

# Preparing for a Regulatory Inspection: SPCC and SWPPP

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# Anita Evenson – Manager of Environmental Engineering

- ▶ Joined Anchor April 2022
- ▶ Managing 6 sites across the US
- ▶ Prior consulting experience providing multi-media support to a wide range of industries and clients in several states
- ▶ BS – Chemical Engineering, Rose-Hulman Institute of Technology



## Stephanie Miller – Senior Consultant

- ▶ Joined Trinity June 2014 – Columbus, OH Office
- ▶ Water permitting and compliance to support multiple industries in OH and other states
- ▶ MS Environmental Science, University of Cincinnati
- ▶ BS Biology, Kent State University



# Agenda

- ▶ CWA, SPCC and SWPPP Overview
- ▶ Spill Prevention Control and Countermeasure (SPCC) Plan
- ▶ Stormwater Management

# CWA, SWPPP, and SPCC Entwined

## Key Definitions

- ▶ CWA – Clean Water Act
  - Primary US EPA law governing water pollution to restore and maintain chemical, physical, and biological integrity of WOTUS
- ▶ SWPPP – Stormwater Pollution Prevention Plan
  - Outlines actions a facility will take to minimize and prevent potential negative impact on storm water quality
- ▶ SPCC – Spill Prevention Control and Countermeasure Plan
  - Establishes procedures, methods, and equipment for prevention, minimization and response to oil discharges

## CWA Relationship to SPCC and SWPPP

- ▶ CWA gives US EPA authority to implement pollution control programs
  - Ohio, Indiana, and Kentucky are delegated to issue permits to protect WOTUS
  - Each state has general stormwater permits and issues NPDES that require SWPPP
  - 40 CFR 112, SPCC regulations, is a federal program



# **Oil Pollution Prevention – 40 CFR 112**

## ***Spill Prevention, Control and Countermeasure Plan (SPCC)***

***Preparing for a Regulatory Inspection***



## SPCC – Regulatory Background

- ▶ **Purpose** - 40 CFR Part 112 requires a Spill Prevention, Control, and Countermeasure (SPCC) Plan for certain facilities to prevent a discharge of oil into navigable waters or adjoining shorelines.
- ▶ **Federal Applicability** - Any facility with aggregate aboveground oil storage capacity **greater than 1,320 U.S. gallons**, OR completely buried storage capacity greater than 42,000 U.S. gallons, AND there is a reasonable expectation of an oil discharge into or upon navigable waters of the U.S. or adjoining shorelines.



## SPCC “Reasonable Expectation” of Discharge

- ▶ Geography – Proximity of facility
- ▶ Transport of “oil” offsite –
  - Ditches, creeks, streams
  - Sewers (onsite and offsite)
  - Precipitation runoff
  - Groundwater



## What types of “oil” are covered?

- ▶ Petroleum
- ▶ Fuel oil (diesel, biodiesel)
- ▶ Sludge
- ▶ Oil refuse (waste oil, oily water)
- ▶ Oil mixed with wastes other than dredged spoil
- ▶ Fats, oils or greases of animal, fish, or marine mammal origin
- ▶ Vegetable oils, including oil from seeds, nuts, fruits, or kernels
- ▶ Other oils and greases, including synthetic oils and mineral oils.
- ▶ US Coast Guard Oil List



**Layman’s terms: if it causes a film or sheen in water, consider it an oil**

## How to calculate oil storage capacity?

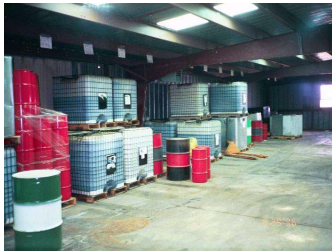
- ▶ Add up the shell capacities of each oil container (maximum volume)
- ▶ **Do not use** the actual amount of product stored in the container or tank (i.e., operational volume or working capacity).
- ▶ Count only containers with storage capacity **equal to or greater than 55 U.S. gallons**
- ▶ Include drums, tanks and oil-filled equipment (such as gear boxes, hydraulic equipment, cooling systems, lubricating systems, flow-through process vessels, etc.).



