

2020

TRAINING MANUAL

2020 STORMWATER POLLUTION PREVENTION PLAN
VIRTUAL TRAINING WORKSHOP

Palm Beach International &
Palm Beach County General
Aviation Airports

PBI ▪ LNA ▪ F45 ▪ PHK

Prepared For:

Palm Beach County Department of Airports
846 Palm Beach International Airport
Palm Beach, Florida 33406

DECEMBER 2020

PBI
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PALM BEACH COUNTY INTERNATIONAL AND GENERAL AVIATION AIRPORTS PBI ▪ LNA ▪ F45 ▪ PHK

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PALM BEACH COUNTY, FLORIDA

Prepared For:

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Palm Beach, Florida 33406



DECEMBER 2020

Prepared By:





PREFACE

The Palm Beach County Department of Airports (PBDOA) has contracted AECOM and Cyriacks Environmental Consulting Services, Inc. (CECOS) to conduct the Stormwater Pollution Prevention Plan (SWPPP) Annual Training Workshop in order to comply with the Airport's National Pollutant Discharge Elimination System (NPDES) permit requirements. This annual training is a benefit provided by the Airport to its tenants in order to ensure SWPPP compliance and to recertify Airport staff and tenants under the Airport's SWPPP program.

Historically, this training has been conducted annually at three locations: North Palm Beach County General Aviation (F45) Airport, Palm Beach County Park (LNA) Airport and Palm Beach International (PBI) Airport. However, due to COVID-19, the training was conducted virtually via CISCO Web Ex. Three (3) virtual training workshops were conducted from December 8th through December 10th, 2020 for all Palm Beach County Airports.

Attendance was recorded via Cisco Web Ex. Testing was conducted at the end of each training in Web Ex or hard copy tests were issued and scored. The attendance and test results were recorded and compiled in this document.

Enclosed is a copy of the training materials provided at the 2020 Annual SWPPP Training Workshop.



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- 1 SWPPP Virtual Training Workshop Presentation Slides
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SWPPP Virtual Training Workshop

Presentation Slides

December 8, 2020 at 1:30 p.m.

December 9, 2020 at 1:30 p.m.

December 10, 2020 at 9:30 a.m.



2020 Stormwater Pollution Prevention Plan Virtual Training Workshop



Palm Beach County Department of Airports
(PBI, LNA, F45, PHK)



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Housekeeping

- Due to COVID-19, SWPPP training went virtual. We would appreciate any feedback.
- General Presentation is for all airports. If you have airport specific questions, please ask during the Q&A.
- Participation is documented via your attendance and test completion today.
- Training Certification will be provided based on attendance and receipt of test documentation.
- Certificates will be emailed along with a link to obtain a copy of the presentation.





Presented By:

**Cyriacks Environmental Consulting Services, Inc.
(CECOS)**

**Wendy Cyriacks
Tim Tedesco (Presenter)**

(954) 571-0290

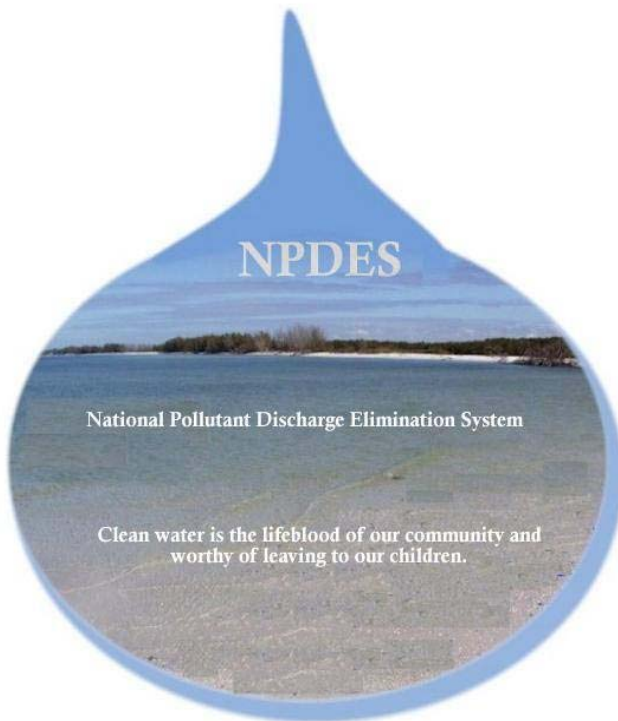
SWPPP@cecosenvironmental.com



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NPDES Multi-Sector Generic Permit (MSGP)



NPDES MSGP - “stormwater discharges associated with Industrial Activity” per 40 CFR 122.26(b)(14)

- “industrial activity” = “point source”
- Includes 11 categories including chemical, mining, manufacturing, land application/disposal, recycling, *transportation*, treatment plants, construction and light industry

