

**APPENDIX 5-1
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PROGRAM
APPLICABILITY FOR STORMWATER RUNOFF**

Municipal separate storm sewer systems serving a population of 250,000 or more will be required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for the discharge of stormwater runoff. The following are the anticipated application requirements. Although specific details may change before enactment of the regulations, the Arizona Department of Environmental Quality (ADEQ) believes the general process will remain similar to that described below.

The ADEQ anticipates a two-part application with provisions for co-applications where more than one publicly owned Municipal Separate Storm Sewer Systems (MSSS) exist within a geographic area.

2.11 NPDES Stormwater Application Requirements - Part I

Part I of the application will consist of the following sections:

- Source Identification
- Discharge Characterization
- Field Screening Analysis
- Characterization Plan
- Management Program.

The applicant will provide general information which includes the name of the applicant together with the address, telephone number, ownership status, and status as a federal, state or local governmental entity. The current legal authority to control discharges into the MSSS should also be detailed. An assessment of discharges shall be provided along with a discharge profile and Characterization Plan.

Source Identification

An USGS 7.5 minute topographic map encompassing the service boundaries of the MSSS plus one mile must be included with the application. An equivalent topographic map with a scale between 1:10,000 and 1:24,000, may be used if cost-effective. On this map the following locations should be indicated:

- A. All currently operating or closed municipal landfills or other treatment, storage or disposal facilities for municipal waste together with a supplement describing the activities of the facility.
- B. The known MSSS outfalls discharging to waters of the United States. Each facility which may discharge to the MSSS and is associated with an industrial activity must be indicated and the facility's name, address, location as well as a SIC code which best describes its products or services should be added.
- C. The area and perimeter of each drainage area associated with all major outfalls. Also included should be a description of the land use activities in the drainage area together with an approximation of population densities and projected growth patterns for a period of ten years.
- D. An estimate of the runoff co-efficient for each land use division.
- E. Location and NPDES permit number of any known discharge to the MSSS which has been issued a NPDES permit should be indicated.
- F. All publicly-owned land shall be identified.
- G. Major structural controls for stormwater discharge should be identified and noted on the map.

Discharge Characterization

- A. The permit will require a Discharge Characterization. The expected required criteria will consist of a tabulation of water bodies that receive discharges from the MSSS and may be degraded by the pollutants received. A description of the impacts will indicate whether or not the water receiving the discharges have been:
1. Assessed any reported in Section 305(b) reports submitted by the state, the basis of the assessment (evaluate or monitor), a summary of designated use support and attainment of Clean Water Act (CWA) goals (fishable and swimmable waters), and causes of non-support of designated uses.
 2. Listed under Section 304(1)(1)(A)(i), 304(1)(1)(A)(ii) or 304(1)(B) of CWA that is not expected to meet water quality standards or water quality goals.
 3. Identified and classified according to eutrophic condition of publicly-owned lakes listed in state reports required under Section 314(a) of the CWA.
 4. Waterbodies listed in state nonpoint source assessments required by Section 319(a) of the CWA that, without additional action to control nonpoint sources of pollution, cannot reasonably be expected to attain or maintain water quality standards in which storm sewers, construction, highway maintenance and runoff from municipal landfills, and municipal sludge adds significant pollution (or contributes to a violation of water quality standards).
 5. Unique waters of Arizona.
 6. Shown to have existing information with respect to pollutants in fish tissue, bottom sediments, or biosurvey data.
- B. Information shall also be provided on:
1. Monthly mean rain and snowfall estimates and the monthly average number of storm events.
 2. Existing quantities data describing the volume and quality of discharges from the MSSS, including a description of the outfall sampled, sampling procedures and analytical methods used.

Field Screening Analysis

A Field Screening Analysis will be required which describes the results of sampling conducted during a field inspection at all major outfalls covered in the permit application. The required information will include:

1. Quantitative information which characterized the quality and volume of the discharges, including sampling protocol, analytical methods, and a description of the outfall sampled.
2. The results of a field inspection for illegal connections and illicit dumping for all outfalls under application. There shall be a screening analysis which includes a narrative of a dry weather visual inspection for each major outfall. Should any flow be noted, then 2 grab samples will be collected within a 24-hour period with at least 4 hours between samples. All samples will include a narrative of observations for the following items:
 - Turbidity
 - Odor
 - Surface scum
 - Color
 - Oil sheen (if any)

Any indications of the potential presence of non-stormwater discharges.

Additionally, a narrative description of the results of a field analysis to estimate the following parameters:

pH	Total chlorine
Total copper	Total and hexavalent chromium
Detergents or surfactants	Flow rate
Total phenol	Free cyanide

If the methods of field analysis are not approved within 40 CFR Part 136, then a description of the test used shall be submitted along with the manufacturer of the method, and the accuracy and range of the test.

Characterization Plan

A Characterization Plan will be required which will provide information on the identification of major outfalls and the location of outfalls appropriate for data collection.