# SPCC Applicability

Yes

55-gallons or greater



Totes



Drums



Tanks



Oil-filled equipment

No



5-gal pail



30-gal drum



Motive Power Containers



Wastewater treatment



Milk and Milk Products

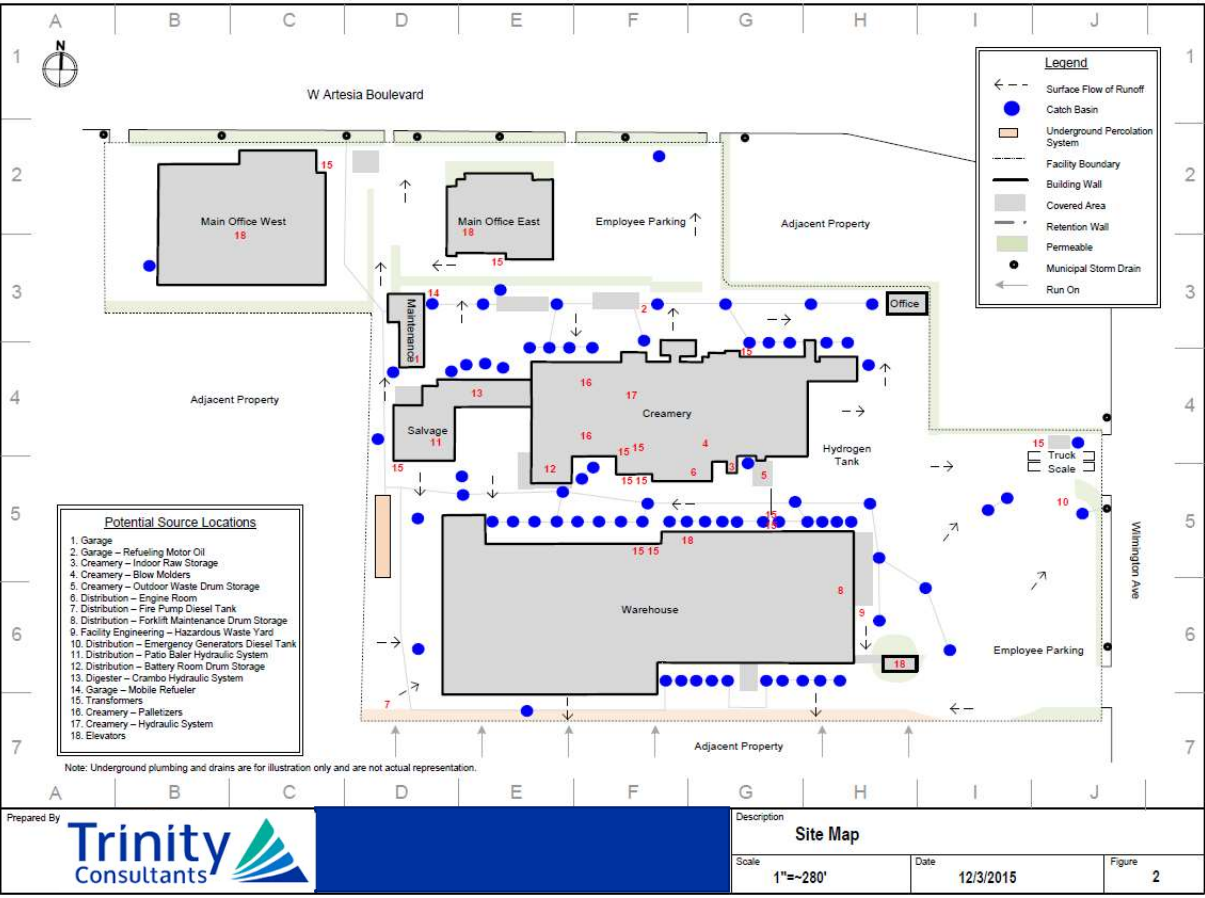


Permanently Closed

## SPCC Plan – Key Elements

- ▶ Facility diagram or site map
- ▶ Oil sources, storage volumes and discharge predictions
- ▶ Secondary containment or diversionary structures
- ▶ Facility drainage
- ▶ Site security
- ▶ Requirements for bulk storage containers including inspections, overfill, and integrity testing requirements
- ▶ Transfer procedures and equipment (including piping)
- ▶ Requirements for qualified oil-filled operational equipment
- ▶ Loading/unloading rack requirements
- ▶ Personnel training and oil discharge prevention briefings
- ▶ Management approval (and certification in some cases)
- ▶ Plan certification by a Professional Engineer (PE) (for facilities > 10,000 gallons of oil storage)

# SPCC Plan – Site Map Example



## SPCC Secondary Containment Requirement

- ▶ Secondary containment requirements are separated into two categories: **general** and **sized**
- ▶ “General” secondary containment must be designed to prevent an offsite discharge of oil – 40 CFR 112.7(c)
  - Applies to all SPCC-regulated containers and oil-handling areas (e.g., oil inventory list), except qualified OFOE
- ▶ “Sized” secondary containment must be designed to hold the **entire capacity of the largest single container and sufficient freeboard** to contain precipitation – 40 CFR 112.7(h)(1), 112.8(c)(2), 112.8/12(c)(11)
  - Applies only to loading/unloading racks, bulk storage containers, and mobile/portable containers



## GENERAL Secondary Containment

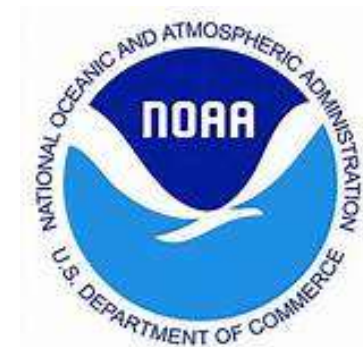
- ▶ Required for ALL activities and containers subject to SPCC, including:
  - Bulk storage tanks
  - Portable/mobile containers
  - Oil-filled operational equipment
  - Oil transfer areas
  - Loading racks
  - Piping
- ▶ Determine the best method using engineering judgement to contain the **most likely discharge of oil** until cleanup occurs
- ▶ When sized secondary containment is required, the sized secondary containment fulfills the general secondary containment requirements (ex: storage tanks, loading racks, etc.)

