

Stormwater Pollution Prevention Training

December 9 & 18, 2019



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Today's Agenda

- Part I – Introduction
- Part II – Our Permit Requirements and Compliance
- Part III - Stormwater Management at CLT Airport
- Part IV – (SPCC)Oil Spill Prevention, Control, and Countermeasures Program

**Please Silence
Your Cell Phone**



Thank You

Introduction (1)

What is Stormwater ?

- Stormwater is water that originates during precipitation events and snow/ice melt. Stormwater can soak into the soil (infiltrate), be held on the surface and evaporate, or runoff over *impervious surfaces* and end up in nearby streams, wetlands, rivers, or other water bodies (surface water).
- Reference: <http://en.wikipedia.org/wiki/Stormwater>



Impervious Surfaces



- ✓ Building Rooftops
- ✓ Parking Decks / Lots
- ✓ Roadways
- ✓ Hard Ground Surfaces



Stormwater Management?

Required by....

The Federal Government's Clean Water Act of 1972. The CWA is the primary federal law in the United States governing water pollution.

Formerly, the “Federal Water Pollution Control Act” (1948)
CWA – original focus on waters for fishing and swimming

Amended; 1977, 1987



No Person shall cause or allow the discharge or disposal of Non-Stormwater, either directly or indirectly, to the Storm Water System, Waters of the State, or upon the land in a manner or amount that is likely to reach the Stormwater system or waters of the State.....

The CWA is applicable to “navigable waters” of the United States

Stormwater Runoff...



- *Is not treated;*
- *Ends up in streams, lakes, and Oceans;*
- *Is a carrier of surface pollutants*
- *Can have a negative effect on wildlife, plants, and aquatic ecosystems*



What are the Culprits?

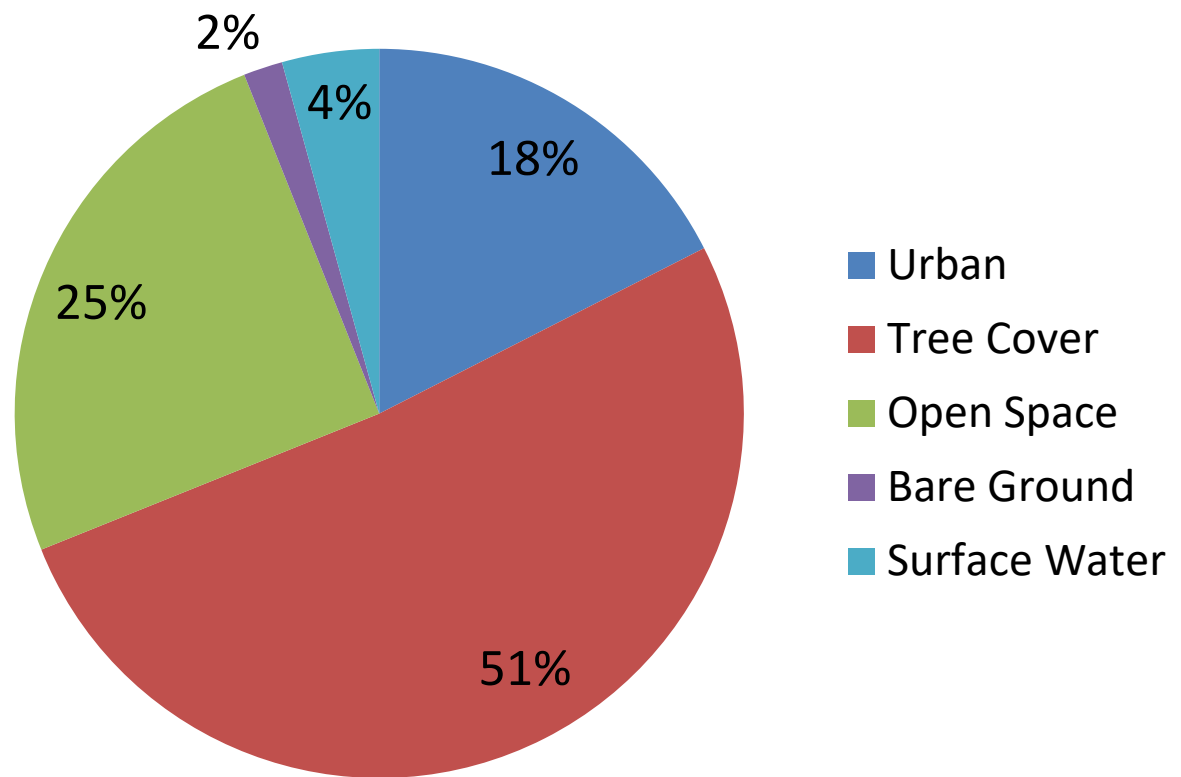


- Antifreeze / Deicing fluid
- Oil / petroleum products
- Sewage
- Sediment
- Detergents/Soaps
- Wash water
- Solid Waste (trash)
- Herbicides and Pesticides
- Fertilizers
- Trace metals



Urban Runoff

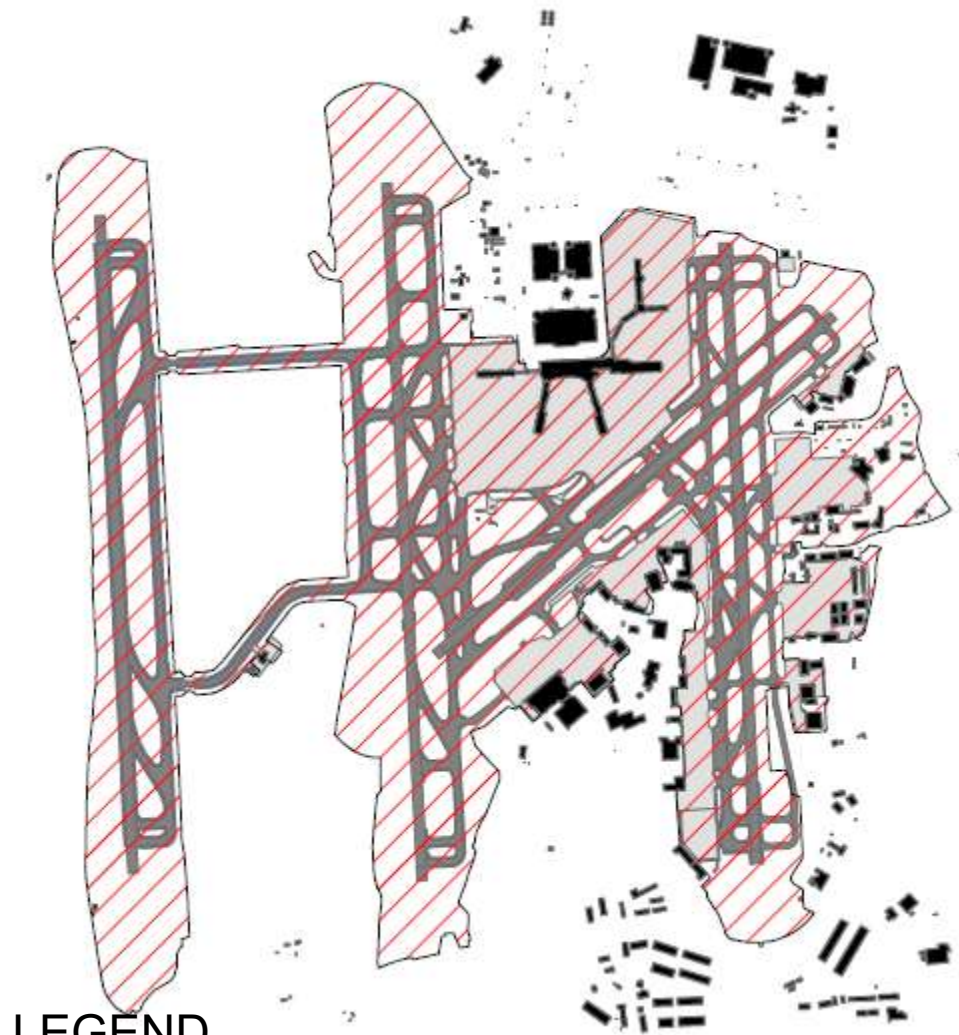
Mecklenburg County Land Use





Impervious surface at CLT has increased about 850% since 1979

Paved/Impervious areas at CLT



Area (Square Ft.)

