



State of Tennessee
Department of Environment and Conservation
Division of Water Pollution Control

NPDES Permit Number TNS068063
Authorization to Discharge under the National Pollutant Discharge Elimination System

In compliance with The Tennessee Water Quality Control Act of 1977, T.C.A. § 69-3-101 et seq., as amended, and in compliance with the provisions of the Clean Water Act, 33 U.S.C. et seq., as amended by the Water Quality Act of 1987, P.L. 100-4,

City of Chattanooga
Municipal Separate Storm Sewer System (MS4) Permittee:
City of Chattanooga
Suite 100, City Hall
Chattanooga, Tennessee 37402

is authorized to discharge storm water runoff, in accordance with the following storm water quality management program(s), effluent limitations, monitoring requirements and other provisions as set forth in Parts II, III, IV, V, VI, VII and VIII below, from all portions of the MS4, owned or operated by any permittee listed above, to waters of the State of Tennessee.

This permit shall become effective on October 1, 1996.

This permit shall expire at midnight on September 30, 2001.

Date Issued September 30, 1996

Paul E. Davis, Director
Division of Water Pollution Control

City of Chattanooga
NPDES Permit TNS068063

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The elements of this permit are structured and named as follows:

- I. Part
 - A. Subpart
 - 1. Item
 - a. Subitem
 - i. Section.

PART I.

DISCHARGES AUTHORIZED UNDER THIS PERMIT

- A. Permit area: This permit covers areas within the boundaries of the City of Chattanooga.
- B. Authorized discharges: Except for discharges prohibited under subpart I.E., this permit authorizes all existing or new storm water point source discharges to waters of the State of Tennessee from those portions of the Municipal Separate Storm Sewer System (MS4) owned or operated by the permittee.
- C. Permittees: The following entity is subject to the conditions of this permit:
- City of Chattanooga
- The City of Chattanooga may be referred to in this permit also by "City," or "Chattanooga."
- D. Responsibilities of the permittee
1. The permittee is responsible for the following:
 - a. compliance with permit conditions relating to discharges from portions of the MS4 where it is the operator;
 - b. implementing the storm water management program on portions of the MS4 where it is the operator;
 - c. where permit conditions are established for specific portions of the MS4, the permittee need only comply with the permit conditions relating to those portions of the MS4 for which it is the operator; and
 - d. a plan of action to assume responsibility for implementation of storm water management and monitoring programs on their portions of the MS4 should inter-jurisdictional agreements allocating responsibility among other institutions be dissolved or in default.
 2. The permittee is responsible for the following:
 - a. submission of annual reporting requirements as specified in Part VI. (Annual Report) of this permit;
 - b. collection of monitoring data as required by Part V.(Monitoring Requirements), according to such agreements as may be established between other institutions or permittees; and
 - c. insuring implementation of system-wide management program elements, including any system-wide public education efforts.
- E. Limitations on coverage: The following discharges are not authorized by this permit.

1. Discharges of non-storm water, except where such discharges are as follows:
 - a. in compliance with a separate NPDES permit; or
 - b. identified by and in compliance with section II.C.7.b.ii. of this permit; and
2. Discharges of material resulting from a spill, except emergency discharges required to prevent imminent threat to human health or to prevent severe property damage, provided measures have been taken to minimize the impact of the discharge; also see subitem II.C.7.e. "Procedures to prevent, contain and respond to spills."

PART II.

PERMIT CONDITIONS

- A. **Authorization:** Permittees are authorized to discharge storm water from the MS4 according to the management program described in the November 18, 1991 Part 1 and November 16, 1992 Part 2 NPDES MS4 permit application. Where this permit specifies modified, different, or other storm water management program activities, the permittee is responsible for compliance with this permit.
- B. **Completion of application Parts 1 and 2**
Not Applicable
- C. **Storm Water Management Program (SWMP) Elements**
 1. Operation and maintenance of structural controls
 - a. System inventory
 - i. The permittee shall conduct an inventory of the storm water drainage system and shall include:
 - location of inlets, outfalls, manholes, junction boxes, culverts, bridges and concrete channels;
 - physical descriptions of the drainage structures including the material of construction and geometry; and
 - observations of the structural integrity, obstruction to flow, and the presence of oil, grease or abnormal color or odor.
 - ii. The City shall begin this inventory with a pilot project, to establish procedures, methods and information fields and to assess the maintenance needs and the costs of the GIS system.
 - iii. This inventory shall encompass all areas within the City boundaries, and shall be performed watershed by watershed according to a written order of priority.

- iv. The inventory data shall be compiled in Geographic Information System (GIS) format.
- b. The permittee shall develop and implement a program of periodic inspections of storm water quality control structures that are a part of the MS4, as described below:
- i. prior to completing the GIS inventory, inspections should be performed according to a set of priorities; structures that serve industrial facilities, landfills, major commercial facilities and airports will receive priority attention;
 - ii. prior to completing the GIS inventory, perform inspections on the 64 major structural controls identified in Part 1 of the NPDES permit application;
 - iii. inspect for evidence of failed structural controls and generally assess operating condition and performance capacity;
 - iv. collect the types of data necessary for prioritizing emergency maintenance and scheduling routine maintenance; and
 - v. establish a recordkeeping system that incorporates results of inspections into the GIS system, and thereby enables the storm water program manager to establish priorities for future inspections.
- c. Develop and implement the most effective and preferred maintenance methods, practices and procedures, for achieving optimum performance of the drainage system.
- i. In developing such preferred methods, the City shall address litter control and cleanup; installation and maintenance of check dams; minimizing potential of erosion in grass-lined wet weather conveyances because of maintenance practices therein; timing of conveyance maintenance; reseeding of conveyances; and
 - ii. The City shall prepare a Maintenance Practices Manual that will describe these maintenance methods.
- d. Develop, implement and enforce maintenance requirements for the management of privately owned or operated wet weather conveyances and storm water quality control structures (e.g. detention ponds, infiltration basins, sand filters, water quality inlets, oil skimmers) that discharge into the Chattanooga MS4, including:
- i. requiring new developments to provide details of system inventory to the City in appropriate, electronic format (GIS compatible);
 - ii. developing a set of general maintenance standards for privately operated wet weather conveyances and storm water quality control structures; the City shall write maintenance standards that recognize State stream alteration permitting requirements pursuant to T.C.A.

69-3-108 and Aquatic Resource Alteration Rule Chapter
1200-4-7;

- iii. a City ordinance which codifies the requirement for system maintenance through agreement at the time of plans approval; and
- iv. a credit mechanism in the storm water service fee program that gives credit to a developer when one installs storm water controls that reduce operational and administrative demands on the Chattanooga Storm Water Management Division (SWMD).

Some typical maintenance activities are listed in Part IX. in the definition of "Maintenance."

- e. Develop and implement a schedule of routine maintenance practices (this element greatly depends on completion of the GIS inventory), ensuring that the types of data necessary for scheduling routine maintenance are collected and recorded in the course of compiling the GIS system inventory.
 - f. Develop and implement a monitoring and evaluation program to measure the effectiveness of the above-described program elements, including the following:
 - i. identifying priority watersheds and sub-basins, where approved maintenance procedures have not been implemented;
 - ii. establishing baseline ambient water quality in these priority areas;
 - iii. comparing water quality in the same areas before and after improved maintenance procedures have been implemented.
 - g. This permit does not convey authority to the City of Chattanooga to alter streams or otherwise engage in activities that would require or do require permitting under the Division's Aquatic Resource Alteration Permitting system.
2. Control of discharges from areas of new development and significant redevelopment
- a. The permittee shall identify how storm water quality issues will be considered and incorporated into the municipality's land use planning process.
 - b. The City shall develop and publish a Best Management Practices Manual for land development and management activities:
 - i. which shall include detailed specifications for a variety of BMP's that should be incorporated into land development projects to control storm water runoff to achieve both quantity and quality objectives;
 - ii. which shall be promulgated to developers in a usable form; and
 - iii. which shall provide quantitative assessments of the effectiveness of each BMP for pollutant removal.

- c. The permittee shall develop and implement performance standards or design standards for detention and treatment of storm water runoff; i.e. to capture the first flush of storm events and provide settling time and remove pollutants.
 - d. The City must ensure that construction plans at new developments and significant redevelopment are reviewed for compliance with design criteria for water quality controls.
 - e. The permittee shall conduct controlled evaluations of various operating BMP's, including at least one pilot project, and keep an ongoing table of results and maintain expertise in the use of these BMP's.
 - f. The permittee shall describe a master planning effort by investigating the following matters and setting forth a strategy to address each matter:
 - i. changes to laws, ordinances, rules, etc.
 - ii. educating and involving the city council and Regional Planning Agency;
 - iii. design criteria for new development, including restrictions on impervious area; use of pervious paving material; identifying opportunities for local and regional detention basins; provisions for recharge of groundwater; and restrictions for development in steeply sloped areas;
 - iv. changes to administrative procedures; and
 - v. education of land developers.
 - g. The permittee shall identify and prioritize all areas where significant levels of development are expected to occur and schedule master planning for these areas.
 - h. The permittee shall develop a pilot master plan for the area with highest priority, identified per subitem 2.g. above.
 - i. The permittee shall proceed with master planning in other areas, in order of priority.
3. Roadways
- a. Develop a set of recommendations to reduce vehicle emissions and discharge of fluids (oil, fuel, etc.) from municipally operated vehicles, including:
 - i. vehicles for fire and police, garbage pickup, street sweeping, public works, school bus services and public transit;
 - ii. seeking assistance from operating departments of the City, from the Air Pollution Control Board, TVA and local universities; and
 - iii. publish and promulgate a report among department managers and City officials.
 - b. Review the current deicing practices and implement changes as appropriate. In addition, ensure that deicing chemicals are properly stored and covered at City Yards.

- c. Develop and implement a modified street sweeping program, including as follows:
 - i. a study of street sweeping operations, examining:
 - priority sweeping areas and frequency of sweeping;
 - equipment types and effectiveness of vacuum type sweepers;
 - sidewalk sweeping frequency in priority areas;
 - proper disposal of street sweepings and flush water;
 - changes in parking ordinances; and
 - requirements for vacuum sweeping of large commercial parking areas.
 - ii. implementing changes per the above described study to the maximum extent practicable
 - d. Review existing traffic management practices and develop plans, guidelines, BMP's and recommendations to reduce the adverse impacts on quality of receiving waters, as described below:
 - i. focus on major roadways;
 - ii. describe feasible new ways to convey, capture and treat the storm water runoff from primary roadways; and
 - iii. compile a report, including schematic drawings, that will serve as a guide for the City's roadway improvement program.
 - e. The permittee shall review its road design criteria, road construction requirements, and road maintenance practices; and produce a manual of design and maintenance practices for Chattanooga roadway construction and maintenance; and ensure that pollution prevention plan practices, described in the storm water application for City Yards, are implemented at City Yards. The manual shall clearly address sensitive areas such as areas adjacent to streams, wetlands and floodplains.
 - f. The permittee shall implement routine and preventive maintenance of catch basins.
4. Flood control projects
- a. The permittee shall evaluate existing flood control facilities for retro-fitting with water quality and pollution control structures, including:
 - i. map of all the available structures, ponds and creeks that could be enhanced for water quality features; and
 - ii. evaluating these structures based on type, location, watershed, ownership, and opportunity for retro-fit.
 - b. The permittee shall institute procedures to assure that flood management projects assess the impacts on the water quality of receiving waters, including steps of communication between the involved parties: government agencies, developers, etc..

5. Program to monitor pollutants in runoff from municipal waste management facilities (landfills and sites used for the treatment, storage and/or disposal of municipal waste, including waste transfer facilities, land application sites, maintenance and storage facilities for rolling stock and equipment)
 - a. The City shall prepare a BMP guidance document to be used for municipal waste management facilities, including both structural and non-structural BMP's.
 - b. The SWMD shall review and inspect pollution prevention programs at each municipalsolid waste management facility in the City and provide guidance for compliance with the plans and with the SWMD's guidance document.
 - c. The permittee shall develop and implement a monitoring program for facilities identified in item 5. above. This monitoring program may be integrated with the monitoring program described in subitem 8.e. "Industrial monitoring program."
 - d. The SWMD shall establish a written memorandum of understanding (MOA) among the SWMD and other City operations that defines responsibilities and funding obligations for the implementation of water quality requirements. It shall clearly define the common and different areas of responsibility between the SWMD and the CSO program and allocation of funding between these two operations.

6. Use of pesticides, herbicides and fertilizers
 - a. The permittee shall ensure that the public is made aware of the proper use, handling, storage and disposal of pesticides, herbicides and fertilizers, through the following efforts:
 - identifying and acquiring information for distribution to the public; and
 - feature articles in the SWMD's newsletter on use of PHF's
 - exploring use of mass mailings, public meetings, handouts, radio, television, hotline
 - b. The SWMD shall develop a guidance document in the form of a brochure for property owners for alternative BMP's for the use and control of vegetation; such as lawn grasses known to require less watering and fertilizer; timely application of fertilizer; landscaping that requires less fertilizing
 - c. Work with the Tennessee Department of Agriculture, and other institutions with an interest in pest management, to find and implement practical applications of non-chemical pest control techniques.
 - d. The SWMD shall review current municipal PHF usage and management activities and develop a PHF BMP guidance document; which addresses application techniques, alternative chemicals, alternate landscaping, soils testing, training, integrated pest management (non-chemical management), stream buffers and weather restrictions.

- e. Implement a PHF monitoring program to identify sources of PHF's and problem areas, to detect improper usage and to evaluate the effectiveness of this element (Use of PHF's) of the City's SWMP.

