

Stormwater Pollution Prevention Plan

Fort Lauderdale – Hollywood International Airport



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FORT LAUDERDALE – HOLLYWOOD INTERNATIONAL AIRPORT

STORMWATER POLLUTION PREVENTION PLAN CERTIFICATION

FDEP FAC ID NO. FLR05A457

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.

Mr. Michael Pacitto
Director of Planning and Environmental,
Broward County Aviation Department

Date

FORT LAUDERDALE – HOLLYWOOD INTERNATIONAL AIRPORT

STORMWATER POLLUTION PREVENTION PLAN RECORD OF REVISION

Revision of the SWPPP should be made as appropriate to incorporate corrective actions to address an unauthorized discharge, exceedance of water quality standards, or inadequate control measures. Revisions in response to corrective actions will require re-certification of the SWPPP; whereas routine revisions can be documented below. The SWPPP shall be updated every five years.

Date	Revised by	Area of Revision	Summary of Revision



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1.0 INTRODUCTION

1.1 SITE DESCRIPTION

The Fort Lauderdale – Hollywood International Airport (Airport) is located in Broward County, Florida, between Interstate 595 to the north, US-1 to the east, Griffin Rd. to the south and Interstate 95 to the west (**Figure 1**). The central latitude and longitude coordinates of the Airport are 26.122438 and -80.137314. The Airport is a large air transportation facility that is approximately 1,700 acres in size. The activities performed at the Airport include commercial aircraft operations, freight handling, and aircraft service and maintenance. The SIC code for the airport is 4581.

Approximately 61 percent of the Airport is covered by impervious surfaces, such as buildings and paved areas such as runways, taxiways, and parking lots. The pervious surfaces, including grass and vegetated areas that occur between runways, taxiways, and buildings cover approximately 39 percent of the facility. The ground coverage for each primary system basin is presented below in **Table 1**, and the stormwater basin map is shown in **Figure 2**.

The types of ground coverages at the Airport include impervious surfaces, pervious surfaces, and building area. Impervious ground coverage is considered to be any surface within HWO that prevents the infiltration of stormwater runoff and directly generates stormwater runoff during rainfall events. The impervious ground coverages at HWO includes runways, taxiways, aprons, roadways, parking lots, and sidewalks. Pervious ground coverage is considered to be any surface within HWO that allows the infiltration of stormwater runoff into the ground. The pervious ground coverages at HWO includes open grass areas, retention areas, swale areas, landscaped areas, and undeveloped areas. The areas surrounding the Airport consist of residential property and small areas of commercial and industrial property.

Table 1. Primary Systems Basins – Ground Coverage

Primary Basin	System	Impervious Coverage		Pervious Coverage		Building Coverage	
		Acres	%	Acres	%	Acres	%
FDOT US-1 System		168.7	10%	190.1	11%	0.13	0%
North System		146.5	9%	83.6	5%	11.15	1%
Southeast System		1.4	0%	13.8	1%	0.00	0%
System 1 – Basin A		93.3	6%	34.0	2%	26.14	2%
System 2		70.5	4%	36.2	2%	28.42	2%
Western/System 1 – Basin B		451.4	27%	295.1	18%	25.28	2%
Total		931.8	56%	652.8	39%	91.11	5%

1.2 STORMWATER POLLUTION PREVENTION TEAM

Table 2. SWPPP Team Members

Name	Role	Title	Contact Number	Phone
Michael Pacitto	SWPPP Team Leader	Director of Planning and Environmental	(954) 359-6103	
Winston Cannicle	SWPPP Co-Team Leader	Environmental Program Manager	(954) 359-6181	
Mishka Binns	SWPPP Inspector	Environmental Compliance Specialist	(954) 359-1043	
Ryan Goldman	SWPPP Inspector	Environmental Compliance Specialist	(954) 359-6216	

The success of the pollution prevention program is dependent on the level of effort put forth by the Storm Water Pollution Prevention Program (SWPPP) Team. The implementation of an effective storm water pollution prevention program requires success in two areas; permit maintenance and implementation of Best Management Practices (BMPs). Maintenance of the facility permit is discussed in Section 1.3.

The proper implementation of BMPs is driven by education and outreach for Airport staff and tenants. It is important that adequate understanding of the stormwater regulations, preventative measures, and response procedures has been attained by those responsible for operation of the Airport.

Additionally, routine facility inspections by the SWPPP team will help identify areas and operations that need improvement. The SWPPP team is also responsible for confirming that corrective measures have been adequately implemented to areas and operations identified as needing improvement.

The responsibilities of the SWPPP Team include:

- Implementing the SWPPP;
- Assigning tasks associated with SWPPP development and implementation to other qualified BCAD Staff or Authorized Agents, where appropriate;
- Ensuring that BMPs that are identified in the SWPPP are implemented;
- Ensuring the implementation of changes in facility operation that are identified in the SWPPP;
- Evaluating and identifying measures that would improve the SWPPP;
- Evaluating, identifying, and correcting the deficiencies in the SWPPP;



- Coordinating with BCAD Staff and Tenants to evaluate, identify, and recommend new BMPs;
- Coordinating with maintenance personnel to identify maintenance needs that are related to implementation of the SWPPP;
- Coordinating inspection and/or monitoring activities;
- Identifying existing or potential SWPPP violations;
- Coordinating the documentation and reporting of spills with the Broward County Aviation Facilities Development and Operations Regulatory Specialist;
- Maintaining spill incident records;
- Documenting corrective actions following spills;
- Providing employee training; and,
- Preparing and submitting reports.

In addition to the efforts of the SWPPP Team, each Airport tenant is responsible for permit compliance and BMP implementation at their facility.

1.3 REGULATORY FRAMEWORK

In 1972, the Federal Water Pollution Control Act (which later became known as 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 a National Pollution Discharge Elimination Service (NPDES) permit. In 1987, amendments to the CWA added Section 402(p), establishing a framework for regulating and permitting municipal and industrial discharge of storm water under the NPDES program.

In October 2000, the Environmental Protection Agency (EPA) authorized the Florida Department of Environmental Protection (FDEP) to implement the NPDES stormwater permitting program in the State of Florida, except on Native American County Lands. The FDEP’s authority to administer the NPDES program is set forth in Section 403.0885 of the Florida statutes. The authorization comprises the original September 1995 Multi-Sector Generic Permit (MSGP) and subsequent updates that were incorporated prior to 2000. Although the FDEP issues MSGPs independently of the EPA, the FDEP recommends that facilities develop their Storm Water Pollution Prevention Plans in accordance with the recommendations of the EPA MSGP. The current EPA MSGP was issued in June 2015, and a proposed 2020 update is currently under review. A link to the 2015 EPA MSGP is provided in **Appendix A**.



The SWPPP Team has obtained permit coverage for the Airport through the submittal of a Notice of Intent (NOI) to the FDEP NPDES Stormwater Notices Center. The Sector S MSGP for the Airport was authorized on February 17, 2016 and expires on February 10, 2021. The FDEP Facility ID for the permit is FLR05A457-004. The permit coverage applies only to the Airport facilities and activities. Each tenant is required to obtain independent permit coverage, as well as develop and implement a site specific SWPPP.

The FDEP identifies the three key conditions of the permit as; the implementation of the SWPPP, record retention to demonstrate that the SWPPP is being implemented, and performing any required stormwater monitoring. For air transportation facilities covered under Sector S of the MSGP, stormwater monitoring is only required for facilities that use over 100,000 gallons of deicing fluid. Since no deicing fluid is used at FLL, stormwater monitoring is not required. However, as further described in Section 3.1, the Airport performs voluntary stormwater monitoring to ensure good environmental stewardship.

Additionally, the SWPPP Team helps facilitate other regulatory programs that also promote stormwater pollution prevention, including a hazardous material management program and a Spill Prevention Control and Countermeasures (SPCC) program for petroleum storage. For example, the Airport complies with the requirements of the Resource Conservation and Recovery Act (RCRA) by inspecting material storage areas for leaks or spills. During the inspections, leaks or spills that may impact stormwater are noted and cleaned immediately. The BMPs included in this SWPPP are also designed to prevent soil and groundwater contamination, which could lead to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) enforcement action. Similarly, pursuant to FAA AC 150 5320-15A, the SWPPP Team facilitated a waste stream compliance evaluation that was performed in June 2020.



In the event that a significant release of a regulated material were to occur, the SWPPP Team would work closely with the Broward County Environmental Engineering and Permitting Division (EEPD) to ensure that the release was properly addressed pursuant to 62-780 FAC. A significant release is defined in 62-780.210 FAC.

The receiving water bodies for five of the seven outfalls at the Airport are currently under regulation through the Total Maximum Daily Load (TMDL) program that is administered under 62-303 FAC. Both the Dania Cutoff Canal and the South Fork of the New River have been determined to be impaired for Fecal Coliform. The Dania Cutoff Canal receives a majority of the runoff from the Airport, and is the receiving water body for Outfalls 1, 5, 6, 7; whereas the South Fork of the New River is the receiving water body for Outfall 4 via Osceola Creek. The City of Dania Beach recently prepared a Bacterial Pollution Control Plan (BPCP) in June 2020 for the Dania Cutoff Canal in support of the Broward County Municipal Separate Storm Sewer System (MS4) permit FLS000016-004. In support of the BPCP development, surface water sampling activities



were completed along the Dania Cutoff Canal throughout 2019. The water sampling activities were completed by Chen Moore and Associates. The 2019 surface water sampling results for the Dania Cutoff Canal demonstrate that the Fecal Coliform concentrations decrease from upstream to downstream; indicating that the impairment of the Dania Cutoff Canal is occurring upstream of the influence of the Airport. A BPCP has yet to be published for the South Fork of the New River.

2.0 SITE INVENTORY

2.1 SITE USE

The activities performed at the Airport which require the use of potential pollutants are presented below:

- Aircraft Fueling
- Aircraft Maintenance
- Aircraft Washing
- Cargo Handling
- Chemical Storage
- Equipment Fueling
- Equipment Maintenance
- Equipment Storage
- Equipment Washing
- Fuel Storage
- GSE Services
- Lavatory Services
- Painting/Stripping
- Waste Management & Disposal

The typical potential pollutants used while performing the above listed activities are batteries, cleaning products including detergents, lavatory fluid, oil and grease, paint, petroleum products, and solvents. A description of where the activities are performed at the Airport is provided in **Appendix B**.

2.2 POTENTIAL POLLUTANT SOURCES

An inventory of stored materials and potential pollutant sources for the Broward County Aviation Department (BCAD) owned and operated facilities is provided in **Appendix C**, and a facility site plan is provided in **Appendix D**. An inventory of the potential pollutant sources at the tenant facilities is available in the Annual Comprehensive Site Evaluation (ACSE) Summary Report.

2.3 PAST SPILLS/ LEAKS

Pursuant to FAA AC 150 5320-15A, a review of the Open FDEP Cleanup Site GIS layer, that is available through the FDEP Map Direct portal, was performed to identify significant releases that have occurred within the last three years. The review indicates that the only significant release that has occurred at the Airport in the last three years was a petroleum release that occurred in October 2019 at the southwest fuel farm located on SW 43rd Street. A review of the FDEP OCULUS database indicates that the release has been remediated, and the current (May 2020) site closure strategy is Monitored Natural Attenuation (MNA). The FDEP Facility ID for the October 2019 release is 9100730.

2.4 STORMWATER DRAINAGE SYSTEM

The existing stormwater management system at FLL is divided into seven primary system basins, which include FDOT US-1 System, North System, Ravenswood System, Southeast System, System 1 – Basin A, System 2, and Western/System 1 – Basins B (**Figure 2**). Although there are limited interconnections between these primary system basins at FLL, the existing stormwater

infrastructure within each primary system basin is directly connected to corresponding primary outfall(s) that discharge stormwater runoff off-site (**Table 3**). The primary system basins are subdivided further into sub-basins within the FLL stormwater management model. The Airport’s surface water runoff is collected in catch basins, swales, and ditches that are routed through open or piped conveyance systems into stormwater treatment ponds. The vegetated swales at the Airport passively remove sediment and pollutants from stormwater runoff through retention and infiltration. Additionally, the vegetated cover provides erosion control. The following paragraphs briefly discuss each outfall within the Airport drainage system.

2.4.1 STORMWATER OUTFALLS

Table 3. Stormwater Outfall Inventory

Outfall ID	Primary Basin	Latitude	Longitude	Number of Pipes	Shape	Size	Material
Outfall 1	Western/System 1 Basin B	26.063611	-80.114722	3	Circular	72"	RCP
Outfall 2	Southeast System	26.066944	-80.140000	4	Circular	48"	RCP
					(3) Elliptical	24"x36"	RCP
Outfall 3	FDOT US-1 System	26.075278	-80.136389	2	Circular	42"	RCP
Outfall 4	North System	26.080556	-80.161389	2	Circular	66"	RCP
Outfall 5	Ravenswood System	26.069722	-80.173889	1	Circular	72"	RCP
Outfall 6	Western/System 1 Basin B	26.070000	-80.162500	3	Circular	(2) 30" 36"	RCP
Outfall 7	Western/System 1 Basin B	26.064444	-80.158889	2	Circular	54"	RCP



Outfall 1 is located on the southeast portion of the airport near the entrance to Perimeter Road from Griffin Road. Outfall 1 drains approximately 487 acres, the largest drainage area at the Airport. This drainage area consists of the eastern portion of the north side operations area, the eastern half of the airfield, Terminals 2, 3, and 4, and the Palm parking garage. The storm water collected in the drainage area is conveyed to the detention area near Perimeter Road and Griffin Road through two 24-inch culverts into a conveyance canal to the Dania Cutoff Canal (**Figure 2**).



Outfall 2 drainage area is located on the eastern side of the US-1 overpass. The drainage area for Outfall 2 is approximately 416 acres; of which approximately half is occupied by US-1 and the US-1 overpass. The Hibiscus parking garage and the GSE storage area are all located within the drainage area for Outfall 2. The storm water collected from the GSE storage area and the BCAD administrative offices travel through two box culverts under perimeter road to the east side of the FEC railway, and then northward to the US-1 overpass. The storm water collected from the Hibiscus garages travel to the US-1 overpass area as well; where it joins with the storm water from other portions of the drainage basin prior to being discharged to the wetland area east of the US-1 overpass.

Outfall 3 has a drainage area of approximately 190 acres, and is comprised of one block on the eastern portion of the north side operations area, Terminal 1, and the I-595/US-1 Interchange. The storm water that is collected near Terminal 1 passes through an Oil Water Separator (OWS) prior to entering the detention pond on the northeast corner of the airfield. The drainage basin for Outfall 3 collects in the FDOT Lake located near the northeastern portion of the Airport. The FDOT Lake is connected to a conveyance canal which flows into the wetland area located east of the US-1 overpass.





The drainage area for Outfall 4 is approximately 282 acres. Outfall 4 is comprised of the western half of the north side operations area, the areas surrounding Taxiway A, and the parking area located on the northwestern portion of the Airport. The storm water collected around Taxiway A and the north side operations area travels through vegetated swales to a conveyance canal located near the northwest corner of former runway 13-31. The conveyance canal is piped under I-595 to Osceola Creek that is located in Edgewood Passive Park. The Osceola Creek joins the South Fork of the New River at the Yacht Haven Marina.

The drainage area for Outfall 5 is approximately 232 acres. The storm water collected in the Park and Save area that is located north of SW 42nd St., west of I-95 drains into the conveyance canal located to the south of SW 42nd St. The conveyance canal flows over a rectangular weir before discharging into Dania Cutoff Canal.



Outfall 6 has a drainage area of approximately 224 acres, and consists of a majority of the west facilities. The storm water that is collected from the drainage area discharges into a detention area that is located east of SW 16th Terrace on the southwest corner of the Airport. The drainage area flows into the mitigation area located west of SW 16th Terrace which connects to the Ft. Lauderdale Small Boat Club located on the Dania Cutoff Canal.