## SIZED Secondary Containment (1/2)

- ▶ Required for:
  - Bulk storage tanks
  - Portable and mobile containers
  - Loading racks
- ▶ Requirements for **Loading/Unloading Racks** [§112.7(h)]
  - Where drainage does not flow into a catchment basin or treatment facility designed to handle discharges, use a quick drainage system (device that drains oil away from area to some means of secondary containment)
  - Must be designed to hold the **max capacity of any single compartment** of a tank car or tank truck loaded or unloaded at the facility

## SIZED Secondary Containment (2/2)

- ▶ Requirements for **Bulk Storage** [§112.8(c)(2)] Containers:
  - Must be designed to hold the **entire capacity of the largest single container plus sufficient freeboard for precipitation**
  - Sufficient freeboard – Not defined in the rule
    - ◆ 110% of largest tank
    - ◆ 25-year, 24-hour precipitation event
  - Good engineering practice (PE certifying SPCC) makes determination
  - Important factors include
    - ◆ NOAA data
    - ◆ Height of dike wall
    - ◆ Volume of container
    - ◆ Footprint of containment area
    - ◆ Frequency of dike drainage/inspection



# Secondary Containment Methods

- ▶ Passive measures = fixed, permanent containment structure which requires no action



- ▶ Active measures = requires deployment or action to be taken

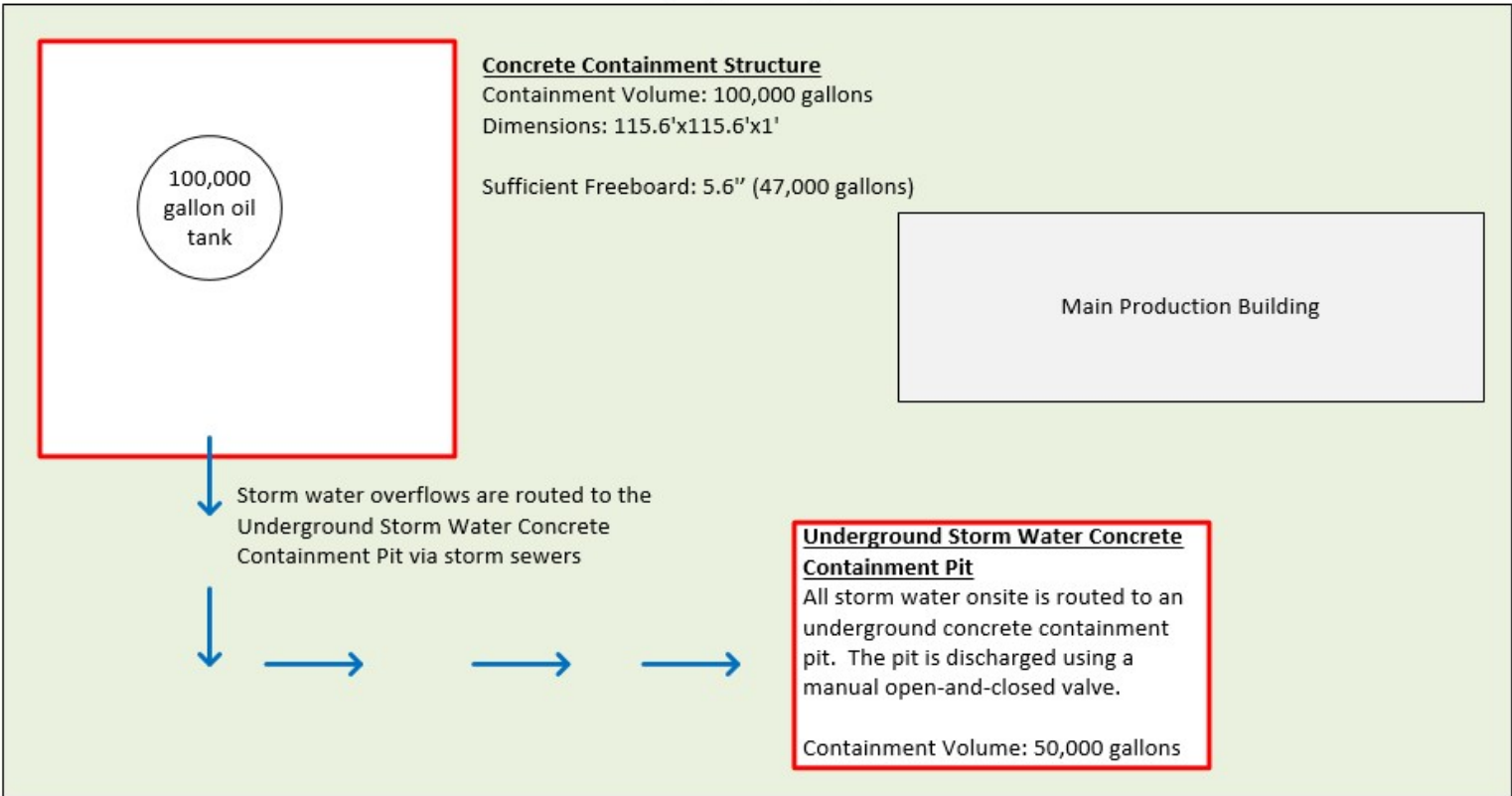


## SPCC Common Containment Issues

- ▶ Insufficient secondary containment
  - Not aware of requirements
  - Not understanding “General” vs. “Sized”
- ▶ No means of monitoring interstitial spaces of double-walled tanks
- ▶ Sufficient freeboard not adequately addressed
- ▶ Issues with containment area
  - Containment valves left open
  - Cracks in containment walls
  - Oil present in containment area
- ▶ **Documentation of containment capacity with freeboard**

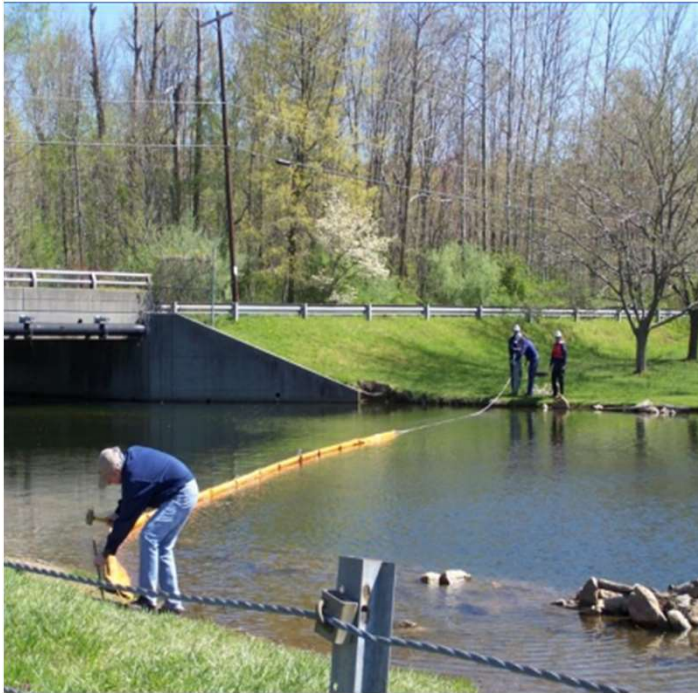
# SPCC Containment Example

Property Boundary



*Does the 100,000 gallon tank have adequate secondary containment?*

## SPCC Training of Personnel



- ▶ Conduct annual training for all personnel that handle SPCC materials
- ▶ Can be combined with training for other facility plans
- ▶ Conduct spill kit deployment exercises if required
- ▶ MUST be documented