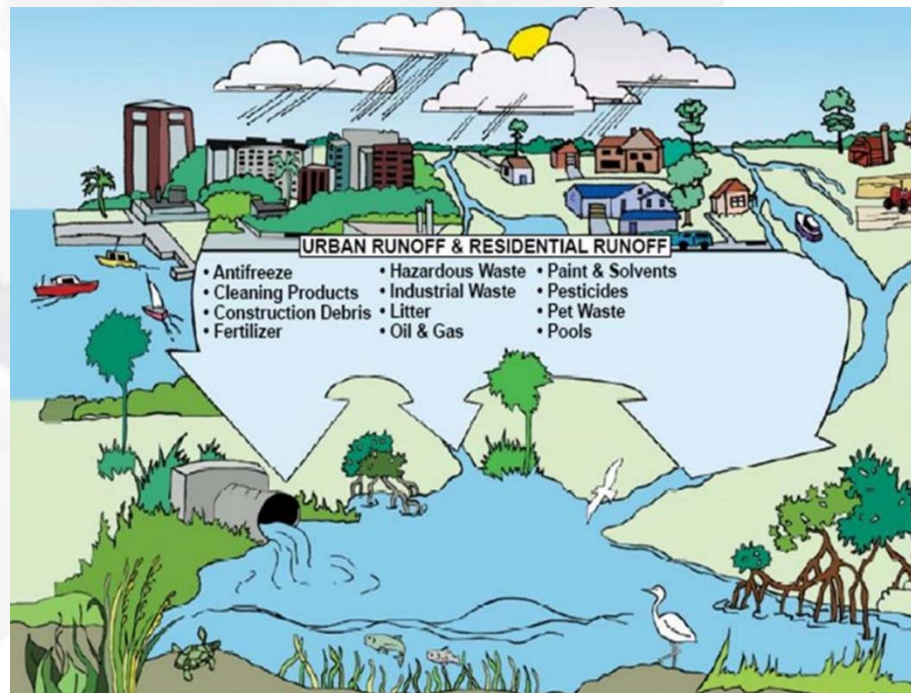


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What is stormwater runoff?

Water from rain that does not immediately infiltrate into the ground and flows over impervious areas accumulating pollutants and sediments. Discharging into our waterways.



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NPDES MSGP Coverage

What is Covered under the Permit?

Stormwater runoff from Airport facilities

- Runways and taxiways
- Parking areas
- Building and hangar roofs

What is Not Covered under the Permit?

- Non-stormwater runoff
 - Vehicle, Equipment & Aircraft washing
 - Fire fighting activities and fire hydrant flushing
 - A/C condensate, lawn watering, potable line flushing
- Use of glycol based deicing fluids that exceeds > 100,000 gallons/year.
- Use of urea that exceeds > 10 tons/year.





Who is covered by the DOA MSGP?

The DOA MSGP is for airport operations only:

- DOA Facilities
- Aircraft and vehicle servicing, repairing, maintaining
- Equipment cleaning and maintenance
 - Mechanical repairs, Painting, Fueling, Lubrication
- Deicing/anti-icing operations



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Who is covered by the DOA MSGP?

Some Tenants require a separate NPDES permit:

- Operations covered by a separate MSGP
 - Petroleum bulk stations (e.g., fuel farms)
 - Motor Freight Transportation
 - Miscellaneous Manufacturing
 - Fabricated Metal Products (e.g., electroplating)
- Aircraft and vehicle washwaters
- Land disturbance greater than 1 acre



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Why are you here?

Airport's NPDES Multi-Sector Generic Permit (MSGP) for Industrial Activities at Airports requires:

- SWPPP
- Annual Training Workshops
- Annual Inspections



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What is a SWPPP?

A **Storm Water Pollution Prevention Plan (SWPPP)** is a site-specific document that:

- Identifies potential sources of stormwater pollution,
- Describes control measures to reduce/eliminate pollutants in discharges,
- Identifies procedures to comply with the NPDES permit.



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What is included the SWPPP?

1. Organization Plan
2. Airport Site and Drainage Maps
3. Potential Stormwater Pollutant Sources
4. Best Management Practices (BMPs)
5. Monitoring and Inspections
6. Record keeping



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What are we going to discuss?

Training Agenda

1. SWPPP Goals
2. Your role and importance of your participation
3. SWPPP Components
4. Who to Call?
5. Know your Airport
6. Best Management Practices (BMPs)





What is our goal today?

- **Discuss** the Airport's SWPPP
- **Income** you of the Airport's spill containment protocol
- **Promote** airport/tenant ownership of the SWPPP and Spill Prevention Control and Countermeasures (SPCC) Plan
- **Share** information!



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Tenant/Employee Role

- **Integrate** employee/tenant feedback into training and BMP implementation.
- Employees/ tenants must **know how** and to whom they can **report** problems and solutions.
- **Encourage** employee/tenants to become **active players** in pollution prevention.





Storm Water Team Leader

SWPPP Manager

Javier (Javi) Gämboa-Villamil

(561) 656-5989

jgamboa@pbia.org

The SWPPP Team Leader and/or her authorized representative is responsible for maintaining and implementing the SWPPP!



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Know your Facility!

