C Definitions

The following are common definitions of terms associated with APDES permits. Not all the terms listed may appear in a permit. Consult the footnote references for a complete list of terms and definitions.

Acute <sup>b</sup>	Means of, relating to, or resulting from a level of toxicity of a substance, a substance combination, or an effluent sufficient to produce observable lethal or sublethal effects in aquatic organisms exposed for short periods of time, typically 96 hours or less
Administrator <sup>a</sup>	Means the Administrator of the EPA or an authorized representative.
Alaska Pollutant Discharge Elimination System (APDES) <sup>a</sup>	Means the state's program, approved by EPA under 33 U.S.C. 1342(b), for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits and imposing and enforcing pretreatment requirements under 33 U.S.C. 1317, 1328, 1342, and 1345.
Annual	Means once per calendar year
Average	Means the arithmetic mean obtained by adding quantities and dividing the sum by the number of quantities
Average Monthly Discharge Limitation <sup>a</sup>	Means the highest allowable average of "daily discharges" over a calendar month calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured for that month
Average Weekly Discharge Limitation <sup>g</sup>	The highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number
Best Management Practices (BMPs) <sup>a</sup>	Means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage areas.
Biochemical Oxygen Demand (BOD) <sup>c</sup>	Means the amount, in milligrams per liter, of oxygen used in the biochemical oxidation of organic matter in five days at 20° C
Black Water	Means water that contains animal, human, or food waste
Boundary <sup>b</sup>	Means line or landmark that serves to clarify, outline, or mark a limit, border, or interface
Bypass <sup>a</sup>	Means the intentional diversion of waste streams from any portion of a treatment facility
Chronic <sup>b</sup>	Means of, relating to, or resulting from a level of toxicity of a substance, a substance combination, or an effluent sufficient to produce observable lethal or sublethal effects, including effects on growth, development, behavior, reproduction, or survival, in aquatic organisms exposed for a period of time that generally is one-tenth or more of their life span

a) See 18 AAC 83

b) See 18 AAC 70.990

c) See 18 AAC 72.990

d) See 40 CFR Part 136

e) See EPA Technical Support Document

f) See Standard Methods for the Examination of Water and Wastewater 18th Edition

g) See EPA Permit Writers Manual

h) See 40 CFR Part 403

Chemical Oxygen Demand (COD) <sup>f</sup>	Is used as a measure of the oxygen equivalent of the organic matter content of a sample that is susceptible to oxidation by a strong chemical oxidant
Clean Water Act (CWA)	Means the federal law codified at 33 U.S.C. 1251-1387, also referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972
Color <sup>b</sup>	Means the condition that results in the visual sensations of hue and intensity as measured after turbidity is removed
Commissioner <sup>a</sup>	Means the commissioner of the Alaska Department of Environmental Conservation or the commissioner's designee
Composite Samples	Composite samples must consist of at least eight equal volume grab samples. 24 hour composite sample means a combination of at least eight discrete samples of equal volume collected at equal time intervals over a 24-hour period at the same location. A "flow proportional composite" sample means a combination of at least eight discrete samples collected at equal time intervals over a 24-hour period with each sample volume proportioned according to the flow volume. The sample aliquots must be collected and stored in accordance with procedures prescribed in the most recent edition of <i>Standard Methods for the Examination of Water and Wastewater</i> .
Contact Recreation <sup>b</sup>	Means activities in which there is direct and intimate contact with water. Contact recreation includes swimming, diving, and water skiing. Contact recreation does not include wading.
Continuous Monitoring	Means monitoring that occurs without interruption throughout the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes, or other similar activities.
Criterion <sup>b</sup>	Means a set concentration or limit of a water quality parameter that, when not exceeded, will protect an organism, a population of organisms, a community of organisms, or a prescribed water use with a reasonable degree of safety. A criterion might be a narrative statement instead of a numerical concentration or limit.
Daily Discharge <sup>a</sup>	Means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for the purposes of sampling. For pollutants measured in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with a limitation expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the day.
Datum	A datum defines the position of the spheroid, a mathematical representation of the earth, relative to the center of the earth. It provides a frame of reference for measuring locations on the surface of the earth by defining the origin and orientation of latitude and longitude lines.

