



# **STORM WATER POLLUTION PREVENTION PLAN**

For

Columbia Metropolitan Airport

3250 Airport Boulevard, Suite 10

West Columbia, SC 29170

Date Prepared: April 1, 2011

Updated: October 5, 2023

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## REVISIONS

Date of Update	Page(s)	Action Taken
10/25/11	5	Adjusted noted Office Hours for Operations
10/25/11	9	Updated Table 3-1 to reflect Tenant responses
10/25/11	11	Updated Table 3-2 to reflect Tenant responses
10/25/11	13-14	Sections 3.4.3 thru 3.4.6 revised to reflect Tenant responses
10/25/11	22	Updated Table 5-1 to reflect Tenant responses
10/25/11	26	Updated Table 5-2 to reflect Tenant responses
10/25/11	Appendix C	Revised forms A-1, A-2, and A-3
10/25/11	Appendix D	Revised form A-4
7/30/12	7,9,11,19,22,26	Update of Tenant Information. Update of Tenant Activities
7/30/12	Appendix C	Revised forms A-1, A-2, and A-3
7/30/12	Appendix D	Removed form A-4
7/30/12	Appendix B	Revised figures 2-2, 3-4; Tenant information Update
7/30/12	Appendix A	Added A.14, Amended A.7
10/30/13	Cover Page	Updated Prepared By
10/30/13	7,26	Update of Tenant Information
10/30/13	Appendix A	Updated A.9, A.12, and A.14
10/30/13	Appendix B	Revised Figures 2-2 and 3-4; Tenant Information Update
10/29/14	7,9,11,19,22,26	Update of Tenant Information. Update of Tenant Activities
2/12/16	Cover	Updated Logo, Date
2/12/16	Certification	Update of Operator's Certification Signatory

2/19/19	Certification	Update of Operator's Certification Signatory
2/19/19	9	Updated Table 3-1 to reflect Tenant information
2/21/19	11	Updated Table 3-2 to reflect Tenant information
2/21/19	7,9,11,19,22,26	Update of Tenant Information. Update of Tenant Activities
2/21/19	5	Updated Facility Information
10/15/20	9	Updated Table 3-1 to reflect Tenant information
10/15/20	11	Updated Table 3-2 to reflect Tenant information
10/15/20	7,9,11,19,22,26	Update of Tenant Information. Update of Tenant Activities
10/15/20	5	Updated Facility Information
2/20/21	Cover	Updated Logo
7/1/2022	5	Updated contact person
7/1/2022	7	Updated co-permittees covered
7/1/2022	9	Updated tenant activity summary
7/1/2022	15	Stemme Aviation changed to City Connect
7/1/2022	22	Updated Table 5-1
7/1/2022	25	Updated section 5.2.1
7/1/2022	19	Updated Table 4-1
8/8/2022	9	Updated Table 3-1
08/29/2022	26	Updated Table 5-2
06/1/2023	14	3.4.5 Aircraft Deicing Areas information updated
9/25/2023	27	5.2.5 Inspection/monitoring of Outfalls updated

## CERTIFICATION

### Operator's 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 gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Michael Gula

President/CEO, Columbia Metropolitan Airport

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## Section 1 Introduction

This document represents the operational storm water pollution prevention plan (SWPPP) for the Columbia Metropolitan Airport (CAE). It has been compiled in order to bring CAE into compliance with the requirement of the National Pollution Discharge Elimination System (NPDES) program under the South Carolina Department of Health and Environmental Control (SCDHEC) and is intended for use by CAE to provide consistent and effective management of storm water runoff. CAE has developed this SWPPP in order to facilitate compliance for its affected tenants, under the storm water requirements. The SWPPP presents a description of the CAE facility, a discussion of potential pollution sources resulting from practices and activities at the airport and identifies storm water management controls and best management practices (BMPs) to eliminate or reduce pollutants entering the storm water system.

This SWPPP has been prepared in accordance with requirements of the State of South Carolina General Storm Water Permit. Following this introductory section is general information on the CAE facility. This includes drainage patterns, tenants, and site activities as presented in Section 2. Section 3 describes past and present potential sources of pollutants in storm water. The non-storm water identification and elimination program at the airport is presented in Section 4 and the storm water management controls being implemented at CAE are described in Section 5.

### 1.1 Regulatory Background

This section discusses some of the regulatory history of the storm water pollution control program on the federal and state levels.

#### 1.1.1 Federal Requirements

In 1972, the Federal Water Pollution Control Act, which became the Clean Water Act (CWA), was amended to require that the discharge of pollutants to waters of the United States from any point source be covered by the NPDES Permit. In 1987, amendments to the CWA added Section 402(p), establishing a framework for regulation of municipal and industrial discharge of stormwater under the NPDES program.

Final regulations that established application requirements for regulated stormwater discharges were published in the *Federal Register* on November 16, 1990. The regulations require that operators of specific types of industrial activity which discharge stormwater obtain NPDES permits. Under these regulations, airport operations are considered “industrial activities.”

Industrial activity at a transportation facility (such as airports), as described by the federal regulation, is defined as those portions of the facility involved in vehicle maintenance (including



vehicle rehabilitation, mechanical repairs, deicing, painting, fueling and lubrication), equipment cleaning operations, or any operation otherwise identified in the regulation. Areas of each leasehold on the airport property that engages in industrial activities are, therefore, required to be permitted under the industrial NPDES program.

According to the federal regulations, coverage for stormwater discharge associated with industrial activity can be obtained with one of three types of permits:

- Individual Permit
- Multi-Sector Permit (developed as a result of the “group” permit application)
- General Permit

The federal regulations also allow states that are authorized to implement the NPDES program (as in South Carolina) to issue general or individual permits to regulate stormwater discharges associated with industrial activity.

#### 1.1.2 State Requirements

The State of South Carolina is, at present, a delegated NPDES state with general permitting authority. Effective January 1, 2011, SCDHEC implemented the revised edition of the initial stormwater general permit (general permit) for industrial dischargers of stormwater in the State of South Carolina. The permit has been revised several times since the initial issuance. The general permit covers all discharges of stormwater associated with industrial activity from point sources to waters of the State of South Carolina.

Facilities permitted under the general permit must prepare and implement SWPPPs in accordance with the Environmental Protection Agency (EPA) document *Stormwater Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices* (September 1992). SWPPPs must be updated as appropriate.