- Movement = 31,600,380
- Non-Movement = 30,908,935

2017 Total ~ around 62 Million square ft., of asphalt, concrete, rooftops, etc.*

* Sidewalk data not available.



The End Result of Poor Stormwater Management?

Poor Water Quality effects...

- Wildlife
- Human Health
- Vegetation
- Recreation
- Economy
- Environment



38,230 Miles of Impaired waterways
1,335 causes of impairment
Pathogens, nutrients, metals, turbidity

Impaired: A waterbody (i.e., stream reaches, lakes, waterbody segments) with chronic or recurring monitored violations of the applicable numeric and/or narrative water quality criteria



2015 DATA

Montana	480
N. Mariana Islands	24
Nebraska	342
Nevada	215
New Hampshire	1,449
New Jersey	716
New Mexico	209
New York	1,543
North Carolina	1,130
North Dakota	201
Ohio	267

2016 DATA

Nevada	210
New Hampshire	1,466
New Jersey	710
New Mexico	255
New York	611
North Carolina	1,152
North Dakota	217
Ohio	267

2017 DATA

Nevada	208
New Hampshire	1,466
New Jersey	763
New Mexico	255
New York	611
North Carolina	1,155
North Dakota	225
Ohio	267

- Reference: https://ofmpub.epa.gov/waters10/attains_nation_cy.control#imp_water_by_state

Where does the Water Go?



Locally at CLT

Storm drain location and flow direction.



Part II – Our Permit Requirements and Compliance

Permit No. NC0083887

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WATER QUALITY

PERMIT

TO DISCHARGE WASTEWATER & STORMWATER UNDER THE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of North Carolina General Statute 143-215.1, other lawful standards and regulations promulgated and adopted by the North Carolina Environmental Management Commission, and the Federal Water Pollution Control Act, as amended,

City of Charlotte

is hereby authorized to discharge wastewater and stormwater from a facility located at

Charlotte/Douglas International Airport
5501 Josh Birmingham Parkway
Charlotte, NC
Mecklenburg County

to receiving waters designated as UT to Ticer Branch, Coffey Creek, UT to Taggart Creek, Little Paw Creek, and UT to Beaverdam Creek, class C streams, and UT to Catawba River, class WS-IV; B stream, all in the Catawba River Basin, in accordance with the discharge limitations, monitoring requirements, and other conditions set forth in Parts I, II, III, IV, V and VI hereof.

This permit shall become effective December 1, 2011.

This permit and the authorization to discharge shall expire at midnight on June 30, 2015.

Signed this day October 24, 2011.



for Coleen H. Sullins Director
Division of Water Quality
By the Authority of the Environmental Management Commission

CLT NPDES Stormwater Permit

What is an NPDES or “Stormwater” Permit?

- A permit intended to control water pollution by regulating point source discharges;
- The National Pollutant Discharge Elimination System (NPDES) permit program is administered under section 402 of the CWA
- Focus is on operations and planning that can reduce pollution point sources
- Regulates 3 types of activities (industrial, MS4, and construction)
- NPDES permit program is administered by the States; in NC, by the Division of Water Resources at NCDEQ

*The Airports NPDES Permit is Expired as of June 2015
The Permit application for renewal was submitted in
December 2014. The Agency has not yet issued the new
permit.*

TWO TYPES OF POLLUTION SOURCES

POINT SOURCES

Pollutants that originate from a fixed location:

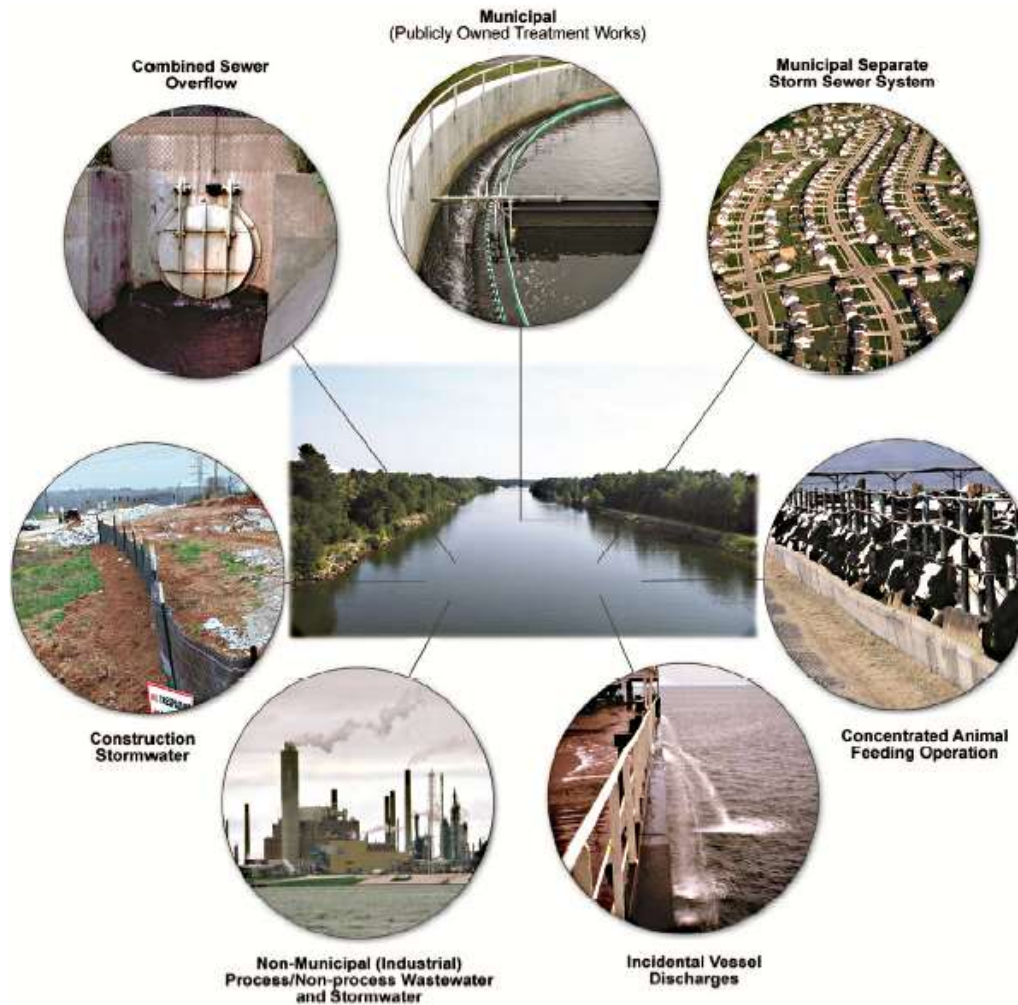
e.g. : Discharges from a pipe, leaks and spills of tanks, improper erosion and sediment control practices.

NON-POINT SOURCES

Pollutants that originate from stormwater flow and not from a fixed location.

e.g. : metals, sediment, microorganisms, and petroleum products from parking lots and street runoff.

Point Source Discharges



Permit Requirements

- **SWPPP** – “The facility must develop a Stormwater Pollution Prevention Plan.....”
 - ✓ Secondary Containment Requirements.
 - ✓ Inspection Requirements.
 - ✓ Identification of Pollution Sources
 - ✓ Training Requirements.
 - ✓ Sampling and Laboratory Testing Requirements.
 - ✓ Record keeping requirements



50. Stormwater Pollution Prevention Plan

A comprehensive site-specific plan which details measures and practices to reduce stormwater pollution and is based on an evaluation of the pollution potential of the site.

Permitted discharges

- ✓ Precipitation,
- ✓ Condensate water
- ✓ Well or groundwater discharges,
- ✓ Spent de-icing fluid
- ✓ Firefighting foam
- ✓ Wash water (with restrictions)

These are the only things allowed to enter the Airport's stormwater drains

Outfall Sampling Requirements

1. Sample **6** outfalls **4** times a year for **11** parameters
2. Sample **1** wastewater discharge **12** times a year for **10** parameters
3. Standard for Benzene* **51** ug/l
4. Sample **6** outfalls during **4** de-icing events for **9** parameters
5. Qualitative monitoring (visual inspection) at **26** outfalls **2** times a year
6. Acute toxicity** – once per quarter at wastewater discharge; during de-icing events over the permit life at **6** locations,
7. Benchmark values established for **all** parameters, most notably turbidity
8. Monthly discharge monitoring report (DMR) and end of year summary DMR

*Benzene is a colorless, flammable liquid with a sweet odor. Benzene is among the 20 most widely used chemicals in the United States. Benzene is known to cause cancer, based on evidence from studies in both people and lab animals, and has multiple exposure pathways.