- **Boundary of your lease;**
- Terminal Areas;
- FBOs;
- Runways, taxiways, & aprons;
- Vehicle parking lots;
- Hangars & buildings;
- Fuel farms and tanks;
- Waste collection areas;
- **Nearest drainage structure of your lease;**
- **How does the water flow;**
- What do if there is a spill.



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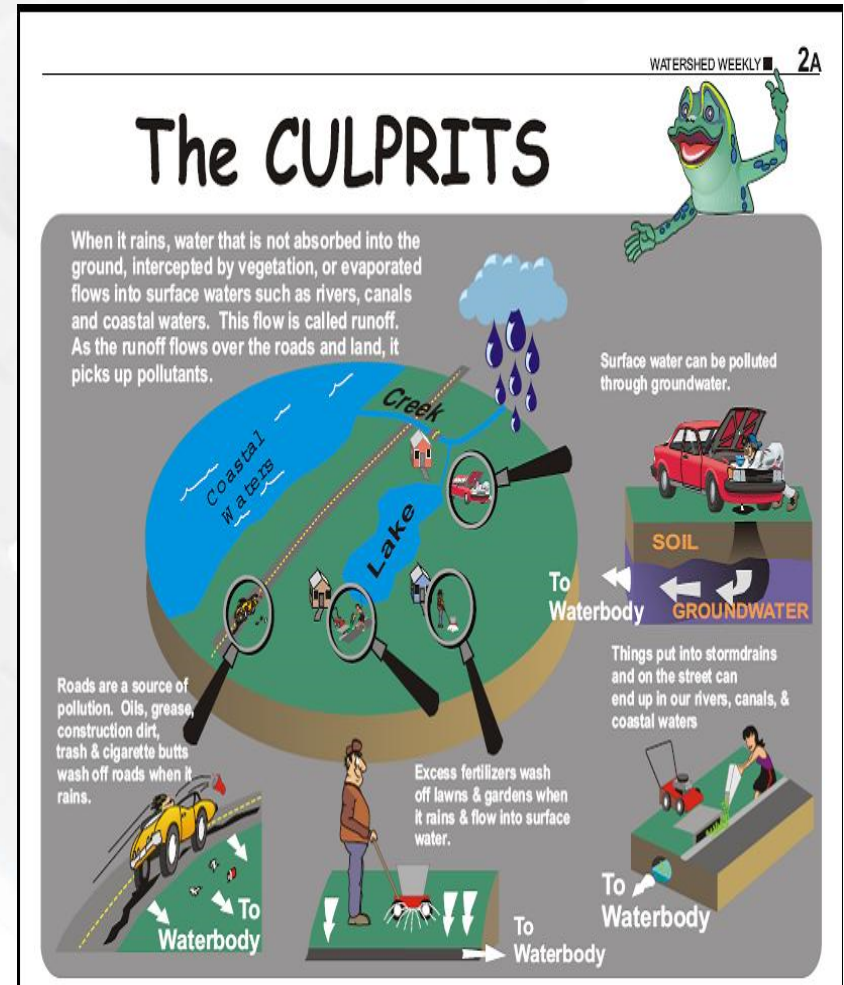
Airport Layout: Drainage

- Ponds, ditches, swales, pipes;
- Stormwater flow direction.
 - Review SWPPP Appendix E to identify nearest inlet to your Facility
- Identifies commingling areas.
- Divides airport into sub-basins.
- Identify stormwater structures and their connection to each other.
- Identify the connection of stormwater structures with offsite drainage



Potential Sources of Pollutants

- Fuel farms – **Fuel**
- Airport warehouse – **fertilizers, pesticide, paint, herbicide, cleaners, etc.**
- FBOs – **oil, degreaser, paint, fuel, solvents, etc.**
- Aircraft/vehicle traffic – **oil, rubber, etc.**
- Taxiways & grassy areas – **dust and landscape waste**
- Wildlife – **animal waste**



What is a BMP?

Best Management Pactices (BMPs) are programs, practices, techniques, processes, measures, and devices that control, prevent, remove, or reduce water pollution.

- *Structural*
- *Non-Structural*



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General Stormwater BMPs

- Minimize use of contaminants
- Source control
- Minimize exposure
- **Maximize infiltration**
- Inspect/maintain structural measures (ditch, pond, OWS)
- Spill prevention and control
- Materials management and storage



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BMPs: Structural

- Ditches and Swales
- **Retention/Detention** ponds
- **Oil-water separators**
- Buffer zones/vegetative stabilization
- Dikes, check dams, weirs
- **Riprap**
- Berms



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BMPs: Non-Structural Housekeeping and Procedural

- **Clean or sweep daily.**
- Provide ample **uncluttered work space.**
- **Keep walkways/passageways accessible.**
- Have a usable, up-to-date fire extinguisher.
- **Spill procedures & kits**
- Proper storage of significant materials



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Stormwater BMPs for Airport Activities