a) See 18 AAC 83

b) See 18 AAC 70.990

c) See 18 AAC 72.990

d) See 40 CFR Part 136

e) See EPA Technical Support Document

f) See Standard Methods for the Examination of Water and Wastewater 18th Edition

g) See EPA Permit Writers Manual

h) See 40 CFR Part 403

Department <sup>a</sup>	Means the Alaska Department of Environmental Conservation
Design Flow <sup>a</sup>	Means the wastewater flow rate that the plant was designed to handle
Director <sup>a</sup>	Means the commissioner or the commissioner's designee assigned to administer the APDES program or a portion of it, unless the context identifies an EPA director
Discharge <sup>a</sup>	When used without qualification, discharge means the discharge of a pollutant
Discharge of a Pollutant <sup>a</sup>	Means any addition of any pollutant or combination of pollutants to waters of the United States from any point source or to waters of the contiguous zone or the ocean from any point source other than a vessel or other floating craft that is being used as a means of transportation. Discharge includes any addition of pollutants into waters of the United States from surface runoff that is collected or channeled by humans; discharges through pipes, sewers, or other conveyances owned by a state, municipality, or other person that do not lead to a treatment works; discharges through pipes, sewers, or other conveyances leading into privately owned treatment works; and does not include an addition of pollutants by any indirect discharger.
Disinfect <sup>c</sup>	Means to treat by means of a chemical, physical, or other process, such as chlorination, ozonation, application of ultraviolet light, or sterilization, designed to eliminate pathogenic organisms, and producing an effluent with the following characteristics:  (A) an arithmetic mean of the values for a minimum of five effluent samples collected in 30 consecutive days that does not exceed 200 fecal coliform per 100 milliliters; and  (B) an arithmetic mean of the values for effluent samples collected in seven consecutive days that does not exceed 400 fecal coliform per 100 milliliters.
Dissolved Oxygen (DO) <sup>b</sup>	Means the concentration of oxygen in water as determined either by the Winkler (iodometric) method and its modifications or by the membrane electrode method.  The oxygen dissolved in water or wastewater and usually expressed in milligrams per liter or percent saturation
Domestic Equivalent	Businesses that only discharge pollutants similar in nature to domestic wastewater that is discharged from residential dwellings, and that do not otherwise qualify as an SIU or an MIU as defined in this glossary.
Domestic Wastewater <sup>c</sup>	Means waterborne human wastes or graywater derived from dwellings, commercial buildings, institutions, or similar structures. "Domestic wastewater" includes the contents of individual removable containers used to collect and temporarily store human wastes.
Ecosystem <sup>b</sup>	Means a system made up of a community of animals, plants, and bacteria and the system's interrelated physical and chemical environment