7. Illicit discharges and improper disposal

a. General requirement

The permittees shall implement an ongoing program to detect and remove (or require the discharger to the MS4 to remove) illicit discharges and improper disposal into the storm sewer system. Elements of such a program are described in Subitems b. through i. below.

b. Inspections, ordinances, and enforcement measures

- i. Non-storm water discharges to the MS4 shall be effectively prohibited by the permittees through various methods, that include at a minimum the use of inspections, ordinances, and enforcement.
- ii. The permittees, however, may allow the following non-storm water discharges to the MS4 where the permittee has not identified them as causes of pollution in waters of the State of Tennessee:

- water line flushing;
- landscape irrigation;
- diverted stream flows;
- rising ground waters;
- uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)) to separate storm sewers;
- uncontaminated pumped ground water;
- discharges from potable water sources;
- foundation drains;
- air conditioning condensate;
- irrigation water;
- springs;
- water from crawl space pumps;
- footing drains;
- lawn watering;
- individual residential car washing;
- flows from riparian habitats and wetlands;
- dechlorinated swimming pool discharges;
- street wash waters (water the City sprays on streets for the purpose of washing debris off the pavement); and
- discharges or flows from emergency fire fighting activities.

The permittee shall identify those non-storm waters listed above which will be allowed to discharge into the MS4. The permittee shall describe any conditions to be placed on these allowable discharges.

In particular, pollution control measures for street wash waters and for fire fighting waters must be addressed in the first annual report and as necessary thereafter.

- iii. New or revised ordinances must include a perspicuous description of "illicit discharge," and must provide, to the extent necessary for effective inspections, procedures of entry (to facility properties), inspection and monitoring.
- iv. The permittees shall put ordinances in place, or revise existing ordinances, to prohibit clearly illicit connections and illegal dumping into the MS4, and the ordinance shall incorporate the capability to enforce the prohibition and to assess penalties for noncompliance with the ordinance.
- v. The permittees shall develop and put in practice enforcement procedures for the illicit discharges and improper disposal program.
- vi. Permittees shall provide in the first Annual Report, a photocopy of the signed adopted ordinance(s) described in section iii. above and the enforcement procedures described in section iv. above.

c. Field screening program

- i. The permittees shall continue to implement and improve its ongoing program to determine whether non-storm water entries are present in the storm drainage system, and to identify locations and sources of non-storm waters, including:
 - I improving methods;
 - II selecting alternative parameters;
 - III assigning additional personnel;
 - IV custom design of program for each of the eight Chattanooga Watershed Management Units; and
 - V developing target priority areas for field screening.

(This program may be considered a continuation of field screening activities done for Part 1 of the NPDES application.)

- ii. The permittees shall continue the existing program with a minimum of four inspectors, two specially equipped vans and one supervisor. Inspectors shall be trained and equipment maintained.
- iii. The ongoing field screening effort shall be conducted according to priorities.

The priorities given in the Part 2 application shall be followed: i. contaminated Part 1 field screen sites and/or areas; ii. Part 1 known outfalls that were not screened in the Part 1 screening effort; iii. newly documented outfalls; and iv. low priority Part 1 field screen sites.

- iv. Field screening activities, including locations, times, parameters and sampling results, discovered sources of flows, etc. shall be documented in an

electronic database format, compatible with the GIS. The data must be documented so that they can be tracked, organized and otherwise analyzed by computer.

- v. Listed below in Table II.C.1. is a set of minimum dry weather field screening activities.

The minimum level of surveillance for the field screening program shall be based upon a 0.50-mile grid system, with each grid area containing at least one field screening location. In industrial and heavy commercial areas, the minimum level of surveillance shall be based upon a 0.25-mile grid system, with each grid area containing at least one field screening location. Under this program, all grid areas of the MS4 must be screened once during the permit term. Some grid areas may require more than one field screening location or a more frequent inspection schedule, as noted in the table below. In lieu of the grid system, the permittees may choose to field screen at all outfalls.

Table II.C.1.	
GRID MAP COVERING AREA SERVED BY MS4 or ALL OUTFALLS	FREQUENCY OF FIELD SCREENING
Industrial Land Use	0.25-mile grid or all outfalls Once / 2 years
Heavy Commercial Land Use	0.25-mile grid or all outfalls Once / 2 years
All Other Land Uses	0.50-mile grid or all outfalls Once / 2 years
Entire MS4 System	One third of the outfalls or one third of the grid areas screened during permit years three, four, & five with the entire MS4 screened once / 5 years

- vi. The permittee shall develop and implement a stream inspection program to identify direct discharges to waters of the State. The program shall arrange for the inspection of every accessible stream segment, via walking of streams and/or riding boats through the waters.
 - vii. The permittee shall develop and implement a wet weather surveillance program to locate sites of intentional improper disposal during wet flush conditions. This program shall include the location of key monitoring points along priority creeks.
- d. Investigations of non-storm water discharges
- i. The permittees shall develop and implement standard procedures to be followed to investigate portions of the MS4 that, based on the results of the field screen or other appropriate information, indicate a reasonable potential of containing illicit discharges or other sources of non-storm water.
 - ii. Written notification to the Division of Water Pollution Control of each illicit connection discovered shall be an element of the standard procedures. Notifications may be in summary form; e.g., a list delivered to the Division once per quarter or other frequency agreed to by both parties.
 - iii. The permittee shall see that field investigators are trained to investigate illicit discharges and/or

improper disposal and shall purchase and maintain the equipment necessary to the effort. These shall be trained in the use of equipment, investigative procedures, water quality analysis, safety measures and enforcement procedures.

- iv. Investigations, and results of those investigations, including locations, times, parameters and sampling results, discovered sources of flows, etc. shall be reported and documented in a format usable with the GIS.
 - v. The SWMD shall develop and follow legally sound procedures in pursuing investigations of non-storm water discharges, such as guidelines for entry, investigation of private property, notification protocols, and documenting evidence.
- e. Procedures to prevent, contain and respond to spills
- i. Investigate and analyze the types and causes of emergency spills, with a view toward preventing spills in the future:
 - I Initiate research inquiries with other agencies;
 - II Summarize in a brief report trends, common causes, and statistical inferences; and
 - III Include pertinent information from storm water pollution prevention plans in the GIS database
 - ii. Develop spill cleanup guidelines, that minimize impacts to receiving waters, in conjunction with the City Fire Department.
 - iii. Provide storm water system and receiving water mapping to Emergency Preparedness officials for the identification of downstream risk areas. Exchange data with these officials. In particular, incorporate into the GIS database industries with stores of hazardous chemicals, explosives, and water priority chemicals.
 - iv. Seek to prevent spills at various industries by identifying those with greater potential for spills or fugitive releases; by requiring SPCC and/or SWPPP plans at these facilities; by inspecting them for compliance with the plans.
 - v. The City shall set forth in written form the categories (sizes, materials, etc.) of spills for which the City itself will function as lead respondent. Also the City shall describe the different functions and responsibilities among the City, the County Emergency Response Team, TEMA, the Fire Department, etc. in case of spill.
- f. Public participation
- The permittees shall develop and implement a program that informs the public on how to report spills, illegal dumping, illicit connections and water quality problems.

The program shall teach the public what to look for and how to report incidents.

The permittees shall establish a 24-hour telephone hotline.

- g. Proper management and disposal of oil and toxic materials
 - i. The permittees shall effectively prohibit the discharge or disposal of used motor vehicle fluids and household hazardous wastes and other toxic materials into the MS4.
 - ii. To satisfy the requirements of this item, the permittees shall educate the public on the correct disposal of these wastes.
 - h. Limitation of sanitary sewer seepage
 - i. The City shall develop and implement a program, in cooperation with the Chattanooga Waste Resources Division to reduce and eliminate the inflow, infiltration and discharge of sanitary sewage into the storm water system and community waters.
 - ii. Corrective actions must follow an order of priority, with Chattanooga Creek included in initial efforts.
 - iii. Field screening procedures, more fully described in subitems c. and d. above, shall include tests that will indicate sanitary wastes.
 - iv. The locations of known sanitary sewer leaks to storm sewer shall be included in the Annual Report and/or in more frequent summary reports to the Division as agreed upon by WPC and the SWMD.
8. Monitor and control industrial and high risk runoff
- a. General requirement

Chattanooga shall develop and implement a program to monitor and control, to the MEP, pollutants in runoff from the following types of industries and activities:

 - i. municipal landfills;
 - ii. hazardous waste treatment, storage and disposal facilities;
 - iii. industries subject to reporting requirements pursuant to SARA Title III section 313; and
 - iv. industrial facilities that the municipal permit applicant determines are contributing a substantial loading of pollutants to the municipal separate storm sewer system.
 - b. Digital database

The permittees shall set up a digital database, compatible with GIS, of industrial facilities in the City, which shall include the following types of industries:

- i. those defined in subitem 8.a. above;
- ii. facilities with individual NPDES permits;
- iii. facilities with coverage under a general permit, such as the storm water general permit;
- iv. facilities under the pretreatment program; and
- v. facilities defined as industries by the EPA storm water application rule of November 16, 1990.

This database will include, for example, NPDES permit numbers, if applicable, compliance information, property information, and water quality information.

The permittees shall establish an administrative mechanism to update this database at least yearly and provide a listing in each Annual Report of any additionally identified industrial facilities which discharge storm water into the MS4.

c. Inspections

The permittees shall develop and implement a program, as described in Section 4.4.4 on pages 106-112 of the Part 2 application, to inspect the industrial facilities identified in subitem 8.a. above.

- i. Cycles of systematic inspections shall be performed: all facilities once in the first two years of the permit and each facility once per three years thereafter.
- ii. The permittees shall establish and follow a set of priorities for both the systematic inspections and for inspections in response to illicit discharges, improper disposal, water quality monitoring or complaints. The priorities shall also assure that those facilities where problem-based inspections uncovered a site management problem are revisited in a timely manner to verify that corrective actions have been taken.
- iii. The inspection procedures must recognize and coordinate with existing programs, namely SARA Title III inspections performed by the Chattanooga Fire Department, pretreatment inspections performed by the Chattanooga Waste Resource Division, and NPDES inspections performed by Tennessee Department of Environment and Conservation.

The permittee shall identify and document modifications, or recommended modifications, that should be made to the existing inspection programs, and provide the Division with copies of this material.

iv. The permittee shall develop procedures for inspections. This includes a manual (p. 107) for inspectors and an inspection checklist. Inspectors shall be trained initially and at least once per year thereafter.

d. Industrial runoff management

The permittee shall provide assistance to its industries in preventing contamination of storm water runoff, by way of guidance materials, workshops, and technical assistance both on site and in review of storm water pollution prevention plans.

e. Industrial monitoring program

The permittee shall develop and implement a monitoring [or self monitoring] program for facilities identified in subitem 8.a. above. The monitoring program shall include the collection of quantitative data on the following constituents:

- any pollutants limited in an existing NPDES permit for an identified facility;
- any pollutants limited in effluent limitations guidelines subcategories;
- oil and grease;
- chemical oxygen demand (COD);
- pH;
- biochemical oxygen demand, five-day (BOD₅);
- total suspended solids (TSS);
- total phosphorous;
- total Kjeldahl nitrogen (TKN);
- nitrate plus nitrite nitrogen; and
- any information on discharges required under 40 CFR 122.21(g)(7)(iii) and (iv)*.

* requires that one do quantitative testing of discharges for parameters listed in Tables II, III, IV and V of of Appendix D of 40 CFR 122.21 which one knows or has reason to believe are present above certain threshold concentrations

These data shall shall be entered into the GIS and analyzed for patterns, trends, potential sources, and modifications to the monitoring program.

The permittees must include at a minimum the following in their program:

- written sampling procedures on the chemical analyses to perform, sampling methods, priorities for sites to sample and a sampling schedule;
- trained sampling personnel;
- two automatic samplers; and
- database of results.

Prior to making a final sampling plan, the permittees shall become familiar with the following articles in the book Stormwater NPDES Related Monitoring Needs, Ed. Torno, 1994:

"Overview of Stormwater Monitoring Needs," Cave and Roesner;
"NPDES Monitoring - Atlanta, Georgia Region," Thomas and McClelland; and
"NPDES Monitoring - Dallas-Fort Worth, Texas Area," Brush et al.

The permittees shall submit, within twelve months of permit effective date, a sampling plan to the Division for review and approval.

Sampling shall be done at four sites per year at least.

f. Followup

In cases where contaminated industrial storm water discharges are eliminated or contamination is significantly reduced, the SWMD shall document, if possible, the beneficial effect on receiving streams.

9. Construction site runoff

a. General requirement

The permittee shall develop and implement a program to reduce to the MEP the discharge of pollutants from construction sites into the MS4 and waters of the State.

b. Site planning for impacts to waters of the State

The permittee shall develop and implement a procedure for site planning whereby developers and the municipality must consider impacts on water quality of nearby waters of the State due to the construction activity itself and due to post construction activities that will take place on the site, as follows:

i. Land developers shall submit to the SWMD a storm water pollution prevention plan that describes not only traditional erosion and sediment control measures, but also construction site planning and permanent post-construction features (both natural and constructed) that will minimize post-construction impacts to waters of the State;

ii. The SWMD shall review these plans as described in Section 4.5.4 on page 122 of the Part 2 application; and

iii. The SWMD shall provide, in its site planning procedures, for compliance with State stream alteration permitting requirements pursuant to T.C.A. 69-3-108 and Aquatic Resource Alteration Rule Chapter 1200-4-7.

c. The SWMD shall upgrade the existing "Best Management Practices (BMP) Manual" to add BMP's and control measures

for other pollutants, such as petroleum products, construction site chemicals, wastes and debris.

- d. The permittee shall not issue a grading or building or storm water approval to sites involving five or more acres of disturbed area unless the applicant for grading permit provides the permittee with proof of coverage under the State of Tennessee's permit for storm water runoff from construction sites, Rule 1200-4-10-.05.
- e. Inspection and enforcement

The City shall improve its construction site inspection and enforcement procedures by carrying out the following:

- i. institute a program of self-reporting by construction site operators, as described on page 128 and 129 of Section 4.5.6 of the Part 2 application;
 - ii. setting up clearly defined procedures for enforcing ordinances, permits and control plans; and
 - iii. to train and educate SWMD construction site inspectors, develop a "Construction Site Water Quality Inspection Manual," and hold at least annual training of inspectors.
- f. Education on erosion and sediment control

The City shall implement an ongoing education program for construction site operators and preparers of construction site pollution prevention plans, as follows:

- i. addressing control technology, construction practices, best management practices, water quality impacts, inspection procedures and legal issues; and
- ii. holding at least annual seminars for site operators and plan preparers;

D. Area-specific storm water management program requirements

Reserved.