Under the general permit, the State of South Carolina allows the following non-stormwater discharges to the storm drain system provided the discharge is in compliance with the measures and controls for the non-stormwater discharges portion of the SWPPP.

- Discharge from firefighting activities
- Fire hydrant flushing
- Portable water sources, including waterline flushing
- Irrigation drainage
- Lawn watering
- Routine external building wash-down that does not use detergents or other compounds
- Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used
- Air conditioning condensate
- Natural springs
- Uncontaminated groundwater
- Foundation and footing drains where flows are not contaminated

## 1.2 Program Approach

CAE operations involve one or more tenants performing fueling, maintenance, cleaning, and/or other potential pollutant activities that may discharge pollutants to the storm drain system. CAE has developed a comprehensive approach to address the permitting of stormwater discharges associated with industrial activities at CAE.

South Carolina's state regulations adhere closely to those at the national level. The South Carolina Department of Environmental and Health Control (SCDHEC) was given the oversight authority of NPDES permits by the EPA. A requirement for this permit is the development and implementation of a SWPPP, which identifies sources of potential pollutants and Best Management Practices (BMPs) to prevent pollutants from reaching any natural water body. Columbia Metropolitan Airport falls within Sector S of the NPDES Permit, which has sector specific requirements. An additional requirement for airports of the SC General NPDES Permit is the monitoring of storm water runoff during deicing operations once per year.

CAE has elected to file under the general permit and to assume the role of principal permittee giving the airport tenants the option of participating as co-permittees. In order to comply with the most recent permit, each tenant must sign an agreement with CAE to be covered under the general permit. This approach conforms to federal and state regulations and will facilitate implementation of consistent stormwater pollution prevention measures for each tenant. Tenants affected by the permitting requirements who chose not to participate with CAE as co-permittees must obtain NPDES compliance through development and implementation of their own SWPPPs.

## 1.3 Stormwater Pollution Prevention Plan Organization

As described in the general permit and EPA guidance manuals, a SWPPP must contain five major elements. These elements include:

- Planning and organization, including formation of a Pollution Prevention Team (PPT)
- Assessment phase, including development of a site map, an inventory and description of exposed materials, an inventory of significant spills and leaks, testing for non-stormwater discharges, evaluation of monitoring data, and summary of pollutant sources and risk.
- BMP identification, including establishment of baseline BMPs and selection of activity and site-specific BMPs.
- Implementation phase, including implementation of BMPs and employee training.
- Evaluation/monitoring, including conducting annual site inspection, BMP evaluation, conducting recordkeeping and reporting of implemented BMPs and review and revision of SWPPP.

## Section 2

### Facility Description

#### 2.1 General

CAE property includes approximately 2,650 acres of mostly developed land. It is located eight miles southwest of Columbia, South Carolina. Figure 2-1 shows the location of CAE. Presently, approximately 570 acres of the District's property is covered with impervious materials, mostly asphalt. Figure 2-2 shows all impervious surfaces on airport property. The majority of operations conducted on the District's property are handled by tenants, which include the commercial passenger airlines, car rental companies, fixed base operators, air cargo carriers, and various governmental agencies. The Airport, along with its tenants, performs a variety of activities that could potentially expose pollutants to the storm water system. These include, but are not limited to, fueling, maintenance and washing of aircraft and vehicles, and deicing of aircraft and asphalt/concrete areas.

Statistical data for the facility is as follows:

**Facility Name:** Columbia Metropolitan Airport

**Facility Address:** 3260 Airport Boulevard, West Columbia, SC 29170

**Latitude:** 33° 56' 28" N

**Longitude:** -81° 07' 26" W

**Facility Telephone:** 803-822-5050

**Contact Person:** Ryan Kreulen, Vice President of Operations

**Contact Person:** Roger Allen, Operations Supervisor

**Facility Type:** Airports, Flying Fields and Services

**Facility Sector:** 4581 Section S

**Operating Schedule:** 24 hours per day, 7 days per week

**Office Hours:** Administration: Mon – Fri, 8:00 am - 4:30 pm; Operations: Mon – Sun, 4:00 am – 1:00 am

**Number of Employees:** Approximately 65 Full Time

**Permit Number:** SCR006480

**Permit Effective Date:** July 1, 2022 – June 30, 2027

**Receiving Waters:** Congaree Creek, (Note – SCDHEC states that this tributary is partially impaired due to fecal coliform), Six Mile Creek, Savanna Branch.

## 2.2 Land Use

Approximately 22 percent of the CAE facility is covered by impervious surfaces, such as buildings and paved areas (i.e., runways, taxiways, and parking lots) as shown in Figure 2-2. The pervious surfaces, including grass and unvegetated soils that principally lie between runways, taxiways, and buildings, cover the remainder of the facility. The areas surrounding CAE consists of developed areas, as well as forest areas.

## 2.3 Drainage System

CAE is subdivided into 17 drainage basins. The drainage basins flow into 9 total outfalls located at various locations in the vicinity of CAE. These outfall locations are depicted in Figure 3-1. The drainage basins drain into one of three different receiving waters; The Savanna Branch, The Six Mile Creek, or The Congaree Creek. No industrial activities take place in the basin that enters the Congaree Creek. Basin areas and drainage patterns for each drainage basin are shown in Figure 2-3.

## 2.4 Impaired Water Bodies

SCDHEC's Total Maximum Daily Load (TMDL), 303(d) Water Quality Information Tool was utilized to identify any impaired waters in the vicinity of CAE. A TMDL Report was developed, released September 1, 2004, for the Congaree Creek Basin (Hydrological Unit Code: 03050110-020); Stations: C-005, C-008, C-025, and C-067 due to Fecal Coliform Bacteria. Potential sources of contaminants were identified to be landfills and other industrial activities taking place off of airport property. A number of these industrial sites are approved through SCDHEC to discharge fecal Coliform. The industrial activities at CAE are not expected to contribute to the Criteria of Concern and no additional BMPs are required to address the partially impaired water bodies concerning fecal Coliform.