The drainage area for Outfall 7 is approximately 210 acres. It collects stormwater runoff from the general aviation operations area, and the western half of Runway 10R-28L. This outfall is located in the Green Belt on the southwest corner of the airport. Stormwater is discharged into a retention area in the Green Belt prior to flowing into Dania Cutoff Canal.



2.4.2 STORMWATER PONDS

The extent of the area at FLL reserved for the storage of stormwater runoff is an important parameter to verify and tabulate for the permitting of any future development projects at FLL. During the development of FLL, water management areas were constructed throughout FLL to provide for storage capacity of stormwater runoff for flood control and water quality purposes. These existing water management areas include the existing dry retention areas, wet ponds, drainage ditches, grass swales, and exfiltration trench located throughout FLL. These existing water management areas cannot be eliminated by future development at FLL without the construction of a new water management area with an equivalent storage volume for stormwater runoff.

There are multiple stormwater ponds, or wet detention areas, located at the Airport. These ponds provide stormwater treatment prior to discharge into the receiving waterbodies. **Figure 2** depicts the stormwater pond locations at the Airport.

Two wet detention areas located in the southeastern portion of the Airport are connected to each other through a series of culverts and pipes. These ponds are connected to Outfall 1. These ponds store and treat stormwater from the southeastern portion of the Airport.

Two wet detention areas located west of W. Perimeter Road and south of SW 42nd Street provide stormwater treatment for the various tenant areas on the western portion of the Airport. These ponds are connected to Outfall 6.

Two wet detention areas are located on the southwest portion of the Airport, north of Griffin Road and south of South Perimeter Road. These ponds are directly connected to Outfall 7, and provide treatment for the western portion of the southern runway (Runway 10R-28L).

2.5 RECEIVING WATERS

The Airport's surface water runoff is collected in catch basins, swales, and ditches that are routed through open or piped conveyance systems into stormwater treatment ponds. A majority of the stormwater at the airport is discharged to the Dania Cutoff Canal. The portion of the Airport located in the Northern drainage basin (**Figure 2**) discharges to the South Fork of the New River through the Osceola Creek, and the eastern portion of the Airport located in the FDOT US-1 drainage basin and the SE System drainage basin discharges to the wetland located east of US-1.

2.6 OFF SITE INFLUENCES

The Dania Cutoff Canal drains the commercial and residential area south and west of the Airport. Due to commercial property use, there is potential off site influence from the release of industrial chemicals such as cleaning agents, motor oil, and fuel. Additionally, the major transportation facilities (I-95, I-595, and US-1) that are adjacent to the Airport are potential sources of water quality degradation.

3.0 SITE EVALUATION

3.1 STORMWATER SAMPLING

Since the Airport does not use 100,000 gallons or more of glycol-based deicing/anti-icing chemicals and/or 100 tons or more of urea on an average annual basis; stormwater sampling is not required as a condition of the Airport's permit.

However, BCAD has implemented a comprehensive storm water monitoring program at the Airport since 2003 to ensure that Airport activities do not negatively impact the integrity of the surrounding water bodies. The storm water monitoring program consists of six monitoring events performed at all seven outfalls each year. The voluntary storm water monitoring program is performed pursuant to the NPDES monitoring plan, and includes analysis for five-day Biological Oxygen Demand (BOD5), Chemical Oxygen Demand (COD), Oil and Grease, Total Recoverable Petroleum Hydrocarbons (TRPH), Total Suspended Solids (TSS), Total Coliform, Enterococci, and pH. In addition several field parameters are recorded for each sampling event. The stormwater sampling log is presented in **Appendix E**. The stormwater analytical results are summarized in an Annual Stormwater Monitoring Report.

3.2 ANNUAL COMPLIANCE INSPECTIONS

To monitor BMP implementation at the Airport, BCAD performs Annual Comprehensive Site Evaluation (ACSE) at approximately 60 tenant facilities per year. The ASCE consists of the following three main tasks: review of regulatory documents, a facility walkthrough, and follow up correspondence and / or follow up inspections to confirm that any observed deficiencies have been corrected. Following the completion of the ACSE inspections, an annual report summarizing the results of the ACSE compliance inspections is prepared. The tenant inspection form is provided in **Appendix F**. The information in the report includes the following:

- Name(s) of ASCE inspectors
- Date(s) of ASCE inspection
- List of FLL tenant facilities being inspected
- Outline of inspection procedures
- Major observations relating to the implementation of the SWPPP
- Any incidents of non-compliance and actions taken

Additionally, each permittee at the Airport is also expected to perform an independent inspection for every facility covered under their MSGP. If a sub-tenant is included on a tenant's MSGP; then the sub-tenant facility must be included in the annual inspection.

3.3 NON-STORMWATER DISCHARGE IDENTIFICATION & ELIMINATION

Identification and elimination of non-stormwater discharges is a component of the annual compliance inspections described above. During the compliance inspections, the following Best Management Practices (BMPs) are recommended:

- Prevent or reduce the discharge of pollutants to storm water from building and grounds maintenance by implementing cleaning practices that use little to no water.
- Eliminate liquid waste disposal down storm water drains. Post proper signage near storm drains to inform employees.
- Provide a process description to the BCAD Environmental Compliance Section for any runoff generating process (aircraft and vehicle washing, outdoor cleaning, and irrigation) for review and acceptance.
- Use alternative dry cleanup methods (for example: rags and sponges) to clean machinery.
- Berm any area where runoff producing activities may be performed and collect all waste water.
- Do not over irrigate. Irrigation system controllers should be set to apply between ½ and ¾ inches per event.



Additionally, the Airport conducts annual non-stormwater discharge inspections at the drainage outfalls. The inspection form is presented in **Appendix G**.

4.0 STORMWATER MANAGEMENT CONTROLS

4.1 BEST MANAGEMENT PRACTICES

Recommended BMPs for standard Airport activities are provided in **Appendix H**. BCAD has developed these BMPs to facilitate employee training and tenant education. During the compliance inspections, the applicable BMPs are reviewed with each tenant to facilitate implementation and compliance. The BMPs cover the following activities:

- Aircraft, Vehicle, and Equipment Cleaning Areas;
- Aircraft, Vehicle, and Equipment Fueling;
- Aircraft, Vehicle, and Equipment Maintenance Areas;
- Aircraft, Vehicle, Equipment Painting and Storage;
- Fire Fighting Foam Discharge;
- Lavatory Waste;
- Fuel Farm
- Non-Stormwater Discharges;
- Oil/Water Separator;
- Outdoor Washdown/Sweeping Areas;
- Outdoor Waste and Material Handling;
- Significant Materials Storage;
- Spill Prevention Control and Countermeasures Plan (SPCC Plan);
- SWPPP Training and Education; and,
- Waste/Garbage Storage and Disposing.

4.2 STRUCTURAL CONTROLS

The Airport has implemented multiple structural controls to help prevent the discharge of pollutants to the surrounding environment. The following is a summary of the components of the storm water system at the Airport designed to retain and treat potential pollutants.

Oil Water Separators (OWS) are baffled chambers designed to remove petroleum, grease, floating debris, and sediment from storm water. Due to the large quantities of fuel required for air transportation, BCAD has installed a series of OWS to collect and retain petroleum that may be released during fueling activities. A total of seven (7) OWS are present around the terminals (**Figure 2**).

Vegetated swales are small channels used to transport storm water runoff that only contain storm water during storm events. Since the swale is empty during normal conditions, then the channel bed and banks remain vegetated. The vegetation in the channel slows the flow of water which promotes the settling of



sediments. A majority of the storm water runoff at the Airport is transported through vegetated swales with the exception of the storm water system around the terminal and parking garage areas.

Wet detention ponds are large ponds that constantly hold water. Detention ponds typically have an inflow point at one end and an outflow point at the other end, and are designed to reduce peak flows during large storm events. Detention ponds are aquatic habitats that promote nutrient uptake through bio-activity, and increase dissolved oxygen in the water by allowing gas-liquid transfer at the water surface. There are three detention ponds at FLL, located immediately upstream of outfalls 1, 6, and 7.

Sweeping and scrubbing of paved surfaces removes dirt and debris before it can be transported into the storm water system. BCAD performs routine pavement sweeping in order to reduce dirt and debris; not only for pollution prevention, but to prevent damage to aircraft from Foreign Object Debris (FOD). The ramp areas at FLL are swept 24 hours a day and the roadways are swept from 11 am to 7 pm. The ramp areas are scrubbed 16 hours a day.

4.3 PREVENTATIVE MAINTENANCE PROGRAM

The Airport has a preventive maintenance program that involves the inspection and maintenance of stormwater structures and equipment. The program aims to inspect, test, maintain, and repair Airport equipment and systems to prevent breakdowns or failures that may result in the discharge of pollutants to surface waters. Tenants shall report any problems that may lead to pollutant discharges into stormwater to the SWPPP Team Leader.

4.4 SPILL RESPONSE PROCEDURES

The Airport has a spill prevention and response program, and each tenant has their own SPCC Plan if they store more than 1,320 gallons of oil; pursuant to 40 CFR Part 112. A review of a tenants SPCC plan is included as part of the ACSE inspections to ensure compliance with the Broward County EEPD requirements.

4.5 ROUTINE FACILITY INSPECTIONS

The Airport's BMP implementation program includes routine daily, semiweekly, monthly, and annual inspections. The facility inspection activities is discussed in sections 3.2 and 5.2.



5.0 PLAN IMPLEMENTATION

5.1 EMPLOYEE TRAINING PROGRAM

Proper training of employees reduces the potential for the release of regulated materials. The Airport has developed a SWPPP Training Program to educate employees about the requirements of the Airport SWPPP. This education program covers the following items:

- Stormwater drainage pathways
- Good housekeeping
- Disposal and control of waste
- Exposure minimization
- Material handling and storage procedures
- BMPs
- Spill response
- Notification Process

The Airport's policy is that supervisory Airport staff members and at least one representative from each division are required to attend an annual training workshop. These personnel are then responsible for providing instruction to personnel under their supervision. The training records will be kept at the SWPPP Team Leader's office. The training program will be reviewed annually by the SWPPP Team Leader to determine its effectiveness and to make any necessary changes to the program. The 2020 training program has been adapted for providing on line training in response to Covid -19 protocols for maintaining social distancing and reducing potential exposures.

Additionally, each tenant is expected to implement a similar training program, and proper implementation of the tenant training program is reviewed as part of the ACSE inspections.

5.2 FACILITY INSPECTION

In addition to the ACSE inspections for tenant facilities, several areas of the Airport are inspected regularly to promote compliance with the Airport's SWPPP. Operations and maintenance personnel perform visual inspections of the runways and taxiways on a daily basis to ensure that there are no spills, debris, waste, or any other issue that may impact normal Airport operations.

Storage tank inspections are performed monthly to confirm that fuel systems are not leaking and that electronic monitoring systems are working properly. Inspection procedures for other material storage areas that are owned and operated by BCAD, such as emergency generator fuel tanks, are detailed in the Spill Prevention Control and Countermeasures (SPCC) Plan for FLL.

Visual inspections of the drainage conveyance system structures are conducted semi-annually, or every 6 months, to make sure the Airport drainage system is operating properly and unobstructed. Should a structure be obstructed or fail, measures are taken to clear or repair the structure. Annual visual inspections of the Oil Water Separators (OWS) at the Airport are conducted as well. The OWS inspection form is provided in **Appendix I**.

5.3 IMPLEMENTATION SCHEDULE

In accordance with the NPDES General Permit (FLR05A457-004), the SWPPP implementation schedule is presented below in **Table 4**.

Table 4. SWPPP Implementation Schedule

Stormwater Pollution Prevention Action Items	Implementation Schedule
BMP implementation	Continuous
Waste dumpster inspections	Semiweekly
Oil-water separator inspections	Monthly
Inlet drain and catch basin inspections	Quarterly
Material storage areas inspections	Quarterly
Ditch and swale inspections	Quarterly
Airport comprehensive inspections	Annually
Employee training	Annually

5.4 RECORD RETENTION REQUIREMENTS

Records described in the SWPPP must be retained on site for five years. These records shall be made available to the state and federal compliance officer upon request. Additionally, training records, maintenance logs, checklists, and inspection logs shall also be maintained. Maintaining a record of events that occur at the Airport is an effective way of documenting the progress of pollution prevention efforts and waste minimization. The records will provide information on past spills, ineffective BMPs, and other useful information that may be used for developing improved BMPs to prevent pollutant discharge to stormwater.



5.5 CORRECTIVE ACTION

Pursuant to section 4.1 of the 2015 EPA MSGP, the following occurrences will require review and revision of the SWPPP:

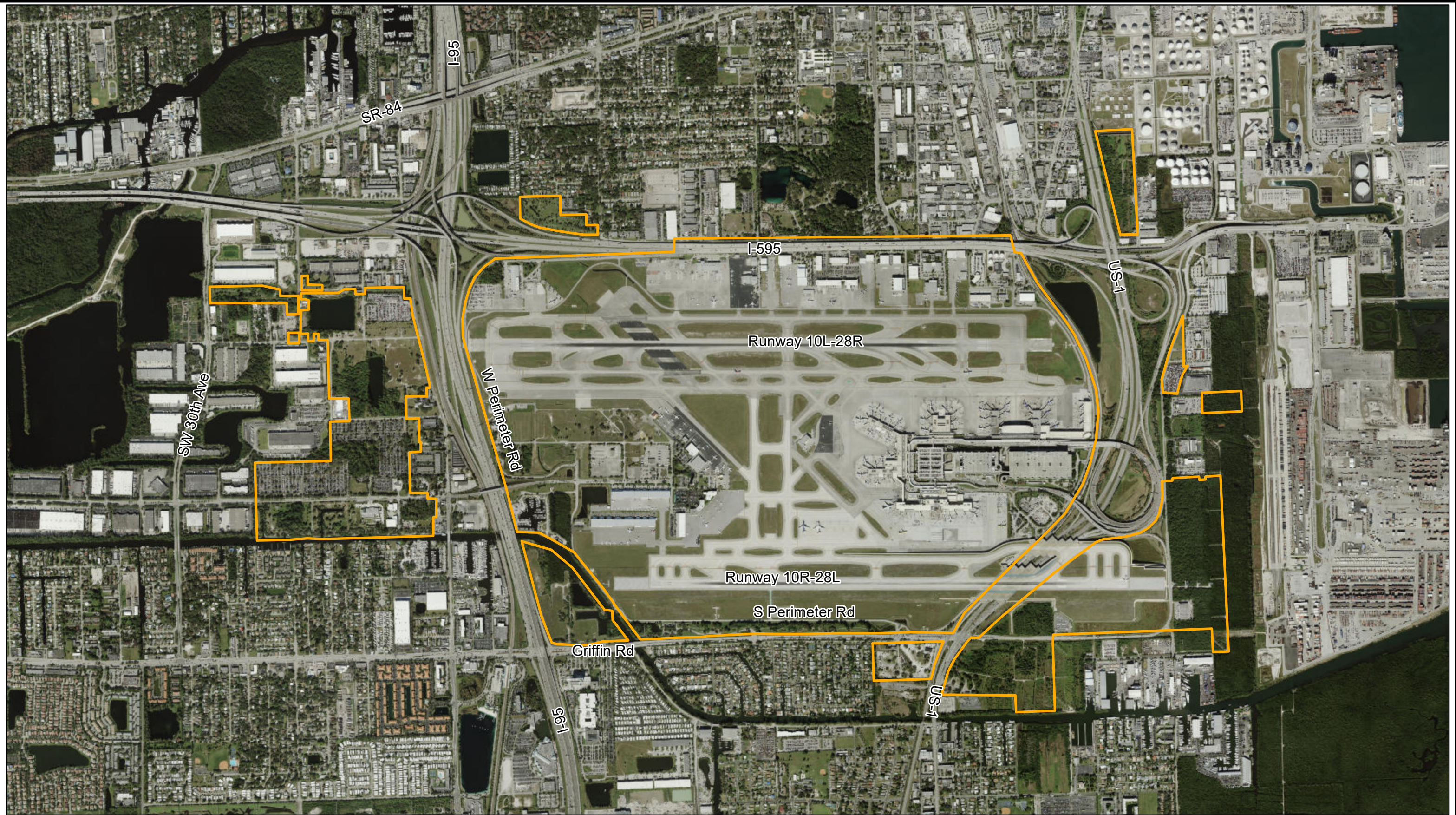
- An unauthorized release or discharge (e.g., spill, leak, or discharge of non-stormwater not authorized by this or another NPDES permit to a water of the U.S.).
- A discharge violates a numeric effluent limit listed in the facility permit.
- Control measures are deemed not stringent enough for the discharge to meet applicable water quality standards or the non-numeric effluent limits in the facility permit.
- A required control measure was never installed, was installed incorrectly, or not in accordance with Parts 2 and/or 8 of the 2015 EPA MSGP, or is not being properly operated or maintained.
- Whenever a visual assessment shows evidence of stormwater pollution (e.g., color, odor, floating solids, settled solids, suspended solids, foam).

