



**ALASKA POLLUTANT DISCHARGE ELIMINATION SYSTEM**

**APPLICATION FORM 2M**

Request for a Mixing Zone

Please submit this form to:

**ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION**  
**Wastewater Discharge Authorization Program**  
**555 Cordova Street**  
**Anchorage, AK 99501**  
**DEC.Water.WQPermit@alaska.gov**

Form 2M must be completed by all applicants who answered "Yes" to question 9D on Form 1 or 2A. Any applicant who indicates a need for a mixing zone on a General Permit Notice of Intent must also fill out Form 2M. THE FOLLOWING INFORMATION MUST BE PROVIDED. The burden of proof for justifying a mixing zone through demonstrating compliance with the requirements of 18 AAC 70.240 – 18 AAC 70.270 (July 2003) rests with the applicant. ADEC may request additional information when necessary.

**SECTION 1 – FACILITY INFORMATION**

(This information must match the facility information entered in Section 1 on Form 1 or 2A)

Facility Name:

Physical Address:

**SECTION 2 –OUTFALL INFORMATION**

Provide the following information for each outfall. Attach additional copies of this section as necessary.

Outfall No.:	Latitude:	Longitude:
Distance from shoreline to end of pipe or first port on diffuser (measured at MLLW for marine):		
Orientation of diffuser to shoreline: (e.g. perpendicular, 45°, parallel):		
Depth to center line of end of pipe or middle of diffuser: (measured at MLLW for marine):		
Number of ports (1 for pipe):		Diameter of pipe or ports:
Length of diffuser:		Port spacing:

**SECTION 3 – RECEIVING WATER INFORMATION**

Provide the following information about the receiving water body.

**A) For Marine Discharges**

Maximum current:	
Provide salinity and temperature data from the surface to the depth of the discharge port or diffuser. Provide actual data or source for the estimate and/or assumed values. Clearly identify data that was estimated or an assumed value that was used. To capture variations with the water column, data from both late winter/early spring and late summer/early fall is preferable. Attach additional sheets if necessary.	

**B) For Freshwater Discharges**

Water body temperature at time of low flow:			
Current or river flow with approximate width and depth.* Units of current or flow:	Current or Flow		Width (+ Units)
	Actual:		
Conventional or nontoxic substances	7Q10:		
Toxic Substances (chronic)	7Q10:		
Toxic Substances (acute)	1Q10:		
Carcinogens	Harmonic Mean		
Area or Dimensions of lake or pond:			
*See Instruction for Explanation of Flow			

**C) Uses of Receiving Water at Distance From Point of Discharge** (Provide a copy of this section for each outfall):

Outfall No.:		
	<b>USE</b>	<b>DISTANCE (meters)</b>
	Supply for drinking water	
	Supply for agriculture including irrigation & stock water	
	Supply for aquaculture	
	Supply for industrial use	
	Contact recreation	
	Secondary recreation	
	Harvesting and consumption of raw fish or other aquatic life	
	Fish processing activities	
	Fish spawning	
	If fish spawning occurs, list the species:	

**SECTION 4 – MIXING ZONE INFORMATION**

Provide the following information about the requested mixing zone.

**A) Mixing Zone Size and Configuration**

Dilution factor(s) (See Instructions):	Width (m):	Length (m):
--	------------	-------------

**B) Pollutants**

List the pollutants by their Maximum Expected Concentrations (MEC) for which a mixing zone is being requested (separated by comma):

**C) Model Information**

Attach a separate sheet describing the input values not included on this form, the assumptions, and the outcome of the model used. If CORMIX was used to model the mixing zone, the "CORMIX Checklist for Data Preparation" must be submitted with Form 2M.

**D) Mixing Zone Map**

Attach a map showing the location and depth on any outfall(s). Include the outline and dimensions of the mixing zone being requested as a result of modeling.

**SECTION 5 - CERTIFICATION**

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

Signature:

Date:

Printed Name:

Title:

# INSTRUCTIONS FOR APDES FORM 2M

## Request for a Mixing Zone

In addition to the information reported on the application form, you shall provide to the department, at the department's request, any other information that the department may reasonably require to assess the discharges of the facility and to determine whether to authorize a mixing zone. The additional information may include additional quantitative data and bioassays to assess the relative toxicity of discharges to aquatic life and information required to determine the cause of toxicity.

### Mixing Zone Regulations

Any references to 18 AAC 70 in this form refer to requirements of 18 AAC 70 (July 2003). A copy of the July 2003 regulations can be found here:

<http://dec.alaska.gov/water/wqsar/wqs/pdfs/70mas.pdf>

### Who Must File Form 2M

Form 2M must be completed in conjunction with either APDES Form 1 or 2A, or a General Permit Notice of Intent (NOI). This form must be completed by all applicants who check "yes" to Section 9D on APDES Form 1 or 2A. Any applicant who indicates a need for a mixing zone on a NOI must also fill out Form 2M.

### Public Availability of Submitted Information

Your application will not be considered complete unless you answer every question on this form or on APDES Form 1 or 2A, or on a NOI. If an item does not apply to you, enter "NA" (*for not applicable*) to show that you considered the question.

You may not claim as confidential any information required by this form or APDES Form 1 or 2A, or on a NOI, whether the information is reported on the forms or in an attachment. This information will be made available to the public upon request.

Any information you submit to the department which goes beyond that required by this form or APDES Form 1 or 2A, or a NOI you may claim as confidential, but claims for information that is effluent data will be denied. If you do not assert a claim of confidentiality at the time of submitting the information, the department may make the information public without further notice to you. Claims of confidentiality will be handled in accordance with the department's business confidentiality regulations at 18 AAC 83.165.