Station C-005, on Six Mile Creek, is present on the 303d list of Impaired Waters. It is impaired on the basis of Dissolved Oxygen (DO). It is known that de-icing activities can have an effect of reducing DO present in receiving waters, but very little de-icing goes on in the areas of the airport that outfall into this water body. Close attention will be paid to water monitoring results at outfalls into the Six Mile Tributary to confirm that the airport is not contributing to this Impairment.

## 2.5 Tenants and Site Activities

As described in Section 1.1, the federal and state regulations governing stormwater discharges require that transportation facilities with discharge from activities defined as “industrial” must be covered under a NPDES permit. Therefore, tenants that conduct industrial activities at CAE are given the option of obtaining coverage as co-permittees with CAE.

CAE tenants conduct a variety of airport-related support functions. To obtain the most current tenant information for the SWPPP, each tenant was asked to complete a SWPPP questionnaire. Additionally, site inspection and interviews of tenant representatives were conducted.

The following lists the responding co-permittees covered under NPDES General Permit **SCR006480** and required to follow the direction and Best Management Practices described in this SWPPP:

- |                              |                                 |
|------------------------------|---------------------------------|
| a) Federal Express (FEDEX)   | i -2) United Express            |
| b) West Cargo                | i -3) American Airlines, Inc.   |
| b-1) Jetstar Aviation        | j) National Weather Service     |
| c) Airport Maintenance       | k) Airport Fire Rescue          |
| d) Enterprise Rent A Car     | l) Eagle Aviation               |
| e) Avis Rent-a-Car           | o) SC Division of Aeronautics   |
| f) Alamo National Car Rental | p) Air Wisconsin                |
| g) Hertz Rent-a-Car          | r) Columbia Aviation            |
| h) Thrifty Rental Car        | s) United Parcel Service (UPS)  |
| i) Terminal Ramp             | t) Celebrate Freedom Foundation |
| i -1) Delta Airlines         | v) City Connect                 |

(Tenant Facility locations are depicted in Fig 2-2 *Impervious Surfaces & Tenant Map*)

Based on the review of tenant-completed questionnaires, the following activities were reported to occur at CAE. Individual tenant questionnaire responses can be found in Appendix D:

- |                                    |                                     |
|------------------------------------|-------------------------------------|
| ✓ Aircraft Fueling                 | ✓ Cargo Handling                    |
| ✓ Equipment Degreasing/Washing     | ✓ Outdoor Apron Wash-down           |
| ✓ Aircraft Maintenance             | ✓ Chemical Storage                  |
| ✓ Equipment Storage                | ✓ Pesticide/Herbicide Usage         |
| ✓ Aircraft Rental/Sales            | ✓ Ground Vehicle Fueling            |
| ✓ Fuel Storage                     | ✓ Ground Vehicle Maintenance        |
| ✓ Aircraft Washing                 | ✓ Ground Vehicle Painting/Stripping |
| ✓ Floor Wash-down                  | ✓ Aircraft Deicing                  |
| ✓ Building and Grounds Maintenance |                                     |

## Section 3

### Source identification

This section describes the potential sources of stormwater contaminations at CAE. These sources were identified using a questionnaire and thorough site investigation.

#### 3.1 Historical Spills/Leaks

As a requirement by the current South Carolina NPDES General Permit, all previous spills and leaks since 2007 must be documented. To provide a historical profile of spills, data was gathered from the questionnaire and interviews were conducted with CAE staff and tenants.

Historically, the Airport Department of Public Safety kept comprehensive records of any spills on Airport property within the previous 36 calendar months. These records can be found in Appendix E.

#### 3.2 Potential Pollutants in Stormwater

Based on a thorough site visit and review of the questionnaires submitted by tenants, potential pollutants that may be present in stormwater discharges were identified. Table 3-1 summarizes the activities performed by the CAE tenants that could produce these pollutants. Pollutant sources consist primarily of petroleum products (such as fuels, oil and grease); aircraft wash water, and propylene glycol. These pollutants can be transported to the Stormwater system either as a direct spill, rainfall runoff that can mobilize residual contaminants, and/or surface area wash downs. Table 3-2 lists specific pollutants that could discharge from industrial tenant facilities based on the materials used at each facility.

Table 3-1  
TENANT ACTIVITY SUMMARY  
COLUMBIA METROPOLITAN AIRPORT

Tenant	Facility Activity																			
	D	AF	AM	AP	AS	AW	BGM	CH	CS	ED	EM	ES	FS	FW	OA	PH	VW	VF	VM	VP
CAE Maintenance	■						■		■	■	i	i	■		■	■	■	■	i	
Air Wisconsin			■						i		■								■	■
Alamo/National									i				■				i	■	i	
American Airlines, Inc.	■		■		■				■				■				i	■	i	
Avis									i								i	■	i	
City Connect		■																		
Columbia Aviation		■	i		■	■			i	■	■		■	i			■			
Delta	■							i	i											
Eagle Aviation	■	■	i	i		■		■	i	■	i	■	■	i		■		■	■	■
Enterprise												■								
Federal Express (FedEx)	■		■					■	■									■	■	i
Hertz																	■	■	i	
JetStar Aviation									i		i	i							i	
National Weather Service (NWS)									■				■							
SC Aeronautics Commission		■	i			i			i				i	i						
Thrifty													■				i	■	i	
United Airlines	■		■		■				■				■				i	■	i	
United Parcel Service (UPS)	■		■		■			■	i								i	i	i	

Notes:  
Outdoors

- |     |                                |    |                           |
|-----|--------------------------------|----|---------------------------|
| D   | Deicing                        | EM | Equipment Maintenance     |
| AF  | Aircraft Fueling               | ES | Equipment Storage         |
| AM  | Aircraft Maintenance           | FS | Fuel Storage              |
| AP  | Aircraft Painting/Stripping    | FW | Floor Wash-down           |
| AS  | Aircraft Sanitary Service      | OA | Outdoor Apron Wash-down   |
| AW  | Aircraft Washing               | PH | Pesticide Herbicide Usage |
| BGM | Building & Grounds Maintenance | VW | Ground Vehicle Washing    |

- |   |                                     |
|---|-------------------------------------|
| ■ | Facility Activity Conducted         |
| i | Facility Activity Conducted Indoors |
| □ | Not a Facility Activity             |



CH	Cargo Handling	VF	Ground Vehicle Fueling
CS	Chemical Storage	VM	Ground Vehicle Maintenance
ED	Equipment Degreasing/Washing	VP	Ground Vehicle Painting/Stripping