5.6 PLAN REVISION

The SWPPP shall be revised to incorporate changes in facility infrastructure and activities that could potentially alter the migration of stormwater runoff from the site or alter the potential pollutant sources. The amended SWPPP will have a description of the new activities that facilitated the need for a revision to the SWPPP.

Figures





Source: Imagery, ESRI 2012



1 inch = 1,500 feet

0 750 1,500 3,000 Feet

Legend

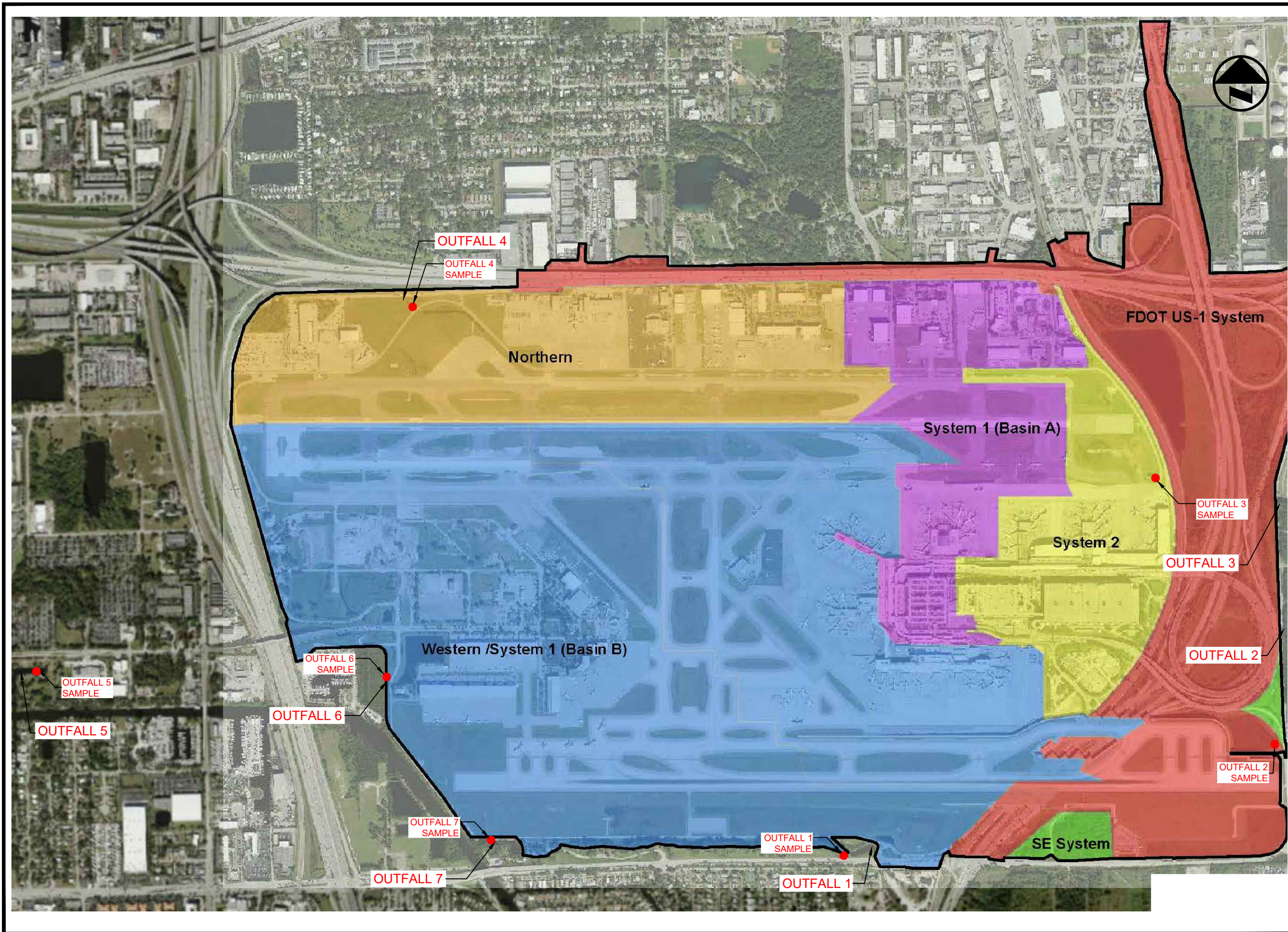
Site Boundary

Drawn	Date
SJH	9/11/2020
Checked	Date
RF	9/11/2020

wood.
Miami, Florida
Project Number
6783-18-3072

**Ft. Lauderdale-Hollywood
International Airport
Storm Water Pollution
Prevention Plan**

**Figure 1
Site
Location Map**



Proj. Mgr. JP	Wood Principal: R.F.
Job. Capt. J.A.M.	Wood Job. Capt. J.A.M.
Drawn by J.A.M.	Wood Updates Drawn by J.A.M.
Rev'd by	Rev'd by

SCALE AS SHOWN

REFERENCE:
PROPERTY MAP
CREATED/PROVIDED BY:
BROWARD COUNTY
AVIATION DEPARTMENT
PLANNING & DEVELOPMENT DIVISION
100 AVIATION BLVD.
FT. LAUDERDALE, FL

REV	DATE	DESCRIPTION



LEGEND:

■	FDOT US-1 SYSTEM
■	NORTHERN
■	SE SYSTEM
■	SYSTEM 1 (BASIN A)
■	SYSTEM 2
■	WESTERN/SYSTEM 1 (BASIN B)

wood.
5845 N.W. 158th STREET
MIAMI LAKES, FL 33014
TEL: (305) 826-5558 / FAX: (305) 826-1799
Project # 6783-18-3072

Ft. Lauderdale - Hollywood International Airport
Storm Water Pollution Prevention Plan

NPDES OUTFALL LOCATIONS MAP

Date 9-28-20	Figure No. 2
Project No. 6783-18-3072	

Appendix A

Regulatory References

2015 EPA MSGP

https://www.epa.gov/sites/production/files/2015-10/documents/msgp2015_finalpermit.pdf

FDEP Regulations

<https://www.flrules.org/gateway/ChapterHome.asp?Chapter=62-621>

<https://www.flrules.org/gateway/ChapterHome.asp?Chapter=62-780>

FAA Guidance

https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentID/74205

Broward County Water Resource Management Ordinance

https://www.municode.com/library/fl/broward_county/codes/code_of_ordinances?nodeId=PTIICOOR_CH36WAREMA

Appendix B

Site Activity Descriptions



Fort Lauderdale – Hollywood International Airport

Storm Water Pollution Prevention Plan

Site Activity Descriptions

Aircraft Fueling

Aircraft leaving from the terminals are typically refueled through the underground jet fuel distribution system that is accessible from each gate. Aircraft being refueled from the general aviation area on the west side of FLL, and from the north side operations area are typically serviced by mobile re-fuelers.

Aircraft Maintenance

Large jet aircraft maintenance is not performed extensively at FLL. However some minor maintenance such as oil changes are performed at some facilities. Usually all large aircraft maintenance is performed at the terminals. Both the north side operations area and the general aviation area have multiple hangars which routinely perform small aircraft maintenance. The performance of any aircraft maintenance outside of a hangar is discouraged at FLL.

Aircraft Washing

Aircraft washing is prohibited at FLL unless BCAD has reviewed and accepted the washing system. Aircraft washing is performed at a limited number of facilities throughout the airport, and also by a limited number of mobile washers.

Cargo Handling

Cargo handling is limited to unloading from the terminals and processing of cargo at a series of warehouses located on the north side operations area. All cargo processing is completed indoors.

Chemical Storage

Most airlines and maintenance facilities store used oil in limited quantities. Other than petroleum products, no bulk chemical storage is performed at FLL.

Equipment Fueling

A limited number of fueling locations are present at FLL at the north side operations area and on the west side of the airport in the general aviation area. These facilities typically perform a low volume of refueling; typically for ground service equipment and maintenance vehicles.

Equipment Maintenance

The majority of equipment maintenance at FLL is performed at the north side operations area and is mostly limited to Ground Service Equipment (GSE).

Equipment Storage

Most equipment storage is performed at individual facilities, and on the southeastern portion of the SIDA area near Terminal 4. This area is used for the storage of luggage carts and GSE equipment.

Equipment Washing

Equipment washing is prohibited at FLL unless the BCAD Environmental Compliance Section has reviewed and accepted the washing system. Equipment washing is performed at a limited number of facilities throughout the airport.

Fuel Storage

Two bulk fuel storage areas are located at FLL. The largest is on the northeast corner of the airport, and supplies the underground jet fuel distribution system that is accessible from each gate as well as mobile re-fuelers. The second storage area is located on the west side of the general aviation area, and typically services mobile re-fuelers.

GSE Services

GSE services are typically provided out of various facilities at the north side operations area, and equipment is stored near the gates as necessary. GSE maintenance is typically performed at various facilities on the north side operations area.

Lavatory Services

Lavatory services are provided by most of the operators at FLL. The lavatory trucks utilize the triturators located near Terminals 2 and 4.

Painting/Stripping

Painting and stripping activities are prohibited unless a proper paint booth is in place. A limited number of paint booths are located on the north side operations area.

Waste Management & Disposal

The majority of bulk trash storage and processing is performed at the BCAD garbage and recycling center. The trash and recycling is processed indoors, and all waste is containerized before storage.

Appendix C

Potential Pollutant Sources



Appendix C
 Potential Pollutant Sources
 Stormwater Pollution Prevention Plan
 Fort Lauderdale - Hollywood Airport

Trade Name	Constituents/ Material Type	Facility Name	Storage Location	Trade Name	Typical Use
Denatured Alcohol	Solvent	N-33	Cabinet	1 Gallon	Building Maintenance
Sikaflex - Polyurethane Sealant	Xylene, Ethyl benzene	N-28	Covered Storage Area	5 Gallons	Building Maintenance
Solvent Base	Solvent	N-33	Covered Storage Area	5 Gallons	Building Maintenance
Toluene	Toluene	N-28	Fire Cabinet	1 Gallon	Vehicle Maintenance
Transmission Fluid	Highly Refined Mineral Oils and Additives (DMSO-Extract)	E-26	Covered Storage Area	5 Gallons	Vehicle Maintenance
Anti-Freeze	Ethylene Glycol	N-28	Covered on Spill Pallet	55 Gallons	Vehicle or Equipment Maintenance
Gasoline	Light Fraction Petroleum Hydrocarbons	E-26	Fire Cabinet	5 Gallons	Vehicle Refueling
		N-33	Covered Storage Area		
		N-28	Covered on Spill Pallet		
Diesel	Median Fraction Petroleum Hydrocarbons	E-26	Fire Cabinet	5 Gallons	Vehicle Refueling
Motor Oil	Highly Refined Mineral Oil	N-28	Covered on Spill Pallet	55 Gallons	Vehicle Maintenance
		E-26	Fire Cabinet Shelf	32 Ounces 5 Gallons	
Gear Oil	Highly Refined Mineral Oil, Non-Hazardous Additive Blend in Refined Oil	E-26	Fire Cabinet	5 Gallons	Vehicle Maintenance
Acrylic Paint	Propenoic Acid, Ethylenecarboxylic Acid, Acrylic Polymer Emulsion, Polyethylene-Based	N-33	Covered on Spill Pallet	55 Gallons	Building or Vehicle Painting
			Outside Fire Shed	5 Gallons	
		N-28	Fire Cabinet		
Paint Thinner	Xylene	N-33	Outside Fire Cabinet	1 Gallon	Building or Vehicle Painting
		N-28	Fire Cabinet	5 Gallons	
Cleaner	Xylenes, Nonane (all isomers), Octanes (all isomers), Ethylbenzene	E-26	Fire Cabinet	1 Gallon	Building Maintenance

Note: The facility locations are provided in the Facility Site Plan provided in Appendix D.

Appendix C
 Potential Pollutant Sources
 Stormwater Pollution Prevention Plan
 Fort Lauderdale - Hollywood Airport

Location	Potential Pollutants	Potential Release Scenario
Roadways	Hydraulic Fluids, Brake Fluid, Fuel, and Anti-Freeze	Leaking fluids from vehicles.
Hangar Aprons	Hydraulic Fluids, Brake Fluid, Fuel, and Anti-Freeze	Leaking fluids from vehicles and aircraft.
Commercial and General Aviation	Hydraulic Fluids, Brake Fluid, Fuel, Anti-Freeze, Lubricants, Solvents, and Deicing Fluid	Spills during maintenance activities, refueling, cleaning, and deicing.
Runways & Taxiways	Hydraulic Fluids, Brake Fluid, Fuel, and Anti-Freeze	Leaking fluids from vehicles and aircraft.
Parking Areas	Hydraulic Fluids, Brake Fluid, Fuel, and Anti-Freeze	Leaking fluids from vehicles.
Fuel Farm	Hydraulic Fluids, Brake Fluid, Fuel, and Anti-Freeze	Spills during refueling. Leaking fluids from vehicles and mobile refueling trucks.
Lawns, Swales, and Ditches	Pesticides, Herbicides, and Fertilizers	Spills during application of turf ammendments.
Maintenance Buildings	Pesticides, Herbicides, Fertilizers, Hydraulic Fluids, Solvents, Lubricants, Brake Fluids, Paints, and Anti-Freeze	Leaking fluids from maintenance equipment and stored materials. Spills during refueling

Appendix D

Facility Site Plan

Please contact a SWPPP Inspector listed on Table 2 for a copy of the Facility Site Plan.