a) See 18 AAC 83

b) See 18 AAC 70.990

c) See 18 AAC 72.990

d) See 40 CFR Part 136

e) See EPA Technical Support Document

f) See Standard Methods for the Examination of Water and Wastewater 18th Edition

g) See EPA Permit Writers Manual

h) See 40 CFR Part 403

Effluent Limit Guideline <sup>a</sup>	Means a regulation published by the administrator under 33 U.S.C. 1314(b) to adopt or revise effluent limitations, and adopted by reference in 18 AAC 83.010;
Effluent <sup>b</sup>	Means the segment of a wastewater stream that follows the final step in a treatment process and precedes discharge of the wastewater stream to the receiving environment
Estimated	Means a way to estimate the discharge volume. Approvable estimations include, but are not limited to, the number of persons per day at the facility, volume of potable water produced per day, lift station run time, etc.
Excluded area	Means an area not authorized as a receiving water under a permit
Fecal coliform Bacteria (FC) <sup>b</sup>	Bacteria that can ferment lactose at $44.5^{\circ} + 0.2^{\circ}\text{C}$ to produce gas in a multiple tube procedure. Fecal coliform bacteria also means all bacteria that produce blue colonies in a membrane filtration procedure within $24 \pm 2$ hours of incubation at $44.5^{\circ} + 0.2^{\circ}\text{C}$ in an M-FC broth.
Final Approval to Operate	Means the approval that the Department issues after it has reviewed and approved the construction and operation of the engineered wastewater treatment works plans submitted to the Department in accordance with 18 AAC 72.215 through 18 AAC 72.280 or as amended.
Geometric Mean	The geometric mean is the Nth root of the product of N. All sample results of zero will use a value of 1 for calculation of the geometric mean. Example geometric mean calculation: $\sqrt[4]{12 \times 23 \times 34 \times 990} = 55$
Grab Sample	Means a single instantaneous sample collected at a particular place and time that represents the composition of wastewater only at that time and place
Gray Water <sup>b</sup>	Means wastewater from a laundry, kitchen, sink, shower, bath, or other domestic source that does not contain excrement, urine, or combined stormwater
Influent	Means untreated wastewater before it enters the first treatment process of a wastewater treatment works
Inhibition Concentration 25% (IC <sub>25</sub> ) <sup>e</sup>	Means the point estimate of the toxicant concentration that would cause 25% reduction in a nonlethal biological measurement of the test organisms, such as reproduction or growth
Lethal Concentration 50% (LC <sub>50</sub> ) <sup>e</sup>	Mean the point estimate of the toxicant that would be lethal to 50% of the test organisms during a specific period
Maximum Daily Discharge Limitation <sup>a</sup>	Means the highest allowable “daily discharge”
Mean <sup>b</sup>	Means the average of values obtained over a specified period and, for fecal coliform analysis, is computed as a geometric mean
Measured	Means the actual volume of wastewater discharged using appropriate mechanical or electronic equipment to provide a totalized reading. Measure does not provide a recorded measurement of instantaneous rates.

a) See 18 AAC 83  
b) See 18 AAC 70.990  
c) See 18 AAC 72.990  
d) See 40 CFR Part 136

e) See EPA Technical Support Document  
f) See Standard Methods for the Examination of Water and Wastewater 18th Edition  
g) See EPA Permit Writers Manual  
h) See 40 CFR Part 403

Method Detection Limit (MDL) <sup>d</sup>	Means the minimum concentration of a substance (analyte) that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix containing the analyte
Micrograms per Liter (µg/L) <sup>b</sup>	Means the concentration at which one millionth of a gram (10 <sup>-6</sup> g) is found in a volume of one liter
Milligrams per Liter (mg/L) <sup>b</sup>	Means the concentration at which one thousandth of a gram (10 <sup>-3</sup> g) is found in a volume of one liter. It is approximately equal to the unit “parts per million (ppm),” formerly of common use.
Minor Industrial User (MIU) <sup>*</sup>	<p>These are businesses that do not qualify as SIUs according to the SIU definition, but who still either:</p> <ul style="list-style-type: none"> <li>• Have some discharges of wastewater containing pollutants not typical of domestic wastewater, and potentially of concern to the POTW; or</li> <li>• Have a potential to discharge or spill chemicals to the POTW which could impair the normal operation of the POTW, adversely affect worker health or safety, or violate Alaska Water Quality Standards (18 AAC 70).</li> </ul> <p><sup>*</sup>This definition is intended for use when categorizing industries and businesses, and not intended to be used as a general APDES definition.</p>
Minimum Level (ML) <sup>e</sup>	Means the concentration at which the entire analytical system must give a recognizable signal and an acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method-specified sample weights, volumes, and processing steps have been followed. This level is used as the compliance level if the effluent limit is below it.
Mixing Zone (MZ) <sup>b</sup>	Means a volume of water adjacent to a discharge in which wastes discharged mix with the receiving water
Month	Means the time period from the 1st of a calendar month to the last day in the month
Monthly Average	Means the average of daily discharges over a monitoring month calculated as the sum of all daily discharges measured during a monitoring month divided by the number of daily discharges measured during that month
N/A	Means Not Applicable
No Observed Effect Concentration (NOEC) <sup>e</sup>	Means the highest concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specific time of observation. NOEC is determined using hypothesis testing.
Pass Through <sup>h</sup>	Means a discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement

a) See 18 AAC 83

b) See 18 AAC 70.990

c) See 18 AAC 72.990

d) See 40 CFR Part 136

e) See EPA Technical Support Document

f) See Standard Methods for the Examination of Water and Wastewater 18th Edition

g) See EPA Permit Writers Manual

h) See 40 CFR Part 403



of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation)