E. Deadlines for compliance

Except as provided in Part III, compliance with the storm water management program shall be required 90 days from the effective date of the permit.

F. Interagency agreements

The storm water management program, together with any attached interagency agreements or interagency agreements developed subsequent to the effective date of the permit, shall clearly identify the roles and responsibilities of the permittee and the other agency. Following the effective date of the permit, interagency agreements developed and implemented must be included in the Annual Report that covers the permit year in which the agreement became effective.

G. Legal authority

To the extent allowed by law, the permittee shall ensure legal authority to control discharges to and from those portions of the MS4 over which it has jurisdiction. This legal authority may be a combination of statute, ordinance, permit, contract, order or inter-jurisdictional agreements between the permittee and the other agency with adequate existing legal authority to accomplish items i.-vi. below:

- i. to control the contribution of pollutants to the MS4 by storm water discharges associated with industrial activity and the quality of storm water discharged from sites of industrial activity;
- ii. to prohibit illicit discharges to the MS4;
- iii. to control the discharge of spills and the dumping or disposal of materials other than storm water (e.g. industrial and commercial wastes, trash, used motor vehicle fluids, leaf litter, grass clippings, animal wastes, etc.) into the MS4;
- iv. to control through interagency or inter-jurisdictional agreements among permittees the contribution of pollutants from one portion of the MS4 to another;
- v. to require compliance with conditions in ordinances, permits, contracts or orders; and
- vi. to carry out all inspection, surveillance and monitoring procedures necessary to determine compliance with permit conditions.

H. Storm water management program resources

Each permittee shall provide adequate finances to implement their activities under the Storm Water Management Program. Each permittee shall also have a source of funding for implementing all other requirements included within this NPDES storm water permit.

I. Storm water management program review and modification

1. Program Review: Each permittee shall participate in an annual review of the current Storm Water Management Program (SWMP) in conjunction with preparation of the Annual Report required under subparts V. A., B., and C. of the permit.
2. Program Modification: The permittee(s) may modify the SWMP during the life of the permit in accordance with the following procedures:
 - a. Modifications that add, but neither subtract nor replace, components, controls, or requirements to the approved SWMP may be made by the permittee(s) at any time. A description of the modification shall be included in the subsequent Annual Report.
 - b. Modifications that replace an ineffective or infeasible best management practice (BMP), which is specifically identified in the SWMP along with an alternate BMP, may be made by the permittee(s) at any time. A description of the replacement

BMP shall be included in the subsequent Annual Report along with the following information:

- (1) an analysis of why the former BMP was ineffective or infeasible (including cost-prohibitive);
- (2) expectations on the effectiveness of the replacement BMP; and
- (3) an analysis of why the replacement BMP is expected to achieve the goals of the BMP which was replaced.

c. Modifications to adjust the schedule for maintenance activities or the frequency of inspections or monitoring identified in the SWMP may be made by the permittee(s) on an annual basis. The permittees must include in the subsequent Annual Report a description of the adjustment to schedule along with the following information:

- (1) an analysis of why the former schedule was ineffective or infeasible;
- (2) expectations on the effectiveness of the replacement schedule; and
- (3) an analysis, if applicable, of why the replacement schedule will ensure the optimization of equipment use.

d. Modifications that subtract components, controls, or requirements of the SWMP may not be made by the permittee(s) unless it can be clearly demonstrated that with the elimination of this component, the SWMP will continue to achieve a reduction in pollutants to the MEP and shall not cause or contribute to violations of State water quality standards in the receiving stream. In the case where this type of modification is appropriate, the permittee(s) may make the required modification and shall include in the subsequent Annual Report a description of the component which has been eliminated along with the following information:

- (1) an analysis of why the component was ineffective or infeasible; and
- (2) a detailed explanation of why, with the elimination of this component, the SWMP will continue to achieve a reduction in pollutants to the MEP and shall not cause or contribute to violations of State water quality standards in the receiving stream.

e. Modifications included in the Annual Report shall be signed in accordance with subpart VII.K. by all permittees affected by that modification, and shall include a certification that all affected permittees were given an opportunity to comment on proposed changes.

3. Transfer of Ownership, Operational Authority, or Responsibility for Storm Water Management Program Implementation: The permittee(s) shall implement the SWMP on all new areas added to their portion of the municipal separate storm sewer system (or for

which they become responsible for implementation of storm water quality controls) as expeditiously as practicable. Implementation of the program in any new area shall consider the plans in the SWMP of the previous MS4 ownership.

Prior to annexation of land, the permittee shall include a schedule for extending the SWMP to the annexed areas. At least 30 days prior to transfer of operational authority or responsibility for implementing the SWMP, all parties shall prepare a single schedule for transfer of responsibility for implementing the SWMP on the affected portions of the MS4. This schedule shall be included in the Annual Report.

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PART III.

SCHEDULES FOR IMPLEMENTATION AND COMPLIANCE

The permittee(s) shall comply with the following schedules for Storm Water Management Program implementation and augmentation, and for permit compliance.

A. Schedule for development and implementation of SWMP elements and programs

The program elements listed below are taken from Part II, subpart C. of this permit.

1. Operation and maintenance of structural storm water controls and of the storm water collection system		
Permit Reference	Activity	Date Due/Frequency
Part II. C.1.a. page 5	Conduct an inventory of the storm water drainage system.	
	Prioritize watersheds.	12 months
	Begin inventory.	12 months
	Complete inventory.	36 months
II.C.1.b. page 6	Develop and implement inspection a program of periodic inspections of storm water quality control structures	Immediately
	Additionally, Chattanooga shall report on the progress of the inventory and of inspection and maintenance procedures and schedules yearly.	Annual Report
II.C.1.c. page 6	Most effective and preferred maintenance methods included in Maintenance Practices Manual	24 months
II.C.1.d. page 7	Develop, implement and enforce maintenance requirements for private storm water structures	24 months
II.C.1.e. page 7	Develop and implement routine maintenance practices	48 months
II.C.1.f. page 7	Monitoring and evaluation program	36 months

2. Control of discharges from areas of new development and significant redevelopment		
Permit reference	Activity	Date Due/Frequency
II.C.2.a. page 8	Identify how storm water quality issues will be considered and incorporated into the municipality's land use planning process.	12 months
II.C.2.b. page 8	BMP Manual for land development and management activities	12 months
II.C.2.c. page 8	Performance stds./design stds. for first flush runoff	12 months
II.C.2.d. page 8	Implement program of plans review of new developments and significant redevelopment	12 months
II.C.2.e. page 8	Controlled evaluations of BMP's	Begin 12 months & continue

II.C.2.f. page 8	Define master planning effort.	12 months
II.C.2.g. page 9	Identify and prioritize all areas where significant levels of development are expected to occur.	24 months
II.C.2.h. page 9	Develop a pilot master plan for the area with highest priority.	36 months
II.C.2.i. page 9	Continue on schedule to do master planning in other areas.	Annual reports/Per schedule

3. Roadways		
Permit reference	Activity	Date Due/ Frequency
Existing programs	Catch basin cleaning, downtown street sweeping, best management practices in the use of deicing chemicals and herbicides, controls at salt storage areas	Immediately
II.C.3.a. page 9	Vehicle emission control report	60 months
II.C.3.b. page 9	Review current deicing practices and make recommendations	12 months
II.C.3.c. page 9	Modified street sweeping program Study	36 months
	Implement changes.	42 months
II.C.3.d. page 9	Traffic management report	48 months
II.C.3.e. page 10	Roadway BMP's Manual	48 months
II.C.3.f. page 10	Routine preventive maintenance on catch basins	36 months

4. Flood control projects		
Permit reference	Activity	Date Due/ Frequency
II.C.4.a. page 10	Evaluate existing flood control for retro-fitting	24 months
II.C.4.b. page 10	Procedures for incorporating water quality features	36 months

5. Discharges from landfills and other solid waste management facilities		
Permit reference	Activity	Date Due/ Frequency
II.C.5.a. page 10	BMP Guidance Document	24 months
II.C.5.b. page 11	Review SWPPP's and provide guidance	Annually
II.C.5.c. page 11	Monitoring program, including sampling storm water runoff once per year from City Yards and 36th Street landfill	Begin at 12 months/ Annual

		sampling
II.C.5.d. page 11	Memorandum of understanding among SWMD and other City operations	12 months

6. Application of pesticides, herbicides and fertilizer		
Permit reference	Activity	Date Due/ Frequency
II.C.6.a. page 11	Teaching public proper use and disposal of household hazardous wastes	Annually, and as necessary
II.C.6.b. page 11	Guidance document/brochure for alternative landscaping BMP's	24 months
II.C.6.c. page 11	Develop practical applications of alternative, integrated pest management.	Annually
II.C.6.d. page 12	Guidance manual for municipal usage of PHF's	Begin 36 months; complete 48 months
II.C.6.e. page 12	PHF monitoring program	Begin 36 months; Continue.

7. Illicit discharges and improper disposal		
Permit reference	Activity	Date Due/ Frequency
II.C.7.b.ii. page 12	Identify allowable discharges of non-storm water and describe conditions.	12 months
II.C.7.b. page 12	Inspections, ordinances and enforcement measures Promulgate new or revised ordinances regarding illicit and illegal dumping and enforcement and penalties; provide copy of ordinances to Division. Develop enforcement procedures.	12 months 12 months
II.C.7.c. page 13	Field screening Develop program. Initiate field screening. Training of inspectors	12 months Beginning of year two Annually
II.C.7.c.vi. page 15	Stream inspection program Initiation of program Establish schedule of inspections Continue on regular basis.	12 months 12 months
II.C.7.c.vii .page 15	Wet weather inspections Initiation of program Identify key monitoring points	12 months 12 months
II.C.7.d. page 15	Investigations of non-storm water Develop program. Implement program.	12 months Beginning of year two
II.C.7.e.	Procedures to prevent, contain and respond to spills	

page 16	Report of spill analysis Spill cleanup guidelines System mapping to emergency officials Risk assessment of various facilities (industries, etc.) Define facilities. Require SWPPP plans. Set up facility files. Risk assessment ranking	48 months 12 months 12 months 12 months 12 months 24 months 24 months 24 months
II.C.7.f. page 14	Public notification Develop a program that informs the public to report spills, etc. Include summary of program in subsequent Annual Report. Public reporting and facsimile line.	24 months 24 months 24 months
II.C.7.g. page 16	Oils, toxics and household hazardous wastes Educate public on proper disposal, including supporting and promoting recycling of used oil. Operate household hazardous waste turn-in site(s) Open facilities Operate facilities.	12 months 24 months 1/quarter
II.C.7.h. page 17	Limiting sanitary sewer seepage Implement program with Waste Resources Division to eliminate sanitary sewer inflows. Pilot project in CSO area	12 months 12 months

8. Industrial and high risk runoff		
Permit reference	Activity	Date Due/ Frequency
II.C.8.b. page 18	Digital database. Structure, initial known industrial sites, entry procedures, etc. set up. .. Update in Annual Reports.	6 months Annually
II.C.8.c. page 18	Inspection program Inspection methods, criteria and procedures written; submitted to Division Inspector manuals, checklists Recommended modifications to other inspection programs. Inspector training "Industrial Facilities Water Quality Inspection Manual" Implement inspection program.	18 months 18 months 18 months Annually 36 months 18 months
II.C.8.d. page 19	Industrial guidance materials	12 months & Annually
II.C.8.e. page 19	Industrial monitoring Proposed sampling plan (to Division for review) Training of staff Sampling four to eight sites per year	12 months 12 months 24 months and annually

9. Construction site runoff		
Permit reference	Activity	Date Due/ Frequency

II.C.9.b. page 21	Site planning procedures and plans review	12 months
II.C.9.c. page 21	Upgrade existing "Chattanooga Erosion and Sediment Control Guidance Manual."	24 months
II.C.9.f. page 21	Inspections and enforcement Self-reporting program Enforcement procedures Training of inspectors "Construction Site Water Quality Inspection Manual"	12 months Immediately (1993 ord.) Annually 24 months
II.C.9.g. page 22	Education of construction site operators	Annually

(end of table)

Go to next page.

B. Compliance with effluent limitations

NONE

Go to next page.

PART IV.

NUMERIC EFFLUENT LIMITATIONS

NONE

Go to next page.

PART V.

MONITORING REQUIREMENTS

A. Wet weather monitoring (seasonal loadings and event mean concentrations)

1. Locations

The permittees shall conduct wet weather monitoring at a minimum of five separate storm sewer outfalls during the five year term of the permit. Sites shall be selected with a view toward achieving the goals of the ambient monitoring program that are enumerated in section 3.4.1 of the Part 2 application and summarized in subpart VII.B. of the Rationale Sheet. The permittees shall submit a list of sites to the Division for review and approval prior to beginning monitoring. Unless otherwise approved by the Division, each site shall drain an area of homogeneous land use.

2. Procedures

a. Parameters to be sampled at a minimum are shown below:

(These constituents were detected in the sampling data reported in the Part 2 application.)

TABLE V. 1.	
PARAMETERS FOR WET WEATHER MONITORING	
total suspended solids (TSS)	biochemical oxygen demand (BOD ₅)
total dissolved solids (TDS)	chemical oxygen demand (COD)
oil and grease	fecal coliform
total ammonia plus organic nitrogen	total recoverable chromium
nitrate plus nitrite nitrogen (as N)	total recoverable copper
total nitrogen	total recoverable lead
total phosphorus	total recoverable nickel
dissolved phosphorus	total recoverable zinc
methylene chloride	total recoverable arsenic
trichloroethylene	total recoverable beryllium
vinyl chloride	total recoverable cadmium
Bis (2 ethyl-hexyl) phthalate	total cyanide
fluoranthene	

b. Sampling methodology (grab samples in first 30 minutes, flow-weighted composites in first three hours, etc.) shall

be according to the EPA storm water application regulations at 40 CFR 122. 26.