TABLE 3-2

Potential Pollutants in Stormwater Discharge  
COLUMBIA METROPOLITAN AIRPORT

Tenant	Potential Pollutants
Alamo/National	Gasoline (UST)
American Airlines, Inc.	Propylene Glycol Type I, Propylene Glycol Type IV
Avis	Gasoline (UST)
City Connect	Jet-A-Fuel, Av Gas
CAE Maintenance	Snow and Ice Melting Salts, Oils and Greases, Petroleum Hydrocarbons
Columbia Aviation	Jet-A-Fuel, Av Gas
Delta	Propylene Glycol type I, Propylene Glycol type IV
Eagle Aviation	Jet-A-Fuel, Av Gas, MD Gas, Low Sulfur Diesel, Deicing Chemicals
Enterprise	None
Federal Express (FedEx)	Propylene Glycol type I, Propylene Glycol type IV, Oil, Antifreeze
FEAM Aero	Engine Oil, Hydraulic Fluid, Cleaning Compounds, Isopropyl alcohol
Hertz	Gasoline (UST)
JetStar Aviation	Used Oil, Used Antifreeze, Hydraulic Fluid, Fuel
National Weather Service (NWS)	Diesel Fuel (2 Locations, Main Weather Center & Radar Site), Used Oil, New Oil
SC Aeronautics Commission	Jet-A-Fuel, Av Gas, Diesel Fuel, MoGas (auto gasoline)
Thrifty	Gasoline (UST)
United Parcel Service (UPS)	Propylene Glycol type IV, Propylene Glycol type I
United Airlines	Propylene Glycol Type I, Propylene Glycol Type IV

### 3.3 Site Reconnaissance Results

The intent of the site reconnaissance task was to visually inspect all observable outfalls throughout the airport storm sewer system during dry weather conditions and identify potential illicit connections, sources of non-stormwater discharges, and/or illegal dumping to surface waters or storm drains. The outfalls of CAE's stormwater discharge system are depicted in Figure 3-1.

On March 30, 2011 the site reconnaissance was conducted at CAE to observe tenant activities which could result in non-stormwater discharges. Areas observed during the reconnaissance included a reasonable sample of the leaseholds considered as co-permittees to CAE. During the site reconnaissance, no dry weather flows were observed, and no illicit connections were present. Refer to table 3-2 for information concerning potential pollutants by tenants.

### 3.4 Potential Area of Pollutant Contact

A variety of activities occur at specific areas of CAE that could cause pollutants to enter stormwater. These activities include:

- ✓ Aircraft, ground vehicle, and equipment maintenance areas
- ✓ Aircraft and ground vehicle fueling areas
- ✓ Aircraft and ground vehicle washing areas
- ✓ Aircraft painting and stripping areas
- ✓ Aircraft deicing areas
- ✓ Chemical and fuel storage areas
- ✓ Building and grounds maintenance areas
- ✓ Lavatory service operation areas

A brief description of the nature of these activities is listed below. Figures 3-1 through 3-5 show the location of potential pollutant contact. Existing control measures to limit the presence of pollutants in stormwater from these activities are summarized in Section 5.

#### 3.4.1 Aircraft, Ground Vehicle, and Equipment Maintenance Areas

Aircraft, ground vehicles, and/or equipment are maintained by one or more of the industrial tenants of CAE. In the questionnaires, CAE tenants indicated that they maintained aircraft, ground vehicles, and/or equipment.

Based on the nature of maintenance activities at airports, materials such as lubricating oils, hydraulic oils, degreasers, and other cleaning products are typically present in these areas. Small leaks or spills of these materials are not uncommon during maintenance activities. Most tenants appear to respond

appropriately to these small leaks through the use of absorbent materials; therefore, this activity does not seem to represent a potential for significant pollutant discharge.

Most of the hangars at CAE do have floor drains. Some level of maintenance activity occurs in nearly all of these hangars. Discharges to floor drains at CAE are potential sources of pollutant discharges to the storm drain system; however, it is believed that the floor drains flow to the sanitary sewer system.

#### 3.4.2 Aircraft and Ground Vehicle Fueling Areas

Aircraft and ground vehicle fueling activities are conducted only on concrete ramps or paved areas, located throughout CAE. A total of six tenants reported that they conduct aircraft fueling activities at their facility or on aprons across CAE: City Connect, Columbia Aviation, Eagle Aviation, and SC Aeronautics Commission. Out of these five tenants, Columbia Aviation and Eagle Aviation serve the fueling operations for the remainder of CAE tenants.

There are five Rental Car Maintenance facilities at CAE, each having a fueling island served by USTs, while CAE Maintenance has a fueling island with ASTs. All these fueling tanks have secondary containment. Potential for fuel spills is largely limited to delivery of fuel to and from these tanks.

Several other fuel tanks are located throughout CAE, mainly in locations where secondary power generators are required: ATCT, Electrical Vaults, FAA Radar Antenna, Weather Radar, and the Terminal Building.

Based on discussions with tenants and CAE staff, there have been a small number of minor fuel spills since 2007, all of which have been contained on the apron surface until cleanup (did not enter Stormwater system). These are recorded in the Department of Public Safety Hazardous Material response records and are described in tenant response questionnaires. Currently, fueling areas do not represent a major source of pollutant discharge. However, they are potential sources of contamination without proper adherence to BMPs.

#### 3.4.3 Aircraft and Ground Vehicle Washing Areas

Eleven tenants reported conducting aircraft or ground vehicle washing activities at CAE. The rental car maintenance facilities (currently operated by Avis, Hertz, Alamo/National and Thrifty) conduct extensive car washing daily using purpose-built car washes. These facilities recycle water, and deposit wash-water into the sanitary sewer system.

#### 3.4.4 Aircraft Painting and Stripping Areas

Ground vehicle and aircraft painting, sand blasting, and paint stripping all occur to a very small degree at CAE. Paint, paint-related materials (i.e., thinners, solvents, etc.) and particulates from sandblasting and paint stripping are all pollutant sources that have limited potential to enter the

storm drain. Eagle Aviation is the only tenant at CAE performing aircraft painting. This work is contained within a purpose-built paint-shop. Hazardous Waste materials are detained and disposed of safely in containers, while other waste fluids enter the sanitary sewer system.