**Acute toxicity tests are short-term exposure tests (hours or days) and use lethality as an endpoint. Results are reported in LC50, or concentration that will affect fifty percent of the sample size.

Secondary Containment Requirements

- (b) **Secondary Containment Requirements and Records.** Secondary containment is required for: bulk storage of liquid materials; storage in any amount of Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) water priority chemicals; and storage in any amount of hazardous substances, in order to prevent leaks and spills from contaminating stormwater runoff. A table or summary of all such tanks and stored materials and their associated secondary containment areas shall be maintained. If the secondary containment devices are connected to stormwater conveyance systems, the connection shall be controlled by manually activated valves or other similar devices (which shall be secured closed with a locking mechanism), and any stormwater that accumulates in the containment area shall be at a minimum visually observed for color, foam, outfall staining, visible sheens and dry weather flow, prior to release of the accumulated stormwater. Accumulated stormwater shall be released if found to be uncontaminated by any material. Records documenting the individual making the observation, the description of the accumulated stormwater, and the date and time of the release shall be kept for a period of five years.

The above rule applies to any above-ground single container that exceeds 660 gallons or a collection of above-ground storage containers in close proximity to each other having a total combined storage capacity greater than 1,320 gallons

What is Bulk Storage ?

6. Bulk Storage of Liquid Products

Liquid raw materials, manufactured products, waste materials or by-products with a single above ground storage container having a capacity of greater than 660 gallons or with multiple above ground storage containers located in close proximity to each other having a total combined storage capacity of greater than 1,320 gallons.



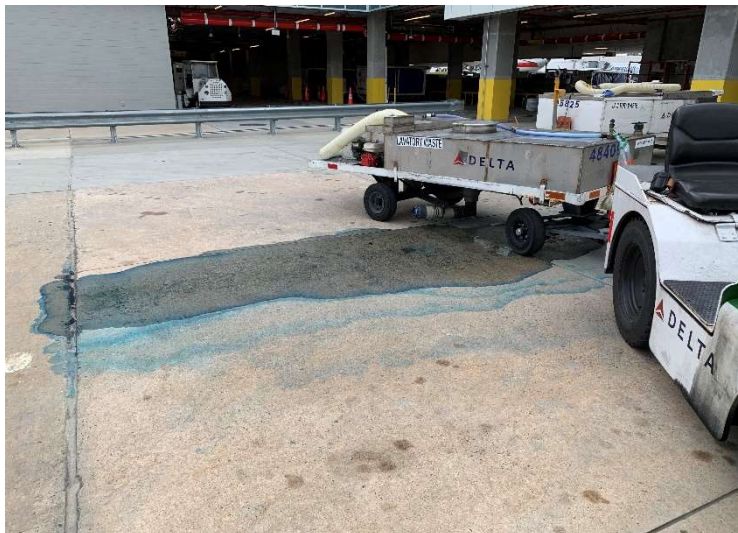
Good Practices



Not so good...



Preventable ?



Non compliance

NORTH CAROLINA DEPARTMENT OF ENVIRONMENT
AND NATURAL RESOURCES
DIVISION OF WATER QUALITY
SURFACE WATER PROTECTION UNIT
610 EAST CENTER AVENUE/SUITE 301
MOORESVILLE, NORTH CAROLINA 28115

REPORT TYPE: Complaint Investigation

DATE OF INVESTIGATION: June 29, 2012

INVESTIGATED BY: Donna Hood & Wes Bell

PLACE VISITED: Charlotte Douglas International Airport (CDIA)

PHYSICAL LOCATION: 5501 Josh Birmingham Parkway/Charlotte/NC

RIVER BASIN: Catawba

REASON FOR VISIT: Investigation regarding wastewater discharges into stormwater drainage system at the Lavatory Facility.

REPORT:

Ms. Hood and Mr. Bell met with Mr. Jimmy Jordan, Environmental Affairs Manager/CDIA, at the airport site on June 29, 2012. The lavatory facility was inspected to determine the wastewater disposal practices at CDIA.



ENFORCEMENT

Price for illegal discharges: Careers, fines, reputation

■ COMPANY AND MANAGERS HIT BY FIVE EPA CRIMINAL PROSECUTIONS

Once EPA cops investigate one set of environmental problems, they don't go away. They return to investigate other sets of violations.

Witness the latest criminal convictions EPA has obtained against McWane, Inc., that has cost two top execs their careers there.

The cast iron foundry agreed to pay a \$4 million criminal fine for violating the Clean Water Act and will also serve five years probation.

The Alabama company pleaded guilty to illegally discharging

untreated industrial wastewater. The company dumped foundry wastewater into storm drains instead of treating it for oil, grease and zinc contaminants.

It's the fifth time McWane and its execs have been prosecuted. Execs convicted are:

- James Delk, ex-general manager, who pleaded guilty to eight criminal charges, was fined \$6,000 and will serve 36 months probation, and
- Michael Devine, ex-plant manager, who pleaded guilty to five criminal counts, was fined \$2,000 and will serve 24 months probation.

Info: <http://snipurl.com/iron389>

Penalties for non-compliance?

- Notice of Violation, Consent Order, or Warning
- Civil Penalty for violations of the CWA...
 - Fines of up to \$25,000 per day, per occurrence
 - “*Negligent Violators*” fined \$2,500 per day up to \$25,000 per day and/or imprisonment up to 1 year – Second offenses are doubled
 - Knowing and willful intent violations – up to half-million dollars
 - “Imminent danger Provision” – fines >1M also up to 15 years prison sentence.

State Level - Class I and Class II State Law penalties may vary up to \$10,000 per day.

Specific Obligations – Airport's Permit

- Monthly or Quarterly Sampling and Qualitative Monitoring;
- Monthly (and annual) Discharge Report submittals to Raleigh;
- Development of a SWPPP (annual updates as necessary);
- General Restraints on chemical use (detergents, e.g.);
- Recordkeeping (up to 5 years);
- Report Spills – Tenants should report spills to CLT;
- Secondary Containment; and
- Restraints on the usage of De-Icing chemicals.

Part III – Stormwater Management at CLT



CLT Airport Stormwater Discharges

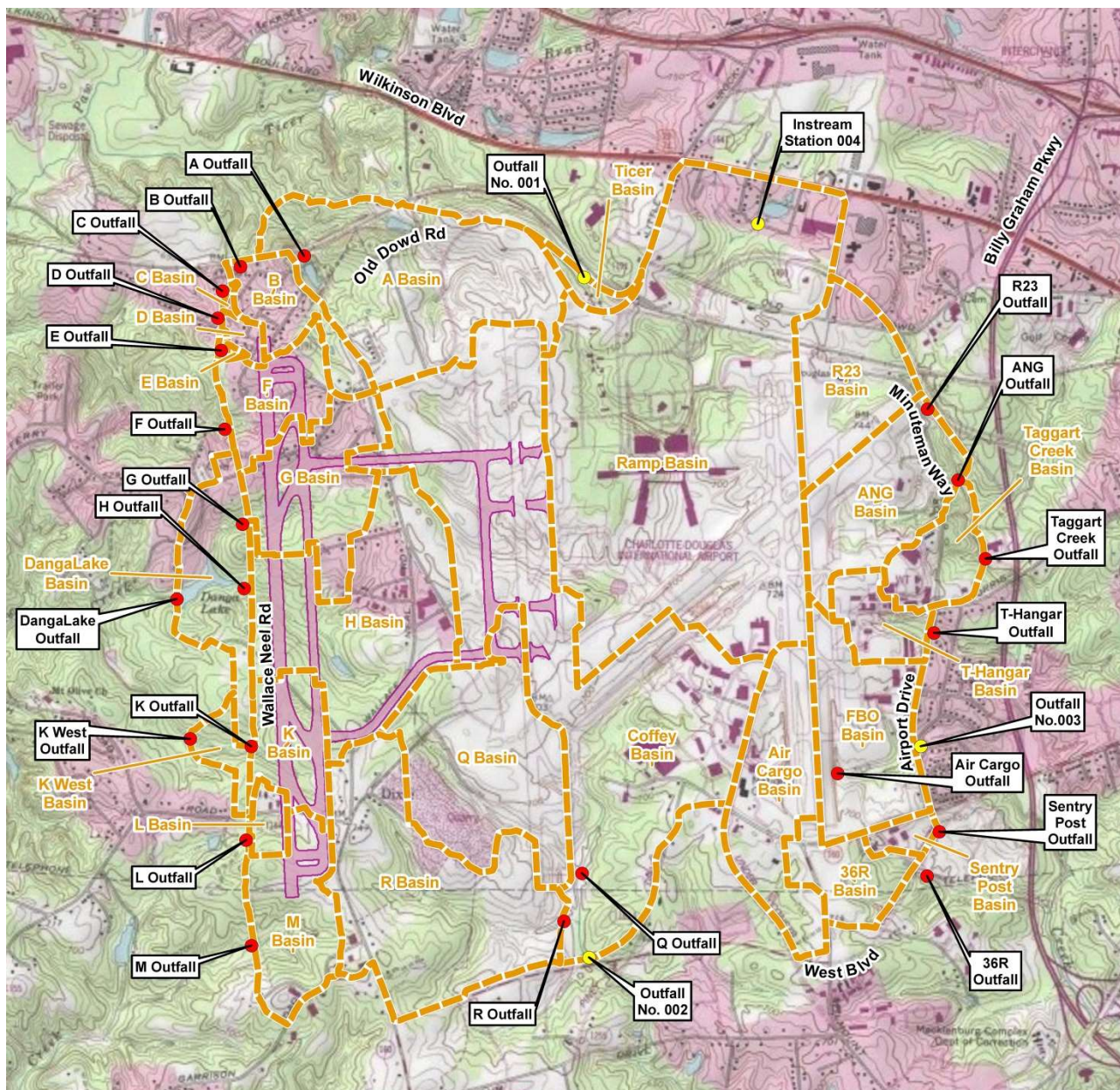
Stormwater Discharges from CLT occur to 4 receiving waters:

