

# 2011 Compliance Assistance Conference

Effective Storm Water Management



Environmental  
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# Effective Storm Water Management Complying with Ohio's NPDES Storm Water Permits

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# Nonpoint Source Pollution

- Nonpoint source pollution generally results from land runoff, precipitation, atmospheric deposition, drainage, seepage or hydrologic modification.
- By weight, silt and other sediment that wash into streams is Ohio's most common pollutant.
- Most nonpoint source pollution enters streams in stormwater runoff.

# How does sediment harm aquatic life?

- Excessive amounts can bury critical habitat where fish, bugs, and mollusk live and reproduce.
- Turbidity makes feeding, breathing & reproduction more difficult or impossible.
- Loss of diversity – Highly sensitive species are the first to go.

# Permit Eligibility

- Since March 10, 2003, those disturbing 1 or more acres of land need NPDES permits
- 2 waiver options for small construction sites (Rainfall Erosivity Waiver & Total Maximum Daily Load Waiver)
- “Zero Discharge” 100% Infiltration with no discharging underdrains = no permit required

# Operator Definition

“Operator” means any party associated with a construction project that meets either of the following two criteria:

1. The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or
2. The party has day-to-day operational control of those activities at a project which are necessary to ensure compliance with an Storm Water Pollution Prevention Plan (SWP3) for the site or other permit conditions.

# Notice of Intent (NOI) Application

- Must be submitted to Ohio EPA at least 21 days prior to initiation of ground disturbing activities
- For construction activities, the NOI must include a vicinity map and check for the appropriate fee
- A storm water pollution prevention plan (SWP3) must be developed prior to the Notice of Intent (NOI) submittal, but it does not need to be included with the NOI
- Ohio EPA will respond to the NOI submittal within 21 days of receipt

## Common NOI Problems:

- The facility address/location was not provided or is the same as company address
- The type of general permit or general permit # not provided
- Estimated start & completion dates not provided
- Land disturbance only represents street & utilities
- Land disturbance does not match the NOI fee
- NOI was not signed or a photocopy was sent in
- Vicinity map wasn't included
- Lat. and Long. not provided
- New NOI form
- <http://www.epa.state.oh.us/dsw/storm/stormform.aspx>

# All Ohio EPA Forms

- Notice of Intent (NOI) form and instructions
- Permit Transfer Application
- Individual Lot NOI and Instructions
- NOT (Notice of Termination)
- All General Permits
- Co-Permittee Forms

<http://epa.ohio.gov/dsw/storm/stormform.aspx>



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# Storm Water Pollution Prevention Plan (SWP3)

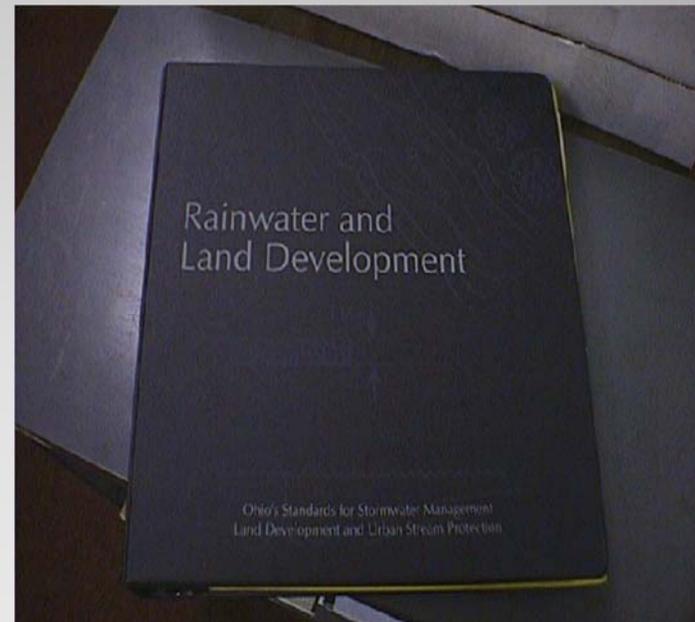
- SWP3 must be developed in accordance with the General Permit
- Must be developed prior to the submittal of NOI
- Must be maintained on site available for review
- Checklist found at:  
[http://epa.ohio.gov/portals/35/storm/CGP\\_SWP3\\_Checklist.pdf](http://epa.ohio.gov/portals/35/storm/CGP_SWP3_Checklist.pdf)
- Duty to inform all contractors and sub-contractors