Airport BMP Areas

- Aircraft, Vehicle and Equipment **Maintenance Areas**
- Significant **Materials Storage**
- Pest Management and Landscaping Maintenance
- **Fire Fighting Foam Discharge**
- Aircraft, Vehicle, Equipment Painting and Storage
- Waste and Material Management
- Aircraft, Vehicle and Equipment **Fueling**

Airport BMPs

- Dust Control
- **Spill Plan**
- Erosion and Sediment Control
- **Oil/Water Separator**
- Runway Rubber Removal
- **SWPPP Training** and Education
- **Minimize outdoor storage** of fuels, oils, wastes, solvents, etc.
- **Inspections**





BMPs: Aircraft, Vehicle and Equipment Maintenance Areas

- Use drip pans.
- Drain and properly dispose of all fluids and batteries from aircraft, vehicles, and equipment.
- Recycle/properly dispose of grease, oil, brake fluid, cleaning solutions, hydraulic fluid, batteries, transmission fluid, filters, etc.
- **Conduct maintenance activities indoors or under covered areas.**
- Use designated areas to clean equipment (parts washer).
- **Regularly clean catch basins.**
- Inspect, clean, and maintain sump and oil/water separators.
- **Keep hazardous waste containers covered.**
- Properly label hazardous materials.
- **Do not pour used/leftover materials into storm drains.**
- Clean shop floors.



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BMPs: Aircraft and Vehicle Maintenance



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BMPs: Significant Materials Storage

- Store materials in their original or approved containers .
- **Label all chemical containers.**
- **Store drums and containers on spill containment pallets.**
- **Protect all significant materials from rainfall, run-off, and wind dispersal.**
- **Maintain a spill response plan near the material or waste storage area.**
- Store like solvents, solutions together.
- Do not store bleach with oils or fuel.
- Maintain an up to date Safety Data Sheet binder.
- **Use fire proof storage cabinets.**
- **Keep hazardous waste containers covered.**
- **Properly dispose of used oil and fluids.**



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BMPs: Significant Materials Storage



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BMPs - Aircraft, Vehicle and Equipment Cleaning Areas

- Use “dry” washing and surface preparation techniques.
- Keep wash area clean and free of waste.
- **Collect stormwater runoff from cleaning area and provide treatment or recycling.**
- Include proper signage to prohibit the discharge of waste oils into the drains.
- Keep degreasing activities in a fully enclosed area.
- **Properly manage and dispose of cleaning/degreasing waste.**



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BMPs: Aircraft, Vehicle and Equipment Painting and Storage

- Use efficient paint equipment to reduce over spray waste.
- Use tarps, drip pans, or other spill control devices to prevent from entering stormwater drainage.
- **Waste paint, paint thinner and solvents should be disposed of properly or stored in cabinets away from stormwater drainage.**
- **Sanding should be performed inside in a well ventilated area.**
- Work areas should be clean and clear to prevent wind from carrying dust into stormwater drainage.



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BMPs: Waste Management

- Waste handling and storage areas should be covered.
- **Use covered dumpsters and keep them closed and locked.**
- Maintain waste storage areas in a clean and orderly condition.
- **Inspect waste management areas for spills and leaks.**
- Eliminate waste collection piles.
- Ensure that sediments and wastes are prevented from being washed, leached, or otherwise carried off-site.
- Schedule waste pickup frequently to avoid overloaded/overfilled disposal containers.
- Segregate and separate wastes.
- **Do not dispose of liquid wastes into dumpsters.**



BMPs: Litter Control

- Provide sufficient garbage receptacles, strategically placed.
- Anchor covered garbage receptacles outdoors.
- Make sure garbage cans do not leak.
- Implement a recycling program.
- Provide recycling containers.

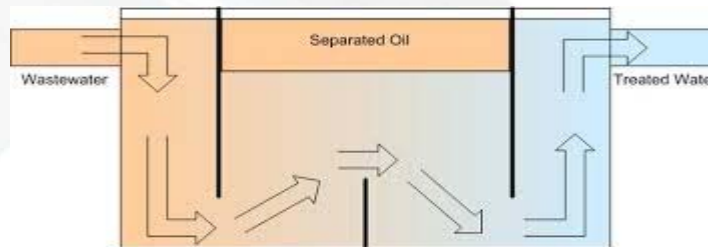


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BMP: Oil/Water Separator

- Separators must be inspected and cleaned frequently to be effective stormwater quality controls.
- Oil absorbent pads are to be replaced as needed, but should 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 all regulatory requirements and replaced with clean water to prevent oil carry-over through the outlet.



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BMP: Lavatory Waste Management

- Only discharge lavatory waste to sanitary sewer connections at triturator facilities.
- Drain the aircraft connecting hose as completely as possible into the storage tank after servicing an aircraft.
- Use only surfactants and disinfectants approved for discharge to the sanitary sewer system.
- **Utilize buckets or pans to capture drippage from aircraft lavatory access fittings.**
- Carry absorbent and other containment equipment on the lavatory service equipment.