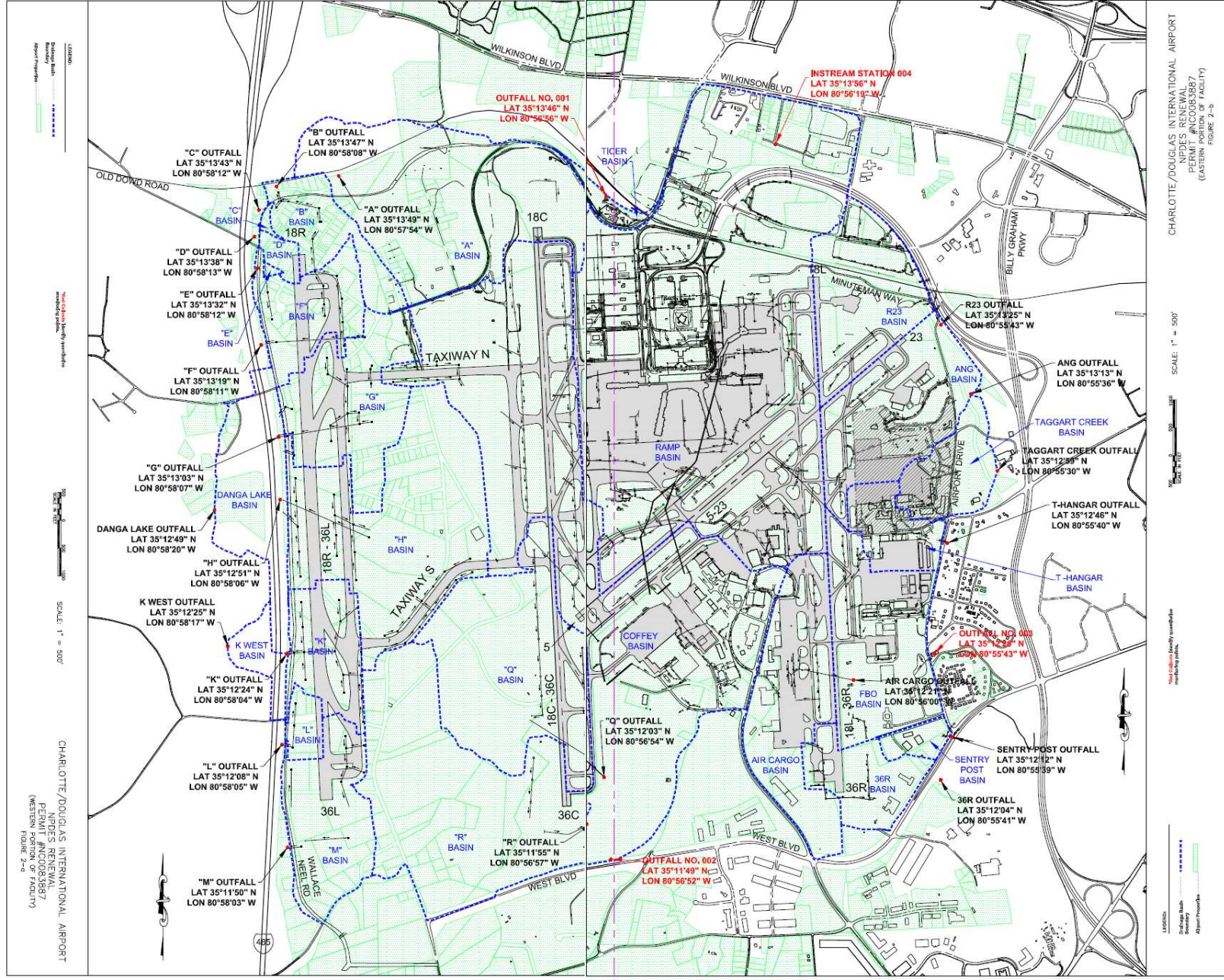


- Taggart Creek
- Coffey Creek
- Ticer Branch
- Beaverdam Creek/Lake Wylie

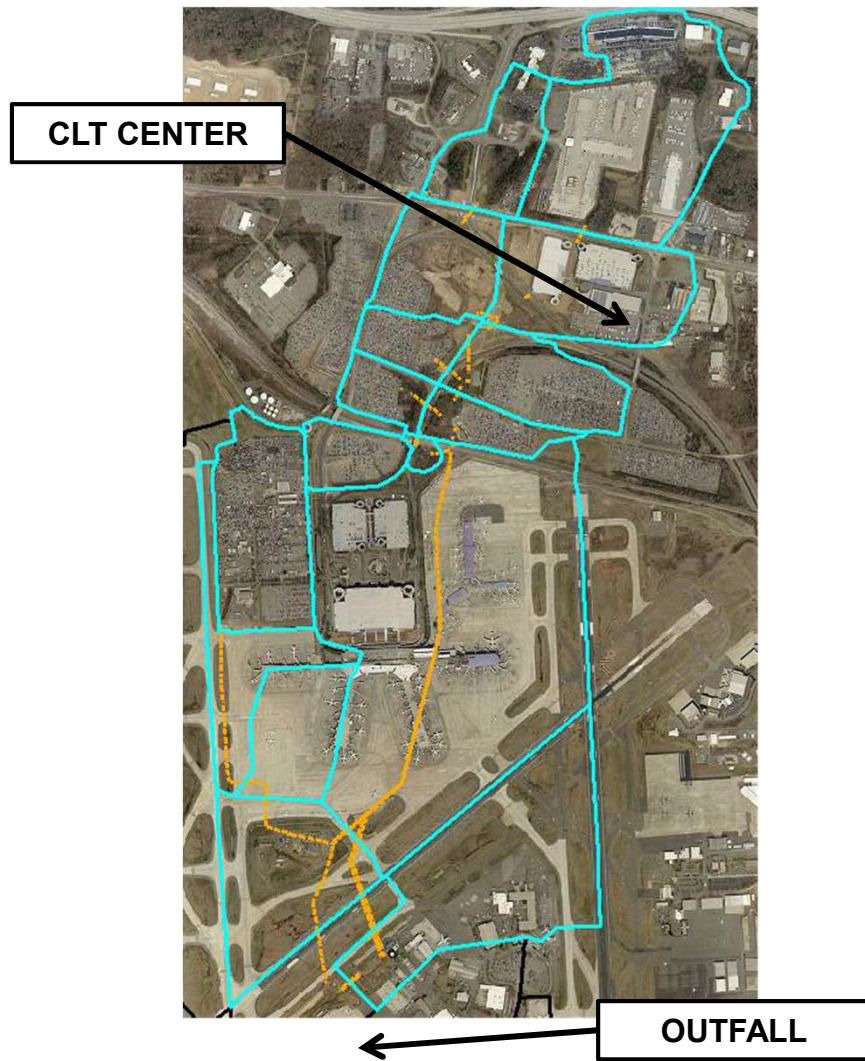


Outfall Locations





Coffey Creek Drainage Basin



Coffey Creek Outfall



Coffey Creek Basin drains 938 acres of CLT; 66% of that is Impervious Surface.