### 3.4.5 Aircraft Deicing Areas

Deicing activities are performed on aircraft to minimize the ice build-up on the wings and plane body during cold weather conditions. A limited amount of deicing material is used at the airport due to the warm climate of the region. Of the tenant responses, American Airlines, Inc., Delta, Eagle Aviation, Federal Express (FEDEX), and UPS are known to be conducting deicing activities during the winter months.

The primary deicing material handled at CAE contains propylene glycol. Currently, there are no preventive procedures for releases of deicing materials on the Air Carrier or General Aviation Ramps. There are significant measures in place to serve the East Cargo Apron where UPS operate, including a stormwater detention pond, and a “parallel” deicing runoff containment pond equipped with aerators, and a pump fed connection to the sanitary sewer system. Stormwater and chemical discharges from East Cargo Ramp can be redirected into this containment pond and held until release into the sanitary sewer. UPS as deemed necessary will conduct annual water monitoring of the outlets from their stormwater outfalls as a requirement of operating agreement with CAE. Due to the numerous locations at which deicing is performed (ramps, fueling facilities, and on the airfield prior to departure), this activity presents a potential for pollutant discharge. However, the volume of deicing fluid is currently estimated below 50,000 gallons for UPS, where extensive pollution control measures are in place, and less than 20,000 gallons for the Air Carrier and General Aviation operations.

The SCDHEC General Industrial Permit in accordance with CFR Part 449 sampling requirements does not apply to CAE. CAE does not collect any aircraft deicing fluid (ADF) and does not meet the threshold for the use of urea for airfield pavement deicing (14.7mg/L, daily maximum). CAE is also below the 100,000 gallons of glycol usage on an annual basis. Tenants at the request of the airport are required to report their glycol usage to CAE annually. The averages of our tenants are listed below.

FedEx: 850 Gallons	United: 700 Gallons	UPS: Not reported
American: 1,000 Gallons	Delta: 1,000 Gallons	

### 3.4.6 Chemical and Fuel Storage Areas

Large quantities of petroleum and chemical products (i.e., jet fuels, gasoline, diesel fuel, and lubricants) are stored by tenants at CAE. Figure 3-2 and 3-3 shows the locations of chemical/fuel storage. Onsite fuels are typically stored outdoors in aboveground storage tanks, although there are select locations where underground storage tanks are used.

Chemicals, lubricating oils, and waste oils are stored indoors and outdoors depending on the tenant. Other materials such as cleansers, paints, and paint-related products are typically stored in cabinets located indoors. Eleven tenants indicated that they store fuel/oil on their leasehold. Eagle Aviation and Columbia Aviation are the two main fueling tenants located at CAE.

Seventeen tenants indicated that they store chemicals on their leasehold. Tenants storing fuel and chemicals follow the established BMPs

to ensure the lowest impact to the storm water system possible. During the rainy season, any residues on the containers or residuals from chemical spills or leaks in outdoor storage areas are potential sources that could contribute to pollutants in stormwater discharges.

#### City Connect

The tank farm located within this facility contains one underground 10,000-gallon aviation gasoline (AVGAS) tank, and one underground 12,000-gallon Jet-A fuel tank. Underground Storage Tank Registration Certificate # 15526 certifies both tanks for operation. Low volumes of fuel are used at this facility.

#### CAE Maintenance

The tank farm adjacent to the CAE Maintenance facility consists of one 2,000-gallon above ground diesel fuel tank, and one 3,000-gallon above ground MOGAS fuel tank. These tanks are surrounded by a secondary containment structure capable of preventing fuel from being discharged into the stormwater basin. If a fuel spill or leak were to occur, the Airport Department of Public Safety would be contacted to assist in clean up. CAE Maintenance also conducts vehicle washing activities. An oil/water separator is currently utilized to prevent any hazardous runoff from reaching the stormwater discharge system.

Other tanks throughout the property include two 135-gallon diesel above ground diked metal tanks, one 500-gallon used oil single wall above ground storage tank (no secondary containment, used in maintenance shop), one 400-gallon diesel above ground metal storage tank, one 1,000-gallon diesel above ground diked metal tank, one 550-gallon diesel above ground storage tank, and one 3,000-gallon diesel above ground storage tank. All tanks have either secondary containment or are diked except one 500-gallon used oil single wall above ground storage tank as noted above.

#### Columbia Aviation

The tank farm located at Columbia Aviation includes one underground 12,000-gallon aviation gasoline (AVGAS) tank, two underground 15,000-gallon Jet A fuel tanks, and one underground 20,000-gallon Jet A fuel tank. The four underground fuel tanks are permitted under the Underground Storage Tank Registration Certificate #16369. Above ground storage tanks located on site include one 200-gallon oil tank and one 200-gallon fuel sump tank. These tanks

are continuously monitored by Columbia Aviation staff. Four fuel trucks of varying capacities provide fueling capabilities to aircraft in the fueling area. An 8,000-gallon fuel containment area is used for prevention of stormwater pollution. Columbia Aviation currently has a SPCC plan to utilize in the event of a spill.

#### Eagle Aviation

Inside the west end of the T-Hangar building is a small oil room which houses drums of various products such as: varsol, toluene, hydraulic fluid, methanol, methyl ethyl ketone, acropolis, trichloroethene, isopropyl alcohol, solvent 141, and degreaser. These products are stored indoors within a storage area secured with lock and key. Inside the Turbine hangar is a 275-gallon used oil above ground storage tank storing oil from a stationary heater. There are two wash racks located at Eagle. On the single wash rack is a 250-gallon used oil above ground storage tank. This tank sits on the wash rack that is outfitted with a drain in the center equipped with an oil/water separator. On the double wash rack is a 275-gallon Jet-A above ground storage tank, equipped with a 60-gallon spill pan underneath, which also has an oil/water separator. Outside of the east end of the tank farm is a 275-gallon used oil tank equipped with a spill pan and a 275-gallon plastic cube tank in located outside of the secondary containment. The metal AST has a 60-gallon spill pan, while the plastic tank has no secondary containment. Any spills located in the vicinity of these two tanks will be captured in the oil/water separator. One underground 10,000-gallon fuel tank is located at the facility, underground storage tank registration certificate #05893. The aboveground fuel tank farm stores aviation fuel in fifteen horizontal 20,000-gallon tanks. Fourteen of the tanks contain Jet-A fuel and one contains Avgas. There is also one 275-gallon reclamation system tank for Jet-A fuel located inside the tank farm secondary containment walls. The entire fuel farm is completely surrounded by secondary containment.