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BMP: Outdoor Waste and Material Handling

- Use seals or door skirts between vehicles and structures to prevent material exposure to rainfall.
- Contain and absorb leaks during transfers and spillage from hose disconnections; dispose of residue properly.
- **Avoid transferring or using materials in close proximity to storm drain inlets.**
- Use **drip pans** to contain small releases.
- **Transfer and use liquids** only in paved areas.
- Provide contractors and haulers with copies of pertinent BMPs.



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BMPs: Pest Management and Landscape Maintenance

- 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.
- Minimize the use of pesticides, herbicides and fertilizers.
- Properly dispose of landscape waste, wash water, sweepings and sediments.
- **Select landscaping plants that require little maintenance and/or pest control.**



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BMPs: Landscape Management

- For sandy soils, **apply fertilizer half the recommended rate but 2x as often.**
- Do not over water!
- **Leave grass clippings on turf areas.**
- Compost leaves.
- Use Integrated Pest Management.
- **Promptly clean spills on impervious surfaces.**



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BMPs: Sediment and Erosion Control

- Leave as much plant cover as possible.
- Sod immediately.
- Divert flow to grassy areas.
- Install and inspect silt screens.
- Locate staging areas in disturbed areas.
- Provide drainage ways for increased runoff.



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BMPs: Dust Control

- Do not expose large areas of soil during drought conditions.
- **Leave buffer/planted areas between graded areas.**
- Plant areas not subject to traffic.
- **Mulch areas to control dust.**
- Minimize impact by using tarps and other surface treatments.
- **Install temporary or permanent surface stabilization measures after completing land grading.**
- Reduce speed limits on roads that generate dust.



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BMPs: Parking Areas

- Collect all waste, liquid and solid, for appropriate disposal.
- **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 storm drains or off-site migration points are protected.



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BMP: Runway Rubber Removal

- Place devices that will capture rubber and dirt particulates over storm drain culverts.
- Use manual or mechanical cleaning methods.



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BMPs: Aircraft, Vehicle and Equipment Fueling

- Use absorbent materials and spot cleaning for small spills.
- Properly dispose of any fuel spills and leaks.
- **Use pigs/mats over catch basins during fueling activity.**
- Provide curbing or posts around fuel pumps to prevent collisions from vehicles.
- Store fuel drums indoors, when possible.
- Employ secondary containment or cover when transferring fuel from a fuel truck to a fuel tank.
- Avoid topping off fuel tanks.
- **Instruct operators how to use and dispose of absorbent material.**
- 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.
- Inspect, clean and maintain sumps and oil/water separators at appropriate intervals.
- Automatic shut-off mechanisms should be in place on fuel tankers.



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BMPs: Aircraft, Vehicle and Equipment Fueling



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BMPs: Preflight Fuel Sample

- Pour sump fuel in waste fuel container.
- Sump fuel containers are provided.
- Use fuel testers, which separate out all non fuel contaminants.
- Provide educational brochures on sump fuel.



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BMP: Spill Plan

- Spill Prevention Control and Countermeasures Plan (SPCC) are required for facilities:
 - Storage **capacity** greater than 1,320 gallons of oil, petroleum or oil based material
 - May be inclusive of several facilities which may not be adjacent to one another



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BMP: Spill Plan

Spill plans should include the following:

- Description of the facility.
- **Site plan showing location of chemical storage areas, storm drains, site drainage patterns, fire extinguishing locations, and description of devices used to contain spills, (i.e. positive shut-off control valves).**
- **Notification procedures** to be implemented in the event of a spill.
- **Spill prevention, containment and cleanup procedures.**
- Designated personnel with spill response cleanup responsibility.
- **Annual training required for compliance with federal regulations.**



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BMP: Spill Kits

- Make spill clean up materials accessible — *fuel farms, FBOs, mobile fuel truck, vehicles, hangars, maintenance canopy*
- Replenish spill kit materials regularly.
- Evaluate the need/feasibility of retrofitting fuel trucks with vacuum pumps for spill response.



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Spill Procedures

What to do in a spill!

1. Identify and stop the source.
2. Contain the spill in the smallest area possible.
3. Establish “spill perimeter zone.”
4. Clean up spill and use absorbent material.
5. If the spill is too large to contain, place absorbent materials around nearest storm drain.
6. Notify the Proper Authority **FOR ANY SIZE SPILL** –
ALL AIRPORTS: PBI Communications Center (24/7) – ALL SPILLS
(561) 471-7420
LNA: Stellar Aviation – Aaron Klein
Office: (561) 656-9815 | Cell: (561) 445-7991
F45 & PHK: Signature Flight Support – Daniel Lyon
Office: (561) 626-9799 | Cell: (540) 354-8995
7. Complete spill report.*