3. Estimates of seasonal loadings and event mean concentrations
 - a. The permittees shall provide estimates of the seasonal pollutant load and of the event mean concentration of representative storms for the parameters listed in Table V.1., except pH, for each major outfall within the MS4. The permittee shall document the method used to prepare these estimates.
 - b. The location of all known major outfalls shall be inventoried in the Annual Report for year one of the permit, with updates describing any additionally identified major outfalls in each subsequent Annual Report.
 - c. The seasonal pollutant load and event mean concentration for each major outfall may be estimated from the representative monitoring locations, from regional NURP or State data, or from pooling results from other Tennessee MS4 monitoring activities and shall take into consideration land uses and drainage areas for the outfall. The conclusions of the USGS sampling and pollutant loading report shall be used. Reference United States Geological Survey (USGS) Open-File Report 94-68 titled "Rainfall, Streamflow, and Water-Quality Data for Five Small Watersheds, Nashville, Tennessee, 1990-92" and USGS Water-Resources Investigations Report 95-4140 (in press).
 - d. The estimates of seasonal loadings and event mean concentrations shall be included in the Annual Report for the fourth year of the permit. For the purposes of this permit, a "major outfall" is defined as follows:
 - a pipe (or closed conveyance) system with a cross-sectional area equal to or greater than 7.07 square feet (e.g., if a single circular pipe system, an inside diameter of 36 inches or greater);
 - a single conveyance other than a pipe, such as an open channel ditch, which is associated with a drainage area of more than 50 acres;
 - a pipe (or closed conveyance) system, draining industrial land use, with a cross-sectional area equal to or greater than 0.79 square feet (e.g., if a single circular pipe system, an inside diameter of 12 inches or greater); or
 - a single conveyance other than a pipe, such as an open channel ditch, which is associated with an industrial land use drainage area of more than 2 acres.
 - e. The flow basis of the seasonal loadings shall be reported along with the estimates. In addition, a value for total runoff from separate storm sewer system outfalls for the entire Chattanooga for the year shall be reported in each Annual Report.

- f. The seasonal sampling program shall be developed and submitted to the Division for review within twelve months of issuance of the permit. Sampling shall proceed in years two through five of the term of the permit.

B. Ambient monitoring

1. Development of program

The permittees shall develop a program, as proposed in the Part 2 application in section 3.4.2., of monitoring the water quality of local streams. The program shall be submitted to the Division for review no later than the first Annual Report. The Division will have 60 days to review the proposed program before permittees begin sampling.

For the second through fifth years of the permit term, at least five sites shall be monitored yearly. The parameters to be sampled are, at a minimum, those identified in Table V.1. above.

Chattanooga may choose to enhance already existing programs of ambient monitoring as fulfillment of this requirement.

2. Biological sampling

Chattanooga shall develop a program of periodic biological assessments of at least two urban streams. The choice of streams must be approved by the Director of the Division of Water Pollution Control (DWPC). The Division intends that these streams be ones that are not meeting classified uses because of, or likely because of, the impact of urban runoff. Beginning in year three of the permit, the two sites shall be sampled at least twice per year in two different seasons. The protocol for sampling shall be EPA's Rapid Bioassessment protocols or the Tennessee Biological Standard Operating Procedures, March, 1996. The level of protocol for each sampling must be approved by the Division of Water Pollution Control.

C. Watershed characterization

The permittee shall develop procedures and define the type of data needed to establish water quality and hydrologic characteristics of the Watershed Management Units (WMU's). (See Part 2 Permit Application Section 4, page 51.)

By end of year two, identify one priority watershed. Implement procedures, collect data, and perform modelling in years three, four and five, the purpose of which is to establish the nature and quantity of non-point source pollutants in the watershed. Submit results in the Annual Report for year five.

PART VI.

REPORTING REQUIREMENTS

A. Annual Report

1. Preparation of annual report required
 - a. The permittee shall prepare an annual system-wide report to be submitted by no later than six months following the period covered by the report. The Annual Report shall cover the 12 month period beginning on the effective date of this permit and annually thereafter.
 - b. The permittee shall sign and certify the Annual Report in accordance with subpart VII.K. of this permit, and shall include a statement or resolution that the permittee's governing body or agency (or delegated representative) has reviewed or has been appraised of the content of the Annual Report.
 - c. The Annual Report shall include the following sections:
 - Contacts List
 - SWMP Evaluation
 - Summary Table
 - Narrative Report
 - Monitoring Section
 - Summary of SWMP and Monitoring Modifications
 - Fiscal Analysis
 - Appendices
2. The following items describe in more detail the specific requirements for the Annual Report.
 - a. Provide a list of contacts and responsible parties (e.g.: agency, name, phone number) who had input to and are responsible for the preparation of the Annual Report.
 - b. Provide an overall evaluation of the Storm Water Management Program including: Objective of Program; Major Findings (e.g.: water quality improvements or degradation); Major Accomplishments; Overall Program Strengths / Weaknesses; and Future Direction of Program.
 - c. Provide a Summary Table of Storm Water Management Program Elements.
 - i. A Summary Table of appropriate SWMP annual activities for each permittee shall be provided. The purpose of the Summary Table is to document in a concise form the program activities and permittees' compliance status with quantifiable permit requirements. Program elements that are administrative (e.g.: planning procedures, program development and pilot studies) are inappropriate for the summary table and shall be discussed in the narrative section of the Annual

Report. The following are examples of SWMP activities to be included in the Summary Table:

- (1) Structural Controls - maintenance and/or inspection activities of existing structural controls
 - (2) Roadway Maintenance - street sweeping, litter control activities, and maintenance on storm water structures & roadside ditches
 - (3) Municipal Waste TSD Facilities - inspections, monitoring, and implementation of control measures
 - (4) Pesticide, Herbicide, and Fertilizer Application -certification training and public education
 - (5) Illicits - facility inspections, investigations, enforcement actions, illicit (dry weather) screening, illicit public reporting, oil/household hazardous waste collection, and storm sewer inlet stenciling
 - (6) High Risk Industrial Facilities (See subitem II.C.8.a.) - inspection activities and monitoring
 - (7) Construction - training of inspectors, certification of construction site operators, inspections, and enforcement actions
 - (8) Storm Water Treatment Projects - description of municipal storm water treatment projects that have been completed, including a brief description of the affected drainage basin
- ii. The Summary Table shall indicate each permittee's SWMP activities and accomplishments. The format for this information shall adhere to the example shown in Table VI.1. below. Items to be reported include:
- (1) Activity description;
 - (2) Number of activities (with frequency) that were scheduled for implementation and/or accomplishment in program element discussion (i.e., once/6 months, 100%/5 years, 6 sites monitored once/year, all sites inspected/permit term). Enter "Not Applicable" (N/A) if no specific schedule was specified;
 - (3) Status of schedule for year ("yes" for schedule was adhered to, or "no" for schedule was not adhered to);
 - (4) Number of activities which were accomplished;
and
 - (5) The availability of documentation (i.e., inspection reports) for those activities which were accomplished and comments describing the reason(s) for any non-compliance.

- d. The Annual Report shall contain a Narrative Report that succinctly discusses the SWMP Elements which were not included within the SWMP Summary Table. Those SWMP elements required to be developed under Parts II. and III. of the permit shall be discussed within this section of the Annual Report following development.
- i. The permittees shall include a brief discussion of the following applicable SWMP Elements:
- (1) Structural Controls Maintenance
 - (2) Development Planning Procedures
 - (3) Roadway Maintenance
 - (4) Flood Management
 - (5) Municipal Facilities
 - (6) Pesticides, Herbicides, and Fertilizers
 - (7) Illicits Inspection/Investigation/Enforcement
 - (8) Field Screening
 - (9) Spill Response
 - (10) Public Reporting of Illicit Discharges
 - (11) Oil and Household Hazardous Waste
 - (12) Sanitary Sewer Seepage
 - (13) High Risk Industrial Facility Inspection
 - (14) Construction Planing Procedures
 - (15) Construction Inspections
 - (16) Education Activities
 - (17) Monitoring Activities
 - (18) Any additional elements of Storm Water Management Program
- ii. The format for the Narrative Report section of the Annual Report shall be a brief discussion of the SWMP element. The aspects of each permittee's activities concerning a SWMP Element shall be succinctly discussed in the section of the Narrative Report dedicated to that element. The discussion shall include the following:
- (1) Objective of SWMP Element;
 - (2) SWMP Element activities completed and those in progress;
 - (3) General discussion of element. Explanation of all Element activity deficiencies (e.g.: activities described in the program that have not been fully implemented or completed). Results of activities shall be summarized and discussed (e.g.: maintenance caused by inspection, pollutants detected by monitoring, investigations as a result of dry and wet weather screening, number and nature of enforcement items, education activities participation);
 - (4) Status of SWMP Element with compliance, implementation, and augmentation schedules in Part III. of the permit;
 - (5) SWMP Element strengths and weaknesses;
 - (6) Assessment of controls; and

- (7) Discussion of Element revisions that are summarized elsewhere in the Annual Report.
- e. The Annual Report shall contain a Monitoring Section which discusses the progress and results of the monitoring programs required under Part V.A. (Wet weather monitoring) of the permit.
- i. The Monitoring Section of the Annual Report shall include the following information as required in subpart V.A. of the permit:
 - (1) Inventory of all known major outfalls in the first Annual Report, with updates describing additionally identified major outfall in each subsequent Annual Report;
 - (2) For the Annual Reports of years four and five of the permit, estimates of seasonal pollutant loadings and event mean concentrations (EMC) for each major outfall required by Item V.A.3. of the permit; the basis for estimates shall be clearly given; and
 - (3) Based on total rainfall for the year, imperviousness of different land uses, etc., an estimate of the total volume of urban runoff discharged in the City for the year.
 - ii. The Monitoring Section of the Annual Report shall include a summary of the monitoring program developed and implemented under subpart V.B. (Ambient monitoring) of the permit. The details to be discussed include:
 - (1) For the first Annual Report, an explanation and rationale for the type of ambient monitoring program Chattanooga will conduct, to be submitted for the Division's review;
 - (2) Summary chart of the data from the monitoring completed;
 - (3) Discussion of any results or conclusions derived from the monitoring completed;
 - (4) For the first year of monitoring (year two of the permit), record of Chattanooga personnel's participation in collection of samples;
 - (5) For the second Annual Report, an explanation and rationale for a program of periodic biological assessments of at least two urban streams; and for years three through five, the Annual Reports shall include as appendices, the results of the assessments; and
 - (6) Discussion of monitoring program revisions that are summarized elsewhere in the Annual Report.

- f. Provide a summary of SWMP and modifications in the monitoring program made during the permit year.
- g. Provide a complete fiscal analysis for each permittee's program implementation, both for the past calendar year and the next. The analysis shall indicate budgets and funding sources.
- h. The following information shall be included as Appendices within the Annual Report for the fifth year of the permit:
 - i. Analytical data collected from the monitoring program;
 - ii. Results of illicit connections screening or dry weather screening; and
 - iii. Any other data specifically requested by the Division to substantiate statements and conclusions reached in the Annual Reports.

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Table VI.1. - EXAMPLE Summary Table for Storm Water Management Program Element Status/Compliance (EXAMPLE ONLY)

PROGRAM ELEMENT	PERMITTEE	REQUIREMENT	ACTIVITY SCHEDULE			COMMENTS
			Activities Required by SWMP	Complied with	Activities Accomplished during calendar year	
Structural Controls	Permittee 1	Major Channels Inspected	15 Channels, once/6 mos.	YES	15 Channels, once/6 mos	Copies of Inspection Report Forms - Available Upon Request
		Major Channels Maintained	As needed	N/A	7 Channels maintained	
		Grate Inlets Inspected	1500 Inlets, once/year	NO	1000 Inlets	Ambitious projection. Reducing to 1000 next year due to resources.
	Permittee 2	Detention Ponds Maintained	1 Pond, once/month	YES	1 Pond once/month	Sediment removed after spring rains.
Monitoring	Permittee 1	Municipal - Landfills POTW	2 Facilities, once/6 mos.	YES	2 Facilities once/6 mos.	Copies of Monitoring Data - Available Upon Request
			3 Facilities, once/year	NO	2 Facilities	Copies of Monitoring Data - Available Upon Request
		Industrial - Hazardous Title III Others	5 Facilities, once/6 mos.	YES	5 Facilities, once/6 mos.	Copies of Monitoring Data - Available Upon Request
			3 Facilities, once/6 mos.	YES	3 Facilities, once/6 mos.	Copies of Monitoring Data - Available Upon Request
			2 Facilities, once/year	YES	2 Facilities	Copies of Monitoring Data - Available Upon Request
		Dry Weather Screening	100% system, once/5 yrs.	YES	20% system	Copies of Screening Field Reports - Appendix B.
		Floatable Assessment	100 sections surveyed/yr.	YES	140 sections surveyed	Copies of Field Survey - Available Upon Request

B. Certification and Signature of Reports

All reports required by the permit and other information requested by the Director shall be signed and certified in accordance with subpart VII.K. of the permit.

C. Reporting: Where and When to Submit.

1. Results of wet weather monitoring required by subpart V.A., obtained during the reporting period running from the 12 month term beginning on the effective date of this permit and annually thereafter shall be submitted in a clear and concise format as a part of Annual Report for year five of the permit. A separate report form is required for each event monitored.
2. Signed copies of the Annual Report required by subpart VI.A. and all other reports required herein, shall be submitted to:

Division of Water Pollution Control
Attention: Compliance Review
L & C Annex, 6th Floor
401 Church Street
Nashville, Tennessee 37243-1534

D. Retention of Records

The permittees shall retain the latest version of the Storm Water Management Program developed in accordance with Part II of this permit for at least three years after the expiration date of this permit. The permittees shall retain all records of all monitoring information, copies of all reports required by this permit, and records of all other data required by or used to demonstrate compliance with this permit, until at least three years after the expiration date of this permit. This period may be explicitly modified by alternative provisions of this permit or extended by request of the Director at any time.

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PART VII.