## Planning Consideration For Effective SWP3 Implementation

- Delineate your watersheds
  - For all phases of construction
  - Pre and post-storm installation
  - Identify all controls per watershed
- Ensure the design limitations are not exceeded for each control

# Planning Consideration Watershed Information Must Address

- Watershed size in acres (drainage area)
- Design limitation for each control including amount required and provided



[http://www.dnr.state.oh.us/water/rainwater/default/  
tabid/9186/Default.aspx](http://www.dnr.state.oh.us/water/rainwater/default/tabid/9186/Default.aspx)

# The way to approach design.

- Call before your project begins!!!
- Can I divert clean water away?
- Can silt fence be utilized? Is it practical or economical?  
\$2.00/ft = 55 – 218 square feet of treatment.
- Can I install diversion ditches to convey water to ponds?  
Low maintenance, better control, dual purpose.
- Can I install the pond in a location that will serve all phases?
- Can I consult the excavator to determine how dirt will be moved?

**If streams or wetlands are present onsite call the Army Corps of Engineers and the Ohio EPA 401 Unit to inquire about permitting requirements.**



# Duty to Inform

- The General Permit mandates a duty to inform all sub contractors who will be involved in the implementation of the SWPPP of the conditions of the General Storm Water Permit.
- Must maintain written documentation

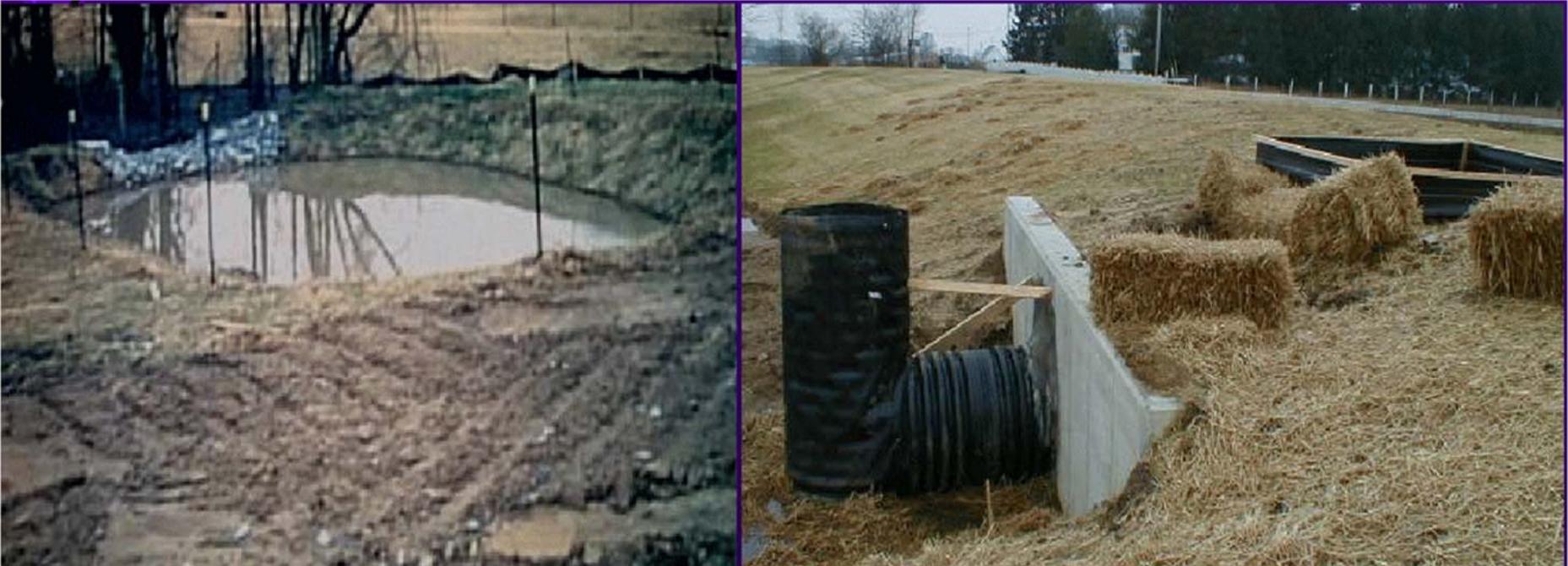
# Clearing/Grubbing

- BMP: Use chips to cover the affected areas.
- Permit Requirement: Sediment controls must be installed within 7 days of grubbing.