Water Testing – what are we looking for?

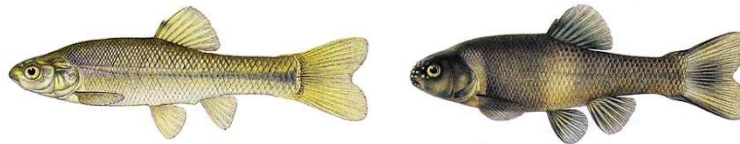
Table 2. Routine Analytical Monitoring Requirements at Representative SDO Outfalls

Discharge Characteristics	Unit	Measurement Frequency ¹	Sample Type ²	Sample Location ³
Total Suspended Solids	mg/L	Quarterly	Grab	SDO
Biochemical Oxygen Demand	mg/L	Quarterly	Grab	SDO
Chemical Oxygen Demand	mg/L	Quarterly	Grab	SDO
TPH / Non-polar Oil & Grease [EPA Method 1664 (SGT-HEM)]	mg/L	Quarterly	Grab	SDO
Detergents (MBAS)	mg/L	Quarterly	Grab	SDO
Turbidity	NTU	Quarterly	Grab	SDO
NH ₃ -Nitrogen	mg/L	Quarterly	Grab	SDO
NO ₃ +NO ₂ -Nitrogen	mg/L	Quarterly	Grab	SDO
Nitrogen, Total	mg/L	Quarterly	Grab	SDO
Phosphorus, Total	mg/L	Quarterly	Grab	SDO
pH	standard	Quarterly	Grab	SDO
Total Rainfall ⁴	inches	Quarterly	Rain Gauge	-

ASIG Fuel Farm Sampling

EFFLUENT CHARACTERISTICS	EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS		
	Monthly Average	Weekly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location ¹
Flow ²				Discharge Event	Estimate	E
Total Suspended Solids			45 mg/l	Monthly	Grab	E
Oil and Grease ³			45 mg/l	Monthly	Grab	E
PH ⁴				Monthly	Grab	E
Benzene			51 ug/L	Monthly	Grab	E
Ethylbenzene				Monthly	Grab	E
Toluene			11 ug/l	Monthly	Grab	E
Xylene				Monthly	Grab	E
Total Nitrogen ⁵				Quarterly	Grab	E
Total Phosphorus ⁶				Quarterly	Grab	E
Acute Toxicity ⁷				Quarterly	Grab	E

E – effluent sample collected downstream of treatment system



Pimephales promelas (fathead minnow)

What about Aircraft, Vehicle, Buildings, Ramp, & Equipment Washing?



- ✓ **Detergents must be biodegradable***
- ✓ DO NOT wash near a storm drain, stay >150' away
- ✓ Use off site facilities where possible
- ✓ Use "dry wash" techniques when feasible
- ✓ **Wash water pH between 6 and 9 Units**
- ✓ Large scale washing needs CLT Approval
- ✓ Use of absorbent socks, pig mats, etc.

**Biodegradable detergent= low salt and phosphorous content, capable of breakdown by bacteria in the soil within 6 months.*

Oil and Petroleum Products



- Don't leave **OPEN** containers outside;
- Clean up spills;
- Don't store products near storm drains;
- Keep absorbent socks & kitty litter on hand;
- Stop leaks, repair equipment; and
- CLT will pickup drums of spent kitty litter or absorbent socks.



Oil Can and Filter Recycling



NC Law forbids the practice of throwing oil filters in the garbage.

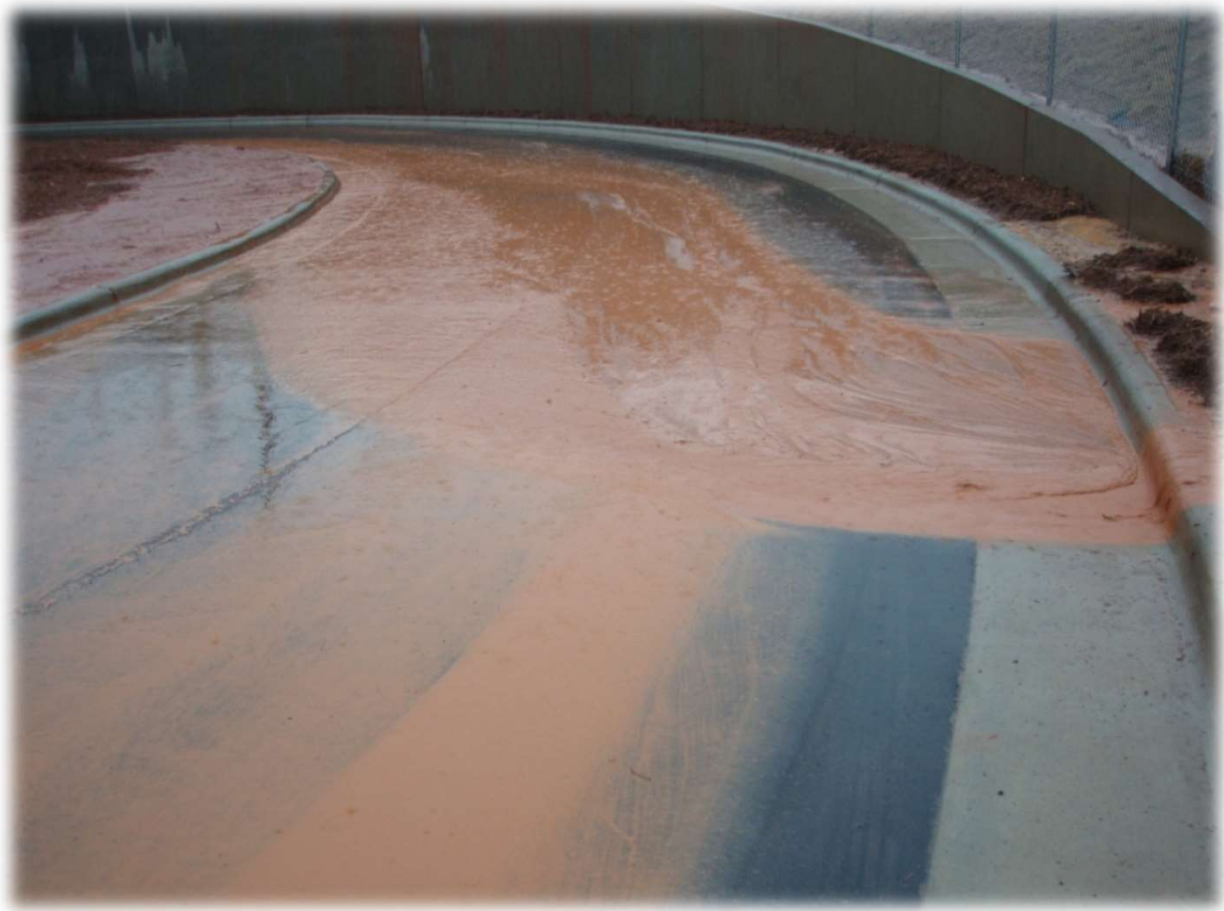
What happens when it rains?



Sediment and Erosion Control

Eroded Sediment is the No. 1 pollutant to stormwater systems in Charlotte-Mecklenburg.





Lighter soil particles are washed away through the SW system, and into the stream, while the heavier sediment is left behind. This clouds the water and builds up the creek or stream floor. As the creeks and streams fill with sediment, the flow capacity of the stream is diminished, stream bank erosion occurs, and the risk of flooding is increased.



- ✓ Major impact on aquatic ecology, altering habitats for aquatic organisms
 - ✓ Reduces light penetration for plant growth
- ✓ Degrades water quality through the addition of pollutants such as heavy metals, nutrients, and microbes attached to sediment particles

In 1972, the Clean Water Act established erosion and sediment control regulations to combat sedimentation of the Nations waterways.