** Spills over 25 Gallons requires the submittal of a Discharge Reporting Form to FDEP.*



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Spill Procedures: Continued



- IDENTIFY THE SOURCE AND STOP THE FLOW OF FUEL
 - Emergency shutoff valve, place container under source of leaking fuel, reconnect hoses, etc.
- CONTAIN SPILL
 - Spread absorbent materials (oil-dri, absorbent pads, pigs)
 - Set up absorbent materials around any nearby storm drains to protect from fuel entering stormwater system
- SET UP “PERIMETER ZONE”
 - Alert PBI Comm. Center
 - Clear the area of unnecessary personnel (only spill responders, fire-rescue, and operations personnel should be in area of spill)
 - Direct traffic away from area



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Summary of Spills (2019 – 2020)

- 13 spills were reported at PBLA in 2019 and four in 2020. One spill was also reported at LNA.
- Majority of spills were caused by human error such as overfilling fuel tanks, driver error, and improper hose connections.
- The remaining spills were caused by equipment malfunction such as faulty gauges, malfunctioning wing vents, and hose failures.



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Spill Prevention/Preparation

- **Human Error:**

- Enforce proper training procedures for fueling, spill response, and inspections
- Employees must be diligent and pay attention, do not leave trucks unattended, etc.
- Evaluate upgrading equipment to minimize spill potential (e.g., auto shut-off on dispensers, high level audio/visual alarms, reconfigure/enhance dispenser location/area, etc.)

- **Equipment Malfunction:**

- Regularly inspect equipment (daily inspection checklists) & routine maintenance
- Recommend logging routine inspections, can use SPCC inspection checklists to prepare inspection sheet
- Red-tag equipment and establish procedure for timely repair/disposal/replacement

Monthly Inspection Checklist

This inspection record must be completed *each month*. Provide further description and comments, if necessary, on a separate sheet of paper and attach to this sheet. *Any item that receives "yes" as an answer must be described and addressed immediately.

	Y*	N	Description & Comments		
Storage tanks					
Tank surfaces show signs of leakage					
Tanks are damaged, rusted or deteriorated					
Bolts, rivets, or seams are damaged					
Tank supports are deteriorated or buckled					
Tank foundations have eroded or settled					
Level gauges or alarms are inoperative					
Vents are obstructed					
Secondary containment is damaged or stained					
Water/product in interstice of double-walled tank					
Piping					
Valve seals, gaskets, or other appurtenances are leaking					
Pipelines or supports are damaged or deteriorated					
Joints, valves and other appurtenances are leaking					
Buried piping is exposed					
Loading/unloading and transfer equipment					
Connections are not capped or blank-flanged					
Secondary containment is damaged or stained					
Security					
Fencing, gates, or lighting is non-functional					
Pumps and valves are locked if not in use					
Response Equipment					
Response equipment inventory is complete					

Date: _____

Signature: _____



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Spill Prevention/Preparation

- Know your facility prior to conducting fuel activities, especially the location of ALL nearby **storm drains** and **spill kits**
- Proper spill kits on fuel trucks and fuel farms
 - Evaluate retrofitting fuel trucks with vacuum pump and small tank or a separate spill cart equipped with vacuum pump and two empty 55-gal drums for spills greater than 25 gallons, annual training on equipment use
- Fuel handlers/managers required to have annual spill training and an exercise.



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Spill Prevention/Preparation

- Maintain a list of environmental/remediation firms for large spills (vacuum trucks, tow companies, etc.)
 - FDEP 24-Hour Emergency Environmental/Remediation Contractors are listed in the following link:
https://floridadep.gov/sites/default/files/24%20Contractors%20list%20updated%209-19-2019_0.pdf
- First responders and/or crew members need to provide detailed site information (i.e., size and cause of spill, location, type of hazardous material, etc.) when communicating with the environmental/remediation firms so they are able to respond in a timely manner, and with the necessary equipment and supplies.



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Spills Happen...




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Spill Procedures

Discharge Reporting Form

- Spills over 25 gallons or when sheen present on surface water:
 - Call FDEP Emergency Response (800) 320-0519
 - Submit Discharge Reporting Form to FDEP

 **Discharge Reporting Form**
PLEASE PRINT OR TYPE

Instructions are on the reverse side. Please complete all applicable blanks.

1. Facility ID Number (if registered): _____ 2. Date of form completion: _____

3. General information
Facility name: _____
Facility Owner or Operator: _____ Telephone number: () _____ County: _____
Facility Contact Person: _____
Facility Mailing address: _____
Location of discharge (facility street address): _____
Latitude and Longitude of discharge (if known.): _____

4. Date of receipt of test results or discovery of confirmed discharge: _____ month/day/year 5. Estimated number of gallons discharged: _____

6. Discharge affected: ☐ Air ☐ Soil ☐ Ground water ☐ Drinking water well(s) ☐ Shoreline ☐ Surface water (water body name) _____

7. Method of discovery (check all that apply)
☐ Liquid detector (automatic or manual) ☐ Internal inspection ☐ Closure/Closure Assessment
☐ Vapor detector (automatic or manual) ☐ Inventory control ☐ Groundwater analytical samples
☐ Tightness test ☐ Monitoring wells ☐ Soil analytical tests or samples
☐ Pressure test ☐ Automatic tank gauging ☐ Visual observation
☐ Statistical Inventory Reconciliation ☐ Manual tank gauging ☐ Other _____