Permittee	Means a company, organization, association, entity, or person who is issued a wastewater permit and is responsible for ensuring compliance, monitoring, and reporting as required by the permit
pH <sup>g</sup>	Means a measure of the hydrogen ion concentration of water or wastewater; expressed as the negative log of the hydrogen ion concentration in mg/L. A pH of 7 is neutral. A pH less than 7 is acidic, and a pH greater than 7 is basic.
Pollutant <sup>a</sup>	Means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under 42 U.S.C. 2011), heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, or agricultural waste discharged into water
Practical Quantification Limit (PQL) <sup>g</sup>	Means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions.
Primary Contact Recreation	See Contact Recreation
Principal Executive Officer <sup>a</sup>	Means the chief executive officer of the agency or a senior executive officer having responsibility for the overall operations of a principal geographic unit of division of the agency
Publicly Owned Treatment Works <sup>a</sup>	Means a treatment works as defined by 33 U.S.C. 1292 that is owned by a municipality or state; in this subparagraph "municipality" includes a municipality that has jurisdiction over the indirect discharges to and the discharges from such a treatment works
Quality Assurance Project Plan (QAPP)	Means a system of procedures, checks, audits, and corrective actions to ensure that all research design and performance, environmental monitoring and sampling, and other technical and reporting activities are of the highest achievable quality
Quarter	Means the time period of three months based on the calendar year beginning with January
Receiving Water Body	Means lakes, bays, sounds, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, straits, passages, canals, the Pacific Ocean, Gulf of Alaska, Bering Sea, and Arctic Ocean, in the territorial limits of the state, and all other bodies of surface water, natural or artificial, public or private, inland or coastal, fresh or salt, which are wholly or partially in or bordering the state or under the jurisdiction of the state. (See "Waters of the U.S." at 18 AAC 83.990(77))
Recorded	Means a permanent record using mechanical or electronic equipment to provide a totalized reading, as well as a record of instantaneous readings

a) See 18 AAC 83  
b) See 18 AAC 70.990  
c) See 18 AAC 72.990  
d) See 40 CFR Part 136

e) See EPA Technical Support Document  
f) See Standard Methods for the Examination of Water and Wastewater 18th Edition  
g) See EPA Permit Writers Manual  
h) See 40 CFR Part 403

Report	Report results of analysis
Residual Chlorine	Means chlorine remaining in water or wastewater at the end of a specified contact period as combined or free chlorine
Responsible Corporate Officer <sup>a</sup>	Means a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function or any other person who performs similar policy or decision making functions for the corporation  The Responsible Corporate Officer can also be the manager of one or more manufacturing, production, or operating facilities if the requirements of 18 AAC 83.385(a)(1)(B)(i)-(iii) are met.
Secondary Recreation <sup>b</sup>	Means activities in which incidental water use can occur. Secondary recreation includes boating, camping, hunting, hiking, wading, and recreational fishing. Secondary contact recreation does not include fish consumption.
Settleable Solids <sup>b</sup>	Means solid material of organic or mineral origin that is transported by and deposited from water, as measured by the volumetric Imhoff cone method and at the method detection limits specified in method 2540(F), <i>Standard Methods for the Examination of Water and Wastewater</i> , 18th edition (1992), adopted by reference in 18 AAC 70.020(c)(1)
Severe Property Damage <sup>a</sup>	Means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
Sheen <sup>b</sup>	Means an iridescent appearance on the water surface
Significant Industrial User (SIU) <sup>h</sup>	(i) Means All Industrial Users subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, subchapter N; and (ii) Any other Industrial User that: discharges an average of 25,000 gallons per day or more of process wastewater to the POTW (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process wastestream which makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW Treatment plant; or is designated as such by the Control Authority on the basis that the Industrial User has a reasonable potential for adversely affecting the POTW's operation or for violating any Pretreatment Standard or requirement (in accordance with §40 CFR 403.8(f)(6)).
Suspended Solids	Means insoluble solids that either float on the surface of, or are in suspension in, water, wastewater, or other liquids. The quantity of material removed from wastewater in a laboratory test, as prescribed in <i>Standard Methods for the Examination of Water and Wastewater</i> and referred to as nonfilterable.