Construction Site Inspection Documentation

Required under *Sedimentation Pollution Control Act* of 1973 (SPCA, North Carolina General Statutes, Chapter 113A Article 4) and Charlotte Mecklenburg County Soil Erosion and Sediment Control Ordinance for ≥ 1 Acre of land disturbance.

Basic Inspection Requirements

General Permit # NCG01

- Inspect site once per 7 calendar days and within 24 hours of any rain event ≥ 1 ", or at completion of any phase of grading;
- Record: date, time, weather conditions, rainfall totals, inspector ID, needed maintenance, corrective actions, each phase of construction; and
- Keep Inspection records on site, they are legal documents and can be used in court.

NC DEPT. of ENVIRONMENTAL QUALITY

Self Inspection and Self Monitoring Form

DEMLR Monitoring Form Rev. 08012013 Page 1 of 2
INSPECTION AND MONITORING RECORDS FOR ACTIVITIES UNDER STORMWATER GENERAL PERMIT NCG010000
AND SELF-INSPECTION RECORDS FOR LAND DISTURBING ACTIVITIES PER G.S. 113A-54.1

Project Name		Land Quality or Local Program Project #	
Financially Responsible Party, (FRP) / Permittee		County	
INSPECTOR		Name	Employer
Inspector Type (Mark) X	Address		
FRP/Permittee	Phone Number		
Agent/Designee	Email Address		

PART 1A: Rainfall Data

Day / Date	Rain Amt (inches) Daily Rainfall Required, except for Holidays or Weekends. If no rain, indicate with a "zero"
M	
T	
W	
Th	
F	
Sat (Optional)	
Sun (Optional)	

PART 1B: Current Phase of Project

Phase of Grading check the applicable box(es)	X
Installation of perimeter erosion and sediment control measures	
Cleaning and grubbing of existing ground cover	
Completion of any phase of grading of slopes or fills	
Installation of storm drainage facilities	
Completion of all land-disturbing activity, construction or development	
Permanent ground cover sufficient to restrain erosion has been established	

PART 1C: Signature of Inspector

By this signature, I certify in accordance with the NCG010000 permit & G.S. 113A-54.1 that this report is accurate and complete to the best of my knowledge.	
Financially Responsible Party / Permittee or Agent / Designee	Date

GROUND STABILIZATION TIMEFRAMES		
Site Area Description	Stabilization	Timeframe Exceptions
Perimeter dikes, swales and slopes	7 Days	None
High Quality Water (HQW) Zones	7 Days	None
Slopes Steeper than 3:1	7 Days	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
Slopes 3:1 or flatter	14 Days	7 days for slopes greater than 50' in length
All other areas with slopes flatter than 4:1	14 Days	None, except for perimeters and HQW Zones

*For an editable copy of this form as a Word doc and other information, see <http://portal.ncdenr.org/web/113errosion>

DEMLR Monitoring Form Rev. 08012013

Page 2 of 2

PART 2A: EROSION AND SEDIMENTATION CONTROL MEASURES: Measures must be inspected at least ONCE PER 7 CALENDAR DAYS AND WITHIN 24 HOURS OF A RAINFALL EVENT GREATER THAN 0.5 INCH PER 24 HOUR PERIOD.

Measure ID or Location and Description	Operating Properly? (Y/N)	Any Repair or Maintenance Needed? (Y/N)	New Measures Installed *			Inspection Date	Describe Actions Needed <u>Corrective actions should be performed as soon as possible and before the next storm event</u>	Date Corrected
			Proposed Dimensions (ft.)	Actual Dimensions (ft.)	Significant Deviation from Plan? (Y/N)			

*New erosion and sedimentation control measures installed since the last inspection should be documented here or by initialing and dating each measure or practice shown on a copy of the approved erosion and sedimentation control plan. List Dimensions of Measures such as Sediment Basins and Riprap Aprons

PART 2B: STORMWATER DISCHARGE OUTFALLS (SDOs): SDOs must be inspected at least ONCE PER 7 CALENDAR DAYS AND WITHIN 24 HOURS OF A RAINFALL EVENT GREATER THAN 0.5 INCH PER 24 HOUR PERIOD.

Stormwater Discharge Outfall ID or Location	Any Visible Sedimentation in Streams, Wetlands or Outside Site Limits? (Y/N)	Any Increase in Stream Turbidity from Discharge? (Y/N)	Any Visible Erosion below SDO? (Y/N)	Any visible oil sheen, floating or suspended solids or discoloration? (Y/N)	Inspection Date	Report Visible Sedimentation to streams or wetlands to Land Quality within 24 Hours http://portal.ncdenr.org/web/113division-contacts Describe Actions Needed <u>Corrective actions should be performed as soon as possible and before the next storm event</u>	Date Corrected

PART 2C: GROUND STABILIZATION Must be recorded after each Phase of Grading

Areas Where Land Disturbance Has Been Completed or Temporarily Stopped	Time Limit for Ground Cover 7 days or 14 days	Is Ground Cover Sufficient to Restrained Erosion? (Y/N)	Inspection Date	Describe Actions Needed	Date Corrected

NC DEQ Link:

<https://deq.nc.gov/about/divisions/energy-mineral-land-resources/erosion-sediment-control/forms>

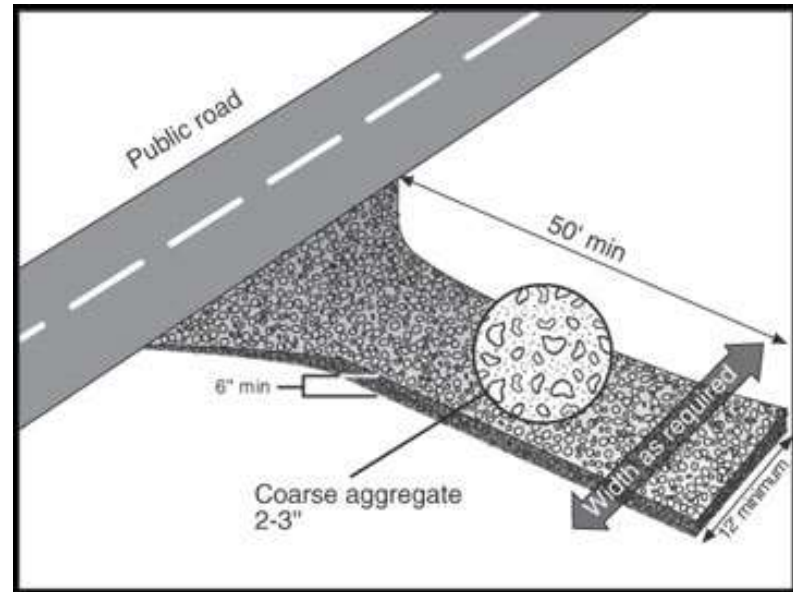
Sediment and Erosion Control for Job Sites

- Use silt fencing to control sediment runoff;
- Establish ground cover within 7 Days on slopes, 14 days other areas;
- Provide engineering mechanisms for management; and
- ≥ 1 acre disturbed? Erosion and Sediment Control Permit Required for approval by NCDEQ



Sediment and Erosion Control For Construction Entrances

- Compacted subgrade;
- Stone base or fabric;
- Course aggregate on surface;
- Locate on high-side of site;
- Install storm drain protections;
- Install multiple entrances as needed; and
- Allow for turning movements.



Stormwater Drains

- Storm drain filters (drain inserts, coir fiber logs, straw, etc.);
- Control dust;
- Require subcontractors or site workers to sweep road as needed; and
- Train your employees to know these drains are **ONLY FOR RAIN**.



Sediment and Erosion Controls for Retention Basins

- Install basin perpendicular to flow;
- Berm 1' above top of outlet pipe;
- Porous baffles;
- Rock coffer for fore bay; and
- Ensure baffle elevation = Spillway elevation.



MAINTENANCE

- Inspect baffles weekly;
- Maintain access for repairs, repair as needed;
- Remove sediment when half full.



BE Proactive NOT Reactive



Fix rills BEFORE they become a problem.



Muck out basins when ½ full



Keep gravel filters clean.