8. Type of regulated substance discharged: (check one)
☐ Unknown ☐ Used/waste oil ☐ Jet fuel ☐ Heating oil ☐ New/lube oil
☐ Gasoline ☐ Aviation gas ☐ Diesel ☐ Kerosene ☐ Mineral acid
☐ Hazardous substance - includes CERCLA substances from USTs above reportable quantities, pesticides, ammonia, chlorine, and derivatives (write in name or Chemical Abstract Service (CAS) number) _____
☐ Other _____

9. Discharge originated from as: (check all that apply)
☐ Dispensing system ☐ Pipe ☐ Barge ☐ Pipeline ☐ Vehicle
☐ Tank ☐ Fitting ☐ Tanker ship ☐ Railroad tankcar ☐ Airplane
☐ Unknown ☐ Valve failure ☐ Other Vessel ☐ Tank truck ☐ Drum
☐ Other _____

10. Cause of the discharge: (check all that apply)
☐ Loose connection ☐ Puncture ☐ Spill ☐ Collision ☐ Corrosion
☐ Fire/explosion ☐ Overfill ☐ Human error ☐ Vehicle Accident ☐ Installation failure
☐ Other _____

11. Actions taken in response to the discharge: _____

12. Comments: _____

13. Agencies notified (as applicable):
☐ State Warning Point (904) 488-1320 ☐ National Response Center 1-800-424-8802 ☐ Fire Department ☐ County Tanks Program ☐ DEP (district/person) _____

14. To the best of my knowledge and belief all information submitted on this form is true, accurate, and complete.

Printed Name of Owner, Operator or Authorized Representative _____ Signature of Owner, Operator or Authorized Representative: _____



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FDEP Spill Response Contacts

FDEP Office Hours: M-F; 8am – 5pm

FDEP Office Phone: (561) 681-6767

Kenton Brown, Professional Responder

Cell: (954) 658-8020



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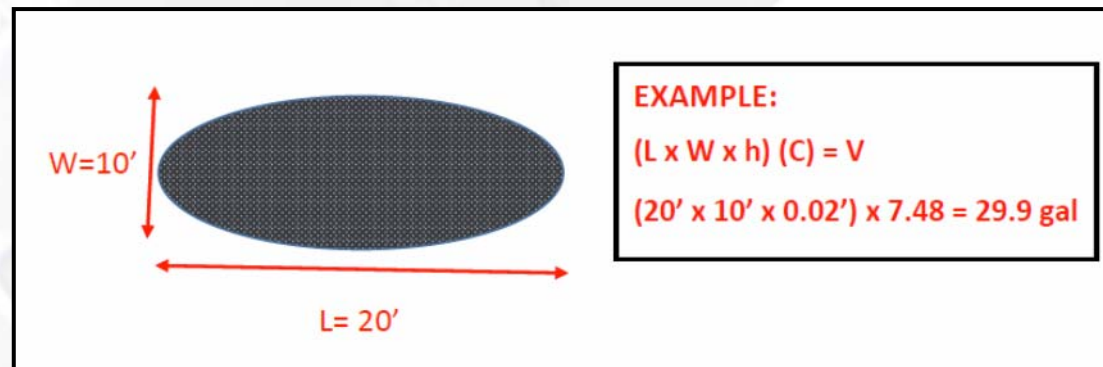


Calculating Spill Volume

Approximate Volume Spilled (in gallons)

(V) = Area (A) (ft²) x height (h) (ft) x Conversion (C=7.48).

- Area (A) = length x width (measured on the ground)
- height (h) varies for flat, impervious surfaces use 0.02 – 0.04'



- If the spill has pooled and is measurable (i.e., along containment berm), a measurement will be taken to determine the height of the spill.
- If spill occurs on a pervious surface where infiltration can occur (sand, soil), the depth of the spill can be substituted for height.



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BMP: SWPPP Training and Education

- **Adequately train employees in the use of spill response equipment and materials.**
- SWPPP education programs should contain the following elements:
 - Promote the proper storage, use and disposal of potentially harmful chemicals.
 - Promote the use of safer alternative products such as: short-lived pesticides, non-chlorinated solvents, water-based paints, non-aerosol products.
 - **Increase awareness of the detrimental environmental impacts that results when harmful chemicals and wastes are dumped onto the ground or into storm drains.**
 - Increase awareness of possible penalties and fines associated with discharge of pollutants into storm drains.