STANDARD PERMIT CONDITIONS

A. Duty to comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of applicable State and Federal laws and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

B. Duty to reapply

The permittee is not authorized to discharge after the expiration date of this permit. If the permittee wishes to continue discharges after the expiration date, the permittee must submit a complete application, with necessary information and forms, for reissuance of the permit, at least 180 days prior to the expiration date.

C. Need to halt or reduce activity not a defense

It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. Duty to mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

E. Proper operation and maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

F. Permit actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

G. Property rights

This permit does not convey any property rights of any sort in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations.

H. Duty to provide information

The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Director upon request, copies of records required to be kept by this permit.

I. Inspection and entry

The permittee shall allow the Director, or an authorized representative of the EPA, including a contractor acting as a representative of the EPA Administrator, upon presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
4. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by State law or the Clean Water Act, any substances or parameters at any location.

J. Monitoring and records

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
2. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.
3. Records of monitoring information shall include:
 - a. The date, place, and time of sampling or measurements;
 - b. The individual(s) who performed the sampling or measurements;

- c. The date(s) analyses were performed;
 - d. The individual(s) who performed the analyses;
 - e. The analytical techniques or methods used; and
 - f. The results of such analyses.
4. Monitoring results must be conducted according to test procedures approved under 40 CFR part 136, unless other test procedures have been specified in the permit.
5. The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by fines and imprisonment described in Section 309 of the Clean Water Act.

K. **Signatory requirement**

1. All applications, reports, or information submitted to the Director shall be signed and certified.
- a. Applications

All permit applications shall be signed (for a municipality, State, Federal, or other public agency) by either a principal executive officer or ranking elected official.
 - b. Reports and other information

All reports required by this permit, and other information requested by the Director shall be signed by a person described in subitem a. of this section, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

 - i. The authorization is made in writing by a person described in subitem a. of this section;
 - ii. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of director or assistant director, manager or superintendent, or position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and
 - iii. The written authorization is submitted to the Director.
 - c. If an authorization under subitem b. above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of subitem b. of this section must be submitted to the Director prior to

or together with any reports, information, or applications to be signed by an authorized representative.

d. Certification

Any person signing a document under subitem a. or b. of this section shall make the following 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.

2. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

L. Reporting requirements

1. Planned changes

The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

- a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in § 122.29(b); or
- b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under § 122.42(a)(1).
- c. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;

2. Anticipated noncompliance

The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

3. Transfers

This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the State law and the Federal Clean Water Act.

4. Monitoring reports

Monitoring results shall be reported at the intervals specified elsewhere in this permit.

- a. Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director.
- b. If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR part 136, or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR.
- c. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

6. Twenty-four hour reporting

- a. The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The oral and the written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
- b. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

7. Other noncompliance

The permittee shall report all instances of noncompliance not reported under paragraphs (1) (4), (5), and (6) of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph (1)(6) of this section.

8. Other information

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

M. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

N. Liabilities

1. Civil and Criminal Liability

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.

Notwithstanding this permit, the permittee shall remain liable for any damages sustained by the State of Tennessee, including but not limited to fish kills and losses of aquatic life and/or wildlife, as a result of the discharge of wastewater to any surface or subsurface waters. Additionally, notwithstanding this permit, it shall be the responsibility of the permittee to conduct its wastewater treatment and/or discharge activities in a manner such that public or private nuisances or health hazards will not be created.

2. Liability Under State Law

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or the Federal Water Pollution Control Act, as amended.

PART VIII.

PERMIT MODIFICATION

A. Modification of the permit

The permit may be reopened and modified during the life of the permit to:

1. Address impacts on receiving water quality caused, or contributed to, by discharges from the MS4;
2. Address changes in State or Federal statutory or regulatory requirements;
3. Include the addition of a new permittee who is the owner or operator of a portion of the Municipal Separate Storm Sewer System; or
4. Include other modifications deemed necessary by the Director to comply with the goals and requirements of the Clean Water Act.

All modifications to the permit will be made in accordance with 40 CFR 122.62, 122.63, and 124.5 and applicable State regulations.

B. Termination of coverage for a single permittee

Permit coverage may be terminated, in accordance with the provisions of 40 CFR 122.64 and 124.5, for a single permittee without terminating coverage for other permittees.

C. Modification of Storm Water Management Program(s)

Only those portions of the Storm Water Management Programs specifically required as permit conditions shall be subject to the modification requirements of 40 CFR 124.5. Replacement of an ineffective or infeasible BMP implementing a required component of the Storm Water Management Program with an alternate BMP expected to achieve the goals of the ineffective or infeasible BMP shall be considered minor modifications to the Storm Water Management Program and not modifications to the permit. (See also subpart II.G.)

D. Changes in monitored outfalls

This permit is issued on a system-wide basis in accordance with CWA §402(p)(3)(B)(i) and authorizes discharges from all portions of the municipal separate storm sewer system. Since all outfalls are authorized, changes in monitoring outfalls, other than those with specific numeric effluent limitations, if any, shall be considered minor modifications to the monitoring program and not modifications to the permit. (See also items V.B.1. and V.C.6.) Changes in monitoring outfalls with specific numeric effluent limitations shall be considered modifications to the permit and will be made in accordance with the procedures at 40 CFR 122.62.

PART IX.

DEFINITIONS

Definitions contained in the Tennessee Water Quality Control Act and Federal NPDES rules apply where one is not specified below. Unless otherwise specified in this permit, additional definitions of words or phrases used in this permit are as follows:

- A. "Best Management Practices," or "BMP's" 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 facility site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.
- B. "CWA" means Clean Water Act, also referred to as "the Act" (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub.L. 92-500, as amended Pub. L. 95-217, Pub. L. 95-576, Pub. L. 6-483 and Pub. L. 97-117, 33 U.S.C. 1251 et.seq., as amended by the WQA of 1987, P.L. 100-4, the "Act."
- C. "Director" means the Director of the Tennessee Division of Water Pollution Control, or an authorized representative of that position.
- D. "Discharge" for the purpose of this permit, unless indicated otherwise, refers to discharges from the Municipal Separate Storm Sewer System (MS4).
- E. "Flow-weighted composite sample" means a composite sample consisting of either: i. a mixture of aliquots collected at a constant time interval, where the volume of each aliquot is proportional to the flow rate of the discharge at the time of sampling; or ii. a mixture of aliquots collected at a constant time interval, where the volume of each aliquot is proportional to the volume of discharge since the previous aliquot; or iii. a mixture of equal-volume aliquots where each aliquot is taken after a specified volume of discharge has passed the point of sample collection.
- F. "Illicit connection" means any conveyance connecting a non-storm water discharge directly to a municipal separate storm sewer system.
- G. "Illicit discharge" means any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and other discharges listed in subitem II.A.7.a. of this permit.
- H. "Industrial Land Use" means land utilized in connection with manufacturing, processing, or raw materials storage at facilities identified under 40 CFR 122.26(b)(14).
- I. "Landfill" means an area of land or an excavation in which wastes are placed for permanent disposal, and which is not a land application unit, surface impoundment, injection well, or waste pile.
- J. "Large Municipal Separate Storm Sewer System" means all municipal separate storm sewers that are either:

- (i) located in an incorporated place (city) with a population of 250,000 or more as determined by the latest Decennial Census by the Bureau of Census (these cities are listed in Appendices F and G of 40 CFR Part 122); or
 - (ii) located in the counties with unincorporated urbanized populations of 250,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties (these counties are listed in Appendices H and I of 40 CFR Part 122); or
 - (iii) owned or operated by a municipality other than those described in paragraph (i) or (ii) and that are designated by the Director as part of the large municipal separate storm sewer system.
- K. "Maintenance" on the municipal separate storm sewer system and associated structural storm water controls includes activities such as inspection of basins and ponds; mowing grass filter strips; regular removal of litter and debris from dry ponds, forebays and water quality inlets; periodic stabilization and revegetation of eroded areas; periodic removal and replacement of filter media from infiltration trenches and filtration ponds; deep tilling of infiltration basins to maintain capacity; vacuuming or jet hosing of porous pavement or concrete grid pavements; removal of litter and debris from wet weather conveyances and catch basins.
- L. "Medium Municipal Separate Storm Sewer System" means all municipal separate storm sewers that are either:
- (i) located in an incorporated place (city) with a population of 100,000 or more as determined by the latest Decennial Census by the Bureau of Census (these cities are listed in Appendices F and G of 40 CFR Part 122); or
 - (ii) located in the counties with unincorporated urbanized populations of 100,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties (these counties are listed in Appendices H and I of 40 CFR Part 122); or
 - (iii) owned or operated by a municipality other than those described in paragraph (i) or (ii) and that are designated by the Director as part of the medium municipal separate storm sewer system.
- M. "MEP" is an acronym for "Maximum Extent Practicable," the technology-based discharge standard for Municipal Separate Storm Sewer Systems established by CWA §402(p). It includes management practices, control techniques, and system, design and engineering methods, and such other provisions the EPA Administrator or the State determines are appropriate for the control of such pollutants.
- N. "MS4" is an acronym for "municipal separate storm sewer system" and is used to refer to either a Large or Medium Municipal Separate Storm Sewer System (e.g. "the Chattanooga MS4").
- O. "Municipal Separate Storm Sewer" means a conveyance, or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, and storm drains):
- (i) owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State Law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State Law such as a sewer district, flood

control district or drainage district, or similar entity, or an Indian Tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States;

(ii) designed or used for collecting or conveying storm water;

(iii) which is not a combined sewer; and

(iv) which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

- P. "Permittee" means each individual co-applicant for an NPDES permit who is only responsible for permit conditions relating to the discharge that they own or operate. (Also, See 40 CFR 122.2)
- Q. "Outfall" means a *point source* as defined in subpart Q. below at the point where a municipal separate storm sewer discharges to waters of the State of Tennessee and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels or other conveyances which connect segments of the same stream or other waters of the State and are used to convey waters of the State.
- R. "Point Source" means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.
- S. "Severe property damage" means substantial physical damage to property, or damage to the treatment facility, which causes them to become inoperable, or substantial and permanent loss of natural resources, any of which can reasonably be expected to occur in the absence of a bypass
- T. "Storm Sewer", unless otherwise indicated, refers to a municipal separate storm sewer.
- U. "Storm Water" means storm water runoff, snow melt runoff, surface runoff and drainage.
- V. "Storm Water Discharge Associated with Industrial Activity" is defined at 40 CFR 122.26(b)(14). (Also, See Appendix C of the Rationale Sheet for this Permit.)
- W. "Storm Water Management Program," or "SWMP," refers to a comprehensive program to manage the quality of storm water discharged from the municipal separate storm sewer system. For the purposes of this permit, the Storm Water Management Program is considered a single document, but may actually consist of separate programs (e.g. "chapters") for each permittee.
- X. "Time-weighted composite" means a composite sample consisting of a mixture of equal volume aliquots collected at a constant time interval.
- Y. "Waters of the state" or simply "waters" is defined in the Tennessee Water Quality Control Act and means any and all water, public or private, on or beneath the surface of the ground, which are contained within, flow through or border upon Tennessee or any portion thereof except those bodies of water confined to and retained within the limits of private property in single ownership which do not combine or effect a junction with natural surface or underground waters.

- Z. "Water priority chemicals" means chemicals or chemical categories that are listed at 40 CFR 372.65 pursuant to EPCRA Section 313; and meet at least one of the following three criteria: i. are listed in Appendix D of 40 CFR Part 122 on either Table II (organic priority pollutants), Table III (certain metals, cyanides and phenols), or Table V (certain toxic pollutants and hazardous substances); ii. are listed as a hazardous substance pursuant to Section 311(b)(2)(A) of the CWA at 40 CFR 116.4; or iii. are pollutants for which EPA has published acute or chronic toxicity criteria. This list of substances is available from the Division of Water Pollution Control, and is printed in the Federal Register on September 29, 1995, in Addendum F to the EPA's Notice of NPDES Storm Water Multi-Sector General Permit for Industrial Activities.
- AA. "Wet weather conveyances" are man-made or natural watercourses, including natural watercourses that have been modified by channelization, that flow only in direct response to precipitation runoff in their immediate locality and whose channels are above the groundwater table and which do not support fish and aquatic life and are not suitable for drinking water supplies. [Taken from State Water Quality Control Board Rule 1200-4-3-.04(4)]

Rationale Sheet
City of Chattanooga
Municipal Separate Storm Sewer System (MS4)
NPDES Permit No. TNS068063

I. Facility identification

This rationale sheet addresses the municipal separate storm sewer system (MS4) owned and/or operated by the City of Chattanooga. The system is described in the NPDES application submitted to the Division of Water Pollution Control in two parts dated May 12, 1992, and May 12, 1993.

The NPDES application was prepared by the City's Department of Public Works, Storm Water Management Division:

Chattanooga Department of Public Works
Storm Water Management Division
1001 Lindsey Street
Nashville, Tennessee 37402

Director: Jack Marcellis
Storm Water: Tom Scott

II. Application status

A. Chattanooga submitted a two part application according to EPA regulations promulgated November 16, 1990.

Part 1: Submitted May 12, 1992
Part 2: Submitted May 12, 1993

B. The TDEC and the City met March 8, 1991, as the city was developing its storm water program and preparing the application for NPDES permit. The purpose of the meeting was primarily to select outfall monitoring locations for the Part 2 application.

C. The Division adjudges that the application is complete for purposes of preparing the NPDES permit.

III. Description of the Chattanooga MS4

A. EPA definitions

The following definitions are excerpts from the EPA November 16, 1990 storm water application rule.

Municipal separate storm sewer means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

(i) Owned or operated by [a State, city or other public body (created by or pursuant to State law)] having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district, or similar entity...or a designated and approved management agency under section 208 of the CWA that discharges to waters of the [State].