BE Proactive NOT Reactive



Dust control



Asset protection



Functional Filters

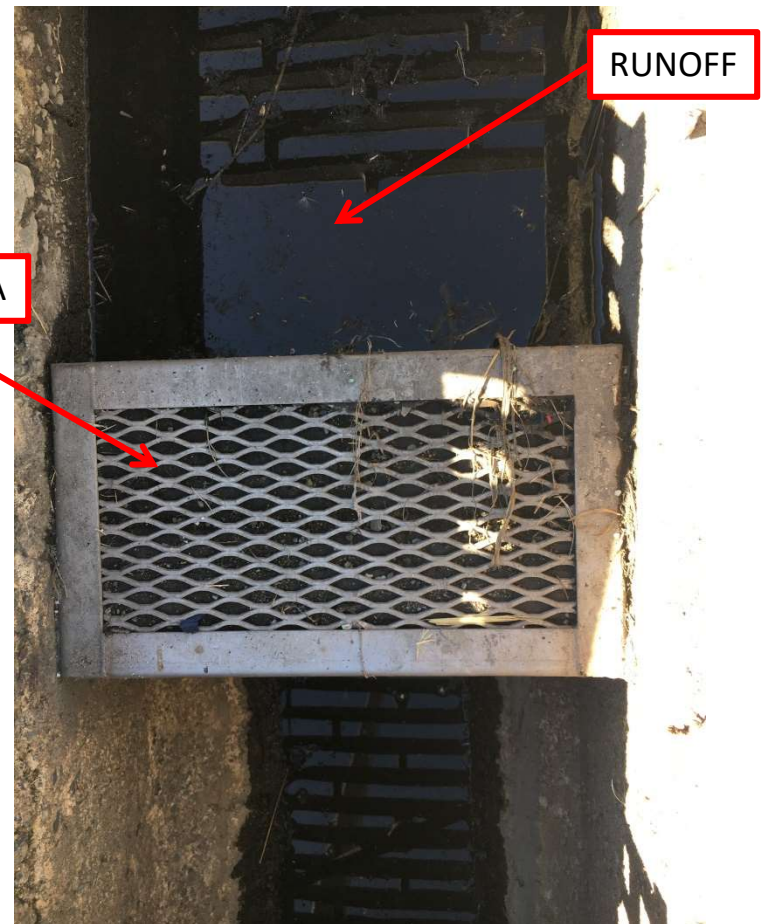
Aircraft Sewage Disposal Area

- Curb drains AND trench drains at the Mid Field Fueling area leads to Coffey Creek.
- Drains at midfield have been retrofitted with a patented filtering media to reduce the risk of contaminants entering the stormwater system
- The stormwater runoff is not treated
- Considered an illicit discharge by regulators
- Closed circuit monitoring 😊



FILTER MEDIA

RUNOFF



Rule No. 1: Get it in the hole



Rule No. 2: Keep it off the pavement

Other Rules for Lavatory Disposal



1. Waste Handling inside the Wash Bay Station
2. Waste water must NOT leave the Wash Bay
3. Contents of the tank go into the Triturator
4. Follow the rules on the sign posted
5. Do NOT wash your vehicle outside
6. Keep all waters away from grate and curb drains
7. Leave the station clean
8. Report equipment malfunctions to 4012

The presence of **Blue Water** on the pavement is an indicator of spills...

Waste (Dumpster) Containers



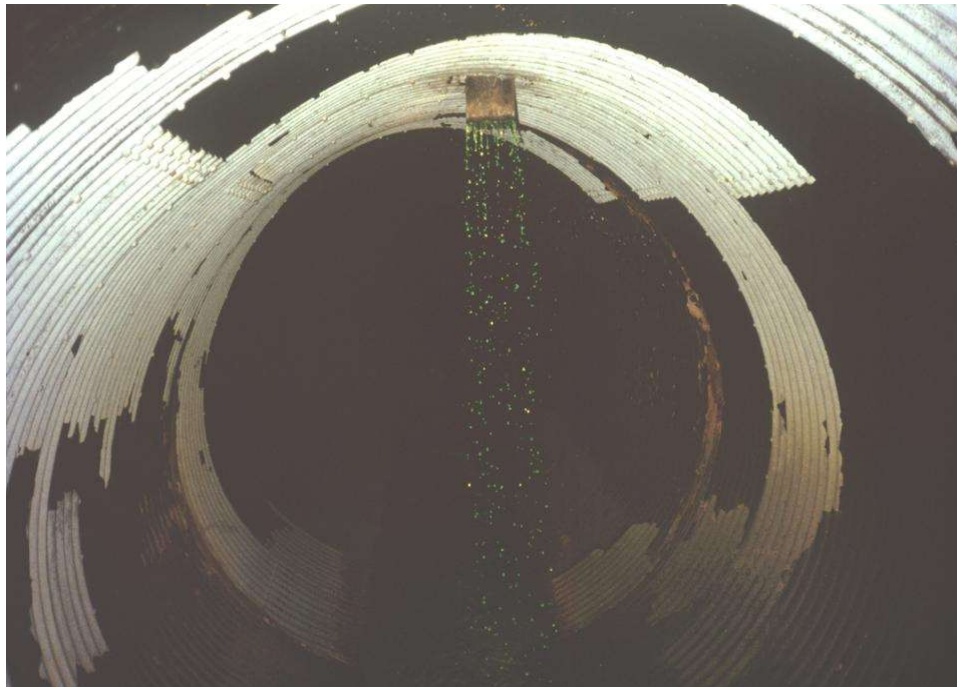
**Your dumpsters should not leak.
Question the content
Drain Valves should remain closed**

Aircraft De-Icing



Aircraft De-Icing – What to know

- ✓ Only propylene glycol should be used-fill trucks away from drains.
- ✓ Repair Leaky nozzles, hoses, and other equipment.
- ✓ NPDES Permit requires reporting of de-icing fluid usage to CLT monthly, and an annual summary report (prepared by CLT) to the State.



Sampling during De-Icing

Table 6. De-icing Event Analytical Monitoring Requirements for Representative Outfalls

Discharge Characteristics	Units	Measurement Frequency ¹	Sample Type ²	Sample Location ³
Propylene Glycol	mg/L	4X/yr	Grab	SDO
Ethylene Glycol	mg/L	4X/yr	Grab	SDO
Biochemical Oxygen Demand	mg/L	4X/yr	Grab	SDO
Chemical Oxygen Demand	mg/L	4X/yr	Grab	SDO
NH ₃ -Nitrogen	mg/L	4X/yr	Grab	SDO
pH	standard	4X/yr	Grab	SDO
Acute Toxicity ⁴	-	4X/yr	Grab	SDO
Total Glycol & Urea Applied	gal	4X/yr	Estimate	-
Total Rainfall	inches	4X/yr	Rain gauge	-

....and more de-icing sampling

Table 7. De-icing Event Analytical Monitoring Requirements for In-stream Sampling

Parameter	Units	Measurement Frequency ¹	Sample Type	Sample Location ²
Dissolved Oxygen	mg/L	4X/yr	Grab	002 & 004
Turbidity	NTU	4X/yr	Grab	002 & 004
pH	stand ard	4X/yr	Grab	002 & 004

Report your Glycol Usage

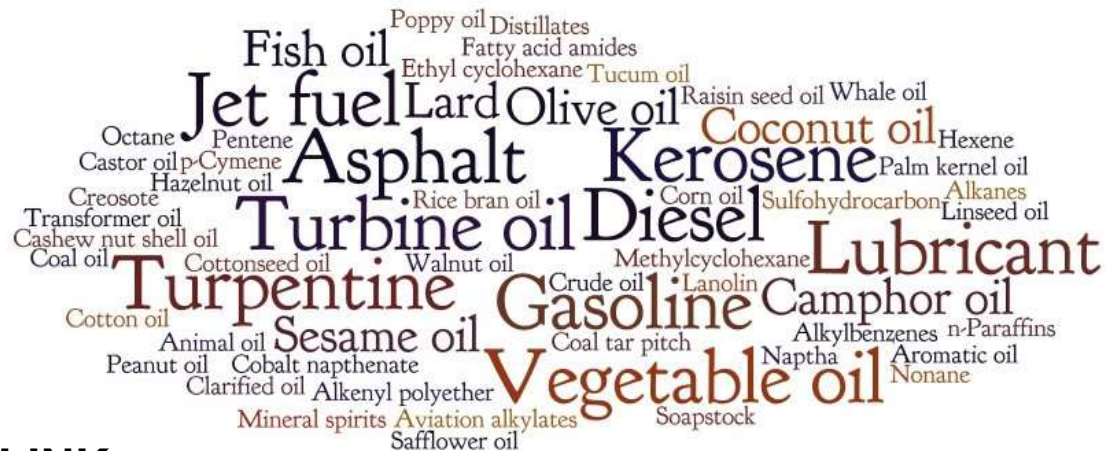
De-Icing Fluid Usage 2019-20 Winter Season