a) See 18 AAC 83  
b) See 18 AAC 70.990  
c) See 18 AAC 72.990  
d) See 40 CFR Part 136

e) See EPA Technical Support Document  
f) See Standard Methods for the Examination of Water and Wastewater 18th Edition  
g) See EPA Permit Writers Manual  
h) See 40 CFR Part 403

Technology Based Effluent Limit <sup>g</sup>	An effluent limit for a pollutant that is based on the capability of a treatment method to reduce the pollutant to a certain concentration or mass loading level. TBELs for POTWs are derived from the secondary treatment regulations in Part 133 or state treatment standards. TBELs for non-POTWs are derived from effluent guidelines, state treatment standards, or by the permit writer on a case-by-case basis using best professional judgment.
Total Suspended Solids (TSS) <sup>g</sup>	Means a measure of the filterable solids present in a sample, as determined by the method specified in 40 CFR Part 136
Toxic Unit, Chronic (TUc) <sup>e</sup>	Means the reciprocal of the effluent concentration that causes no observable effect on the test organisms by the end of the chronic exposure period (i.e., 100/NOEC)
Twice per year	Means two time periods during the calendar year: October through April and May through September
Upset <sup>a</sup>	Means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
Wastewater Treatment	Means any process to which wastewater is subjected in order to remove or alter its objectionable constituents and make it suitable for subsequent use or acceptable for discharge to the environment
Waters of the United States or Waters of the U.S. (WOTUS)	Has the meaning given in 18 AAC 83.990(77)
Water Quality Based Effluent Limit <sup>g</sup>	An effluent limitation determined by selecting the most stringent of the effluent limits calculated using all applicable water quality criteria (e.g., aquatic life, human health, wildlife, translation of narrative criteria) for a specific point source to a specific receiving water.
Water Quality Criteria <sup>e</sup>	Are comprised of numeric and narrative criteria. Numeric criteria are scientifically derived ambient concentrations developed by EPA or States for various pollutants of concern to protect human health and aquatic life. Narrative criteria are statements that describe the desired water quality goal.
Water Quality Standard <sup>e</sup>	Means a law or regulation that consists of the beneficial designated use or uses of a waterbody, the numeric and narrative water quality criteria that are necessary to protect the use or uses of that particular waterbody, and an antidegradation statement.
Water Recreation <sup>b</sup>	See contact recreation or secondary recreation

a) See 18 AAC 83  
b) See 18 AAC 70.990  
c) See 18 AAC 72.990  
d) See 40 CFR Part 136

e) See EPA Technical Support Document  
f) See Standard Methods for the Examination of Water and Wastewater 18th Edition  
g) See EPA Permit Writers Manual  
h) See 40 CFR Part 403

Water Supply <sup>b</sup>	Means any of the waters of the United States that are designated in 18 AAC 70 to be protected for fresh water or marine water uses. Water supply includes waters used for drinking, culinary, food processing, agricultural, aquacultural, seafood processing, and industrial purposes. Water supply does not necessarily mean that water in a waterbody that is protected as a supply for the uses listed in this paragraph is safe to drink in its natural state.
Week	Means the time period of Sunday through Saturday
Whole Effluent Toxicity <sup>a</sup>	Means the aggregate toxic effect of an effluent measured directly by a toxicity test.

a) See 18 AAC 83  
b) See 18 AAC 70.990  
c) See 18 AAC 72.990  
d) See 40 CFR Part 136

e) See EPA Technical Support Document  
f) See Standard Methods for the Examination of Water and Wastewater 18th Edition  
g) See EPA Permit Writers Manual  
h) See 40 CFR Part 403