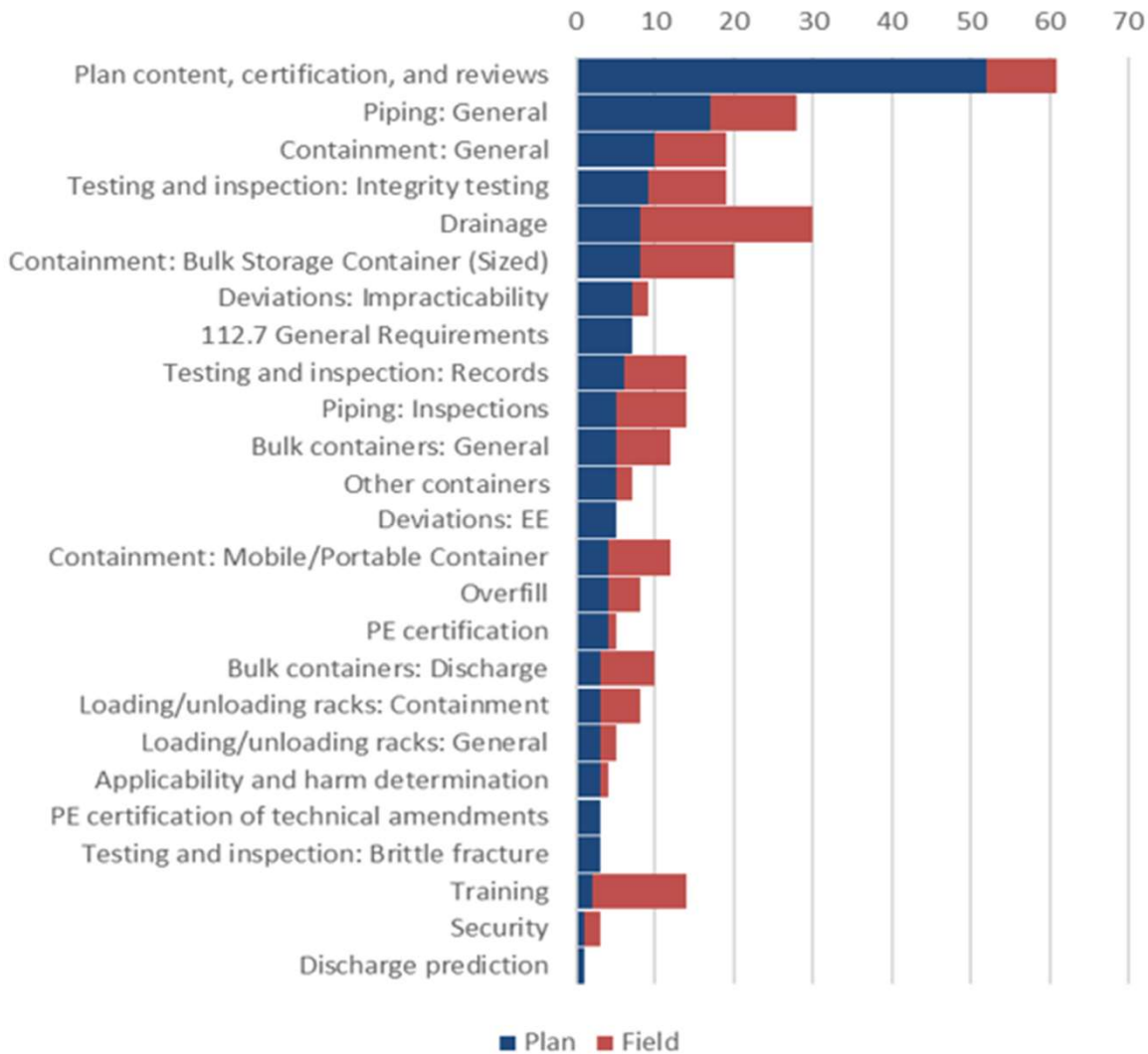
## SPCC - Common Violations

- ▶ Outdated SPCC Plan – or no plan!
- ▶ Incomplete or inaccurate site map (with all oil sources)
- ▶ Tank inspections are not documented
- ▶ Lack of integrity testing (per applicable tank standards/schedule)
- ▶ Insufficient secondary containment (for bulk storage containers)
- ▶ Lack of management approval and commitment
- ▶ Lack of certification by a Professional Engineer (for facilities > 10,000 gallons of oil storage)
- ▶ Failure to address or cross-reference all sections of 40 CFR Part 112
- ▶ Lack of contingency plan when required





## Experience-based Noted SPCC Deficiencies



## US EPA Fact Sheet Summary

### ► Most common SPCC deficiencies

- Inadequate documentation of every 5-year review
- No review/stamp by PE
- Facility diagrams/map missing information
- Secondary containment (general and sized) demonstration
- Integrity testing not addressed thoroughly

# How to Prepare for your Inspection



- ▶ Read your SPCC Plan – seriously!
- ▶ Make the sure the oil inventory (tanks, drums, totes, oil-filled equipment, etc.) is consistent between these three documents:
  - Written SPCC Plan
  - SPCC Site Map
  - Routine SPCC Inspection Checklist
- ▶ Inspection containment areas
  - Drainage valves **closed**?
  - Significant cracks? – “does the containment hold water?”
- ▶ Organized recordkeeping is still key
  - Visual inspections
  - Integrity testing reports
  - Dike drainage logs
  - Training records
- ▶ Substantial harm certification is completed and signed
- ▶ SPCC Plan is signed by management and P.E. (>10,000 gallons)
  - Self-certification is **NOT** allowed in KY

# US EPA Guidance for Regional Inspectors

- ▶ Detailed applicability information
- ▶ Example SPCC plans
- ▶ Example forms



## SPCC Guidance for Regional Inspectors

Office of  
Emergency  
Management

December 16, 2013



# **National Pollutant Discharge Elimination System**

## ***Industrial Stormwater Programs***

### ***Preparing for a Regulatory Inspection***

## Industrial Stormwater Permit – 3 Types of Regulatory Coverage

### General Permit

Facilities with categories of industrial activity which are subject to NPDES permitting (40 CFR 122.26)

### Individual Permit

Facilities with individual NPDES permit for other discharges OR subject to national effluent guideline for stormwater discharges