Structural controls exist to assist in pollution prevention management. The bulk fuel storage facility is completely surrounded by concrete secondary containment. The secondary containment has 8-inch thick 4,000 psi concrete floors and 6-inch thick 4,000 psi concrete walls. The walls are 16 inches tall and have 6-inch HDPE seals at all joints. The volume of secondary containment is structured to contain the volume of the largest single tank (20,000 gallons) plus 50% of the next largest tank (10,000 gallons) plus a 25-rain (6 inches). All secondary containment floors, walls, and sumps are designed to contain stored products for a minimum of 72 hours. Emergency contractors are available within four hours if a spill occurs at the facility which on-hand personnel cannot manage.

Emergency spill equipment is readily available in case of an incident regarding a fuel or chemical spill. Absorbent pads, portable dikes, storm drain covers, oil dry, shovels, and brooms are kept at multiple locations throughout the facility.

#### Rental Car Facilities

Automotive gasoline (MOGAS) is stored in a 12,000-gallon underground storage tanks at each of the five rental car facilities. Each tank is monitored independently by each respective tenant via electronic sensors. Annual inspections are performed by the SWPPP coordinator to insure

proper inspection techniques by the tenants. If a spill should occur in this area, a spill kit would be deployed to prevent fuel from advancing off-site. Any significant spill should be immediately reported to CAE Operations or Department of Public Safety for immediate assistance. All spills are documented in accordance with the established BMPs and must be turned in to the SWPPP coordinator upon request.

Underground Storage Tank Registration Certificates:

Avis/Budget:	#18951
Alamo/National:	#18952
Enterprise:	#18968
Hertz:	#18954
Thrifty:	#18953

### 3.4.7 Building and Ground Maintenance

Pesticide and herbicides products are applied at selected areas at CAE to eliminate insects and to inhibit the growth of weeds. Columbia Metropolitan Airport Maintenance reportedly uses pesticides and herbicides. Products stored outdoors can have residues on the container that could leach onto the pavement or soil and be washed into the storm drain. During rainfall events, pesticide and herbicide residues that accumulate at the application site can also wash into the storm drain. Pollutant discharges are expected at CAE from the use and storage of pesticides and herbicides. However, since these pesticides and herbicides are stored inside and are used in accordance to manufactures' instructions, they are not expected to be a major source of pollutants at the present time.

### 3.4.8 Sediment and Erosion

Sediment and erosion control historically has not been a significant issue at CAE. The greatest potential for sediment and erosion control to impact storm water quality would be during construction activities. In this case, contractors are required to submit coverage under the South Carolina General NPDES Permit for Construction Activities. Site specific sediment and erosion control measures will be specified under the Construction Activities Permit and CAE personnel will ensure proper compliance. Open spaced land on airport property is grass covered and will be consistently monitored by CAE personnel. Drainage ditches and storm water drop inlets will be inspected following the Facility Inspection Protocol as defined in Section 5.4.3 of this plan. Any erosion issues will be reported to management and corrected as needed.



## Section 4

### Non-Stormwater Discharge Identification

#### 4.1 Methodology

The general permit requires non-stormwater discharge into storm drainage systems (except as discussed in Section 1.1) to be eliminated prior to implementation of the SWPPP. To determine if non-stormwater discharges existed at CAE facilities, the following steps were taken:

1. Tenants were requested fill out the Tenant Storm Water Questionnaire, detailing the type of industrial activities present at their facilities.
2. Available storm drain piping plans and schematics of CAE were reviewed.
3. Site reconnaissance was conducted at CAE's tenant facilities during dry weather.

Results of these tasks are described in the following sections.

There are generally two types of non-stormwater discharges:

- Overt or "hard piped" illicit connections where non-stormwater discharges enter the storm drain system directly via a pipe.
- Subtle illicit connection that result from a variety of activities discharging to the storm drain system or receiving water via overland discharge.

The site investigation program described in Section 3 focused on identifying both overt and subtle illicit connections to the CAE storm drain system.

#### 4.2 Findings

To the best of CAE's knowledge, there are no illicit connections or non-stormwater discharges to the storm drain system or ground surface from any tenant facility. If any illicit connections are discovered, they will be investigated and documented in table 4-1.

TABLE 4-1  
 Summary of Tenant Response to Non-Stormwater Certification statement  
 COLUMBIA METROPOLITAN AIRPORT

Tenant	Existence of Non-Stormwater Discharges	Site Observation
Air Wisconsin	None	Non-Stormwater Discharges not present
Alamo/National	None	Non-Stormwater Discharges not present
American Airlines, Inc.	None	Non-Stormwater Discharges not present
Avis	None	Non-Stormwater Discharges not present
Columbia Aviation	None	Non-Stormwater Discharges not present
City Connect	None	Non-Stormwater Discharges not present
CAE Maintenance	None	Non-Stormwater Discharges not present
Delta	None	Non-Stormwater Discharges not present
Eagle Aviation	None	Non-Stormwater Discharges not present
Enterprise	None	Non-Stormwater Discharges not present
Federal Express (FedEx)	None	Non-Stormwater Discharges not present
Hertz	None	Non-Stormwater Discharges not present
Jetstar Aviation	None	Non-Stormwater Discharges not present
National Weather Service (NWS)	None	Non-Stormwater Discharges not present
SC Aeronautics Commission	None	Non-Stormwater Discharges not present
Thrifty	None	Non-Stormwater Discharges not present
United Parcel Service (UPS)	None	Non-Stormwater Discharges not present
United Airlines	None	Non-Stormwater Discharges not present

## Section 5 Stormwater Management Controls

A stormwater Best Management Practice (BMP) is defined as any program, technology, process, sitting criteria, operating method, measure, or device that controls, removes, or reduces pollution. The general permit requires the development and implementation of BMPs to address pollutants originating from industrial sources. Appropriate BMPs are selected for industrial facilities based on a site assessment. Areas of actual or potential pollutant contact are evaluated and applicable BMPs implemented to eliminate or minimize the pollutants. BMPs can be classified into categories based on the intended stormwater control objective: *quality* control and *quantity* control.