This form should be used to report De-Icing Fluid Usage for 2019-20 Winter Season		
This form should be completed and returned Monthly or as requested by the Airport		
Your Company _____		
Contact Person _____ <small>(person whom is providing this information)</small>		Phone # _____
CARRIER IDENTIFICATION	Circle ALL Appropriate Responses	
	All Commercial Carriers (e.g. AA, Delta, etc.)	
	General Aviation (e.g. Wilson Air)	
	Cargo (e.g. FedEx, UPS, etc.)	
	Non tenant/Others	
Deicing Fluid Usage - Please report the number of Gallons used BEFORE Dilution		
Month	Propylene Glycol - Select a Type	
	Type 1	Type 4
October-19		
November-19		
December-19		
January-20		
February-20		
March-20		
April-20		
Additional months include here:		
PLEASE NOTE ETHYLENE GLYCOL (Type 1,4) IS NOT APPROVED FOR USE AT CLT		
This form should be completed and returned Monthly or as requested by the Airport		
EMAIL this form to: Jimmy D. Jordan, P.G. jdjordan@charlotteairport.com Phone 980-288-3793		
Comments on this form, or other De-icing Information?		

Part IV

SPCC – Oil Spill Prevention, Control, and Countermeasures Program

- 1973 Section 311 of the CWA – *Authorizes a program to prevent, prepare for, and respond to discharges of oil from vessels and facilities, and mandates regulations establishing procedures, methods, equipment, and other requirements.*
- Rule stated in 40 CRF 112.



EPA REGULATORY GUIDANCE LINK

<https://www.epa.gov/sites/production/files/documents/spccbbluebroch.pdf>

Who is required to Comply?

The regulation applies to “facilities” that either:

1. Have an aggregate capacity in above-ground **oil** storage of more than 1,320 gallons, or a total underground oil storage capacity of 42,000 gallons; and
2. Could reasonably be expected to discharge oil in harmful quantities into navigable waters of the United States.

Know the Basics

- Oil containers with **at least 55 gallons**, including drums and intermediate bulk containers (e.g. “**tote tanks**”) are specifically included in the scope of the rules;
- Animal and vegetable oils, soluble oils, included;
- Oil filled equipment is exempt from secondary containment & inspections. So is mobile equipment, so long as it is operated within the boundaries of the “facility”; and
- Requirements include increased secondary containment capacity to hold both the largest tank volume plus precipitation.
- 1 gallon of oil contaminates a million gallons of fresh water

What is required to Comply?

- Secondary Containment is required for single containers greater than **1,320 gallons** or groups;
- A written SPCC Plan;
- Monthly inspections;
- Written records
- Manage and document water release from dikes; and
- Contingency Plan.



Secondary Containment



Applies to aboveground containers

- Any petroleum container $\geq 1,320$ gallons;
- Accumulation area where the total* is greater than 1,320 gallons;
- Labeling Requirement;
- Spill Kits;
- Routine, documented inspections;
- Does not apply to mobile equipment.

* 55 gallons or greater

Exempt containers

- Single or multiple Containers less than 55 gallons; i.e., pallets of 5 gallon paint pails
- Completely Buried Tanks;
- Permanently Closed Tanks; and
- Mobile vehicular equipment.



Elements of the SPCC document

- Secondary Containment descriptions
- Engineering and Procedural Control Measures
- Operating Procedures, Inspection records, Evaluations, and Testings;
- Facility Diagram;
- Drainage and Discharge Path Descriptions;
- Response and Reporting Procedures;
- Cleanup Measures and Countermeasures;
- Training; and
- Spill Planning, Notification, and Response.



An SPCC Plan must be.....

- at the onsite location;
- available for inspection;
- signed and authorized by management;
- reviewed and updated after 5 years (or more frequent)
- site specific, and revised as needed

CLT SPCC 2019

- CLT COVERAGE includes
 - ✓ CLT Center and Fleet Maintenance
 - ✓ Main Terminal; all Five Concourses and Ramp Area
 - ✓ Lighting Vaults
 - ✓ CLT ARFF Stations
 - ✓ CLT Helicopter Pad
 - ✓ Old Terminal
 - ✓ CLT Business Valet Parking Deck
 - ✓ Hourly Parking Deck and Consolidated Rental Car Facility

New SPCC Plan in 2019

Tote Storage



Mobile Equipment



Mobile equipment is exempt from SPCC as long as operated within the bounds of the “facility”. Spill Kits must be located nearby or must be carried with the vehicle.

Drums and Drum Storage



Drum Storage

- Spill Kits must be located nearby;
- EPA Region IV has granted CLT exemption from having new unopened drums subject to secondary containment requirements, so long as spill kits are nearby; and..
- Do not situate drums adjacent or atop storm drains.

Release of Contained Water

- Secondary containment dikes (or concrete curb containments) valves should remain in the closed position.
- Collected runoff must be observed. If clean water is present, the runoff can be released, but you must document the release.
- Document each release event; keep on location. Minimal information must be kept for 5 years.



If you have this....



..then you must have this

secondary containment release log

SECONDARY CONTAINMENT RELEASE LOG

[illegible]

Notes:

What about Floor Drains?



They should be plumbed to sanitary sewer, or oil-water separator, and not into the storm drain.

Reporting of Spills

Notification Procedure

For Fuel Spills, and Spills of Hazardous Liquids, Unknown Liquids, and other Potentially Hazardous Substances – Airport Ramp and Other Movement Areas

- ✓ **Notify the Environmental Officer, as he will (in most cases) desire to be on-site should any of the following conditions apply:**
- **The spill is a petroleum product and greater than 10 gallons;**
 - **The spill is a petroleum product of any size, and has entered a subsurface conduit such as a grate, drain, or curb gutter;**
 - **The spill of a petroleum product or other substance is within 100 feet of a surface water body;**
 - **Moderate to heavy rainfall is in progress at the time of a 10+ gallon spill;**
 - **The spill is non-petroleum, but is some other hazardous liquid, potentially hazardous substance, or unknown substance, and is of any measurable amount.**

Airport operations should Notify Airport Environmental Manager (Jimmy D. Jordan) if any of the above criteria apply to the situation.

Airport Operations 704-359-4012
Environmental Manager 980-288-3793
Environmental Compliance Specialist 704-793-7706

Reporting any spills to the appropriate regulatory agencies will be handled by the environmental affairs manager at his discretion. AIRLINE EMPLOYEES, RAMP WORKERS, FUELING PERSONNEL, OR EMERGENCY RESPONSE PERSONS SHOULD NOT REPORT SPILLS UNLESS THEY FIRST CONFER WITH THE CLT ENVIRONMENTAL AFFAIRS MANAGER.

Reportable Spill Information Form
Charlotte/Douglas International Airport

Spill Date and Time _____

Type of Material Spilled (for example, No. 2 Fuel Oil) _____

Estimated Quantity Spilled _____

Estimated Quantity Entering Drains or Grates - Describe in Detail

Source of Spill _____

Description of Affected Area (for example, spill covered dirt area 80 feet long by 20 feet wide)

Cause of Spill _____

Injuries or Damages _____

Corrective Actions Taken _____

Evacuation Needed? _____

Names of Other Parties Contacted _____

The Good...



Spill pallet...



The Bad...



The Ugly

Fix Leaks



Cover your products.



Clean up after your self.



Going Forward...



What Can you do?

- Use drum and tote spill pallets;
- Fix leaking equipment and clean up spills;
- Use biodegradable cleaners and other products;
- Report clogged drains;
- Keep erosion and sediment control measures in good working order;
- Lock up discharge points from totes, tanks, etc.;
- Clean up spills of fuel, hydraulic oil, and oil, and dispose of the absorbents in a 55-gallon drum or other container; and
- Report violators.
- Educate those who work with you – **Training Rosters due to CLT ENV not later than 31 January 2020.**



And Remember....



Training Aids and Documents

- Additional training aids and documentation provided on the Airport's website:
 - Training Roster
 - Current Stormwater Pollution Prevention Plan (SWPPP)
 - Latest Annual Stormwater Training Presentation
- Link to items listed above:
 - www.cltairport.com