### Definitions

All significant terms used in these instructions and in the form are defined in the glossary found at the end of APDES Forms 1, 2A, 2B, 2C, 2D, 2E, and 2F.

### Section 1 – Facility Information

Enter the facility's official or legal name and physical address or location. Do not use a colloquial name.

### Section 2 – Outfall Information

For each outfall provide:

- The distance from the shoreline to discharge or first port on diffuser. For marine waters, provide the distance at Mean Lower Low Water (MLLW);
- The orientation of the diffuser to the shoreline (e.g., perpendicular, 45°, parallel);
- The depth of the discharge port or diffuser. For marine waters, provide the depth at MLLW;
- The number of ports;
- The length of the diffuser;
- The port spacing; and
- The diameter of the ports.

Attach additional copies of this section for each outfall.

### Section 3 – Receiving Water Information

#### A) For Marine Discharges

Fill out this section only if the discharge is to marine waters. Provide the maximum current. If possible, provide salinity and temperature data from the receiving water surface to the depth of the discharge port or diffuser. Data from both late winter/early spring and late summer/early fall is preferable.

#### B) For Freshwater Discharges

Fill out this section only if the discharge is to freshwater. Provide the water body temperature at the time of low flow. Provide the current or flow and approximate width and depth of the water body at low flow. For streams, rivers, or other flowing fresh waters, the volume of flow available for dilution must be determined using:

- a. The actual flow as determined by gauging data collected concurrent with the discharge; or
- b. for conventional or nontoxic substances, the 10-year, 7-day low flow (7Q10) appropriate to the period of discharge. (*EPA did not approve using the 3-year, 2-day low flow (3Q2) stated in 18 AAC 70.255(f)(2) (July 2003) the 7Q10 is the accepted low flow for conventional or nontoxic substances*);
- c. for toxic substances, the 7Q10 as the chronic criteria design flow and the 10-year, 1-day low flow (1Q10) as the acute criteria design flow for protection of aquatic life; and
- d. for carcinogens, the harmonic mean flow as the design flow for the protection of human health

The low flows must be calculated using methods of Ashton and Carlson, *Determination of Seasonal, Frequency and Durational Aspects of Streamflow with Regard to Fish Passage Through Roadway Drainage Structures* (1984); Carlson, *Seasonal, Frequency and Durational Aspects of Streamflow in Southeast and Coastal Alaska* (1987); or another appropriate regional regression flow model approved by the department. Numeric water quality criteria apply at all design flows that are equal to or greater than the critical low flows.

If your receiving water body is a lake or pond, provide the dimensions.

#### C) Uses of Receiving Water at Distance From Point of Discharge

Provide the distance in meters from the point of discharge that the uses listed in the table may occur. If fish spawning occurs, list the species of fish that are known to spawn near your discharge [including fish listed in 18 AAC 70.255(h)]. The "Anadromous Waters Catalog" should be checked to verify that spawning does not occur for anadromous fishes (<http://www.sf.adfg.state.ak.us/SARR/AWC/>). Attach a copy of this section for each outfall.

### Section 4 – Mixing Zone Information

#### A) Mixing Zone Size and Configuration

Provide the dilution factor required for any pollutant in the discharge. To do this, first determine the Maximum Expected Concentration (MEC), otherwise termed the Reasonable Potential (RP) value, then determine the required dilution needed to meet the acute and/or chronic water quality standard for that pollutant. Use an approved mixing zone model to generate the mixing zone, length and width (in meters). For marine discharges, use the 10<sup>th</sup> percentile of the maximum current to model the width and the 90<sup>th</sup> percentile current to model the length of the mixing zone.

#### B) Pollutants

Provide a list of pollutants for which the mixing zone is being requested. A mixing zone shall be requested for any pollutants that do not meet Alaska Water Quality Standards (18 AAC 70) at the point of discharge. A mixing zone for pollutants that

bioaccumulate, bioconcentrate, or persist, or can cause carcinogenic, mutagenic, or teratogenic effects will require site-specific exposure and risk assessment in addition to the information provided in this form.

C) Model Information

Attach a separate sheet describing the input values not included on this form, the assumptions, and the outcome of the model used. If CORMIX was used to model the mixing zone, the "CORMIX Checklist for Data Preparation" must be submitted with Form 2M.

D) Mixing Zone Map

Attach a map showing the location and depth on any outfall(s). Include the outline and dimensions of the mixing zone being requested as a result of modeling.

**Section 5 – Certification**

Alaska Statute 46.03.790 provides for severe penalties for submitting false information on this application form. State regulations at 18 AAC 83.385 require this application be signed and certified as follows:

1. **For a corporation**, a responsible corporate officer shall sign the application; in this subsection, a responsible corporate officer means:
  - (A) 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, or
  - (B) the manager of one or more manufacturing, production, or operating facilities, if
    - (i) the manager is authorized to make management decisions that govern the operation of the regulated facility, including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental statutes and regulations;
    - (ii) the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and
    - (iii) authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
2. **For a partnership or sole proprietorship**, the general partner or the proprietor, respectively, shall sign the application; and
3. **For a municipality, state, federal, or other public agency**, either a principal executive officer or ranking elected official shall sign the application; in this subsection, a principal executive officer of an agency means
  - (A) the chief executive officer of the agency or
  - (B) a senior executive officer having responsibility for the overall operations of a principal geographic unit or division of the agency.

Include the name and title of the person signing the form and the date of signing.