Quality control BMPs are designed to limit the types and concentration of pollutants found in stormwater runoff. Quality control BMPs can be subdivided into *source control* BMPs and *treatment control* BMPs. Source control BMPs are operational practices intended to prevent pollutants from entering surface waters by altering activities to eliminate or minimize pollution produced as a result of the activity. Examples of source control BMPs include:

- Moving an outdoor operation indoors
- Placing storage containers for recyclable oil in a shed or under a lean-to
- Storing hazardous materials/wastes in covered, contained areas

Treatment control BMPs treats the stormwater to remove pollutants. Treatment BMPs include retention ponds, oil/waste separators, and grass swales.

Quantity control BMPs are intended to control the runoff volume or peak discharge rate. The use of stormwater detention basins is one example of a quantity control BMP. However, a properly designed and maintained detention basin can also decrease the amount of pollutants entering surface waters, thereby improving receiving water quality.

A properly designed and implemented spill response program can also be an effective method for protecting stormwater quality. Spill response programs rely upon employee awareness and training to be effective. CAE has an airport-wide Spill Prevention Control and Countermeasures (SPCC) Plan in place as required by the Federal EPA regulations in 40 CFR 112. A spill response procedure is provided in the SPCC Plan and a list of required local and regulatory contacts is provided that will be notified in the event of a spill. The facility has placed several spill kits around the airport. The spill kits will be available to make the initial response with the focus to keep the fuel and/or oil from entering the storm water drainage system. In the event a larger spill is encountered; a 24-hour spill response company will be contacted to assist.

The following discussion describes existing source and treatment control mechanisms implemented at CAE and proposed additional control mechanisms. An implementation program detailing scheduling, PPT personnel, training requirements and facility inspection protocol is provided for proper installation and maintenance of proposed and existing BMPs for CAE tenants.

### 5.1 Existing Control Mechanisms

Section 2.4 (Tenants and Site Activities) describes current industrial activities typically performed by CAE tenants. Industrial activities performed outdoors have greater potential to affect runoff water quality. Activities performed indoors have less potential to affect runoff water quality. However, practices such as hosing indoor floor space down to outdoor areas negate the potential water quality benefits of performing industrial activities under cover.


CAE tenants perform industrial activities related directly to aviation, such as aircraft operation, maintenance, and cargo handling, as well as general industrial activities such as vehicle maintenance, equipment storage, and facility maintenance. Section 3 (Source Identification) describes the types and estimated quantities of potential pollutants that may affect runoff water quality as the result of these tenant operations. The potential pollutants most commonly cited were oils and greases and petroleum hydrocarbons. Other potential pollutants included herbicides, hydrocarbons, solvents, glycols, and soaps. Table 5-1 presents a summary of the tenant requirements concerning BMP implementation.

TABLE 5-1

Existing Best Management Practice for Implementation  
COLUMBIA METROPOLITAN AIRPORT

Tenant															SK
	NQ	ZD	DI	ET	FS	HK	PM	RK	SE	SR	TP	VM	SS	AM	
CAE Maintenance Staff															B
Air Wisconsin Airlines															C
Alamo/National															B
Avis															B
City Connect															C
Columbia Aviation															A
Delta															C
Eagle Aviation															A
Enterprise															
Federal Express (FedEx)															C
Hertz															B
Jetstar Aviation															C
National Weather Service (NWS)															C
SC Aeronautics Commission															C
Thrifty															B
United Parcel Service (UPS)															C
United Airlines															C
American Airlines															C

 BMP currently used

 BMP Not currently practiced

Notes:

NQ Did not complete questionnaire  
ZD Zero Discharg  
DI Deicing Procedures  
ET Employee Training  
FS Fuel/Chem Storage  
HK Good Housekeeping  
Preventative  
PM Maintenance  
SK Universal Spill Kit

RK Record Keeping and Spill Reporting  
Sediment and Erosion  
Prevention  
SE  
SR Spill Prevent and Response  
TP Traditional Practices  
VM Visual Monitoring  
SS Significant Hazardous Spills  
Aircraft  
AM Maintenance

TABLE 5-1A

APPLICABLE BEST MANAGEMENT PRACTICES

BMP	DESCRIPTION
ZERO DISCHARGE (ZD)	No activities are performed on-site which result in actual or potential contamination of storm water.
DEICING PROCEDURES (DI)	Deicing procedures expose various chemicals to the environment. Proper procedures should be designed and implemented to minimize this impact.
EMPLOYEE TRAINING (ET)	Employees are made aware of the potential to contaminate storm water through industrial activities and are trained in pollution prevention materials.
FUEL/CHEMICAL STORAGE (FS)	Employees are made aware of the proper fuel and chemical storage, as well as handling procedures.
GOOD HOUSEKEEPING (HK)	Pollutants are prevented from entering storm water through measures such as prompt disposal of debris resulting from outdoor activities.
PREVENTATIVE MAINTENANCE (PM)	All equipment must remain in good working order as well as leak free concerning hazardous materials.
RECORD KEEPING AND SPILL REPORTING (RK)	Monitoring implementation and compliance with this SWPPP requires proper documentation of events and training.
SEDIMENT & EROSION PREVENTION (SE)	Storm water can be a potential source of erosion, monitoring of potential areas is a requirement.
SPILL PREVENTION AND RESPONSE (SR)	A spill prevention and response plan has been implemented, reducing the potential for storm water contamination.
TRADITIONAL STORM WATER MANAGEMENT PRACTICES (TP)	Reduce the amount of pollutants and foreign material discharged yearly to the natural waters surrounding the Airport.
VISUAL MONITORING (VM)	Through visual monitoring of each area on Airport property, it is hoped that any leaks, blocked storm drains, or any illicit connections will be detected.
SIGNIFICANT HAZARDOUS SPILLS (SS)	For significant or hazardous spills that cannot be controlled by personnel in the immediate vicinity.
AIRCRAFT MAINTENANCE (AM)	Prevent hazardous aircraft maintenance fluids from dispensing into the storm water system by means of controlling activities.
UNIVERSAL SPILL KIT (SK)	Provide supplies and collection device necessary for containment and collection of spills of varying materials and quantities. Provide protective clothing and gloves for individual responding to spill.