### No Exposure Certification (NEC)

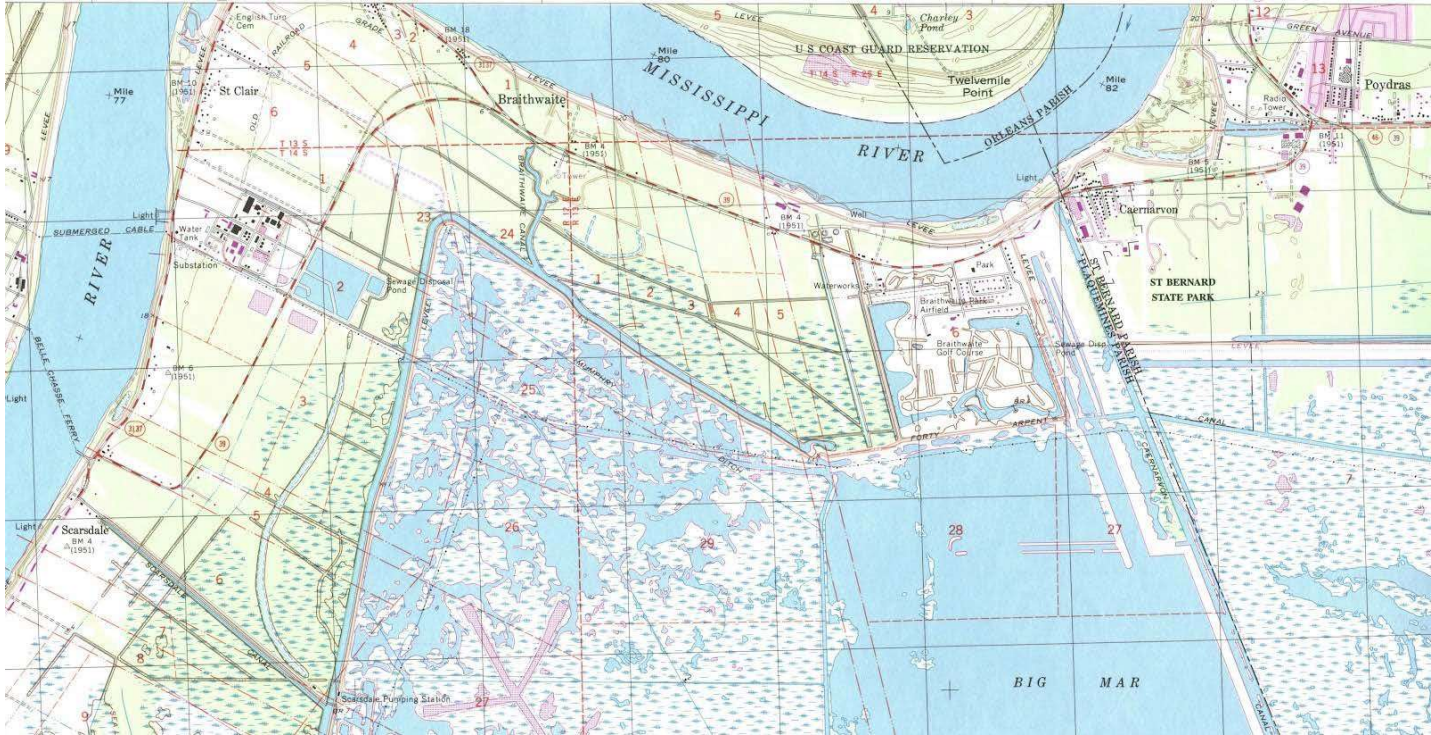
Exempted facilities which are subject to NPDES permitting, however, there is “no exposure” to industrial activity