# Sediment Ponds

- Must address a minimum sediment storage capacity of 104 cubic yards per acre of drainage
  - Traps may be implemented for watersheds < 5 acres
  - Sediment basins with riser for larger watersheds
  - Must de-water in between storm event



# Silt Fence/Filter Berms

- Design capacity must not exceed:
  - Silt fence not to exceed 0.5 acres of drainage to 100 linear feet of silt fence
  - Filter Berms must meet requirement of silt fence



# Temporary Stabilization

Type of disturbed area	Time frame to apply erosion controls
Within 50 feet of stream <u>but not</u> at final grade	Stabilize within 2 days if area is dormant for over 21 days
Disturbed areas dormant for over 21 days but < 1 year	Stabilize within 2 days if area is dormant for over 21 days
Disturbed areas idle for winter	Prior to onset of winter weather

# Permanent Stabilization

Type of disturbed area	Time frame to apply erosion controls
Within 50 feet of stream <u>and</u> at final grade	Stabilize within 2 days of reaching final grade
Disturbed areas dormant for over 1 year	Stabilize within 7 days of last disturbance
Disturbed areas reaching final grade (> 50 feet of stream)	Stabilize within 7 days of reaching final grade

# Vehicle Tracking



# Inlet Protection

Poor Inlet Protection



Good Inlet Protection



# De-watering



Dewater into a sediment trap before discharging to stream.

# In-Stream Activities

**Build a pad to work  
in-stream**



**Or simply divert the  
water**

# Stream Crossings



Good stream crossing

# In-Stream Activities



In this example, the stream has been re-routed to perform construction activities within the stream.



# Self Inspections Required

- The inspections must be conducted every 7 days and within 24 hours of a rain event equal to or greater than 0.5 inches.
- All inspections must be logged noting all deficiencies. Logs must be maintained on site.
- All deficiencies must be corrected within 3 days or 10 days for a sediment pond.
- Check the permit for log detail requirements.