Appendix E

Stormwater Sampling Log



FLL STORM WATER SAMPLING LOG

Sampling Date: _____

Physical Water Quality Observations

Discharge Outfall No.	Clarity	Color	Odor	Floating Solids	Settled Solids	Suspended Solids	Foam	Oil Sheen	Additional Observations

Color Abbreviations: VPY = Very Pale Yellow, PY = Pale Yellow, LB = Light Brown

Clarity Abbreviations: C = Clear, SC = Slightly Clear, FC = Fairly Clear, CL = Cloudy, VCL = Very Cloudy

Quantitative Abbreviations: N = None, VSA = Very Sligh Amount, SA = Slight Amount, MA = Moderate Amount

Prepared by: _____

Checked by: _____

Appendix F

Tenant Inspection Form



SWPPP ACSE REPORT

Initial Inspection

Re-Inspection

FACILITY AND INSPECTION INFORMATION

FACILITY NAME: _____
FDEP FACILITY ID: _____
FACILITY ADDRESS: _____
FACILITY SUBTENANT(S): _____
FACILITY REPRESENTATIVE(S): _____ **TELEPHONE:** _____
FACILITY PERMITTEE: _____ **EMAIL:** _____ **TELEPHONE:** _____
 _____ **MOBILE:** _____
INSPECTION DATE: _____ **INSPECTOR'S NAME:** _____
INSPECTOR'S COMPANY: _____

SUMMARY OF ACTIVITIES

<input type="checkbox"/> Aircraft lavatory service	<input type="checkbox"/> Equipment repair	<input type="checkbox"/> Vehicle repair
<input type="checkbox"/> Aircraft maintenance	<input type="checkbox"/> Equipment storage	<input type="checkbox"/> Vehicle washing
<input type="checkbox"/> Aircraft painting	<input type="checkbox"/> GSE	<input type="checkbox"/> Chemical storage
<input type="checkbox"/> Aircraft refueling	<input type="checkbox"/> Food service	<input type="checkbox"/> Oil storage
<input type="checkbox"/> Aircraft washing	<input type="checkbox"/> Potable water flushing	_____
<input type="checkbox"/> Cargo handling	<input type="checkbox"/> Vehicle fueling	_____
<input type="checkbox"/> Equipment cleaning	<input type="checkbox"/> Vehicle maintenance	_____
<input type="checkbox"/> Equipment maintenance	<input type="checkbox"/> Vehicle painting	_____

Flight operations and maintenance

LIST OF POTENTIAL POLLUTANTS

Material	Stored Properly	Comment

PERMIT

Granted MSGP coverage by FDEP NPDES: YES NO N/A Exp Date _____
 Granted "No Exposure" by FDEP NPDES: YES NO N/A _____
 Submitted NOI to obtain MSGP coverage: YES NO N/A _____
 Maintains copy of MSGP confirmation letter: YES NO N/A _____
 Maintains copy of the MSGP with SWPPP: YES NO N/A _____
 Hazardous Material License: YES NO N/A Exp Date _____
 Hazardous Material License Location: _____
 Tank License: YES NO N/A Exp Date _____
 Tank License Location: _____

SWPPP ACSE REPORT

SWPPP

Has a SWPPP been prepared for facility:	YES <input type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>	
Is the SWPPP available for review:	YES <input type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>	
Has the SWPPP been made facility-specific:	YES <input type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>	
Has the SWPPP been properly updated:	YES <input type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>	
Has the appropriate documentation from the past 3 years been kept:	YES <input type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>	
Have training records been kept:	YES <input type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>	

CONDITION OF STORM DRAIN & OUTDOOR AREAS

Stormwater runoff apparent during inspection:	YES <input type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>	
Airport stormdrain within 100 feet of site:	YES <input type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>	
Presence of on-site stormwater drain(s):	YES <input type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>	
Presence of on-site oil-water separator(s):	YES <input type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>	
Outfall within 500 feet of site:	YES <input type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>	
Any staining from spills or dumping evident: (Please photodocument any evidence)	YES <input type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>	
Evidence of illicit dumping into storm drain: (Please photodocument any evidence)	YES <input type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>	

BULK FUEL STORAGE

Number of Tanks Aggregate Capacity

Tank No.	Tank Type	Tank Product	Capacity (gal)	Condition	Comments

SW - Single Wall DW - Double Wall	AG - Avgas LL - 100LL J - JetA G - Gasoline D - Diesel O - Other U - Used Oil	S - Good P - Poor M - Needs Work
--------------------------------------	---	--

SWPPP ACSE REPORT
BEST MANAGEMENT PRACTICES

No.	Areas of Concern	Performed in House or Subcontracted		Current Best Management Practices (BMPs)	BMPs Appear Sufficient to Protect Surface Water (Y/N/N/A)	Improvements to BMPs (Discuss with Tenant); BMP Subcontractors	Tenants Intials/ Inspectors Initials	
		In House	Subcontracted					
1	Aircraft Cleaning & Washing	In House		Dry Washing	Wash Water Contained		Representative:	
				Performed under Cover			Stormwater Segregated from Wash Area	Inspector:
		Subcontracted		Performed in Bermmed Area				
		Not Performed		All wash water recovered				
				Wash Water Recycled				
2	Lav Cleanout	In House		Spill Kits on Lav Stations	Spills Can Be Contained		Representative:	
				Lav Truck Maintenance Log	Lav Trucks in Proper Condition		Inspector:	
		Subcontracted		Employee Training Log				
		Not Performed						
3	Equipment Maint.	In House		Performed Only Indoors	Stormwater is Segregated From Maint. Area		Representative:	
				Spill Kits and Spill Pans Used	Spills Do Not Contact Pavement		Inspector:	
		Subcontracted		Proper Disposal Methods				
		Not Performed						
4	Aircraft Fueling	In House		Performed under Cover	Stormwater is Segregated From Fueling Area		Representative:	
				Spill Kits and Spill Pans Used	Spills Do Not Contact Pavement		Inspector:	
		Subcontracted		Proper Containment Methods				
		Not Performed						
5	Equipment Painting	In House		Performed Only Indoors	Stormwater Segregated From Painting Area		Representative:	
				All Wastes Collected (Sanding & Scraping)	All Potential Pollutants Contained & Collected		Inspector:	
		Subcontracted		Proper Containment Methods				
		Not Performed						
6	Equipment Loading	In House		All Equipment is Properly Maintained	All Potential Pollutants Contained & Collected		Representative:	
				Spill Kits and Spill Pans Used			Inspector:	
		Subcontracted						
		Not Performed						
7	Waste Collection & Disposal	In House		Contain Spills & Fix Leaks	All Wastes Contained & Segregated From Stormwater		Representative:	
				Prevent Stormwater Collection In Waste Containers			Inspector:	
		Subcontracted						
		Not Performed						
8	Chemical Storage	In House		Proper Secondary Containment	All Containers & Storage Areas In Good Condition		Representative:	
				Containers Segregated From Stormwater			Inspector:	
		Subcontracted		Spill Kits Available				
		Not Performed						
9	Bulk Fuel Storage	In House		Proper Implementation of SPCCP & Inspections Records Are Current	All Tanks & Fueling Areas In Good Condition		Representative:	
				Tanks Segregated From SW, or SW is Retained & Visually Inspected			Inspector:	
		Subcontracted		Fueling Area is Undercover				
		Not Performed						

ADDITIONAL INSPECTION COMMENTS

Do you have a storage tank (Yes/No): What size is the Tank:

Do you have a Spill Control and Countermeasures Plan (Yes/No): Do you Recycle (Yes/No):

Do you have a Hazardous Materials License (Yes/No):

In Case of Spill Company Name: Contact Name: Phone:

**SWPPP ACSE REPORT
PHOTODOCUMENTATION**

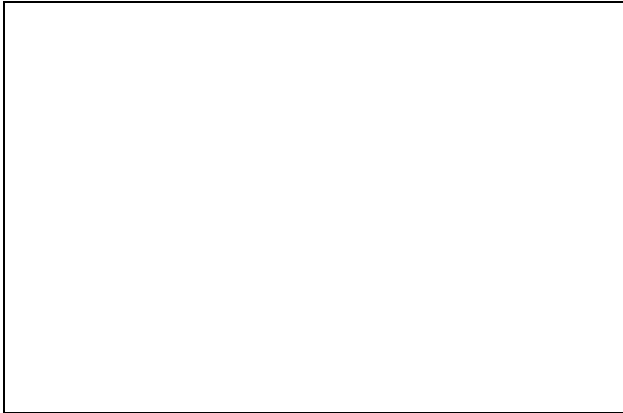


Photo 1:

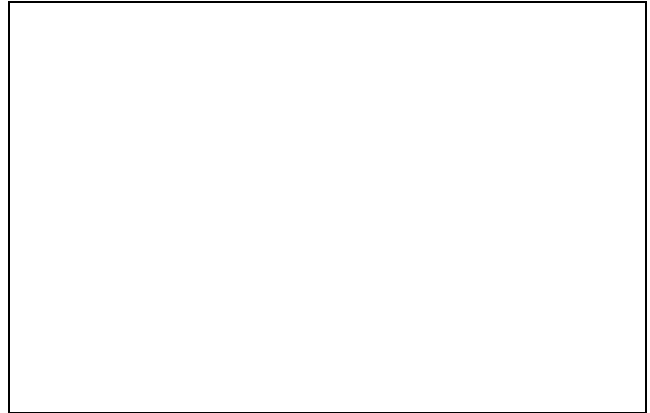


Photo 2:

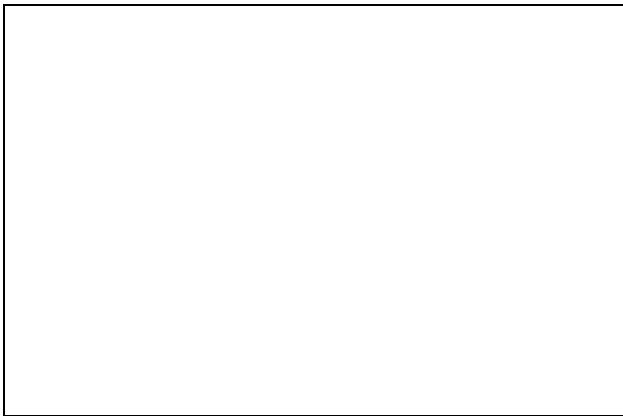


Photo 3:

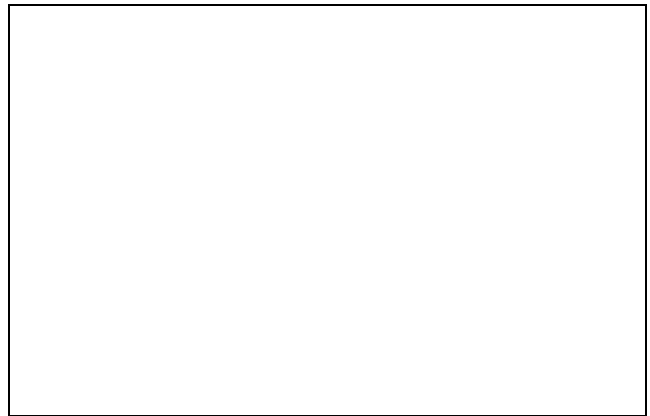


Photo 4:

FACILITY CORRECTIVE ACTION

SWPPP ITEM	PROBLEM NOTED / REQUESTED INFORMATION	CORRECTIVE ACTION REQUESTED	TENANT* RESPONSE

SUMMARY EVALUATION

PERMIT
 SWPPP / RECORDS / REPORTS
 CONDITION OF STORM DRAIN & OUTDOOR AREAS
 BEST MANAGEMENT PRACTICES

S = Satisfactory M = Marginal (Needs Improvement) U = Unsatisfactory N/A = Not Applicable

Re-Inspection Suggested

Appendix G

Non-Stormwater Discharge Inspection
Form



ANNUAL NON-STORMWATER DISCHARGE COMPLIANCE INSPECTION FORM

Name _____ Date _____
Test Type: Visual Inspection Time _____
Inspectors Signature: _____
(Please check if the outfall has discharge or not and check the boxes that applies and/or fill in the blanks)

Outfall #1: North of Griffin Road, east of the Intersection of U.S. Route 1, south of Perimeter Road, and west of Green Belt Buffer Area



no discharge has discharge other
Water has/is: soap suds oil film/sheen clear cloudy
Potential discharge source: _____
Comments: _____

Outfall #2: North of the new runway over U.S. Route 1, west of U.S. Route 1 and east of the railroad tracks.



no discharge has discharge other
Water has/is: soap suds oil film/sheen clear cloudy
Potential discharge source: _____
Comments: _____

Outfall #3: North of Terminal Ramp, southeast of Runway 10L-28R, and west of Perimeter Road



no discharge has discharge other
Water has/is: soap suds oil film/sheen clear cloudy
Potential discharge source: _____
Comments: _____

ANNUAL NON-STORMWATER DISCHARGE COMPLIANCE INSPECTION FORM

Outfall #4: Northeast of Runway 13-31, east of north side general aviation ramp, and south of the SW 34th Street



no discharge has discharge other
Water has/is: soap suds oil film/sheen clear cloudy
Potential discharge source: _____
Comments: _____

Outfall #5: North Dania Cut-off Canal, east of Anglers Avenue, and south of SW 42th Street



no discharge has discharge other
Water has/is: soap suds oil film/sheen clear cloudy
Potential discharge source: _____
Comments: _____

Outfall #6: North of Dania Cut-off Canal, east of Interstate 95, south of SW 42th Court, and west of West Perimeter Road



no discharge has discharge other
Water has/is: soap suds oil film/sheen clear cloudy
Potential discharge source: _____
Comments: _____

Outfall #7: North of Griffin Road, east of the Intersection of U.S. Route 1, south of Perimeter Road, and on the western of Green Belt Buffer Area



no discharge has discharge other
Water has/is: soap suds oil film/sheen clear cloudy
Potential discharge source: _____
Comments: _____

ANNUAL NON-STORMWATER DISCHARGE COMPLIANCE INSPECTION FORM

INSPECTOR CERTIFICATION

I, _____ certify under penalty of law that I completed these inspections and that
print full name

I am qualified to gather and evaluate the information necessary to determine if the discharge is from stormwater runoff or from an illicit source. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Inspector's Signature: _____ Date: _____

CERTIFICATION

I, _____ certify under penalty of law that this document was prepared under
print full name

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

Signature: _____ Date: _____

Appendix H

Best Management Practices



FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT

AIRCRAFT, VEHICLE, AND EQUIPMENT FUELING

PURPOSE:

Prevent fuel spills and leaks, and reduce their impacts to stormwater.

APPROACH TO FUTURE FACILITIES AND UPGRADES:

Design of New Facilities and Existing Facility Upgrades

- Design fueling areas to prevent the run-on of stormwater and the runoff of spills by employing the following approaches:
 - Cover the fueling area if possible.
 - Use a perimeter drain or slope the fueling area to a dead-end sump or oil/water separator.
 - Pave the fueling area with concrete rather than asphalt.
- If stormwater runoff from fueling areas is not collected, install an appropriately-sized oil/water separator.
- Install and maintain vapor recovery systems where required and/or appropriate.
- Existing underground fuel storage tanks should be upgraded with leak detection, spill containment, and overfill protection.
- Design facilities to include secondary containment where required and/or appropriate.

APPROACH TO EXISTING FACILITY ACTIVITIES:

Operational Considerations

Implement the following to the maximum extent practicable.

Good Housekeeping

- Fuel pumps intended for vehicular use (not aircraft) should be posted with signs stating “No Topping Off” to prevent overflow.
- Use absorbent materials and spot cleaning for small spills; do not hose down the areas unless the storm drain is blocked and drainage is collected by vacuum truck and disposed of through a permitted connection to the sanitary sewer.
- Properly dispose of any fuel spills and leaks. Always dispose of materials in an approved manner; use an approved treatment facility through a permitted connection. Never discharge materials to a catch basin or storm drain.
- Use pigs/mats over catch basins during fueling activity.
- Manage the disposal of water that collects in fuel tanks and fueling hydrant sumps according to state and federal regulations.
- Provide curbing or posts around fuel pumps to prevent collisions from vehicles.
- Clearly label fuel drums (used, diesel, gasoline).

TARGETED ACTIVITIES

- Aircraft/Vehicle/Equipment Fueling
- Taking pre-flight fuel samples
- Apron/Floor Washdown

SIGNIFICANT MATERIALS

- Fuel

KEY APPROACHES

- Install berms or curbing around fueling areas
- Use absorbent materials and/or vacuum equipment for spills
- Install proper equipment for fuel dispensing and tank monitoring to prevent spills, leaks and overflows
- Use GATS JARS to take fuel samples; dispose of samples at collection sites; use fire-rated containers for storage of fuel samples

FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT

Physical Site Usage

- Avoid mobile fueling of equipment wherever feasible; fuel equipment at designated fueling areas.
- Store fuel drums indoors, when possible.

Structural Controls

- Cover the fueling area, if possible.
- Divert stormwater runoff away from fueling area to avoid stormwater contact with contaminated surfaces through the use of berms or curbing.
- Install gate valves at catch basins for use during fueling activity.
- Employ secondary containment or cover when transferring fuel from a tank truck to a fuel tank.
- Use double-walled tanks with overflow protection, if possible.

Equipment

- Provide appropriate monitoring for tanks containing fuel, such as:
 - Level indicators and gauges.
 - Overfill protection and alarms.
 - Intertial leak detection for double-walled tanks.
 - Routine inspection/lockout for drainage valves for tank containment areas.
- Fuel dispensing equipment should be equipped with “breakaway” hose connections that will provide emergency shut-down of flow should the fueling connection be broken through movement.
- Automatic shut-off mechanisms should be in place on fuel tankers. These valves should remain in the closed position unless manually opened during fueling.
- Use GATS JARS for collecting fuel samples, which enables clear and bright fuel to be returned to the aircraft fuel tank.