- (ii) Designed or used for collecting or conveying storm water;
- (iii) Which is not a combined sewer; and
- ..(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2

Medium municipal separate storm sewer system means all municipal separate storm sewers that are either:

- (i) Located in an incorporated place with a population of 100,000 or more but less than 250,000, as determined by the latest Decennial Census by the Bureau of Census (appendix G) ["Chattanooga" is listed in appendix G] ; or
- (ii) Located in the counties listed in appendix I, except municipal separate storm sewers that are located in the incorporated places , townships or towns within such counties; or
- (iii) Owned or operated by a municipality other than those described in paragraph (b)(4)(i) or (ii) of this section and that are designated by the Director as part of the large or medium municipal separate storm sewer system due to the interrelationship between the discharges of the designated storm sewer and the discharges from the municipal separate storm sewers described under paragraph (b)(4)(i) or (ii) of this section. In making this determination, the Director may consider the following factors:
 - (A) Physical interconnections between the municipal separate storm sewers;
 - (B) The location of the discharges from the designated municipal separate storm sewer relative to discharges from municipal separate storm sewers described in paragraph (b)(7)(i) of this section;
 - (C) The quantity and nature of pollutants discharged to waters of the United States;
 - (D) The nature of the receiving waters; and
 - (E) Other relevant factors.

B. Chattanooga's system described

1. The City of Chattanooga owns and/or operates an extensive separate storm sewer system within the 127.1 square mile area encompassed by its boundary. The city notes that it owns only those storm sewers within city property or right-of ways. Other storm sewer systems are private or are located within other municipalities or State right-of-ways.
2. Storm water runoff in the city drains, either directly or via storm sewers and/or tributaries, to the Tennessee River, which traverses the city from southwest to northeast. An area of combined sewers (sanitary and storm) intercepts approximately seven square miles of storm water drainage in an area bounded by the Citico Creek watershed, the Chattanooga Creek watershed, and the Tennessee River.
3. Chattanooga reports that "[its] drainage is characterized by an extensive network of drainage ways both natural, improved and constructed." In many cases, the points where these drainage ways discharge [runoff] to streams are open outfalls rather than pipes or other closed conduits.

In locating major "open" outfalls, the city applied EPA's 50 acre/2-acre criteria to delineate and identify major

outfalls. (50 acres in residential and commercial areas; 2 acres in industrial areas.)

C. Tennessee Department of Transportation (TDOT) roadways and associated storm drains

Storm sewers owned or operated by TDOT are publicly owned storm drains in Chattanooga and are thus a part of the Chattanooga MS4. Some of the TDOT sewers drain directly to waters of the State. Others join storm sewers owned by the City and do not discharge directly into waters of the State.

IV. Description of receiving streams

A. Introduction and definitions

Defined below are several terms important to a discussion of permitting discharges of storm water runoff from a storm sewer system into waters of the State.

First, waters of the State are defined in the Tennessee Water Quality Control Act as follows:

"Waters" means any and all water, public or private, on or beneath the surface of the ground, which are contained within, flow through, or border upon Tennessee or any portion thereof except those bodies of water confined to and retained within the limits of private property in single ownership which do not combine or effect a junction with natural surface or underground waters.

Thus, the storm water that is being conveyed within the city's storm sewer system is itself waters of the State.

By State rule 1200-4-4, waters are classified for various uses. Practically all waters, with the exception of wet weather conveyances, are classified for fish and aquatic life, livestock watering and wildlife, irrigation and recreation. For each use, rule 1200-4-3 establishes a set of water quality criteria. The State, through regulatory and other means, strives to maintain and to restore waters to these standards. Wet weather conveyances are also regulated but not the same as waters that support fish and aquatic life, as noted below.

Wet weather conveyances are man-made or natural watercourses, including natural watercourses that have been modified by channelization, that flow only in direct response to precipitation runoff in their immediate locality and whose channels are above the groundwater table and which do not support fish and aquatic life and are not suitable for drinking water supplies. 1200-4-3-.04(4)

and

Waters designated as wet weather conveyances according to the definitions found in 1200-4-3-.04(4) shall be protective of humans and wildlife that may come into contact with them and shall not degrade or adversely affect the quality of downstream waters. Applicable water quality standards will be maintained downstream of wet weather conveyances. 1200-4-3-.02(7)

There is also a distinction, made via the NPDES permit itself, between waters in a wet weather conveyance owned or operated by the permittee and waters to which that conveyance discharges. The city-owned wet weather conveyance does convey waters of the State (e.g. storm water runoff), but the NPDES permit describes the permittee's conveyance as discharging to waters of the State. This is a convention used in part because the State generally focuses its regulatory effort on receiving waters after a discharge has exited a permittee's conveyance.

Thus, where the NPDES permit authorizes discharges into waters of the State, it refers to points where city-operated storm sewers, which themselves are wet weather conveyances, discharge into wet weather conveyances, or other waters of the State, not owned or operated by the City.

(Go to next page.)

B. List of streams and designated uses

Chattanooga identified eight major watershed management units (WMU's) for the purpose of the NPDES permit application and ongoing storm water programming:

- 1 Chattanooga Creek
- 2 South Chickamauga Creek
- 3 North Chickamauga Creek
- 4 Lookout Creek
- 5 Citico Creek
- 6 Mountain Creek
- 7 Stringers Branch
- 8 Tennessee River sub-basins

The designated uses of these streams include: domestic water supply, industrial water supply, fish and aquatic life, livestock watering and wildlife, irrigation, recreation and navigation.

C. Quality of streams in the Chattanooga area

Following is a tabulation of streams in the Chattanooga area which were known by the Division of Water Pollution Control not to be supporting classified uses as of publication of the State's 1994 305(b) report.

Waterbody	Stream Miles ¹		Reasons for Use Nonsupport ²									
	PS	NS	Mi	HZ	LF	Pa	SO	SW	S	UI	LD	CH
South Chickamauga, include. West Chickamauga	18.7											
Chattanooga Creek		9.3										
Stringers Branch		6.1										
Tennessee River *	19.8											
Tennessee River *	9.2											
Tennessee River *	7.9											
Tennessee River *	3											
North Chickamauga Creek	5.6	5.4										

* River miles 431.2 to mile 471.0

¹ PS Partially Supporting Designated Uses
NS Non Supporting Designated Uses

² Mi Mining
HZ Hazardous Waste
LF Landfill
Pa Pastures
SO Sewer Overflows
SW Urban Storm Water Runoff
S Spills
UI Upstream Impoundment
LD Land Development Practices
CH Channelization

D. Map of Chattanooga watersheds

See Appendix A for a map of Chattanooga watersheds.

V. Permit writer's approach to developing this permit

A. Introduction

The Water Quality Act of 1987, which set up the present NPDES permit requirements for discharges of urban runoff, requires that the NPDES permit issued to the City of Chattanooga:

a. include a requirement to effectively prohibit non-storm water discharges into the storm sewers; and

b. require the permittees to reduce pollutants in discharges from the MS4 to the "Maximum Extent Practicable" (MEP).

On item b., the State, EPA, cities and other interested parties generally think that the MEP is accomplished through pollution prevention programs to prevent storm water pollution at the source and to put in place a comprehensive Storm Water Management Program (SWMP). This is in contrast to traditional NPDES permits for discharges of industrial wastewater in which numerical limits are used to define the standard of discharge quality. Given present knowledge of urban storm water runoff and ways to control it, we are not able to establish numerical effluent limits in the permit. Likewise, the permit will not impose requirements for extensive structural controls for the physical or physical/chemical treatment of storm water runoff.

B. Necessary MS4 program elements

The EPA regulations of November 16, 1990, formally established application requirements for medium and large MS4's. In addition to requiring much background information and collection of mapping and storm water discharge data, the application regulations required the city to submit a proposed storm water quality management program. The minimum elements of such a plan were spelled out in the regulations. Likewise, the NPDES permit issued to a medium or large MS4 should set forth requirements for each of these program elements.

Appendix B, taken from the November, 1992, document mentioned below, shows the part 1 and part 2 MS4 application requirements in short form. Note how the part 2 requirements elaborate on the part 1 requirements.

EPA guidance manuals elaborated on the application requirements: Guidance Manual for the Preparation of Part 1 of the NPDES Permit Applications for Discharges from Municipal Separate Storm Sewer Systems, (EPA-505/8-91-003A), April, 1991, and the Guidance Manual for the Preparation of Part 2 of the NPDES Permit Applications for Discharges from Municipal Separate Storm Sewer Systems, (EPA 833-B-92-002), November, 1992.

The minimum program elements enumerated in the regulations are the following. These are listed here for quick reference. In section VI. of this rationale sheet, there is a short description of each of these elements.

<u>REQUIRED PROGRAM ELEMENT</u>	<u>REGULATORY REFERENCES</u>
Operation and maintenance of structural controls	40 CFR 122.26(d)(2)(iv)(A)(1)
Control of discharges from areas of new development and significant redevelopment.	40 CFR 122.26(d)(2)(iv)(A)(2)
Operation and maintenance of public streets, roads, and highways	40 CFR 122.26(d)(2)(iv)(A)(3)
Ensuring flood control projects consider water quality impacts	40 CFR 122.26(d)(2)(iv)(A)(4)
Identification, monitoring, and control of discharges from municipal waste ... treatment, storage, or disposal facilities.	40 CFR 122.26(d)(2)(iv)(A)(5)
Control of pollutants related to application of pesticides, herbicides, and fertilizers.	40 CFR 122.26(d)(2)(iv)(A)(6)
Implementation of an inspection program to enforce ordinances which prohibit illicit connections and illegal dumping into the MS4.	40 CFR 122.26(d)(2)(iv)(B)(1)
Field screening the MS4 for illicit connections and illegal dumping	40 CFR 122.26(d)(2)(iv)(B)(2)
Implementation of standard investigative procedures to identify and terminate sources of illicit connections or discharges.	40 CFR 122.26(d)(2)(iv)(B)(3)
Prevention, containment, and response to spills that may discharge into the .. MS4.	40 CFR 122.26(d)(2)(iv)(B)(4)
Limit the infiltration of sanitary seepage into the MS4	40 CFR 122.26(d)(2)(iv)(B)(7)
Identification, monitoring, and control of discharges from municipal landfills; hazardous waste treatment, storage, disposal and recovery facilities; facilities that are subject to EPCRA Title III, Section 313; and any other industrial or commercial discharge the permittee determines are contributing a substantial pollutant loading to the MS4.	40 CFR 122.26(d)(2)(iv)(C)(1)
Control of pollutants in construction site runoff	40 CFR 122.26(d)(2)(iv)(D)(1)
Public education	40 CFR 122.26(d)(2)(iv)(A)(6) 40 CFR 122.26(d)(2)(iv)(B)(5) 40 CFR 122.26(d)(2)(iv)(B)(6)

VI. Rationale for permit conditions for elements of the storm water management plan

Discussed below are each of the necessary MS4 program elements along with Chattanooga's proposed program and the Division's rationale for selected permit conditions. The City has already implemented or begun many of the tasks and programs (permit conditions) described below. The permit writer has attempted to make note of these under the headings "Activities already completed."

Structural Controls: The permittee must maintain according to schedule any storm water structural controls for which they are the owner or operator, in a manner so as to reduce the discharge of pollutants (including floatables).

Introduction --

As a part of the application Part 1, Chattanooga identified three classes of major structural controls for storm water in the city:

<u>Class</u>	<u>Number identified</u>
Flood plain facilities	3
Regional public facilities	7
Private facilities	54*

* includes one roof detention and one infiltration system

In its application, Chattanooga notes that its commercial/residential programs have been/are minimal in scope and practice relative to what is needed, and what is proposed in the Part 2 application, to prevent pollution effectively. What can be said on the matter of structural controls is that flood control is administered by the Federal Emergency Management Agency; that all developments incorporate a storm water detention facility, including water quality features; and that system maintenance has been on an emergency basis.

Proposed program --

For this program element, Chattanooga proposes a program that includes the following:

- compiling in GIS format a comprehensive inventory of the storm water drainage infrastructure
- periodic inspections, on a priority basis, of significant stream segments, drainage structures and areas
- develop and implement preferred maintenance methods, practices and procedures for storm water conveyances; including a Maintenance Practices Manual
- develop, implement and enforce maintenance requirements for private conveyance systems, including adoption by ordinance
- scheduling routine maintenance (depends on GIS inventory first)
- monitoring and evaluation program to measure effectiveness of above measures and to adjust maintenance schedules and practices

The City does not describe any special measures for the control of floatables. The permit writer notes then that this would be addressed incidentally, as a benefit of catch basin cleaning, street sweeping and retrofitting of detention facilities.

Activities already completed --

- ◆ System inventory in GIS format
- ◆ develop, implement and enforce maintenance requirements for private conveyance systems, including adoption by ordinance

Proposed permit conditions --

The Division proposes to adopt Chattanooga's proposed program, with the following revisions:

- a. to restrict the scope of periodic inspections from "significant stream segments" to storm water quality control structures; and to define better the purpose of the inspections;
- b. in the course of compiling the system inventory, to collect the types of data necessary for prioritizing emergency maintenance, scheduling routine maintenance, etc.; and
- c. briefly describe the maintenance measures that affect discharge of floatables and any other means to reduce discharge of floatables

Areas of New Development and Significant Redevelopment: The permittee must utilize a comprehensive master planning process to develop, implement, and enforce controls to minimize the discharge of pollutants from areas of new development and significant re-development. In particular, the planning process shall address post-construction runoff.

Introduction --

Urbanization generally results in increases both in the volume of storm water discharged to surface water and in the rate of discharge. These are caused when vegetation, which would otherwise slow and absorb runoff, is removed and replaced with pavement and structures. Furthermore, it is typical that an increase in impervious land surfaces leads to increased pollutant levels in storm water runoff. Such chemical and thermal changes in storm water runoff can adversely affect the quality of receiving waters.

Pollution from urbanization can be prevented, or limited, through planning prior to development. Prior to development, one can examine the full range of structural storm water controls and non-structural best management practices that might be implemented at a given location. Additionally, controls installed at the onset of land development are the most cost-effective approach to storm water quality management. Thus, to reduce long-term pollutant discharges, i.e., discharges after an area has been developed and populated, planning priorities and procedures must be in place before and during the process of development.

Discussion --

The Division believes that the regulatory requirement of this program element demands a planning process, indeed a comprehensive planning process, for ensuring that water quality controls are incorporated into new development. On the site-specific scale, there should be a process by which the City ensures that storm water controls are considered and installed; for instance, through a process of plans review. There should also be a process on a larger scale: e.g., how is storm water runoff considered in the zoning process and otherwise in decisions on land use and development.