Any outfalls suspected by the applicant of containing illicit discharges, will be identified. For those outfalls identified, a plan to detect and control illegal discharges and improper disposal to the storm sewer may be submitted in lieu of the sampling requirements detailed in the "Characterization of Data" section in Part II of the application.

The locations of outfalls appropriate for sampling shall be included along with a rationale stating why the outfall is representative. The locations of outfalls for sampling should reflect water quality concerns. Additionally, the seasons during which sampling is intended and a description of the sampling equipment shall be included.

Management Programs

The applicant shall provide a description of the existing management program to control pollutants from the MSSS. At a minimum, the description will include information on the following components:

- A. Existing structural and source controls.
- B. Operation and maintenance measures for structural controls.
- C. An estimate of the reduction of pollutant loads due to such controls.
- D. Procedures to control pollution resulting from construction activities.
- E. Floodplain management controls.
- F. Wetland protection measures.
- G. Best Management Practices for emergency spill response programs.
- H. Controls established under state and local laws.

Additionally, the seasons during which sampling is intended, and a description of the sampling equipment should be affixed.

2.12 NPDES Stormwater Application Requirements - Part II

The second part of the NPDES application for stormwater runoff is expected to consist of the following:

- Legal Authority
- Source Identification
- Characterization of Data

- Proposed Management Program.

Legal Authority

The applicant will be required to demonstrate that adequate legal authority is established by statute, ordinance or series of contracts which enables the applicant to:

- A. Require compliance with conditions in contracts, orders, permits, or ordinances.
- B. Regulate the discharge of pollutants to the MSSS by each stormwater discharge associated with industrial activity or the quantity of stormwater discharged from sites of industrial activity.
- C. Require the control of discharges to the MSSS of spills, dumping, or disposal of materials other than stormwater.
- D. Disallow illegal discharges to the MSSS.
- E. Regulate through interagency agreements among co-applicants the addition of pollutants from one section of the MSSS to another section of the MSSS.
- F. Conduct all surveillance, inspection, and monitoring procedures necessary to determine compliance with permit conditions.

Source Identification

For any major outfall location that discharges to waters of the United States not reported in Part I, Source Identification, the same information shall be supplied as required under Field Screening Analysis.

Characterization of Data

The applicant must provide information characterizing the quality and quantity of discharges covered in the permit applicant.

Dry weather and storm event sampling requirements shall include an approximation of the dry weather flow together with a 24-hour dry weather composite sample. Samples which are collected from a stormwater discharge will require the following in the application:

- A. Duration and date of the event.
- B. An estimate of the amount of flow.
- C. An approximate value for the amount of rainfall from the event being sampled.

Quantitative data will be required from the following:

pH	Chemical Oxygen Demand (COD)
Fecal coliform	Total Organic Carbon (TOC)
Biological Oxygen Demand (BOD)	Fecal streptococcus
Volatile Organic Carbon (VOC)	Surfactants (MSAS)
Oil and grease	TSS
Zinc	Total phenol
Lead	Chromium
Copper	Cadmium
Nickel	Silver
Cyanides	

Collection of the sample must in accordance with 40 CFR 122.21(g)(7). Analytical methods must be approved under 50 CFR Part 136. If no approved analytical method exists, the applicant may use any suitable method but must provide a description of the method.

The EPA shall designate among five and ten outfalls as representative of the commercial, residential, and industrial and uses of the drainage area contributing to the system. For these designated outfalls quantitative data shall include the following requirements.

- A. Samples are to be collected for each designated outfall of a stormwater discharge from a representative storm event.
- B. For at least one designated outfall, the applicant will collect samples of stormwater discharges from three representative storm events with minimum of one month between events.
- C. A narrative description of each representative storm event which contains information pertaining to: the date and duration of the storm event sampled, an estimate of the rainfall of the event which generated the sampled discharge, and the time period between the sampled event and the previous measurable (0.1 inch rainfall) storm event.
- D. For samples collected to comply with "Source Identification" - discharging to waters of the United States (Part I), and samples collected for number two above shall provide quantitative data for the organic pollutants listed in Table II (except bis (chlormethyl) ether, dichlorofluormethane, and trichlorofluormethane, and the compounds listed in the Table III of Appendix D of 40 CFR Part 122.

For these samples, quantitative information must be provided for the following parameters:

Dissolved solids	Total Suspended Solids (TSS)
BOD	COD
Fecal coliform	Oil and grease
pH	Fecal streptococcus
Dissolved phosphorous	Total nitrogen
Total phosphorus	Total ammonia plus organic nitrogen

- E. Additional quantitative data may be required in order to substantiate sample representation.

Estimates of the annual pollutant load of the cumulative discharges from all outfalls identified in the permit applications, and the event mean concentration of the cumulative discharge from all outfalls represented in the permit application during a representative storm event shall be provided. The following parameters will be required:

Total nitrogen	Total ammonia plus organic nitrogen
COD	TSS
BOD	Dissolved solids

Dissolved phosphorous
Copper
Lead

Total phosphorus
Cadmium
Zinc

The estimates must detail the procedures used in the estimation of constituent loads and concentrations, a description of the representative storm, discharge monitoring, modeling, calculation methods, and data analysis.