Maintenance

- Inspect, clean, and maintain sumps and oil/water separators at appropriate intervals.

Contingency Response

- Develop and implement a Spill Prevention Control and Countermeasure (SPCC) Plan or Spill Response Plan.
- Maintain a well stocked spill kit in locations where spills are likely to occur.
- Furnish adequate spill response information, equipment, and materials on all fueling vehicles.

Inspection and Training

- Inspect fueling areas and storage tanks regularly. Record all maintenance activities and inspections relating to fueling equipment and containers in a log book.
- Underground fuel storage tanks should be tested as required by federal and state laws.
- Provide spill response training to personnel to address all types of spills.

FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT

RELEVANT RULES AND REGULATIONS:

- Rule 62-621.300 Florida Administrative Code (FAC) – NPDES Generic Permits
- Subsection 62-770.160(1) of the Florida Administrative Code – Petroleum Contamination Clean Up Criteria
- 40 CFR 261 – Resource Conservation Act (RCRA) – hazardous wastes
- 42 CFR 103 – Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – hazardous substances
- 40 CFR 110.3 Discharge of Oil
- 40 CFR 112 Oil Pollution Prevention (SPCC OPA/Plans)
- 40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
- 40 CFR 122-124 NPDES Regulations for Storm Water Discharges
- 40 CFR 401 Effluent Limitation Guidelines

FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT

AIRCRAFT, VEHICLE, AND EQUIPMENT MAINTENANCE AREAS

PURPOSE:

Prevent or reduce the discharge of pollutants to stormwater from aircraft, vehicle, and equipment maintenance and repair, including ground vehicle and equipment painting/stripping and floor washdowns.

APPROACH TO FUTURE FACILITIES AND UPGRADES:

Design of New Facilities and Existing Facility Upgrades

- Provide covered maintenance areas when designing new facilities or upgrading existing facilities. Utilize indoor areas, lean-tos, or portable covers.
- Include appropriate stormwater quality structures (oil/water separators, sumps, first flush diversion basins, etc) in the design of outdoor maintenance areas.

APPROACH TO EXISTING FACILITY ACTIVITIES:

Operational Considerations

Implement the following to the maximum extent practicable.

Good Housekeeping

- Use drip pans.
- Use absorbent materials at potential problem areas. Collect/remove absorbent materials from the area after use and dispose in appropriate manner.
- Drain and crush oil filters (and oil containers) before recycling or disposal. Store crushed oil filters and empty lubricant containers in a leak-proof container – cover if outdoors.
- Label storm drain inlets to indicate they are to receive no wastes.
- Drain and properly dispose of all fluids and remove batteries from salvage aircraft, vehicles, and equipment.
- Drain parts and equipment of all fluids. Store on secondary containment under cover.
- Recycle or properly dispose of grease, oil, antifreeze, brake fluid, cleaning solutions, hydraulic fluid, batteries, transmission fluid, and filters.
- Use biodegradable products and substitute materials with less hazardous properties where feasible.

Physical Site Usage

- Where feasible, move maintenance activities indoors or provide cover over work area.
- Use designated washing, steam cleaning, and degreasing areas to clean equipment.
- Store mechanical parts and equipment that may yield even small amounts of contaminants (e.g. oil or grease) under cover and away from drains.

TARGETED ACTIVITIES

- Aircraft/Vehicle/ Equipment Maintenance
- Aircraft/Vehicle/ Equipment Painting or Stripping
- Apron/Floor Washdown
- Potable Water System Cleaning

SIGNIFICANT MATERIALS

- Oil and Grease
- Vehicle Fluids
- Solvents/Cleaning Solutions
- Fuel
- Battery Acid
- Paint

KEY APPROACHES

- Conduct maintenance indoors, or in covered area
- Prevent wash water discharges to the storm drain
- Clean catch basins regularly
- Collect and properly dispose of all fluids

FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT

AIRCRAFT, VEHICLE, AND EQUIPMENT MAINTENANCE AREAS

Structural Controls

- Provide maintenance and cleaning areas with runoff controls that prevent discharge to storm sewers.
- Install and maintain catch basin filter inserts that assist in the removal of oil and grease, sediments and floatables.

Maintenance

- Maintain clean equipment by eliminating excessive amounts of external oil and grease buildup. Use water-based cleaning agents or non-chlorinated solvents to clean equipment.
- Regularly clean any catch basins which receive runoff from a maintenance area, especially after larger storms.
- Inspect, clean and maintain sump and oil/water separators, if necessary.

Contingency Response

- Maintain a well stocked spill kit in locations where spills are likely to occur.
- Furnish all maintenance vehicles with a spill kit and spill response procedures.

Inspection and Training

- Provide employee training for spill response and prevention, stormwater pollution prevention education, right-to-know awareness training, and hazardous materials management.
- Provide employee stormwater quality awareness training.
- Develop regular maintenance and inspection programs for oil/water separators.
- Characterize wastes collected from oil/water separators. Provide appropriate employee training.

RELEVANT RULES AND REGULATIONS:

- Rule 62-621.300 Florida Administrative Code (FAC) – NPDES Generic Permits
- Subsection 62-770.160(1) of the Florida Administrative Code – Petroleum Contamination Clean Up Criteria
- 40 CFR 261 – Resource Conservation Act (RCRA) – hazardous wastes
- 42 CFR 103 – Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – hazardous substances
- 40 CFR 110.3 Discharge of Oil
- 40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
- 40 CFR 122-124 NPDES Regulations for Storm Water Discharges
- 40 CFR 401 Effluent Limitation Guidelines

FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT

AIRCRAFT, VEHICLE, AND EQUIPMENT PAINTING AND STORAGE

PURPOSE:

Prevent or reduce discharge of pollutants to stormwater drains from aircraft, vehicle, or equipment painting activities or paint storage.

APPROACH:

Good Housekeeping

- Use efficient paint equipment to reduce the amount of over spray waste.
- Tarps, drip pans, or other spill control devices are used to prevent paints, solvents, or other materials from entering stormwater drainage.
- Paint equipment should be cleaned and maintained regularly.
- Painting is performed in ventilated areas and does not allow overspray to enter stormwater drainage.
- Sanding of vehicles, aircraft, and equipment is performed inside in a well ventilated area.
- After sanding is complete, the waste is collected and disposed of properly.
- Work areas are clean and clear of debris and grit to prevent wind from carrying dust into stormwater drainage.
- Paint, paint thinner, and solvents are recycled.
- Waste paint, paint thinner, and solvents are disposed of properly or stored in cabinets away from stormwater drainage.

Maintenance

- Use dirty solvents to clean painting equipment.

Inspection and Training

- Provide employee training for spill prevention and clean up, right-to-know awareness, hazardous materials management and stormwater pollution prevention.

TARGETED ACTIVITIES

- Aircraft / Vehicle / Equipment Painting or Stripping
- Chemical Storage

SIGNIFICANT MATERIALS

- Solvents
- Paints
- Cleaning Solutions

KEY APPROACHES

- Prevent paint waste from reaching stormwater drainage.
- Use spill control devices.
- Painting and sanding are performed in ventilated areas.
- Waste paint, paint thinner, and solvents are either stored or disposed of properly.

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AIRCRAFT, VEHICLE, AND EQUIPMENT PAINTING AND STORAGE

RELEVANT RULES AND REGULATIONS:

- Rule 62-621.300 Florida Administrative Code (FAC) – NPDES Generic Permits
- Subsection 62-770.160(1) of the Florida Administrative Code – Petroleum Contamination Clean Up Criteria
- 40 CFR 261 – Resource Conservation Act (RCRA) – hazardous wastes
- 42 CFR 103 – Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – hazardous substances
- 40 CFR 110.3 Discharge of Oil
- 40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
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- 40 CFR 401 Effluent Limitation Guidelines

FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT

FIRE FIGHTING FOAM DISCHARGE

PURPOSE:

Eliminate discharges to the storm drain system associated with flushing or testing of aircraft fire fighting foam (AFFF) systems.

TARGETED ACTIVITIES

- Fire Fighting Equipment Testing and Flushing

APPROACH TO FUTURE FACILITIES AND UPGRADES:

Design of New Facilities and Existing Facility Upgrades

- Design testing facility with the following characteristics:
 - Located away from storm drain inlets, drainage facilities, or water bodies.
 - Paved with concrete or asphalt, or stabilized with an aggregate base.
 - Berm to contain foam and to prevent run-on.
 - Configure discharge area with a sump to allow collection and disposal of foam.
- Discharge foam waste to a sanitary sewer (industrial waste water permitting may be required). Foam waste shall not be discharged to storm drains or water bodies.

SIGNIFICANT MATERIALS

- Aircraft Fire Fighting Foam (AFFF)

KEY APPROACHES

- Perform testing operations in designated areas
- Properly dispose of, or recycle, foam discharge
- Service sump regularly

APPROACH TO EXISTING FACILITY ACTIVITIES:

Operational Considerations

- Perform fire fighting foam testing operations only in designated areas.
- Properly dispose of, or recycle, foam discharge.
- Conduct berm repair and patching.
- Regularly inspect, clean, and maintain equipment and testing facility.

Contingency Response

- Maintain a well stocked spill kit in locations near area of activity.

Inspection and Training

- Regularly inspect testing facility.
- Provide employee training for spill response and prevention, stormwater pollution prevention education, right-to-know awareness training, and hazardous materials management.

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FIRE FIGHTING FOAM DISCHARGE

RELEVANT RULES AND REGULATIONS:

- Rule 62-621.300 Florida Administrative Code (FAC) – NPDES Generic Permits
- Subsection 62-770.160(1) of the Florida Administrative Code – Petroleum Contamination Clean Up Criteria
- 40 CFR 261 – Resource Conservation Act (RCRA) – hazardous wastes
- 42 CFR 103 – Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – hazardous substances
- 40 CFR 110.3 Discharge of Oil
- 40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
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- 40 CFR 401 Effluent Limitation Guidelines

FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT

MARINA AND BOATYARD MAINTENANCE

PURPOSE:

Prevent or reduce the discharge of pollutants to stormwater from marina/boat wash-down and maintenance operations.

APPROACH TO FUTURE FACILITIES AND UPGRADES:

Design of New Facilities and Existing Facility Upgrades

- Install oil/grit separators to capture petroleum spills and coarse sediment. Sweep routinely around storm drains to keep debris out.
- Incorporate appropriate waste receiving facilities for maintenance and washing equipment.
- Incorporate oil/water separators or other water quality devices into project designs.
- Pressure washing pads are cleaned daily and/or immediately after use to prevent organic material and paint chips from entering the stormwater systems.
- Build a wash rack with berms to minimize run-on to other areas.

APPROACH TO EXISTING FACILITY ACTIVITIES:

Operational Considerations

- Collect and discharge wash water to the sanitary sewer system through a permitted connection.
- Use designated and approved discharge facilities to dispose of waste derived from apron/ramp cleaning.
- Perform boat repair and maintenance work inside a building or under a covered area, if possible.
- Use tarps, plastic sheeting or petroleum absorbent pads to catch any leaks which might occur during service.
- Conduct berm repair and patching.
- Zincs, stainless steel, aluminum, brass, bronze and other metals should be stored in a container and recycled.

Contingency Response

- Maintain a well stocked spill kit in locations where spills are likely to occur.

TARGETED ACTIVITIES

- Boat Repair and Maintenance
- Vessel Washing
- Dry Sanding of Vessels

SIGNIFICANT MATERIALS

- Oil and Grease
- Solvents/ Cleaning Solutions
- Fuel
- Aircraft Fire Fighting Foam (AFFF)
- Sediment
- Floatables

KEY APPROACHES

- Repair or replace any leaking connections, valves, pipes, and hoses on vessels while inside a building or covered area.
- Use dustless sanding techniques
- Stationary skids for fueling watercrafts.

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MARINA AND BOATYARD MAINTENANCE

Inspection and Training

- Provide employee training for spill response and prevention, stormwater pollution prevention education, right-to-know awareness training, and hazardous materials management.
- Develop regular maintenance and inspection programs for oil/water separators.
- Characterize wastes collected from oil/water separators.
- Dispose of wastes properly and provide appropriate employee training.

RELEVANT RULES AND REGULATIONS:

- Rule 62-621.300 Florida Administrative Code (FAC) – NPDES Generic Permits
- Subsection 62-770.160(1) of the Florida Administrative Code – Petroleum Contamination Clean Up Criteria
- 40 CFR 261 – Resource Conservation Act (RCRA) – hazardous wastes
- 42 CFR 103 – Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – hazardous substances
- 40 CFR 110.3 Discharge of Oil
- 40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
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- 40 CFR 401 Effluent Limitation Guidelines

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AIRCRAFT, VEHICLE, AND EQUIPMENT WASHING CLEANING AND

PURPOSE:

Prevent or reduce the discharge of pollutants to stormwater drains from aircraft, vehicle, and equipment cleaning activities.

APPROACH TO FUTURE FACILITIES AND UPGRADES:

Design of New Facilities and Existing Facility Upgrades

- Use off-site commercial washing where feasible.
- Evaluate the need for incorporating a wash water recycling system into the project design.
- Outdoor washing operations should have the following design characteristics:
 - Paved with portland cement concrete (PCC).
 - Bermed and/or covered to prevent contact with stormwater.
 - Sloped to facilitate wash water collection.
 - Wash water should be collected in a dead-end sump for removal or discharged to the sanitary sewer through a permitted connection.
 - Discharge piping serving uncovered wash areas should have a positive shut-off valve that allows switching between the storm drain and the sanitary sewer.
 - Wash areas should be clearly identified with appropriate signage.
 - Equipped with an oil/water separator designed to operate under stormwater runoff conditions to treat stormwater volumes and flow rates. (Regulatory agency approvals are required.)

APPROACH TO EXISTING FACILITY ACTIVITIES:

Operational Considerations

Implement the following to the maximum extent practicable.

Good Housekeeping

- Use “dry” washing and surface preparation techniques when possible. Consider dry washing as an option regardless of aircraft size. Remove all materials (i.e., drippings and residue) using vacuum methods. Dispose of properly.
- Provide secondary containment, and cover if possible, for containers of washing and steam cleaning additives.
- Use pigs/mats to control the discharge of wash water.
- Use biodegradable phosphate-free detergents.
- Keep wash area clean and free of waste.
- Include proper signage to prohibit the discharge of waste oils into the drains.
- Collect stormwater runoff from cleaning area and provide treatment or recycling.

TARGETED ACTIVITIES

- Aircraft/Vehicle/Equipment Painting or Stripping
- Aircraft/Vehicle/Equipment Washing or Cleaning

SIGNIFICANT MATERIALS

- Oil and Grease
- Solvent
- Vehicle Fluids
- Cleaning Solutions

KEY APPROACHES

- Use designated area
- Use dry washing techniques
- Recycle wash water or discharge appropriately
- Cover catch basins
- Provide training

FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT
AIRCRAFT, VEHICLE, AND EQUIPMENT WASHING CLEANING AND

- Keep degreasing activities in a fully enclosed area, if possible, and located away from storm drains.
- Properly dispose of cleaning/degreasing waste.

Physical Site Usage

- Use off-site commercial washing and steam cleaning where feasible.
- Use designated wash areas that are covered and/or bermed to prevent contamination of stormwater by contact with wastes.
- Perform all cleaning operations indoors, when possible.

Structural Controls

- Gate valves at catch basins will prevent discharge to the storm drainage system during washing activities by facilitating the collection of wash water.
- Filter and recycle wash water when possible.

Maintenance

- Patch and repair berms and PCC to maintain contaminant system.
- Inspect, clean, and maintain sumps, oil/water separators, and on-site treatment and recycling units.

Management

- File a Wash Plan for approval by the Aviation Department prior to commencing wet washing activities in any area outside designated wash rack.

Contingency Response

- Maintain a well stocked spill kit in locations where spills of cleaning chemicals are likely to occur.

Inspection and Training

- Provide employee training for spill response and prevention, stormwater pollution prevention education, right-to-know awareness training, and hazardous materials management.
- Develop regular maintenance and inspection programs.
- Characterize wastes derived from oil/water separators. Provide appropriate employee training.