## Permitted Facilities - Key Permit Requirements

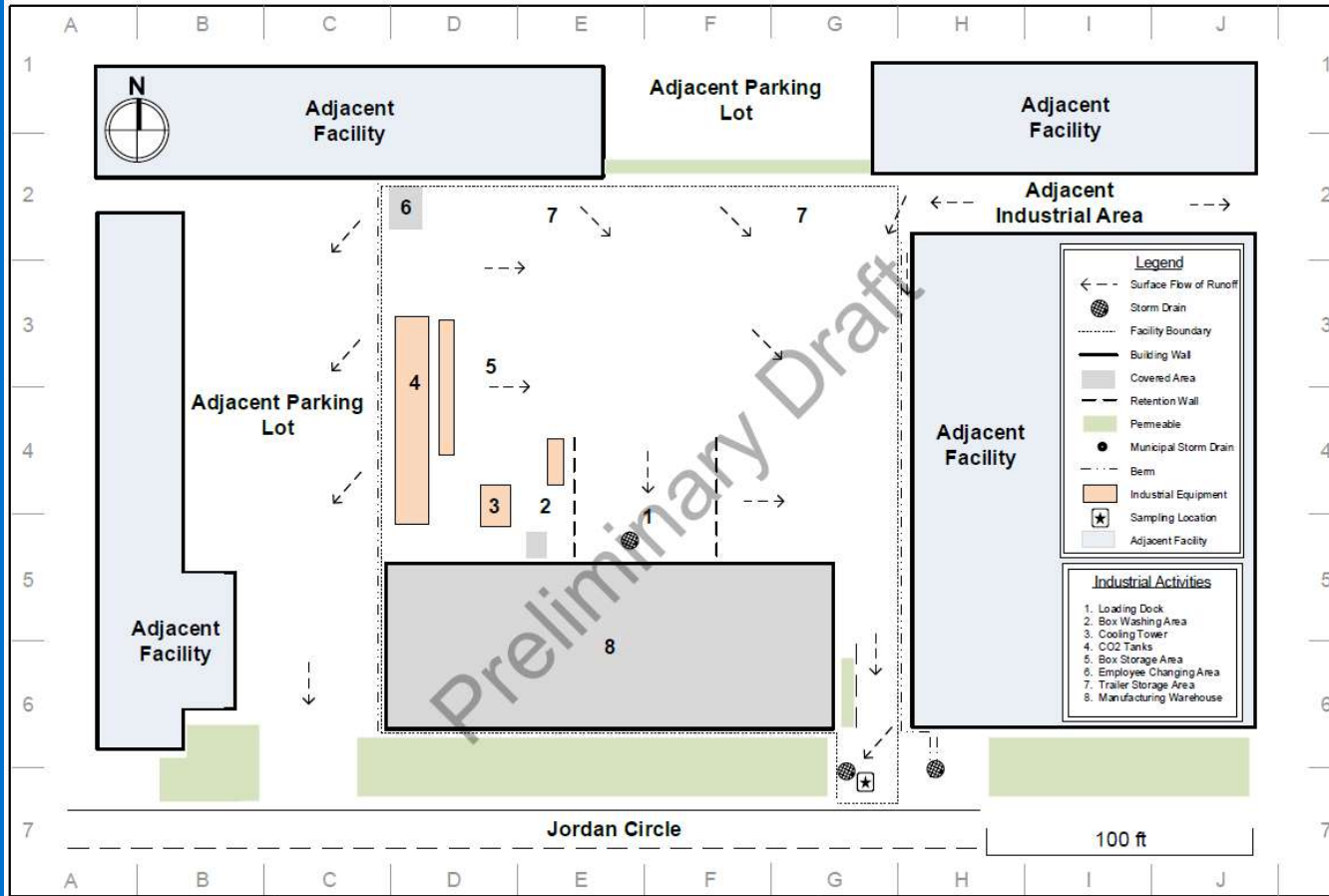
- ▶ Stormwater Pollution Prevention Plan (SWPPP)
  - Site Map and General Location Map
  - Discharge/Sampling Locations (Outfalls)
  - Pollutant Source Assessment
- ▶ Control Measures and Best Management Practices
- ▶ Routine Facility Inspections
- ▶ Stormwater Monitoring
  - Visual Assessment
  - Benchmark Monitoring (if applicable)
  - Effluent Limit Monitoring (if applicable)
- ▶ Corrective Actions



# SWPPP General Location Map Example



# SWPPP - Site Map Elements



- ▶ Facility Boundaries
- ▶ Buildings / Structures
- ▶ Pollutant Sources / Industrial Activities
- ▶ Stormwater Flow Direction
- ▶ Drainage Areas
- ▶ Conveyance Structures
- ▶ Discharge Locations
- ▶ Soil Erosion Areas
- ▶ Outdoor Storage Areas
- ▶ Sampling Points



# SWPPP Summary of Potential Pollution Sources

- ▶ Describe areas at your facility where industrial materials or activities are exposed to stormwater
- ▶ For each area identified –
  - List of industrial activities exposed to stormwater
  - Pollutants that could be exposed to precipitation and discharges
  - Where potential spills and leaks could occur
  - Unauthorized non-stormwater discharges evaluation
  - Sampling data to be collected



# Control Measures and Best Management Practices (BMPs)

- ▶ Exposure Minimization
  - Structural Controls
  - Location of pollutant sources
  - Storm-resistant coverings
- ▶ Good Housekeeping
- ▶ Preventative Maintenance
- ▶ Spill & Leak Prevention Plans
- ▶ Material Handling & Waste Management
- ▶ Erosion & Sediment Controls
- ▶ Management of Run-off/Run-on
- ▶ Employee Training
- ▶ Dust Generation/Vehicle Tracking of Industrial Materials
- ▶ Quality Assurance & Recordkeeping
- ▶ Storm Water Containment & Discharge Reduction
- ▶ Treatment Control