EPA's Part 2 Guidance Manual (11/92) states: "the applicant must describe how consideration of those activities that affect storm water quality are to be incorporated into the municipality's comprehensive or master plan and its approval process for construction projects."

In order to fulfill this requirement, a City needs to amend, if impacts to water quality are not already adequately considered in the existing process, its procedures for planning of land use, and for construction site approvals. These planning processes must not be limited to individual sites of development.

A city might approach this requirement by setting up a master planning process for storm water controls; i.e., a master plan that is separate from an existing land use and zoning plan. If so, such a plan must be integrated into the existing planning process to have an effect.

Chattanooga's proposed program --

Chattanooga states that this SWMP element "focuses on improving and maintaining water quality of community waters through a more thorough process of land development management through the application of structural and nonstructural BMP's."

The Part 2 application listed several BMP's and structures that mitigate negative impacts to community waters:

- | | |
|---|--|
| -Infiltration devices | -Detention and retention basins |
| -Grassy swales and filter strips | -Development density controls |
| -Oil/grit separators, litter and debris screens | -Wetlands preservation and restoration |
| -Tree and natural ground cover preservation | -Landscaping and terracing to detain and filter runoff |
| -Hydraulic separation of downspouts | -Natural and riparian channel stabilization |

Chattanooga's proposed program is made up of the following:

- a Best Management Practices manual for land development and management activities
- performance standards and/or design specifications for installation of water quality features in storm water runoff controls
- plan review of new development
- monitoring outfalls in commercial and residential areas and monitoring and evaluating discharges from water quality BMP's
- master planning process, beginning with a pilot project in an environmentally challenged area (See below regarding this task.)

Since submittal of the Part 2 application, the City has adopted an ordinance that sets forth design specifications of water quality features in new development.

Chattanooga's Part 2 application does propose a master planning process, but it is not presented under the "Areas of New Development" item in the application. Rather, it is located and discussed under "Flood Control" on page 49 of Section 4. It

describes master planning that is broader than flood control, however. The Division considers this proposed master planning effort to be more appropriately addressed in the "Areas of New Development" part of the permit.

Activities already completed --

- ◆ a Best Management Practices manual for land development and management activities
- ◆ performance standards and/or design specifications for installation of water quality features in storm water runoff controls
- ◆ plan review of new development

Proposed NPDES permit conditions --

The Division wants to make sure that, to the maximum extent practicable, there is a land use planning process that addresses controls for water quality. The above listed items of Chattanooga's proposed program are, it seems, limited to individual sites.

Planning procedures could involve, in addition to the more site specific controls Chattanooga has included in its ordinance and will be including in its Best Management Practices Manual, amending zoning ordinances to force the consideration of storm water; procedures to allocate land for local and regional detention basins; modifying sanitary and/or storm sewer designs; and restrictions on development in steeply sloped areas.

The Division proposes the following permit conditions:

- a. identify how consideration of storm water quality issues will be incorporated into the municipality's land use planning process;
- b. establishing a procedure which requires developers to install, wherever practicable, the BMP's identified in the City's BMP Manual; in contrast to a recommendation only;
- c. define "significant redevelopment" and establish criteria for installing water quality control systems in redevelopment; and
- d. develop a master plan that combines all the ongoing aspects of the SWMP, integrate this into the City's land use planning process; begin with a pilot project.

The Division views commercial and residential and ambient monitoring primarily as management tools to quantify the impact of storm water discharges into surface waters and as a means of assessing the effectiveness of storm water controls. So we will incorporate this monitoring into its own part in the permit itself, not as a part of the "new development" program.

Roadways: Each permittee must operate and maintain public streets, roads, and highways under its jurisdiction in a manner so as to minimize the discharge of pollutants.

Introduction -

Chattanooga's Part 2 application includes a good list of sources of pollution to community waters via roadways:

- exhaust emissions laden w/hydrocarbons, oxides, salts and metals
- nutrients, herbicides and pesticides from roadside maintenance activities
- trash, debris, garbage from vehicle passengers
- animal carcasses
- sediments from bank and shoulder erosion
- sand, salt etc., from deicing
- worn pavement particulates and wind blown deposits
- hydrocarbons from leaks and spills
- thermal/chemical decomposition of pavement
- metals, tire particles, brake lining particles
- debris transport on the vehicles

The day to day management of roadways consists of catch basin cleaning, street sweeping, and ice and snow removal. Also related to roadways are the application of herbicides for weed control, and an emergency management plan that specifies spill response procedures.

Proposed management program -

Chattanooga proposes the following:

- vehicle emissions control and maintenance control programs for municipally owned, leased or contracted vehicles and rolling stock (police and fire, garbage, etc.)
- to review and improve the current deicing activities to minimize loading of deicing agents and/or their environmental impact to community waters
- to study the effects of the street sweeping program and make improvements based on findings
- review existing traffic management practices and develop plans, guidelines, BMP's and recommendations to reduce adverse impacts on water quality
- develop and implement BMP's, to promote preservation of water quality, for the design, construction and maintenance of roadways; and review operations of City Yards
- work with the Tennessee Department of Transportation (TDOT) in storm water quality improvement programs

Activities already completed --

Development and implementation is ongoing.

Proposed permit conditions -

The Division proposes to adopt Chattanooga's proposed program with the following addition:

- a. scheduled routine and preventive maintenance of catch basins (cf. the infrastructure inventory).

Flood Control Projects: Each permittee must ensure any flood management project it undertakes assesses impacts on water quality of receiving waters. Each permittee must also evaluate the feasibility of

retrofitting existing structural flood control devices to provide additional pollutant removal from storm water.

Introduction -

Chattanooga reports that environmental impacts on water quality have not been a controlling concern for flood control projects and drainage management. With some exceptions, Chattanooga notes, the use of concrete-lined and straightened channels typifies the historic solutions to flood management in Chattanooga. Federal projects have had to consider impacts to the environment, but they have typically been designed and built to manage flooding.

Proposed management program -

Chattanooga proposes the following:

- as feasible, retrofit or modify existing flood control structures
- incorporate flood management considerations into the City's master plan (This master plan has been discussed under Areas of New Development.)
- BMP Manual for flood control structures
- comprehensive watershed-based discharge characterization monitoring and modeling program
- develop objectives, criteria and BMP's for the Chattanooga-Hamilton County greenway planning and development process

Activities already completed --

None completed.

Proposed permit conditions -

For the purpose of this NPDES permit, the Division will reduce the scope of the City's proposed program slightly. We will require the evaluation for retro-fit, but otherwise we will require only that procedures are in place to assure that water quality is considered in flood management projects. Also, the master planning effort has been placed as a task of the "Areas of New Development" element.

Likewise, we do not view the watershed characterization as primarily a flood control project and will include it in its own part of the permit, not as a part of the "flood control" program.

Identification, monitoring, and control of discharges from operating or closed municipal landfills or other waste treatment, storage, or disposal facilities: Each permittee must implement a program to reduce pollutants in storm water discharges from municipally-operated solid waste transfer stations, maintenance and storage yards for waste transportation fleets, POTW's and sludge application sites not covered by NPDES storm water permits. The initial phase of the program shall contain procedures to evaluate, inspect, and monitor these sites. Based upon the evaluations, inspections, and monitoring performed, priorities and procedures for implementing control measures for pollutant reduction at these sites shall be developed. Monitoring methods used during the initial

investigative period may be relaxed from standard protocol and may be based on experience gained during actual field activities. The goal of the investigative portion is actively to identify areas within these sites with poorer quality discharges during storm events, so that those areas will be given priority when implementing control measures.

Introduction -

Chattanooga states that this program element addresses "all aspects of municipally owned or operated solid waste management facilities, including active and closed landfills, transfer sites, land application sites, maintenance and storage facilities for rolling stock and equipment, and all other areas that handle municipal waste." These operations, if not managed carefully, have great potential for pollution to waters of the State. It is important to the Division that they are thoroughly addressed.

Chattanooga has submitted complete EPA Form 2F applications for several City-operated facilities, including the 36th Street Landfill and the Summitt Landfill. The State does not propose to include in this permit any special conditions for the 36th Street Landfill however. We will issue a general permit for that landfill or an individual permit. Likewise for the Summitt Landfill, which is not within Chattanooga city limits.

Proposed management program -

Chattanooga proposes the following:

- ensuring that each facility is implementing a storm water pollution prevention plan
- a BMP guidance document for municipal waste management facilities
- a monitoring program to evaluate water quality impacts because of runoff from municipally operated waste management facilities, specifically the two landfills and City Yards
- memorandum of understanding between the SWMD and other City operations

Activities already completed --

None completed.

Proposed permit conditions --

The Division will incorporate the program as proposed except that we will not include the Summitt Landfill in the MS4 permit requirements, because it is not located within Chattanooga city limits and so is outside the scope of this permit.

Pesticide, Herbicide, and Fertilizer Application: Each permittee must implement controls to reduce the discharge of pollutants related to application of pesticides, herbicides, and fertilizers applied by the permittee's employees or contractors to public right of ways, parks, and other municipal facilities. The public education element of the SWMP must include a component aimed at private use of fertilizers, herbicides and pesticides.

Introduction -

Chattanooga's pesticide, herbicide and fertilizer (PHF) program will complement existing federal and state programs. Regulations are already in place that restrict the use of certain pesticides; prohibit some uses; and establish requirements for certifications of applicators; register manufacturers; set disposal standards; and ban certain pesticides.

Proposed management program -

Chattanooga proposes the following:

- feature articles in SWMD newsletter on proper use of PHF's
- guidance document for alternative BMP's for control of vegetation
- use of alternative, non-chemical pest management techniques
- review and improvement of City PHF usage
- PHF monitoring program to identify problem areas, etc.

Activities already completed --

None completed.

Proposed permit conditions -

The Division will incorporate the program as proposed. In addition, we note that Chattanooga will be establishing a household hazardous waste turn-in facility that will expedite the proper disposal of PHF's.

Illicit Discharges and Improper Disposal: Each permittee must implement an ongoing program to detect and remove illicit discharges and improper disposal into the storm sewer. Each permittee must effectively prohibit non-storm water discharges to the MS4, other than those authorized under a separate NPDES permit.

This program should include the elements listed below:

- i. ordinances, orders and enforcement mechanisms which prohibit illicit discharges and improper disposal to the MS4;
- ii. policy and procedures concerning discharges of various non-storm waters such as individual car washing runoff, fire fighting waters, fire hydrant flushing, landscape irrigation etc.;
- iii. a dry weather field screening program, including priorities, to find possible illicit discharges, then to locate and eliminate them;
- iv. a detailed summary of responsibilities, among the various departments within City government, for locating illicit discharges;
- v. a program to prevent, contain and respond to spills that may discharge into the MS4;
- vi. a program to prevent (or require the operator of the sanitary sewer to eliminate) unpermitted overflows from the sanitary sewer to the MS4, and to limit leakage from sanitary sewers to the MS4; and

- vii. public education on both illicit discharges and on proper disposal of used oil and toxic chemicals.

The dry weather screening is a continuation of efforts started under Part 1 of the permit application to locate and eliminate illicit connections to the MS4.

Introduction -

Chattanooga's present (as of the date of the Part 2 application) activities for this element include:

- i. an anti-litter ordinance (fine level to be raised to \$5000)
- ii. monitoring RCRA facilities and their associated materials by the Chattanooga Fire Department; these facilities are also in the SWMD GIS database;
- iii. pretreatment facilities are in the GIS database;
- iv. building codes prohibit illicit discharges;
- v. continuation of efforts, begun to complete the MS4 permit application, to seek and find illicit connections and illegal dumping.

Field screening activities during the Part 1 application process indicated the presence of illicit discharges and improper disposal, including not only industrial sources but also discharges from sanitary systems, chlorinated water and illegal dumping.

Chattanooga notes that additional, specific authority in City ordinances will be required to provide for clear, enforceable requirements in this program.

Proposed management program -

Chattanooga proposes a program with the following elements:

- to develop more specific descriptions, prohibitions, and regulations as needed, to control or eliminate illicit discharges, etc., including procedures for entry, inspection, monitoring, and penalties
- to continue and improve an ongoing field screening program, including priorities, inspection of streams, a wet weather surveillance program, and improved GIS recordkeeping of field screening activities
- to develop and refine procedures to investigate non-storm water discharges, including written procedures (check lists, charts, etc.); training of investigators; and training in legal procedures
- a multi-pronged effort to effect prevention of spills; including spill analysis, spill cleanup guidelines, providing maps to emergency-preparedness officials, and risk assessment of various industrial facilities
- establishing an effective public reporting program (reporting of illicit discharges and spills) through public education and a reporting and facsimile telephone line
- public education on disposal of household hazardous waste and waste oils and automotive fluids, plus setting up a permanent collection facility

- inspection and corrective action program in cooperation with Chattanooga Waste Resources to eliminate sanitary sewer inflows

Activities already completed --

- ◆ more specific regulations etc. in place
- ◆ ongoing field screening
- ◆ procedures to investigate non-storm water discharges

Proposed permit conditions -

The Division proposes to incorporate Chattanooga's program as proposed, with the following additions:

- a. requirement to consider in more detail the various non-storm waters, and in particular to address pollution control measures for street wash waters and fire fighting waters;
- b. a requirement, under "Procedures to prevent, contain and respond to spills," that the City incorporate into its GIS database industries with stores of hazardous chemicals, explosives and water priority chemicals; and
- c. requirement that the City define in written form the types of spills for which it will be the lead respondent, and the roles of other government agencies in case of spill

Chattanooga should be familiar with the EPA publication, Investigation of Inappropriate Pollutant Entries into the Storm Drainage System: a User's Guide, EPA/600/R-92/238 (January, 1993).

Industrial & High Risk Runoff: Each permittee must implement a program to identify, monitor, and control pollutants in storm water discharges to the MS4 from municipal landfills; hazardous waste treatment, storage, disposal and recovery facilities and facilities that are subject to EPCRA Title III, Section 313; and any other industrial or commercial discharge the permittee determines is contributing a substantial pollutant loading to the MS4.