RELEVANT RULES AND REGULATIONS:

- Rule 62-621.300 Florida Administrative Code (FAC) – NPDES Generic Permits
- Subsection 62-770.160(1) of the Florida Administrative Code – Petroleum Contamination Clean Up Criteria
- 40 CFR 261 – Resource Conservation Act (RCRA) – hazardous wastes
- 42 CFR 103 – Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – hazardous substances
- 40 CFR 110.3 Discharge of Oil
- 40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
- 40 CFR 122-124 NPDES Regulations for Storm Water Discharges
- 40 CFR 401 Effluent Limitation Guidelines

FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT

LAVATORY WASTE

PURPOSE:

Eliminate discharges to the storm drain system associated with ground servicing of aircraft lavatory facilities. The sanitary sewage and associated rinse waters producing during the servicing of aircraft lavatory facilities must be discharged to a wastewater treatment facility under appropriate permitting. Trucks or trailers equipped with bulk storage tanks are typically used to service lavatory facilities. Non-stormwater discharges and residuals associated with servicing these facilities can be classified as follows:

- Discharges and residuals associated with diluting and mixing the surfactants and disinfectants used for servicing lavatory facilities.
- Discharges and residuals associated with transferring materials from the aircraft.
- Discharges and residuals associated with transporting and disposing materials to the sanitary sewer system.

APPROACH TO FUTURE FACILITIES AND UPGRADES:

Design of New Facilities and Existing Facility Upgrades

- If possible, design triturator facilities to be covered, with low roll-over type berming.
- Include a source of water at the triturator for clean up of lavatory service equipment.
- Coordinate permitting of the triturator sanitary sewer connection through the local stormwater and sanitary sewer agencies.
- Triturator facilities should not be located near storm drains.

APPROACH TO EXISTING FACILITY ACTIVITIES:

Operational Considerations

- Do not discharge lavatory waste to sanitary sewer connections other than triturator facilities. Other industrial-type connections may be equipped with bypass gates, which, if improperly maintained or defective, may discharge to the stormwater collection system.
- Drain the aircraft connecting hose as completely as possible into the storage tank after servicing an aircraft. Properly secure all hoses, valves, and equipment when transporting waste to eliminate leakage and spills.
- Use only surfactants and disinfectants approved for discharge to the sanitary sewer system. Do not discharge or rinse other unapproved chemicals or materials into the triturator facility.
- If possible, perform surfactant/disinfectant mixing and transfers in the triturator area or under cover. This will allow the rinsing of minor spills and splashes to enter the sanitary sewer system.
- Do not perform lavatory truck cleanout/backflushing at any location other than triturator facilities.
- Utilize buckets or pans to capture drippage from aircraft lavatory access fittings. Immediately dump the drippage into the bulk storage tank on the service cart or truck.

TARGETED ACTIVITIES

- Aircraft Lavatory Service
- Lavatory Truck Cleanout/Backflushing

SIGNIFICANT MATERIALS

- Lavatory Chemicals
- Lavatory Waste
- Lavatory Truck Wash Water

KEY APPROACHES

- Do not discharge lavatory waste to sanitary sewer connections other than triturator facilities
- Utilize buckets or pans to capture drippage from aircraft lavatory access fittings
- Do not perform lavatory truck cleanout or backflushing at any location other than triturator facilities
- Carry absorbent and other containment equipment on the lavatory service equipment

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LAVATORY WASTE

- Carefully handle chemicals and chemical concentrates. Immediately collect dry chemicals or absorb liquid chemicals for proper disposal. Do not hose down spills unless the discharge enters the sanitary sewer system through a permitted connection (triturator facility).
- Practice good housekeeping techniques at the triturator facility. Immediately clean spills of wastes and chemicals.

Contingency Response

- Carry absorbent and other containment equipment on the lavatory service equipment.
- Maintain a well stocked spill kit in locations where spills are likely to occur.

Inspection and Training

- Perform regular inspections of the hose and fittings used for transferring lavatory waste. Keep the equipment in good working order. Replace worn equipment before leaks develop. Notify appropriate ground service personnel if it is noticed that the aircraft lavatory fittings require maintenance.
- Provide employee training for spill response and prevention, stormwater pollution prevention education, right-to-know awareness training, and hazardous materials management.

RELEVANT RULES AND REGULATIONS:

- Rule 62-621.300 Florida Administrative Code (FAC) – NPDES Generic Permits
- Subsection 62-770.160(1) of the Florida Administrative Code – Petroleum Contamination Clean Up Criteria
- 40 CFR 261 – Resource Conservation Act (RCRA) – hazardous wastes
- 42 CFR 103 – Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – hazardous substances
- 40 CFR 110.3 Discharge of Oil
- 40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
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NON-STORMWATER DISCHARGES

PURPOSE:

Existing discharges: Eliminate non-stormwater discharges to the stormwater collection system. Non-stormwater discharges can be classified as follows: 1) *Activity-based* (subtle), and 2) *Overt* (hard pipe connection). Activity-based non-stormwater discharges may include: wash water, and spillage. Overt non-stormwater discharges may include: process wastewater, treated cooling water, and sanitary wastewater.

Prevention of illicit connections: Prevent improper physical connections to the storm drain system from sanitary sewers, floor drains, industrial process discharge lines, and wash racks through education, developing project approval conditions, and performing both construction phase and post-construction inspections.

GENERAL APPROACH:

Identification of Activity-Based (Subtle) Discharges:

The following techniques may be used to identify activity-based non-stormwater discharges to the stormwater collection system:

- Perform frequent activity inspections to identify non-stormwater discharges – stagger inspection times to cover all work periods.
- Perform visual inspections of discharge points to the storm drain system – observe uncharacteristic volumes, colors, turbidity, odors, deposition, staining, floatables, and foaming characteristics of any flow.

APPROACH TO FUTURE FACILITIES AND UPGRADES:

Design of New Facilities and Existing Facility Upgrades

- Perform inspections during the design review and project construction phases to ensure drainage, wastewater, and water supply connections are correct (no cross connections or illicit hookups).
- Develop a set of as-built prints for all projects. Keep a set of the prints at the facility.
- Design projects to include adequate waste repositories at locations near waste origin points.
- Provide adequate and appropriate area for functions such as steam cleaning, degreasing, painting, mechanical maintenance, chemical/fuel storage and delivery, material handling, waste handling and storage, lavatory service, and food preparation.

TARGETED ACTIVITIES

- All activities with potential to impact stormwater

SIGNIFICANT MATERIALS

- Oil and Grease
- Antifreeze
- Fuel
- Solvent/Cleaning Solutions
- Battery Acid
- Pesticides/Herbicides/Fertilizers
- Paint
- Aircraft Fire Fighting Foam (ARFFF)
- Scrap Metal and Parts
- Garbage and Hazardous Wastes
- Sediment
- Landscape Waste
- Floatables
- Lavatory Chemicals and Waste
- Potable Water System Cleaning Chemicals
- Rubber Particles

KEY APPROACHES

- Perform inspections and enforcement
- Provide training for employees
- Promote education of vendors/public

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NON-STORMWATER DISCHARGES

APPROACH TO EXISTING FACILITY ACTIVITIES:

Operational Considerations

- Use “dry” cleaning and surface preparation techniques where feasible.
- Limit the availability of outdoor water supplies (hose bibs).
- Post signs at outdoor water sources stating the appropriate uses and discouraging uses that would introduce pollutants to the storm drain system/receiving waters.

Contingency Response

- Develop and implement a Spill Prevention Control and Countermeasure (SPCC) Plan.
- Maintain a well stocked spill kit in locations where spills are likely to occur.

Inspection and Training

- Inspect waste containers frequently for leaks and proper closure seal.
- Develop employee training programs which emphasize the proper disposal procedures for operations-derived wastes.
- Provide employee training for spill response and prevention, stormwater pollution prevention education, right-to-know awareness training, and hazardous materials management.

RELEVANT RULES AND REGULATIONS:

- Rule 62-621.300 Florida Administrative Code (FAC) – NPDES Generic Permits
- Subsection 62-770.160(1) of the Florida Administrative Code – Petroleum Contamination Clean Up Criteria
- 40 CFR 261 – Resource Conservation Act (RCRA) – hazardous wastes
- 42 CFR 103 – Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – hazardous substances
- 40 CFR 110.3 Discharge of Oil
- 40 CFR 112 Oil Pollution Prevention (SPCC/OPA Plans)
- 40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
- 40 CFR 122-124 NPDES Regulations for Storm Water Discharges
- 40 CFR 401 Effluent Limitation Guidelines

FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT

OUTDOOR SIGNIFICANT MATERIALS STORAGE

PURPOSE:

Prevent or reduce the discharge of pollutants to stormwater from outdoor significant materials.

APPROACH TO FUTURE FACILITIES AND UPGRADES:

Design of New Facilities and Existing Facility Upgrades

- Require the use of appropriate water quality control structures for fuel, waste, and chemical storage areas. Develop appropriate minimum performance standards for these water quality control structures and implement a reporting program to monitor the performance and maintenance of these structures.
- Chemical, fuel, and oil dispensing (non-aircraft) sites, and waste collection areas should be sloped to contain releases and covered, if possible.
- Develop standardized guidelines for the management of stormwater, which collects in secondary containment areas.

APPROACH TO EXISTING FACILITY ACTIVITIES:

Operational Considerations

Good Housekeeping

- Avoid dispensing from drums positioned horizontally in cradles. Dispensing materials from upright drums equipped with hand pumps is preferred. Always use secondary containment and self closing spigots if dispensing from horizontally positioned drums.
- Store drums and containers on spill containment pallets or other structures to keep the container out of contact with stormwater.
- Discharge collected stormwater from secondary containment areas according to guidelines developed by the federal government and applicable state and local regulations.
- Store all materials in their original containers or containers approved for that use. Ensure that all containers are appropriately sealed.
- Store empty containers in fully enclosed areas, under cover, or move them off-site.
- Protect all significant materials from rainfall, run-on, run-off, and wind dispersal to the maximum extent practicable. Viable options are:
 - Store material in a fully enclosed area.
 - Cover an outdoor storage area with a roof or awning.
 - Cover the material with a temporary covering made of polyethylene, polypropylene, or hypalon.
 - Minimize stormwater run-on by enclosing the area, building a berm around the area, storing indoors, or completely cover the stored material.
- Properly label all chemical containers with information, including their contents, hazards, spill response and first aid procedures, manufacturer's name and address, and storage requirements. Maintain copies of MSDS on file for any materials stored and/or handled by the applicator.

TARGETED ACTIVITIES

- Aircraft/Vehicle Equipment Fueling
- Aircraft/Vehicle Equipment Maintenance
- Aircraft Lavatory Service
- Aircraft/Vehicle Equipment Washing or Cleaning
- Fuel/Chemical Storage
- Equipment Storage

SIGNIFICANT MATERIALS

- Fuel
- Solvent
- Cleaning Solutions
- Liquid Wastes
- Lavatory Chemicals/Waste

KEY APPROACHES

- Store materials in a covered or fully enclosed area
- Provide a secondary contaminant
- Implement an SPCC, if requires
- Perform and document periodic inspections

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OUTDOOR SIGNIFICANT MATERIALS STORAGE

- Maintain a spill response plan near the material or waste storage area.

Physical Site Usage

- Reduce the quantities of material and waste stored outside to the minimum volume required based on variables such as release potential, usage, and shelf life.
- Make use of existing overhangs as covered storage areas.

Structural Controls

- Provide berms or secondarily contain storage tankers, ASTs, drums, and containers.
- Install and maintain catch basin filter inserts.

Maintenance

- Inspect, clean, and maintain sumps, if applicable.

Contingency Response

- Develop and implement a Spill Prevention Control and Countermeasure (SPCC) Plan.
- Maintain a well stocked spill kit where spills are likely to occur.
- Post signs at all chemical storage locations in clearly visible locations noting the materials stored, emergency contacts, and spill cleanup procedures.

Inspection and Training

- Provide employee training for spill response and prevention, stormwater pollution prevention education, right-to-know awareness training, and hazardous materials management.
- Perform and document periodic inspections in a log book. Inspection items should include the following:
 - Check containers for external corrosion and structural failure.
 - Check for spills and overfills due to operator failure.
 - Check for failure of piping system (pipes, pumps, flanges, couplings, hoses, and valves).
 - Check for leaks or spills during pumping of liquids or gases.
 - Visually inspect new tanks or containers for loose fittings, poor welds, and improper or poorly fitted gaskets.
 - Inspect tank foundations and storage area coatings

RELEVANT RULES AND REGULATIONS:

- Rule 62-621.300 Florida Administrative Code (FAC) – NPDES Generic Permits
- Subsection 62-770.160(1) of the Florida Administrative Code – Petroleum Contamination Clean Up Criteria
- 40 CFR 261 – Resource Conservation Act (RCRA) – hazardous wastes
- 42 CFR 103 – Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – hazardous substances
- 40 CFR 110.3 Discharge of Oil
- 40 CFR 112 Oil Pollution Prevention (SPCC/OPA Plans)
- 40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
- 40 CFR 122-124 NPDES Regulations for Storm Water Discharges
- 40 CFR 401 Effluent Limitation Guidelines
- 40 CFR 260 et. seq. Identification and Listing of Hazardous Waste

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OIL/WATER SEPARATOR

PURPOSE:

Oil/water separators are baffled chambers designated to remove petroleum compounds and greases from stormwater. Oil/water separators also remove floatable debris and settled solids (sediment).

APPROACH TO FUTURE FACILITIES AND UPGRADES:

Design of New Facilities and Existing Facility Upgrades

Oil/water separators are typically used in areas where the concentrations of petroleum hydrocarbons, floatables, or sediment may be abnormally high and source control techniques are not very effective. There are two types of oil/water separators: the American Petroleum Institute (API) separator and the coalescing plate separator (CPS). Design, sizing, and placement of oil/water separators are dependent on several factors including: tributary area, type of activity, pollutant type and concentration, and water temperature.

APPROACH TO EXISTING FACILITY ACTIVITIES:

Operational Considerations

- Separators must be inspected and cleaned frequently of accumulated oil, grease, floating debris, and sediments to be effective stormwater quality controls.
- Oil absorbent pads are to be replaced as needed but will always be replaced prior to the wet season.
- The effluent shutoff valve will be closed during cleanup operations.
- Any standing water removed during the cleanup operation must be disposed of in accordance with federal, state, and local regulatory requirements.
- Any standing water removed during the cleanup operation must be replaced with clean water to prevent oil carry-over through the outlet.

Contingency Response

- Maintain a well stocked spill kit in locations where spills are likely to occur.

Inspection and Training

- Provide employee training for spill response and prevention, stormwater pollution prevention education, right-to-know awareness training, and hazardous materials management.
- Perform and document in a log book all inspections and maintenance operations.
- Develop a written operating, sampling, and reporting procedure under local stormwater authority guidelines. Train appropriate employees to implement these procedures.

TARGETED ACTIVITIES

- Aircraft/Vehicle/Equipment Fueling
- Aircraft/Vehicle/Equipment Washing
- Fuel/Chemical Storage
- Installing, Cleaning, and Maintaining Oil/Water Separators

SIGNIFICANT MATERIALS

- Oil and Grease
- Fuel
- Floatables
- Sediment

KEY APPROACHES

- Frequently inspect and clean separators
- Replace absorbent pads as needed

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OIL/WATER SEPARATOR

RELEVANT RULES AND REGULATIONS:

- Rule 62-621.300 Florida Administrative Code (FAC) – NPDES Generic Permits
- Subsection 62-770.160(1) of the Florida Administrative Code – Petroleum Contamination Clean Up Criteria
- 40 CFR 261 – Resource Conservation Act (RCRA) – hazardous wastes
- 42 CFR 103 – Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – hazardous substances
- 40 CFR 110.3 Discharge of Oil
- 40 CFR 112 Oil Pollution Prevention (SPCC/OPA Plans)
- 40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
- 40 CFR 122-124 NPDES Regulations for Storm Water Discharges
- 40 CFR 401 Effluent Limitation Guidelines

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OUTDOOR WASHDOWN/SWEEPING

PURPOSE:

Prevent or reduce the discharge of pollutants to stormwater from indoor and outdoor washdown and sweeping operations.