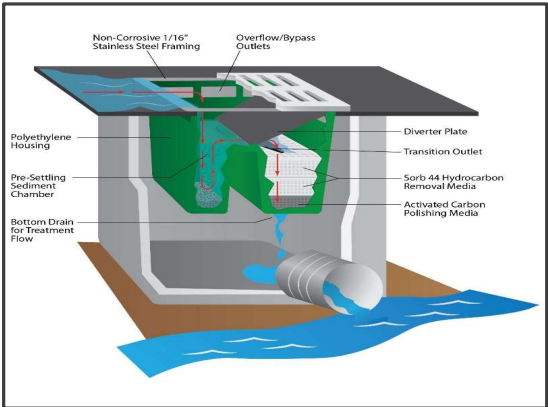
# Control Measures - Examples



**Downspout Filter**



**Stormwater Wattles**



**Catch Basin Filter**



**Secondary Containment / Dikes / Berms**



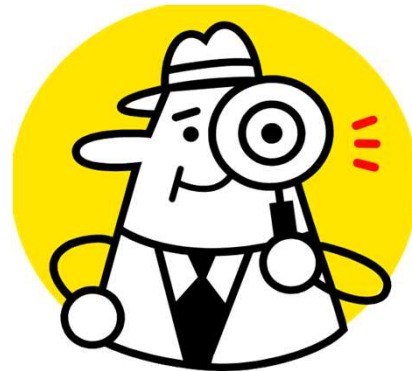
**Tarps / Covers**



**Industrial Vacuum**

# SWPPP Procedures – Inspections and Assessments

- ▶ Routine (monthly) visual facility inspections by trained staff
- ▶ Periodic inspections of outfalls, some states require analytics
  - Carefully read permit for submittal schedule of sampling
  - Sample early!
- ▶ Document any items found on inspections are corrected promptly



# Monitoring Requirements

- ▶ Types of monitoring (varies by state and SIC)
  - Visual Inspections
  - Benchmark Monitoring
  - Effluent Limit Monitoring
- ▶ Frequency may be quarterly, monthly, semiannually
- ▶ Discharge Monitoring Reports (DMRs)
  - KY GP – Submit by 7/28 and 1/28 each year
  - OH GP – Benchmark and Effluent Limit monitoring submitted monthly; Visual inspections not required to be submitted

## How to Prepare for your Inspection

- ▶ Read your SWPPP and your permit!
- ▶ Make the sure the exposed significant material list is consistent between site map, inspection list, and document
- ▶ Check your outfalls for signs of spills or contamination
- ▶ BMPs being properly maintained?
- ▶ More records
  - Routine visual inspections
  - Outfall visual inspections
  - **Signed** non-stormwater discharge evaluation
  - Monitoring records and associated Discharge Monitoring Reports
  - Annual site assessment in KY / Annual Reporting Form in OH
  - Training records
  - NOI/permit coverage
  - SWPPP is signed by management
    - ◆ Contacts in the SWPPP are current

# General Tips on Preparing for Regulatory Inspections

- ▶ Have a plan
  - Route for facility tour
  - Who is involved? Backup person?
- ▶ Be prepared
  - Know how you will describe operations to the inspector
  - Know how each program applies
  - Know where your records are
  - Review past inspection records
- ▶ Practice!
  - Conduct internal audits
- ▶ First impressions are key!
  - Good housekeeping

## SWPPP and SPCC Plan Sustainability

- ▶ Plan is easy to maintain and keep updated
  - Use tables to summarize oil inventories and exposed significant materials
  - Required inspections, testing, monitoring, etc. are clearly identified
- ▶ Easily transferrable to new EHS personnel
- ▶ Plan does not require constant revisions
  - Not too specific, but specific enough to meet the regulatory requirements
  - Avoid generic language that can be misinterpreted
    - ◆ Wrong: “Site personnel regularly receive SWPPP training.”
    - ◆ Better: “All oil-handling personnel receive annual SWPPP training.”



# Spot the Issue







Questions?



## Biographical Information

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Anita has worked as a regulator (short stint at US EPA in Cincinnati after college), consultant, and now in industry. She is currently the manager of environmental engineering for Anchor Glass Container Corporation. She is managing the environmental compliance programs for the six Anchor facilities located in six different states. While Lawrenceburg, Indiana is her “home” plant, Anita does frequently travel to the other five glass container manufacturing plants while working remotely when not traveling. Prior to accepting a position in industry, she was an environmental engineering consultant with more than 15 years multi-media permitting and compliance expertise. This included project management and technical experience in permitting, emission inventories, regulatory compliance support, multi-media environmental assessments, and complex permitting compliance efforts surrounding several NSPS and NESHAPs, Title V renewals, synthetic minor permits (including NSR and PSD analysis), and other engineering projects. Routinely assisted clients in compliance with complex environmental regulations. Developed air emission inventories for plastics, resins, coating, steel mills, automotive, food and flavoring clients that involved site evaluations, process analysis, extensive records review, and detailed calculations of potential and actual emissions. Anita is a graduate of Rose-Hulman Institute of Technology with a B.S. in Chemical Engineering.

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Stephanie Miller is a senior environmental consultant with Trinity Consultants' Columbus, Ohio office. She began her career with Trinity in Pittsburgh in 2014, where she served a number industry sectors throughout Pennsylvania, West Virginia, and Ohio. Stephanie's experience includes air permitting and compliance, air dispersion modeling, Environmental Management Information Systems (EMIS), Spill Prevention Control and Countermeasure (SPCC), Toxic Release Inventory (TRI), and a number of other environmental specialties. Her work encompasses a wide variety of industries, including oil & gas, metal manufacturing, chemical manufacturing, among other manufacturing industries. Stephanie earned a Master of Science degree in Environmental Science from the University of Cincinnati, where she conducted research on drinking water treatment at the U.S. EPA. She earned a Bachelor of Science degree in Biology from Kent State University.