## 5.2 Best Management Practices Implementation Program

### 5.2.1 Pollution Prevention Team

The airport SWPPP coordinator is: Roger Allen and may be contacted at (803) 822-7822. Individual tenants have designated personal responsible for implementing the SWPPP at corresponding tenant sites. Table 5-2 lists the members of the PPT for all facilities responding to the CAE questionnaire. This list will be updated as necessary. It will be the responsibility of each facility to notify the CAE SWPPP coordinator when there are personnel changes. Other tenant responsibilities include ensuing implementation of appropriate BMPs and retaining an onsite copy of the implemented SWPPP and providing feedback to the CAE coordinator regarding SWPPP compliance.

### 5.2.2 Training Requirements

The CAE coordinator shall conduct an annual SWPPP implementation training seminar for all PPT members. These members in turn will train their own internal staff. Training will cover items such as prohibited discharges, inspection, spill response, good housekeeping, implementation of BMPs, and recordkeeping procedures. Training will be provided on an annual basis and as a required provision for new tenant occupancy. The training program implementation, including tenant participation, will be thoroughly documented throughout the permit period.



TABLE 5-2  
 Airport Pollution Prevention Team  
 COLUMBIA METROPOLITAN AIRPORT

Tenant	Team Member	Phone	Questionnaire Complete	Sub-Leases From	Site Visit Conducted	PPT Status
CAE Maintenance Staff	Thomas Tapp	803-822-5068	Yes	n/a	Yes	OK
Air Wisconsin	Thomas Springs	757-748-5027	Yes	n/a	Yes	OK
Alamo/National	Andrew Metze	803-260-3494	Yes	n/a	Yes	OK
American Airlines	Donald Peru	850-774-4385	Yes	n/a	Yes	OK
Avis	Henry Kaiser	803-822-5110	Yes	n/a	Yes	OK
Celebrate Freedom Foundation	Dean Crepes	803-822-8812	Yes	n/a	Yes	OK
Columbia Aviation	Gary Parker	803-822-8332	Yes	n/a	Yes	OK
City Connect	Aaron Oelhafen	803-528-2165	Yes	n/a	Yes	OK
Delta	Eugene James	803-381-2305	Yes	n/a	Yes	OK
Eagle Aviation	Carrie Myers	803-822-5569	Yes	n/a	Yes	OK
Enterprise	Andrew Metze	803-260-3494	Yes	n/a	Yes	OK
Federal Express (FedEx)	Darryl Blakely	803-822-1785	Yes	n/a	Yes	OK
Hertz	Cameron Jordan	803-446-2179	Yes	n/a	Yes	OK
Jetstar Aviation	Delbert Hammer	803-227-9214	Yes	n/a	Yes	OK
National Weather Service (NWS)	Douglas Anderson	803-822-8133	Yes	n/a	Yes	OK
SC Aeronautics Commission	Gary Siegfried	803-708-2838	Yes	n/a	Yes	OK
Thrifty/Dollar Car Rental	Cameron Jordan	803-446-2179	Yes	n/a	Yes	OK
United Parcel Service (UPS)	Alvina Harrison	803-822-6601	Yes	n/a	Yes	OK
United Airlines	Christopher Smith	839-224-0817	Yes	N/A	Yes	OK

\* No response from tenant

### 5.2.3 Facility Inspection Protocol

An annual inspection of tenant facilities will be conducted by CAE personnel (accomplished by the designated tenant representative) to verify that all SWPPP elements are properly implemented at the facility. A form is provided in Appendix C. It is recommended that PPT members conduct at least semi-annual inspections of their own facilities and maintain records of these inspections to ensure that BMPs have been properly implemented.

The tenant personnel designated and trained to implement the SWPPP will perform the joint annual inspection and provide the CAE coordinator with complete and accurate information. Any observation made during the annual inspection (which requires a response) will be documented and incorporated into the SWPPP along with any subsequent response. All inspection records will be retained for at least 5 years.

### 5.2.4 SWPPP Content Review

SWPPP elements will be reviewed annually as described in Section 5.3.3. Any necessary revision to the SWPPP, based on the facility inspections, will be documented, and incorporated. The SWPPP will also be amended at this time if there has been a change in construction, operations, or maintenance that may affect the discharge of pollutants to surface water, groundwater, or the storm drain system. Individual tenants are required to notify the CAE coordinator as early as feasible when contemplating any such changes. The SWPPP will also be modified if certain BMPs are shown to be ineffective in achieving the general objective of controlling pollutants in stormwater.

### 5.2.5 Quarterly and Annual Inspection/monitoring of Outfalls

All outfalls (9) that are subject to industrial activity are required to undergo a visual inspection on a quarterly basis. Due to the proximity of outfalls 1-6 only one of the outfalls within the area will need to be sampled. Samples for visual inspection should be taken in a clear glass jar and should be inspected for the following criteria and a checklist is provided in Appendix D.

An annual inspection of water quality may be conducted to determine the numeric effluent limit (The ammonia as nitrogen limit). This test is not required if the airport does not use urea based deicing compounds.

- Color
- Odor
- Clarity
- Floating Solids
- Settled Solids
- Suspended Solids
- Foam
- Oil Sheen
- Other obvious indicators of storm water pollution

Samples for the quarterly visual inspection must be taken from a storm event that is greater than 0.1 inch in magnitude and that occurs at least 72 hours from the previous measurable storm event (0.1 inch of rain fall). Samples should be taken as soon as practical after the rain fall begins, but not to exceed 30 minutes from when the runoff begins discharging from the facility. During winter months, snowmelt can also be used as the storm event and must be taken within the 30 minutes of when the snowmelt begins discharging from the facility.

Additionally, Samples for annual monitoring must be taken from a storm event that is greater than 0.1 inch in magnitude and that occurs at least 72 hours from the previous measurable storm event (0.1 inch of rain fall). Samples should be taken as soon as practical after the rain fall begins, but not to exceed 30 minutes from when the runoff begins discharging from the facility. Records for the monitoring results will be kept in Appendix D. Any discrepancies found within the stormwater discharge monitoring will be addressed by the SWPPP Coordinator.

## Appendix A

## Appendix B

## Appendix C

## Appendix D

## Appendix E