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Monitoring and Inspections

- Non-stormwater discharge
- Stormwater structures
- Facilities – *fuel farms, parking areas, waste collection areas, etc.*
- Industrial Tenants
- Fuel Tanks
- Security



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Visual Inspections: Non-Stormwater Discharge Form



Palm Beach County International Airport
Stormwater Pollution Prevention Plan

ANNUAL NON-STORMWATER DISCHARGE COMPLIANCE INSPECTION FORM

Name _____ Date _____

Test Type: Visual Inspection

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 – East of East/North Pump House Station



☐ no discharge ☐ has discharge ☐ other _____

Water has/is: ☐ soap suds ☐ oil film/sheen ☐ clear ☐ cloudy

Potential discharge source: _____

Comments: _____

INSPECTOR CERTIFICATION

I, _____ print full name certify under penalty of law that I completed these visual inspections to the best of my knowledge and that 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: _____

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Visual Inspections: Stormwater Structures

- Is the pond choked with water plants?
- Are there dead fish?
- Is the water green?
- Is the pipe cracked?
- Is there silt in the pipe or ditch?
- Are there dying plants around the structure?
- Integrity and condition

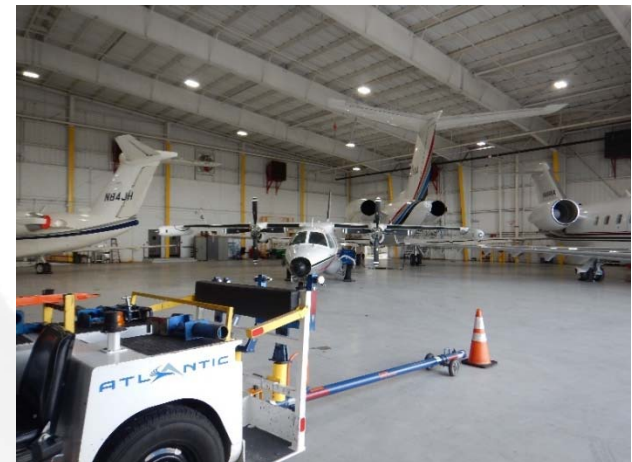


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Inspections: Industrial Tenants

- **Cleanliness**
- Floor drain/storm drain
- Safety
- **Waste management**
- **Record keeping**
- Structural BMPs
- Storage
- Secondary containment
- Significant materials use



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Facility Inspections: Fuel Farm

- Double walled tank
- Concrete pad
- Concrete wall for containment



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Facility Inspections: Fuel Farm

- Emergency procedures posted
- Bollards to protect tank
- Spill kit & fire extinguisher
- Fence and padlock for security



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Facility Inspections: Fuel Tanks*

- **Daily**
 - Sump Fuel Check
 - Check Hoses for Damages
 - Fuel receiving quality
- **Monthly**
 - Filter membrane color test.
 - Bonding cable electrical continuity test
 - **Dike integrity condition**
 - Test and inspect storm water pumps and pipes
 - Clean and inspect nozzle screens.
 - **Inspect and replace signs, placards and product labeling.**

** FBO's responsibility*



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Facility Inspections: Fuel Tanks*

Quarterly Inspections

- Emergency fuel shut off system test.
- Water defense mechanism test and repair, if necessary.

Annual Inspections

- Tank integrity inspection.
- Valve flow inspection.
- Filter inspection and/or replacement.
- Filter separator and coalescer elements.
- Full flow monitor and micronic filter elements.
- Check/calibrate dispenser.
- Check pressure gauges and pressure controller for accuracy.

** FBO's responsibility*



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Visual Inspections: Security Measures

- Fencing
- Padlock and Key
- Daily check
- Badge entry system
- Electronic key pad entry system
- Airport limits access only!





2020 Inspection Summary

- **No flammable cabinet**; flammable materials not stored inside flammable cabinet
- **No spill kit** or spill containment procedures posted
 - Insufficient spill equipment/materials
- No drip pans
- No oily rag bin
- **Outdoor storage of materials not covered**
- **HAZMAT, waste and/or oil storage near building exit**
- HAZMAT, waste, and/or chemical containers not labeled properly
- Fire extinguisher expired
- SDS reports not available
- Oil drips on the floor
- **No secondary containment or insufficient**
- Waste dumpster not covered; trash debris around dumpster
- Use of toxic surfactants and/or detergents

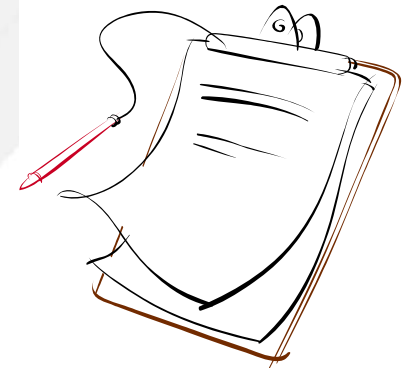


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Record Keeping

- Inspection records
- Maintenance records
- Corrective actions records
- Changes to the Plan
- Annual reports
- Training records



No documentation = Non compliance

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Review

What is in the SWPPP?

- Organization plan
- **Airport layout/drainage maps**
- Potential sources of pollutants
- **BMPs**
- Monitoring/Inspections
- **Record keeping**

What can you do?

- **Generate less waste.**
- Keep your hangars/buildings clean!
- **Share your ideas with the airport.**
- **Follow our Airport plan and rules!**
- Prevent pollution (P2)!



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