All MSSS outfalls discharging to waters of the United States are expected to be required to submit a proposed schedule which gives estimates of the seasonal pollutant load and of the event mean concentration of a representative storm for any constituent detected in any sample from a designated representative outfall. The applicant will propose a monitoring program for representative data collection for the term of the permit stating the location of the outfalls to be sampled, substantiation as to why the location is representative, parameters to be sampled, the frequency of sampling, and a description of the instruments used for the sampling shall be included.

Proposed Management Program

For the duration of the permit, a management program is to be proposed by the applicant. In the case of co-applicants, separate programs may be submitted by each. The objectives of the management program are to develop a comprehensive planning process to define public participation and intergovernmental coordination, which facilitates the reduction of pollutant discharges.

The Management Program shall be a description of structural and source control measures to reduce pollutants from commercial and residential runoff during the life of the permit. Additional information should give an approximation of the reduction of the expected pollutant loads and a schedule for implementing the controls. The proposed Management Program shall include a description of staff and equipment available to implement the program. Separate proposed programs may be submitted by each co-applicant. The programs may impose controls on a systemwide basis, a watershed basis, a jurisdiction basis, or on individual outfalls.

Management Programs will be considered by the EPA when developing permit conditions. The proposed management Programs shall describe priorities for implementing controls.

First, the program shall, at a minimum, include the following descriptions:

- A. Procedures to assure that the impacts upon the water quality of receiving waters is assessed for flood management projects.
- B. A program to monitor pollutants in runoff from closed or operating municipal landfills including other storage, treatment, or disposal facilities for municipal waste. This shall describe procedures and priorities for inspections and the establishment and implementation of discharges.
- C. The activities and schedules concerning the maintenance for structural controls to reduce pollutants in discharges from the MSSS.
- D. The operating and maintenance practices for public thoroughfares and procedures for reducing the impact on receiving waters from the discharges of MSSS.
- E. A comprehensive master plan to develop, enforce, and implement controls to reduce the discharge of pollutants from the MSSS which receive discharges from areas of new development and significant redevelopment. After construction is completed, the master plan should include the controls to reduce pollutants in discharges from the MSSS.
- F. The procedures to reduce to the maximum extent practical pollutants in discharges from the MSSS connected with application of pesticides, fertilizer, and herbicides. The procedures will include, where appropriate, educational activities, certifications, permits, and other measures from commercial applicators and distributors and controls for application in public right-of-ways and at

municipal facilities.

Second, the Management Program shall include details of a plan to monitor pollutants in runoff from industrial facilities that discharge to MSSS. This plan shall identify priorities and procedures for inspections and, establishing the implementing control measures for the discharges to the MSSS.

Third, the program should include a strategy to detect and remove illicit dischargers and improper disposal into the MSSS.

Alternatively, the strategy should require the illegal discharger to obtain a NPDES permit for discharges to the MSSS. The strategy is expected to include the following descriptions.

- A. Procedures to contain, prevent, and respond to spills that may be discharged into the MSSS.
- B. The educational and public information activities or other appropriate methods to facilitate the proper management and disposal of used oil and toxic materials.
- C. A plan to implement and enforce an ordinance, order or similar means to prevent illegal discharges into the MSSS.
- D. The sampling requirements during non-storm and storm events for following parameters: VOC, residual chlorine, fecal coliform, fecal streptococcus, and surfactants (MBAS).
- E. Testing with flourometric dye and smoke, can be used as an indication for illegal cross connection to storm sewer systems.
- F. Controls to limit seepage infiltration from municipal sanitary sewers to MSSS.
- G. A plan to facilitate public reporting of illicit discharges or water quality impacts associated with discharges from MSSS. This can be performed by promotion or publicizing type activities.

Fourth, a fiscal analysis for each year to be covered by the permit will be needed to document there is necessary capital and operation and maintenance expenditures to accomplish the activities of the proposed Management Program and the Characterization of Data. The analysis shall include a description of the source of funds that are proposed to meet the necessary expenditures, including legal restrictions on the use of such funds.

Fifth, details of a program to implement and maintain structural and non-structural Best Management Practices to reduce pollutants in stormwater runoff from construction sites to the MSSS which include the following descriptions:

- A. The procedures for identifying priorities for inspecting sites and enforcing control measures which consider the nature of the construction activity, soil, and receiving water quality characteristics and topography.
- B. Requirements for structural and nonstructural Best Management Practices.
- C. The appropriate training and other educational sessions for construction site operators.
- D. Procedures for site planning which encompass considerations of potential water quality impacts.

Sixth, the Management Program shall contain an estimation of the reductions in loadings of pollutants from discharges of municipal storm sewer constituents from municipal storm sewer systems expected as a result of the municipal stormwater quality management program. This assessment will also identify known impacts of stormwater controls on groundwater.

Seventh, if two or more legal entities submit an application, the application shall include a description of the

responsibilities and roles of each legal entity and policies to ensure effective coordination.