



AZPDES APPLICATION
MIXING ZONE

Arizona Department of Environmental Quality
Water Quality Division – AZPDES Permits
1110 W. Washington Street
Phoenix, AZ 85007

This form is to be used as a supplement to an application for an AZPDES Permit when the applicant is requesting a mixing zone pursuant to R18-11-114. An application for a mixing zone can only be considered where there is sufficient water available in the receiving body for dilution. Please attach additional pages if more space is needed for your answers.

The following conditions prohibits granting of a mixing zone:

The Director shall not establish a mixing zone in an AZPDES permit for the following persistent, bioaccumulative pollutants:

1. Chlordane,
2. DDT and its metabolites (DDD and DDE),
3. Dieldrin,
4. Dioxin,
5. Endrin,
6. Endrin aldehyde,
7. Heptachlor,
8. Heptachlor epoxide,
9. Lindane,
10. Mercury,
11. Polychlorinated biphenyls (PCBs), and
12. Toxaphene.

I. Applicant Information

If existing facility:
NPDES/AZPDES No. _____

A. Name of Applicant _____

B. Name of person and company preparing mixing zone application _____

C. Email and phone number for person preparing mixing zone application



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II. Facility Information

A. Facility Name: _____

B. Discharge Point Latitude/Longitude: (In degrees, minutes, seconds)

_____ ° _____ ' _____ " N _____ ° _____ ' _____ " W

C. Discharge flow (MGD):

a. Present Flow: Monthly Average _____ Daily Maximum _____

b. Design Capacity (in MGD): _____

III. Receiving Water

A. Complete this section if discharge is to a stream, river, or canal. (If discharge is to a lake, skip this section and complete III.B. below.)

a. Name of receiving water: _____

b. The 7-day flow (cfs) which has a 10% probability of occurring in any given year (7Q10)

c. The 1-day flow (cfs) which has a 10% probability of occurring in any given year (1Q10)

d. The harmonic mean flow (cfs) _____

e. Stream velocity (in ft/sec) _____

B. Complete this section if discharge is to a lake. (If discharge is not to a lake, skip this section and complete III.A. above.)

a. Name of Lake: _____

b. Normal Operating Level:

i. Surface Area (acres or square miles, specify): _____

ii. Volume (million gallons or cubic feet): _____

iii. Average Monthly Inflow (mgd): _____

iv. Average Monthly Outflow (mgd): _____



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v. Maximum Depth (feet): _____

C. Complete all items below for all mixing zone requests.

a. List all downstream flow diversions within one mile of outfall: _____

b. List all downstream flow additions within one mile of outfall: _____

c. List any known facilities that discharge into the receiving water within one mile of outfall: _____

d. List the location of any nearby public swimming areas/beaches: _____

e. List any nearby drinking water intakes: _____

f. Are any threatened/endangered species of fish present in the receiving water? If yes, explain.

g. Does the receiving water have any nearby biologically sensitive habitats or communities? If yes, explain.

h. Is the receiving water on the 303(d) list? _____

IV. Outfall Information

a. Does the outfall have a diffuser? _____

b. How does the outfall maximize rapid and complete mixing? _____

c. Have any tracer or dye studies been completed? If so, please describe results:

d. Does the outfall discharge directly into the waterbody? If no, explain. _____



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V. Mixing Zone Study

- A. List all pollutants for which you are requesting a mixing zone. _____
- _____
- B. The following information is required to be submitted along with this document:
- a. Map of the outfall, receiving water, and mixing zone boundaries.
 - b. Bathymetric map (only if discharge is to a lake).
 - c. Spreadsheet with the following:
 - i. Both Receiving water and effluent data for pollutants for which a mixing zone is being requested. Data should include at least 4 sample results taken at least 2 months apart.
 - ii. Daily flow data for both the receiving water and effluent for the last two years.
 - d. A diagram of the outfall structure
 - e. A diagram showing the placement and depth of the outfall structure in receiving waterbody
 - f. Demonstration of complete mixing
 - i. Is complete mixing occurring? Complete mixing **must be demonstrated** on a stream or canal transect within two stream widths of the discharge location showing no more than a five percent variation in either the constituent of concern or specific conductivity. If complete mixing is occurring, provide transect sampling results.
 - ii. Provide Sampling and Analysis Plan for complete mixing demonstration. The Sampling and Analysis Plan, should describe the following: when and where samples were collected, how samples were collected, laboratory(s) that performed analyses, any field tests conducted, pollutants or analytes measured, approved analytical method(s) used, limits of Detection (LOD) and Limits of Quantitation (LOQs).



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- iii. Define boundary of the mixing zone (including average area and average width of receiving waterbody within the mixing zone) and the gradient of concentrations within the mixing zone.
- C. If complete mixing cannot be demonstrated, a model must be submitted. Include the following information:
 - a. Describe modeling approach
 - b. Provide model inputs
 - c. Provide model outputs
 - d. Description and illustration of the boundaries of the mixing zone

VI. 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, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Printed Name _____

Official Title (Type or print) _____

Signature _____

Date Signed _____