APPROACH TO FUTURE FACILITIES AND UPGRADES:

Design of New Facilities and Existing Facility Upgrades

- Consider contracting apron washing/sweeping services. Using appropriate contractors will decrease waste handling responsibilities.
- Incorporate appropriate waste receiving facilities for sweepers and washing equipment.
- Incorporate oil/water separators or other water quality devices into project designs.
- Consider incorporating gate valves in areas where apron washing will occur. The gate valves will direct wash water to the sanitary sewer in dry weather and will direct stormwater to the storm drain system during wet weather.
- Employ berms to minimize run-on to other areas.

APPROACH TO EXISTING FACILITY ACTIVITIES:

Operational Considerations

- Collect and discharge wash water to the sanitary sewer system through a permitted connection.
- Use designated and approved discharge facilities to dispose of waste derived from apron/ramp cleaning.
- Use "dry" sweeping techniques where feasible.
- Dispose of sweepings in an appropriate manner.
- Conduct berm repair and patching.
- Inspect, clean, and maintain sumps and oil/water separators.

Contingency Response

- Maintain a well stocked spill kit in locations where spills are likely to occur.

Inspection and Training

- Provide employee training for spill response and prevention, stormwater pollution prevention education, right-to-know awareness training, and hazardous materials management.
- Develop regular maintenance and inspection programs for oil/water separators.
- Characterize wastes collected from oil/water separators. Dispose of wastes properly and provide appropriate employee training.

TARGETED ACTIVITIES

- Apron Washing
- Ramp Scrubbing
- Outdoor/Power Washing
- Floor Washdown

SIGNIFICANT MATERIALS

- Oil and Grease
- Solvents/ Cleaning Solutions
- Fuel
- Aircraft Fire Fighting Foam (AFFF)
- Sediment
- Floatables

KEY APPROACHES

- Collect and discharge wash water to the sewer
- Use "dry" sweeping techniques
- Dispose of sweepings

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OUTDOOR WASHDOWN/SWEEPING

RELEVANT RULES AND REGULATIONS:

- Rule 62-621.300 Florida Administrative Code (FAC) – NPDES Generic Permits
- Subsection 62-770.160(1) of the Florida Administrative Code – Petroleum Contamination Clean Up Criteria
- 40 CFR 261 – Resource Conservation Act (RCRA) – hazardous wastes
- 42 CFR 103 – Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – hazardous substances
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OUTDOOR WASTE AND MATERIAL HANDLING

PURPOSE:

Prevent or reduce the discharge of pollutants to stormwater from handling potential pollutants outside enclosed buildings.

APPROACH TO FUTURE FACILITIES AND UPGRADES:

Design of New Facilities and Existing Facility Upgrades

- Design outdoor waste and material handling areas to prevent stormwater run-on through the use of the following practices:
 - o Grading or berming
 - o Positioning roof downspout to direct stormwater away from outdoor waste and material handling areas
- Design facilities so that materials which may contribute pollutants to stormwater may be stored indoors or under cover.
- Incorporate oil/water separators into exposed loading dock designs.

APPROACH TO EXISTING FACILITY ACTIVITIES:

Operational Considerations

Good Housekeeping

- Use seals or door skirts between vehicles and structures to prevent material exposure to rainfall.
- Contain and adsorb leaks during transfers and spillage from hose disconnections; dispose of residue properly.
- Avoid transferring or using materials in close proximity to storm drain inlets. Cover nearby storm drain inlets during material transfer or use.
- Use drip pans to contain small releases and promptly clean and remove drip pans when not in use.
- Transfer and use liquids only in paved areas.
- Provide contractors and haulers with copies of pertinent BMPs. Require contractor/hauler adherence to BMP specifications.
- Consider contracting maintenance operations for material handling equipment. Designate an appropriate area for contractors to perform maintenance activities. Verify proper waste disposal practices of contractors.

Physical Site Usage

- Protect all loading/unloading activities and material use areas from rainfall, run-on and wind dispersal to the maximum extent practicable. Viable options include conducting activities under existing cover, or moving indoors.
- Position tank trucks or delivery vehicles so that possible spills or leaks can be contained.
- Provide appropriate spill containments, hand pumps, and other devices to minimize releases during material transfer.

TARGETED ACTIVITIES

- Aircraft/Vehicle/Equipment Deicing
- Aircraft/Vehicle/Equipment Fueling
- Aircraft/Vehicle/Equipment Maintenance
- Aircraft Lavatory Service
- Cargo Handling
- Fuel/Chemical Storage
- Pesticide/Herbicide Usage
- Runway Deicing

SIGNIFICANT MATERIALS

- Fuel
- Pesticides and Herbicides
- Oil and Grease
- Solvents/Cleaning Solutions
- Battery Acid
- Lavatory Chemicals and Waste
- Deicing Chemicals

KEY APPROACHES

- Conduct loading/unloading under cover
- Transfer materials in paved areas, away from storm drain inlets
- Contain and absorb releases
- Maintain readily accessible spill kits
- Immediately place waste and materials in proper storage/disposal location

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OUTDOOR WASTE AND MATERIAL HANDLING

Structural Controls

- Cover loading/unloading areas/docks and material use areas to reduce exposure of materials to rain. Construct roofing structures over material handling areas, or move indoors.
- Investigate feasibility of relocating storm drain inlets away from fuel hydrants or fuel dispensing and storage areas.

Maintenance

- Inspect loading/unloading areas and material use areas for repair and patching.
- Inspect, clean, and maintain oil/water separators.

Contingency Response

- Maintain a well stocked spill kit in locations where spills are likely to occur.
- Include spill kits on appropriate material handling vehicles and equipment.

Inspection and Training

- Conduct regular inspections and make repairs as necessary.
- Check loading/unloading equipment (valves, pumps, flanges, and connections) regularly for leaks.
- Develop and implement a written operations plan which describes loading/unloading procedures.
- Provide proper training for material handling equipment operators.
- Provide employee training for spill response and prevention, stormwater pollution prevention education, right-to-know awareness training, and hazardous materials management.

RELEVANT RULES AND REGULATIONS:

- Rule 62-621.300 Florida Administrative Code (FAC) – NPDES Generic Permits
- Subsection 62-770.160(1) of the Florida Administrative Code – Petroleum Contamination Clean Up Criteria
- 40 CFR 261 – Resource Conservation Act (RCRA) – hazardous wastes
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PARKING AREAS

PURPOSE:

Prevent or reduce discharge of pollutants to stormwater drains from aircraft, vehicle, and equipment parking areas.

APPROACH TO FUTURE FACILITIES AND UPGRADES:

- Install an oil removal system such as oil water separator, catch basin filter, or equivalent in high use areas.
- Apply only as much sealer as required to completely cover the paved area. Remove any excess and store or dispose of appropriately.

APPROACH TO EXISTING FACILITY ACTIVITIES:

- Collect all waste, liquid and solid, for appropriate disposal.
- Schedule maintenance, such as seal coating and repair work as needed.
- Protect storm drains, gutters, or off-site migration points from any liquid or solid waste during maintenance or repair work.
- Regularly clean parking lots to remove dirt, accumulations of grease and oil, general debris, and trash.
- If a wet cleaning method is used, ensure that the storm drains or off-site migration points are protected.

Contingency Response

- Keep spill response equipment for hydrocarbon clean up on-site. Promptly clean up any spill of liquid or solid wastes. Do not hose down an area to clean or handle a spill, unless the liquid will be completely contained.

Inspection and Training

- Inspect all outfall drainage structures for illicit discharges.
- Provide employee training for spill prevention and clean up, right-to-know awareness, hazardous materials management, and stormwater pollution prevention.

TARGETED ACTIVITIES

- Aircraft / Vehicle / Equipment Parking

SIGNIFICANT MATERIALS

- Oil and grease
- Waste

KEY APPROACHES

- Regularly clean parking areas.
- Properly dispose of all liquid and solid waste.
- Protect storm drains, gutters, or off-site migration points from any liquid or solid waste.

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PARKING AREAS

RELEVANT RULES AND REGULATIONS:

- Rule 62-621.300 Florida Administrative Code (FAC) – NPDES Generic Permits
- Subsection 62-770.160(1) of the Florida Administrative Code – Petroleum Contamination Clean Up Criteria
- 40 CFR 261 – Resource Conservation Act (RCRA) – hazardous wastes
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PEST MANAGEMENT AND LANDSCAPING MAINTENANCE

PURPOSE:

Prevent or reduce the discharge of pollutants to stormwater from pest management and landscaping maintenance by minimizing the use of pesticides and fertilizers, keeping debris from entering storm drains, and maintaining the stormwater collection system.

TARGETED ACTIVITIES

- Building Maintenance
- Grounds Maintenance
- Pesticide/Herbicide Use
- Outdoor Washdown

APPROACH TO FUTURE FACILITIES AND UPGRADES:

Design of New Facilities and Existing Facility Upgrades

- Incorporate areas of landscape into project design to reduce runoff discharge from a site.
- Incorporate design considerations such as leaving or planting native vegetation to reduce irrigation, fertilizer, and pesticide needs.
- Select landscaping plants that require little maintenance and/or pest control.
- Incorporate stormwater detention/retention to reduce peak runoff flows and for water quality control.

SIGNIFICANT MATERIALS

- Pesticides/Herbicides/Fertilizers
- Oil and Grease
- Sediment
- Landscape Waste
- Washdown Waste
- Building Maintenance Materials

APPROACH TO EXISTING FACILITY ACTIVITIES:

Operational Considerations

Good Housekeeping

- Collect outdoor washdown water and properly dispose of it through a permitted connection to the sanitary sewer.
- Clean any catch basins that receive runoff from maintenance areas on a regular basis.
- Minimize the use of pesticides, herbicides, and fertilizers. Use according to directions. Seek less harmful/toxic products to replace ones currently used.
- Utilize integrated pest management where appropriate.
- Properly dispose of landscape waste, wash water, sweepings, and sediments.
- Regularly clean paved surfaces that are exposed to industrial activity. Use “dry” cleaning techniques, such as sweeping, whenever possible.

Structural Controls

- Provide landscaped areas where erosion is becoming a problem.

KEY APPROACHES

- Keep paved surfaces cleaned and swept
- Clean catch basins regularly using vacuum trucks
- Manage use of pesticides/herbicides/fertilizers

Contingency Response

- Maintain a well stocked spill kit in locations where spills are likely to occur.

Inspection and Training

- Provide employee training for spill response and prevention, stormwater pollution prevention education, right-to-know awareness training, and hazardous materials management.

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PEST MANAGEMENT AND LANDSCAPING MAINTENANCE

RELEVANT RULES AND REGULATIONS:

- Rule 62-621.300 Florida Administrative Code (FAC) – NPDES Generic Permits
- Subsection 62-770.160(1) of the Florida Administrative Code – Petroleum Contamination Clean Up Criteria
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RUNWAY RUBBER REMOVAL

PURPOSE:

Eliminate discharges to the storm drain of particulate rubber generated by runway rubber removal activities.

APPROACH TO FUTURE FACILITIES AND UPGRADES:

Design of New Facilities and Existing Facility Upgrades

- Design runway storm drain culverts to allow placement of particulate capture devices, such as haybales or filter fabric, that will capture rubber and dirt particles generated during runway rubber removal activities.

APPROACH TO EXISTING FACILITY ACTIVITIES:

Operational Considerations

- Place devices that will capture rubber and dirt particulates, such as haybales or filter fabric, over storm drain culverts or at other areas that will capture rubber and dirt particles generated during runway rubber removal activities.
- Use manual or mechanical cleaning methods (ordinary mechanical street sweepers) to remove rubber particulates from the runway and adjacent paved areas after runway rubber removal activities.

Inspection and Training

- Provide employee training for spill response and prevention, stormwater pollution prevention education, right-to-know awareness training, and hazardous materials management.
- Inspect storm drain culverts or runway drainage areas after runway rubber removal activities.

RELEVANT RULES AND REGULATIONS:

- Rule 62-621.300 Florida Administrative Code (FAC) – NPDES Generic Permits
- Subsection 62-770.160(1) of the Florida Administrative Code – Petroleum Contamination Clean Up Criteria
- 40 CFR 261 – Resource Conservation Act (RCRA) – hazardous wastes
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TARGETED ACTIVITIES

- Runway Rubber Removal

SIGNIFICANT MATERIALS

- Rubber particles
- Dirt particles

KEY APPROACHES

- Use haybales or filter fabric over culverts
- Use manual or mechanical cleaning methods (e.g., street sweepers) to remove particulates following normal removal process

FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT

EROSION AND SEDIMENT CONTROL

PURPOSE:

Prevent or reduce the discharge of pollutants to stormwater from construction and landscaping activities, runoff, and other ground disturbing activities.

APPROACH TO FUTURE FACILITIES AND UPGRADES:

- Incorporate sediment and erosion control measures into design to prevent or minimize discharge of pollutants into stormwater.
- Preserve and incorporate natural vegetation into design.
- Locate construction staging areas and waste collection areas away from drainage structures.
- Use appropriate BMPs for stormwater runoff treatment.

APPROACH TO EXISTING FACILITY ACTIVITIES:

Good Housekeeping

- Clean catch basins and drainage structures regularly.
- Collect and dispose of waste regularly.

Physical Site Usage

- Locate staging areas in disturbed areas.
- Preserve natural vegetation.
- Utilize erosion control measures over exposed ground.

Structural Controls

- Silt fence, sand bags and sand
- Brush barrier, mulching, and sodding
- Check dams, berms, interceptor dikes and swales
- Dust control and inlet protection
- Sediment trap/filters/chambers
- Temporary sediment basin/rock dams
- Gradient terraces and subsurface drains
- Ponds, baffle boxes, stormceptors, and stormwater vaults

Maintenance

- Inspection of erosion and sediment control measures
- Drainage system maintenance

Contingency Response

- Maintain adequate sediment and erosion control materials to replace damaged materials (silt fence, etc.)
- Maintain adequate supplies of spill response equipment and materials in accessible locations near areas where spills may occur.

TARGETED ACTIVITIES

- Design
- Construction
- Landscaping
- Maintenance
- Inspections

SIGNIFICANT MATERIALS

- Sediment
- Pesticides/Herbicides/Fertilizers
- Oil and Grease
- Trash

KEY APPROACHES

- Preserve natural vegetation
- Utilize the 2007 FDOT FDEP Sediment and Erosion Control Manual
<http://www.dot.state.fl.us/rddesign/dr/files/Erosion-and-Sediment-Control-Manual-June-2007.pdf>
- Keep erosion and sediment control measures in place at all times.

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EROSION AND SEDIMENT CONTROL

Inspection and Training

- Provide adequate level of training.
- Require contractor construction inspectors to have a certificate from Florida Stormwater, Erosion and Sediment Control Inspectors Training Certification Program.

RELEVANT RULES AND REGULATIONS:

- Rule 62-621.300 Florida Administrative Code (FAC) – NPDES Generic Permits
- Subsection 62-770.160(1) of the Florida Administrative Code – Petroleum Contamination Clean Up Criteria
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- 40 CFR 401 Effluent Limitation Guidelines

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SPILL PLAN

PURPOSE:

Prevent or reduce the discharge of pollutants to stormwater resulting from petroleum products or other materials.

GENERAL APPROACH:

Owners and operators of facilities that store, process, or refine oil or oil products may be required by federal law (40 CFR 112) to develop and implement a Spill Prevention Control and Countermeasure (SPCC) Plan. Emergency spill cleanup plans should include the following information:

- A description of the facility including the owner's name and address, the nature of the facility activity, and at the general types and quantities of chemicals stored at the facility.
- A site plan showing the location of storage areas for chemicals, the location of storm drains, site drainage patterns, fire water source locations, and the location and description of any devices used to contain spills, such as positive shut-off control valves.
- Notification procedures to be implemented in the event of a spill, such as key company personnel and local, state, and federal agencies.
- Instructions regarding spill containment and cleanup procedures.
- Designated personnel with overall spill response cleanup responsibility.