The program must include:

- i. priorities and procedures for inspections;
- ii. establishing and implementing control measures for such discharges; and
- iii. a monitoring program for facilities identified under this section, including the collection of quantitative data on the discharges from those facilities.

The monitoring program shall include the collection of quantitative data on the following constituents:

- any pollutants limited in an existing NPDES permit for an identified facility;
- any pollutants limited in effluent limitations guidelines subcategories
- oil and grease;
- chemical oxygen demand (COD);

- pH;
- biochemical oxygen demand, five-day (BOD₅);
- total suspended solids (TSS);
- total phosphorous;
- total Kjeldahl nitrogen (TKN);
- nitrate plus nitrite nitrogen; and
- any information on discharges required under 40 CFR 122.21(g)(7)(iii) and (iv).

[40 CFR 122.21(g)(7)(iii) and (iv) require that permittees must indicate whether they know or have reason to believe that any of the pollutants in Tables II, III, or IV of Appendix D (toxic pollutants, total phenols, and certain conventional and nonconventional pollutants) are being discharged from the outfalls at these sites.]

The permittee must provide a listing in each Annual Report which contains any additionally identified industrial facilities which discharge storm water into the MS4. The industrial storm water discharges that must be included in this inventory fall into eleven classes of industrial activities as defined in the November 1990 regulations under 40 CFR 122.26(b)(14). The definition of "storm water discharge associated with industrial activity," including the eleven classes of industries, is given in Appendix C.

Introduction -

Chattanooga presently has no storm water specific inspection program for industrial facilities.

The City's Part 2 application gives discussion on this part of the storm water program and recognizes that the City is in the dual role of both permittee and regulator. One, the City will be regulated by the State by the very permit this rationale sheet supports. Two, the City is charged with ensuring that industries within its boundaries are not polluting waters of the State by way of storm water runoff.

Proposed management program -

Chattanooga proposes a program that consists of the following:

- GIS database of all industrial facilities
- inspection methods, criteria and procedures
- training of inspectors
- to continue to build the GIS system with industrial data
- technical guidance to industries, such as documents, seminars, newsletters, site-specific guidance
- monitoring of industrial outfalls and receiving streams
- use of GIS system for the industrial monitoring results

Activities already completed --

- ◆ GIS database of industrial facilities

Proposed permit conditions -

The Division proposes adopting Chattanooga's program as proposed.

Construction Site Runoff: Each permittee must implement a program to reduce the discharge of pollutants from construction sites, including requirements for the use and maintenance of structural and nonstructural best management practices during construction; procedures for site planning which include consideration of short and long term water quality impacts and minimizing these impacts; prioritized inspections of construction sites, and enforcement of control measures; education and training measures for construction site operators; and notification to building permit applicants of their responsibilities under the NPDES permitting program for construction site runoff.

Introduction -

There has been in effect in Chattanooga an erosion and sediment control program, at least since 1988, with the adoption of Ordinance 8959. This ordinance requires compliance with a set of adopted "Erosion and Sediment Control Guidelines." The fines and penalties for violations of this ordinance have been amended with adoption of the City's Storm Water Quality Management Ordinance in September, 1993. It is the responsibility of the SWMD to administer and enforce the erosion and sediment control ordinance.

Up until the time of the Part 2 application, the SWMD conducted the program with two teams of inspectors and a chief inspector, who concentrated their efforts during the summer construction months. Additional staff and public education and involvement, resulting from the NPDES storm water permit requirements, have improved and will greatly improve the effectiveness of the City's program.

Proposed management program -

Chattanooga's proposed program includes:

- the requirement for construction activity pollution prevention plans*
- a plans review and approval process
- revising the "Chattanooga Erosion and Sediment Control Guidance Manual," adding erosion and sediment control BMP's and control measures for other pollutants (oil and grease, construction chemicals, etc.)
- promulgating "Construction Site Water Quality Management Manual"
- self-reporting by site operators
- clearly defined process for enforcing ordinances, permits, and control plans
- training of SWMD inspectors
- active program of training site operators

* The plan must describe construction site planning and permanent features to minimize post construction discharge of pollutants. These features could include, for example, preservation of wooded areas, provisions for temporary sediment basins, preservation or maintenance of grassed areas, minimizing steep grades and deep cuts, and so forth.

Activities already completed --

All items above have been completed and/or implemented, and the programs are ongoing.

Proposed permit conditions --

The Division proposes adopting Chattanooga's program as proposed.

One addition is to require that the SWMD provide, in its site planning procedures, for compliance with State stream alteration permitting requirements.

Public Education: Each permittee must implement a public education program including a program to promote, publicize, and facilitate public reporting of the presence of illicit discharges of non-storm water or improper disposal of materials such as industrial and commercial wastes, household hazardous wastes, leaf litter, grass clippings, and animal wastes into the MS4; a program to promote, publicize, and facilitate the proper management and disposal of used oil and household hazardous wastes; a program to promote, publicize, and facilitate the proper use, application, and disposal of pesticides, herbicides, and fertilizers by the public and commercial and private applicators and distributors; and where applicable and feasible, the permittee should publicize those best management practices (including but not limited to the use of reformulated or redesigned products, substitution of less toxic materials, and improvements in housekeeping) used by the permittee that facilitates better use, application, and/or disposal of materials identified above. The State believes that educating the public on the impacts of their everyday activities is a crucial component of preventing storm water pollution.

Introduction --

Chattanooga addresses the task of public education in two or three of the programs described above.

Proposed program --

In short, Chattanooga proposes to carry out the items listed above. Also, the City plans to build and operate a household hazardous waste turn-in site.

Proposed permit conditions --

The Division proposes to adopt Chattanooga's program as proposed. The permit will also require Chattanooga to publicize the BMP's it uses itself.

VII. Rationale for sampling and monitoring requirements

A. Introduction

The EPA storm water application regulations set forth requirements that MS4 cities will address at least three types of sampling during the term of their permits:

- representative data collection (refers to sampling storm water discharges at outfalls of the MS4)

system; may be designed to describe an area of homogeneous land use);

- field screening for illicit connections and improper disposal; and
- monitoring runoff from industrial sites.

See Appendix D for quotations from the EPA regulations on the subject of sampling.

A city might perform other types of monitoring as well, such as the following:

- instream sampling, chemical and biological;
- stream bioassessments; and
- BMP or other storm water treatment system influent and effluent monitoring.

B. Chattanooga's proposed program

In its part 2 application, Chattanooga describes and makes proposals on several ongoing monitoring programs. These are tabulated below.

<u>Program and description</u>	<u>Goals</u>	<u>Notes</u>
Monitoring and evaluation program; which is a part of the Commercial and Residential Element 1, Inspection and Maintenance	To measure effectiveness of improved maintenance schedules, practices and procedures	Will identify priority watersheds and sub-basins and seek to acquire before and after data; is this discharge monitoring or ambient monitoring or both?
Monitoring and BMP Evaluation; a part of the Areas of New Dvlp.	Continuing monitoring to measure and characterize runoff from commercial and residential areas; plus controlled evaluations of BMP's	In lieu of the Part 2 application monitoring (see Sect. 4, page 39), only on more restricted areas; outfall monitoring it seems
A comprehensive watershed-based discharge characterization monitoring and modeling pgm. (see Sect. 4, page 51)	On one priority watershed; to determine non-point source loading and ultimately to quantify improvements from the SWMP	Only one watershed 1st five years; parameters to be monitored, etc. not defined; this is described in the flood control projects element
Municipal waste-related sites	To evaluate water quality impacts	One water sample (discharge) each year from each facility
PHF monitoring	To identify sources and problem areas, and assess effectiveness of PHF controls	Sampling and monitoring of runoff from high risk areas (e.g. golf courses); no details of the pgm. given otherwise
Field screening	To find illicit discharges	Continuation of Part 1 application screening
Stream inspections	To find illicit discharges	Inspect every possible segment of community waters; visual only

Wet weather inspections	To find illicit discharges	perhaps Choose locations to monitor in wet flush conditions; no sampling details given
Industrial outfall monitoring	To quantify pollutants from certain industries; to gather useful data for use in GIS	Outfalls; priority sites; scheduled automated sampling and strategic grab sampling; begin in the Chattanooga Creek watershed

C. Proposed permit conditions for sampling and monitoring

The Division proposes to adopt Chattanooga's program as proposed, with the addition of some instream biological monitoring.

The Division proposes that Chattanooga conduct periodic biological assessments of several streams as a way to monitor improvements in water quality.

VIII. Assessment of controls

A. Need for assessments

We believe an MS4 city needs to assess the effectiveness of its storm water quality management program for several reasons; assessments serve:

- as a step in determining whether the most cost effective best management practices are included in the storm water management program;
- as a means to ensure the operator of the MS4 is accountable to the public and other users of the MS4;
- to assist in designing on-going monitoring, inspection and surveillance programs that help refine estimates of program effectiveness;
- as a baseline and ongoing measuring stick of the progress of the program; and
- in developing a strategy to evaluate progress toward achieving water quality goals.

B. Definition of assessments

EPA's Part 2 Guidance Manual states: "For some components of a proposed management program, such as structural controls (e.g., vegetative streambank stabilization, sediment pond or basin, etc.), the effect on pollution in storm water runoff is observable, and pollutant removal efficiencies can be estimated directly. For other components, pollutant reductions may be difficult to quantify. Applicants may need to use indirect estimates. For example, a program component may address source controls such as changing the behavior of citizen in the community, or improving the municipal control of industrial or commercial runoff." So there are direct measurements of program effectiveness and indirect measurements.

Examples of some direct measurements:

- expected pollutant load reductions (part 2 application)
- removal efficiencies of BMP's
- reductions in the volume of storm water discharged
- reductions in event mean concentrations

Examples of indirect measurements:

- gallons of used oil recycled
- amount of household hazardous water collected
- number of education brochures distributed
- number of reports of illicit discharges or illegal dumping
- number of construction and erosion and sediment control plans submitted and approved

C. EPA storm water application regulations

The EPA storm water rules address assessments in a couple of places.

First, the application rule made "Assessment of controls" an element of the part 2 application, requiring that the applicant make an initial, or baseline, assessment of what quantitative impact its storm water management plan will have on the quantity of pollutants discharged from the MS4.

Second, NPDES rules at 40 CFR 122.42 specify that the operator of an MS4 submit an annual report that includes, among other items, "revisions, if necessary, to the assessment of controls...reported in the permit application."

D. Chattanooga's proposal for assessments of controls

The City will be developing and implementing storm water control programs, studying existing programs for how to improve them, collecting technical data from pilot projects, water quality data, etc. Suggested assessments for different types of activities are given below.

<u>Type of storm water management program component</u>	<u>Examples</u>	<u>Result of assessment</u>
Pilot study	Industrial park BMP assessment site & other pilot BMP projects	Quantitative data; report and technical conclusions; whether or not to adopt the studied system; schedule and budgeting
Pilot study	Reduction of storm water flow to CSO	Reduction in flow measured or estimated
Quantitative investigations	Storm water monitoring, seasonal and industrial, for example	Quantitative data; conclusions; trend analysis

Public education	Used oil and toxics disposal; use and disposal of pesticides; spill reporting	Numbers of people contacted or participating; volume of materials turned in or picked up; number of reports of spills and pollution; trend analysis
New program implementation	Illicit connections; industrial inspections; construction inspections	Manpower; number of investigations and amount of useful information; record of follow-up actions; trend analysis of ambient monitoring data
Master planning	Master planning	Development of planning procedures; technical information on building water quality controls into flood control facilities; cost benefit study of such controls
Studies and Manuals	Maintenance Practices Manual; BMP Manual for Land Development	Completion of project

E. Division's proposed permit conditions

The Division will require an assessment of controls in the permit, primarily by reiterating the federal regulations on the annual reporting requirements. See Appendix E.

Additional specific requirements will be presented as well:

to require the City to provide estimates of pollutant loading, with a view toward setting up the system to report by program and at least by watershed, if not by outfall.

We believe that as information on these programs and their effects is collected, not only in Nashville, but nationwide, that more and more reliable estimates can be made. Already having a system in place to accept these data will save time and resources in the future. For example, a worksheet and lookup table can be prepared with program information, compliance rates, land uses, etc., that can be correlated with monitoring and stream data and pollutant load estimation equations. Such a table could include all known MS4 outfalls, which could be manipulated and reported by watershed, by industry, by land use, etc.

IX. More particular issues of importance to the Chattanooga MS4

A. TDOT

Roads with drainage systems, including TDOT roads, are a part of the Chattanooga MS4. Chattanooga has recognized this and proposes to work with the TDOT in "Public Roads" element of its SWMP.

The Division proposes to issue a separate NPDES permit to TDOT for discharges of runoff directly into waters of the State or indirectly through the Chattanooga MS4.

B. Outfall monitoring

In fulfilling the characterization data requirements (chemical sampling of storm water) of the part 2 application, Chattanooga sampled at instream locations. These locations were selected according to agreement among Chattanooga, USGS and WPC.

The Division proposes that Chattanooga perform its wet weather seasonal storm water sampling specifically at outfalls. Sampling at outfalls is also expected at four to eight industrial sites per year.

C. Storm sewer mapping and GIS

Chattanooga has stated that GIS mapping is a fundamental component of its storm water management program. The permit will be as specific as possible in seeing that this mapping done well and soon.

D. Stream alterations

Where a person does construction work in or near waters of the State such that the waters are likely to be altered in their

physical or chemical or biological properties, a State Aquatic Resource Alteration Permit (ARAP) is required by the State. This applies to work done by a city, by a private institution such as a land developer, by the State or by the Federal government.

This permit will require that the City's procedures recognize the aquatic resource alteration permitting requirements.

X. Permit conditions enumerated

See permit itself for details.

XI. Permit issuance and public notice procedures

The Division will publish notice of its intent to issue an NPDES storm water discharge permit to the City of Chattanooga and for at least 30 days thereafter will receive comments on the draft permit, including the proposed storm water management program. Any interested person may request copies of the Rationale Sheet and draft permit and submit written comments on the draft permit.

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