APPROACH TO EXISTING FACILITY ACTIVITIES:

Operational Considerations

- Post a summary of the plan at appropriate site locations, identifying the spill cleanup coordinators, location of cleanup equipment, and phone numbers of regulatory agencies to be contacted in the event of a spill.
- Maintain an inventory of appropriate cleanup materials on-site and strategically deploy cleanup materials based on the type and quantities of chemicals present.
- Make absorbents readily available in fueling areas.
- Label spill kit containers.

Contingency Response

- Perform the following notifications in the event of a spill:
 - o Fire Department
 - o Local Health Department
 - o State Office of Emergency Services
 - o National Response Center – if spill exceeds reportable quantity (RQ)
- Containment and cleanup of spills shall begin immediately.

TARGETED ACTIVITIES

- Aircraft/Vehicle/Equipment Deicing
- Aircraft/Vehicle/Equipment Fueling
- Aircraft Lavatory Service
- Aircraft/Vehicle/Equipment Washing
- Cargo Handling
- Fuel/Chemical Storage
- Pesticide/Herbicide Use
- Runway Deicing

SIGNIFICANT MATERIALS

- Lavatory Chemicals and Waste
- Fuel
- Oil and Grease
- Solvents/Cleaning Solutions
- Pesticides/Herbicides/Fertilizers
- Battery Acid
- Antifreeze
- Deicing Fluid

KEY APPROACHES

- Implement SPCC (if required)
- SPCC implementation training
- Immediate containment/cleanup of spills
- Availability of spill response equipment/materials
- Required agency notification

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SPILL PLAN

Inspection and Training

- Provide formal training in plan execution to key personnel, with additional training for first responder level personnel (29 CFR 1910.120). All employees should have basic knowledge of spill control procedures.

RELEVANT RULES AND REGULATIONS:

- Rule 62-621.300 Florida Administrative Code (FAC) – NPDES Generic Permits
- Subsection 62-770.160(1) of the Florida Administrative Code – Petroleum Contamination Clean Up Criteria
- 40 CFR 261 – Resource Conservation Act (RCRA) – hazardous wastes
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STORMWATER POLLUTION PREVENTION TRAINING AND EDUCATION

PURPOSE:

Prevent or reduce the discharge of pollutants to stormwater through implementing an educational program targeting employees, contractors, vendors, and the public.

TARGETED ACTIVITIES

- All Activities with Potential to Impact Stormwater

APPROACH TO FUTURE FACILITIES AND UPGRADES:

Design of New Facilities and Existing Facility Upgrades

- Work early on with design and construction engineers, and local stormwater authorities to incorporate proactive stormwater management features into projects, such as decreased impervious areas, infiltration BMPs, biofilters, oil/water separators, etc.
- Inform all construction contractors of their responsibility to comply with adopted BMPs and with regulations prohibiting cross connections between sanitary sewers and storm drains. Provide contractors subcontractors with copies of relevant BMPs during specification and bidding phases.

SIGNIFICANT MATERIALS

- Oil and Grease
- Vehicle Fluids
- Fuel
- Solvents/Cleaning Solutions
- Battery Acid
- Pesticides/Herbicides/Fertilizers
- Paint
- Metals
- Dumpster Wastes
- Sediment
- Landscape Waste
- Floatables
- Lavatory Chemicals and Waste
- Runway Rubber Waste
- Other Miscellaneous Chemicals

APPROACH TO EXISTING FACILITY ACTIVITIES:

Contingency Response

- Provide adequate implementation training for facilities with a Spill Prevention Control and Countermeasure (SPCC) Plan.
- Adequately train employees in the use of spill response equipment and materials.

KEY APPROACHES

- Perform inspections and enforcement
- Provide training for employees
- Promote education of vendors/public
- Show Storm Water Training Video to employees

Inspection and Training

- Perform and document frequent inspections of work areas, waste storage facilities, maintenance areas, and contractor projects to examine compliance with BMPs. Follow up with additional training or enforcement as required. Incorporate inspection findings into subsequent training efforts.
- Design stormwater pollution education programs to contain the following elements:
 - Promote the proper storage, use, and disposal of landscape maintenance chemicals and other potentially harmful chemicals.
 - Promote the use of safer alternative products such as: short-lived pesticides, non-chlorinated solvents, water-based paints, non-aerosol products.
 - Encourage the use of “dry” washing processes for aircraft, vehicles, and equipment.

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STORMWATER POLLUTION PREVENTION TRAINING AND EDUCATION

Inspection and Training (Continued)

- Design stormwater pollution education programs to contain the following elements:
 - Encourage efficient and safe housekeeping practices in industrial activity areas.
 - Increase awareness of the detrimental environmental impacts that results when fuel, antifreeze, pesticides, lubricants, detergents, paints and other wastes are dumped onto the ground or into storm drains.
 - Promote source reduction and recycling of waste materials.
 - Increase awareness of possible penalties and fines associated with discharge of pollutants into storm drains.
 - Increase awareness of what is and what is not allowed in storm drains. Provide a mechanism for violations to be reported.
 - Hold annual training workshops.
 - Provide new employee training.

RELEVANT RULES AND REGULATIONS:

- Rule 62-621.300 Florida Administrative Code (FAC) – NPDES Generic Permits
- Subsection 62-770.160(1) of the Florida Administrative Code – Petroleum Contamination Clean Up Criteria
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WASTE/GARBAGE COLLECTION, STORAGE, AND DISPOSAL

PURPOSE:

Prevent or reduce the discharge of pollutants to stormwater from waste storage and disposal by tracking waste generation, storage, and proper disposal; reducing waste generation and disposal through source reduction, re-use, and recycling; and preventing run-on and runoff from waste management areas.

APPROACH TO FUTURE FACILITIES AND UPGRADES:

Design of New Facilities and Existing Facility Upgrades

- Avoid the following characteristics when examining candidate sites for storing wastes:
 - Excessive slope
 - High water table
 - Locations near storm drain inlets
 - Locations near public access areas
- Waste handling and storage areas should be covered, if possible.
- Develop standardized guidelines for the management of stormwater that collects in secondary containment areas.
- Incorporate sanitary sewer drains into bermed, outdoor, non-hazardous waste storage areas, if approved by the local wastewater treatment agencies/regulations.
- Provide contained (and covered, if possible) area for hazardous waste collection sites.

APPROACH TO EXISTING FACILITY ACTIVITIES:

Operational Considerations

Good Housekeeping

- Perform regular housekeeping to maintain waste storage areas in a clean and orderly condition.
- Recycle materials whenever possible.
- Inspect waste management areas for spills and waste management containers for leaks.
- Ensure that sediments and wastes are prevented from being washed, leached, or otherwise carried off-site.
- Completely drain containers (e.g., quart oil cans) prior to disposal in trash receptacles.
- Eliminate waste collection piles (i.e., “boneyards”).
- Schedule waste pickup as frequently as necessary to keep storage of waste to a minimum and to avoid overloaded/overfilled disposal containers.
- Minimize spills and fugitive losses such as dust or mist from loading areas.
- Maintain a minimal inventory of required chemicals to reduce the magnitude of potential spills and limit waste generation.
- Track waste generation:
 - Characterize waste streams
 - Evaluate the process generating the waste for pollution prevention opportunities.

TARGETED ACTIVITIES

- Aircraft/Vehicle/Equipment Maintenance
- Aircraft/Vehicle/Equipment Painting or Stripping
- Fuel/Chemical Storage
- Garbage Collection

SIGNIFICANT MATERIALS

- Oil and Grease
- Vehicle Fluids
- Solvents/Cleaning Solutions
- Dumpster Wastes

KEY APPROACHES

- Cover waste storage areas
- Recycle materials
- Regularly inspect and clean waste storage areas
- Berm waste storage areas to prevent contact with run-on or runoff
- Perform dumpster cleaning in designated areas
- Properly dispose of all fluids

FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT

WASTE/GARBAGE COLLECTION, STORAGE, AND DISPOSAL

- Maintain accurate information on waste streams using: manifests, bills of lading, biennial reports, permits, environmental audits, SARA Title III reports, emission reports, Material Safety Data sheets (MSDS), NPDES discharge monitoring reports, inventory reports, data on chemical spills, and emissions data.
- Find substitutes for harmful chemicals.
- Properly dispose of unusable chemical inventory.

Physical Site Usage

- Segregate and separate wastes.
- Avoid locating waste handling and storage in areas with storm drain inlets/catch basins.
- Locate waste storage areas beneath existing cover, if possible.

Structural Controls

- Enclose or berm waste storage areas, if possible, to prevent contact with run-on or runoff.

Garbage Collection Areas

- Design facilities to provide shelter and secondary containment for dumpsters.
- Use covered dumpsters and keep them closed and locked.
- Use only dumpsters with plugged drain holes to prevent leaks from waste materials.
- Do not dispose of liquid wastes into dumpsters. Completely drain liquid waste containers prior to disposal.
- Perform dumpster cleaning in designated areas that are bermed to contain wash water for a subsequent disposal or discharge to the sanitary sewer. Dispose of or recycle all fluids collected.

Contingency Response

- Maintain a well stocked spill kit in locations where spills are likely to occur.
- Equip waste transport vehicles with spill containment equipment.

Inspection and Training

- Provide employee training for spill response and prevention, stormwater pollution prevention education, right-to-know awareness training, and hazardous materials management.
- Perform and document periodic inspections of hazardous and non-hazardous waste storage areas. Inspection items should include the following:
 - Check containers for external corrosion and structural failure.
 - Check for spills and overfills due to operator failure.
 - Check for failure of piping system (pipes, pumps, flanges, couplings, hoses, and valves).
 - Check for leaks or spills during pumping of liquids or gases.
 - Visually inspect new tanks or containers for loose fittings, poor welds, and improper or poorly fitted gaskets.
 - Inspect tank foundations and storage area coatings.
 - Inspect dumpster areas for signs of leakage.

FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT

WASTE/GARBAGE COLLECTION, STORAGE, AND DISPOSAL

RELEVANT RULES AND REGULATIONS:

- Rule 62-621.300 Florida Administrative Code (FAC) – NPDES Generic Permits
- Subsection 62-770.160(1) of the Florida Administrative Code – Petroleum Contamination Clean Up Criteria
- 40 CFR 261 – Resource Conservation Act (RCRA) – hazardous wastes
- 42 CFR 103 – Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – hazardous substances
- 40 CFR 110.3 Discharge of Oil
- 40 CFR Oil Pollution Prevention (SPCC/OPA Plans)
- 40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
- 40 CFR 122-124 NPDES Regulations for Storm Water Discharges
- 40 CFR 401 Effluent Limitation Guidelines
- 40 CFR 260 et. seq. Identification and Listing of Hazardous Waste

FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT

Food Handling and Restaurant Waste Water

PURPOSE:

Prevent or reduce discharge of pollutants to stormwater drains from food handling, kitchen cleaning activities or grease handling.

TARGETED ACTIVITIES

- Food Handling / Cleaning / Cooking Waste Handling
- Oil/Grease Handling and Storage

APPROACH:

Good Housekeeping

- Pour wash water into a utility sink or curbed cleaning facility with a floor drain, do not pour into parking lots, alley, sidewalk or street.
- Use dry methods for spill cleanup, do not hose down spills.
- Clean floor mats, filters and garbage cans in a utility sink or curbed cleaning facility with a drain.
- Recycle grease and oil, do not pour it into sinks, floor drains or onto a parking lot or street.
- Keep dumpster area clean and lid closed, do not fill with liquid waste or hose it out.

Maintenance

- Ensure solidified grease is not present around grease trap.
- Make sure storage areas and trash containers are free of cracks, leaks and spillage.

SIGNIFICANT MATERIALS

- Oil
- Grease
- Cleaning Solutions

KEY APPROACHES

- Prevent oil/grease and cleaning byproducts from reaching stormwater drainage.
- Use spill control devices.
- Cleaning and disposal of oil and grease are performed in proper sinks or drain areas.
- Waste cooking byproducts are either stored or disposed of properly.

Inspection and Training

- Provide employee training for spill prevention and clean up, right-to-know awareness, hazardous materials management and stormwater pollution prevention.

RELEVANT RULES AND REGULATIONS:

- Rule 62-621.300 Florida Administrative Code (FAC) – NPDES Generic Permits
- Subsection 62-770.160(1) of the Florida Administrative Code – Petroleum Contamination Clean Up Criteria
- 40 CFR 261 – Resource Conservation Act (RCRA) – hazardous wastes
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- 40 CFR 401 Effluent Limitation Guidelines

Appendix I
OWS Inspection Form





Fort Lauderdale-Hollywood International Airport

OIL WATER SEPARATOR VISUAL INSPECTION FORM

INSTRUCTIONS: Please check the boxes that apply and/or fill in the blanks for each outfall structure)

Name _____ Date _____

Time: _____ Weather: sunny clear cloudy light rain heavy rain

Inspector's Signature: _____

OWS #1 - North of terminal ramp, SE of Runway 28R and west of Perimeter Road



Water level
 below grate at grate over grate

Structure has/is: no discharge discharge/flowing
 dry standing water overflowing

no cracks cracks silted in trash
 obstructed with vegetation

Water has:
 soap suds oil film/sheen clear



cloudy foam on surface algae odor _____
 color _____ other _____

Near/around structure: healthy/green plants dead plants no plants

Press the test button on the monitoring system
 test is working not working

Test is not working
 Notified Maintenance Supervisor _____

Print Name

Overall OWS Condition

good poor & requires maintenance

Comments: _____

FLL Oil Water Separator Inspection Form

OWS #2 - NW of Terminal 2 near Taxiway T3



Water level

- below grate at grate over grate

Press the test button on the monitoring system

- test is working not working

Structure has/is: no discharge discharge/flowing

- dry standing water overflowing

- no cracks cracks silted in trash

- obstructed with vegetation

Water has: soap suds oil film/sheen clear

- cloudy foam on surface

- algae odor _____ color _____

other _____

Near/around structure: healthy/green plants dead

- plants no plants

Overall OWS Condition

- good poor & requires maintenance

Take a long stick (8 feet) through the grate and measure the sludge/soil. Any resistance through the bottom indicates sludge build up. Service the OWS if the build up is 8 inches deep.

Stain on stick is _____ inches

Comments: _____

FLL Oil Water Separator Inspection Form

OWS #3 - Near Taxiway T5



Structure has/is:

- no discharge discharge/flowing dry
- standing water overflowing
- no cracks cracks silted in
- trash obstructed with vegetation

Water has: soap suds oil film/sheen clear

cloudy foam on surface algae

odor _____ color _____

other _____

Near/around structure:

- healthy/green plants dead plants no plants

Concrete slough has:

- silt/sediment black staining dry
- flowing

Wildlife observed: fish turtles birds

other _____



Take a long stick (8 feet) through the grate and measure the sludge/soil. Any resistance through the bottom indicates sludge build up. Service the OWS if the build up is 8 inches deep.

Overall OWS Condition

- good poor & requires maintenance

Comments: _____

FLL Oil Water Separator Inspection Form

OWS #5 - West of Terminal 3 near Taxiway T7



Structure has/is: no discharge discharge/flowing
 dry standing water overflowing no cracks
 cracks silted in trash obstructed with vegetation

Water has: soap suds oil film/sheen clear
 cloudy foam on surface algae
 odor _____ color _____
 other _____



Near/around structure: healthy/green plants
 dead plants no plants

Wildlife observed: fish turtles
 birds Other _____

Overall OWS Condition

good poor & requires maintenance

Comments: _____

FLL Oil Water Separator Inspection Form

OWS #7 – Maintenance Facility



Press the test button on the OWS monitoring system (located on building wall)

- test is working
- not working

Test is not working

- Notified Maintenance Supervisor _____

Print Name

Take the cover off.

- dry
- standing water
- standing water with oil sheet
- not overflowing
- overflowing



Overall OWS Condition

- good
- poor & requires maintenance

Comments: _____