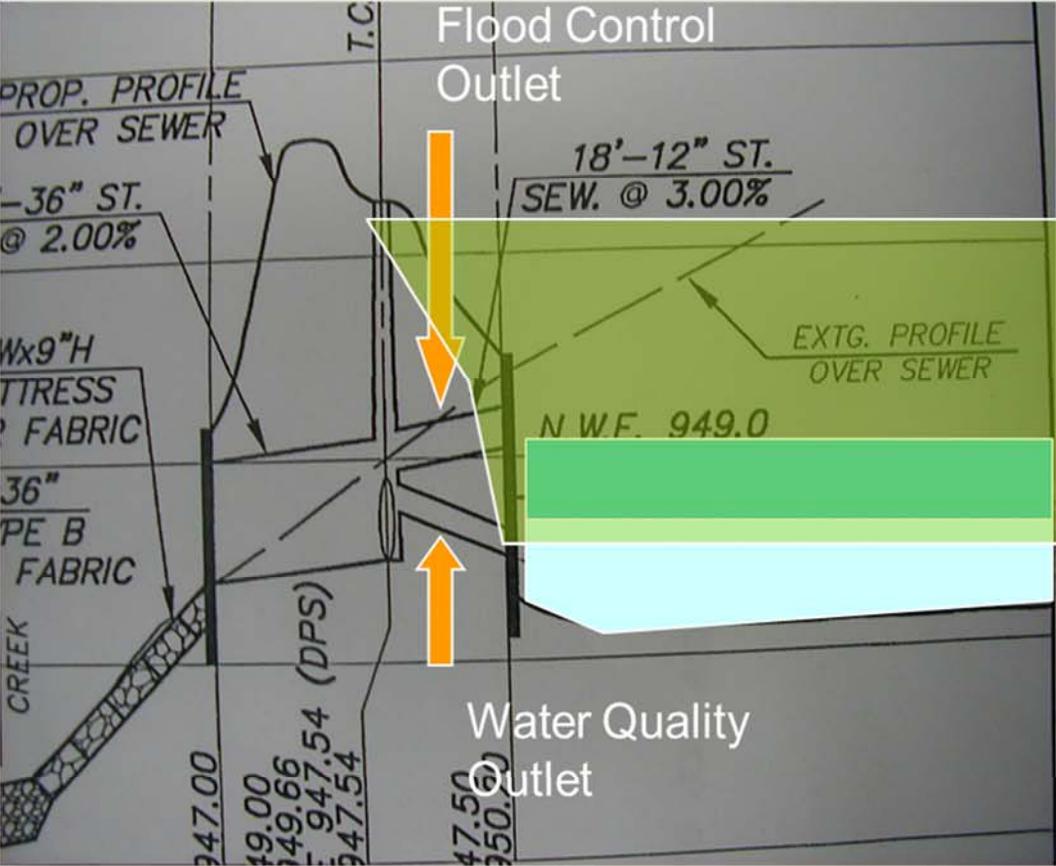




# Post-Construction BMPs

- SWP3 must provide
  - Narrative description of post-construction BMPs
  - Rationale for their selection &
  - Long-term maintenance plan must be provided to post-construction landowner
- Non-Structural post-construction BMPs are encouraged
  - Minimum riparian setback of 25 ft recommended
- Structural post-construction BMPs are required
  - On all large construction projects (5 or more acres in the larger common plan of development)
  - Must capture the Water Quality Volume (WQv) and release it over a prescribed number of hours

# Retention Pond (Wet Basin) Outlet



Profile View

The WQ Outlet is designed to drain the EDv in 24 hours

Flood Control Volume (per local requirements)

Extended Detention Volume =  $0.75 * WQv$

Wet Pool =  $(0.75 * WQv) + (0.20 * WQv)$

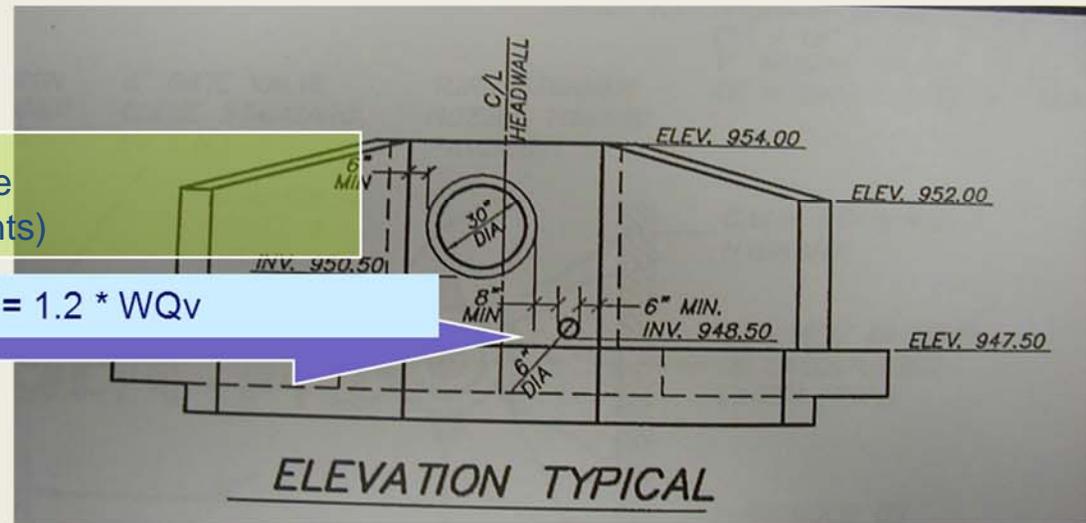
Flood Control  
Outlet

Water Quality  
Outlet

Releases WQv  
over a 48-hr time  
period

Flood Control Volume  
(per local requirements)

Water Quality Volume = 1.2 \* WQv



Provide the additional 20% of WQv in forebays or micropools

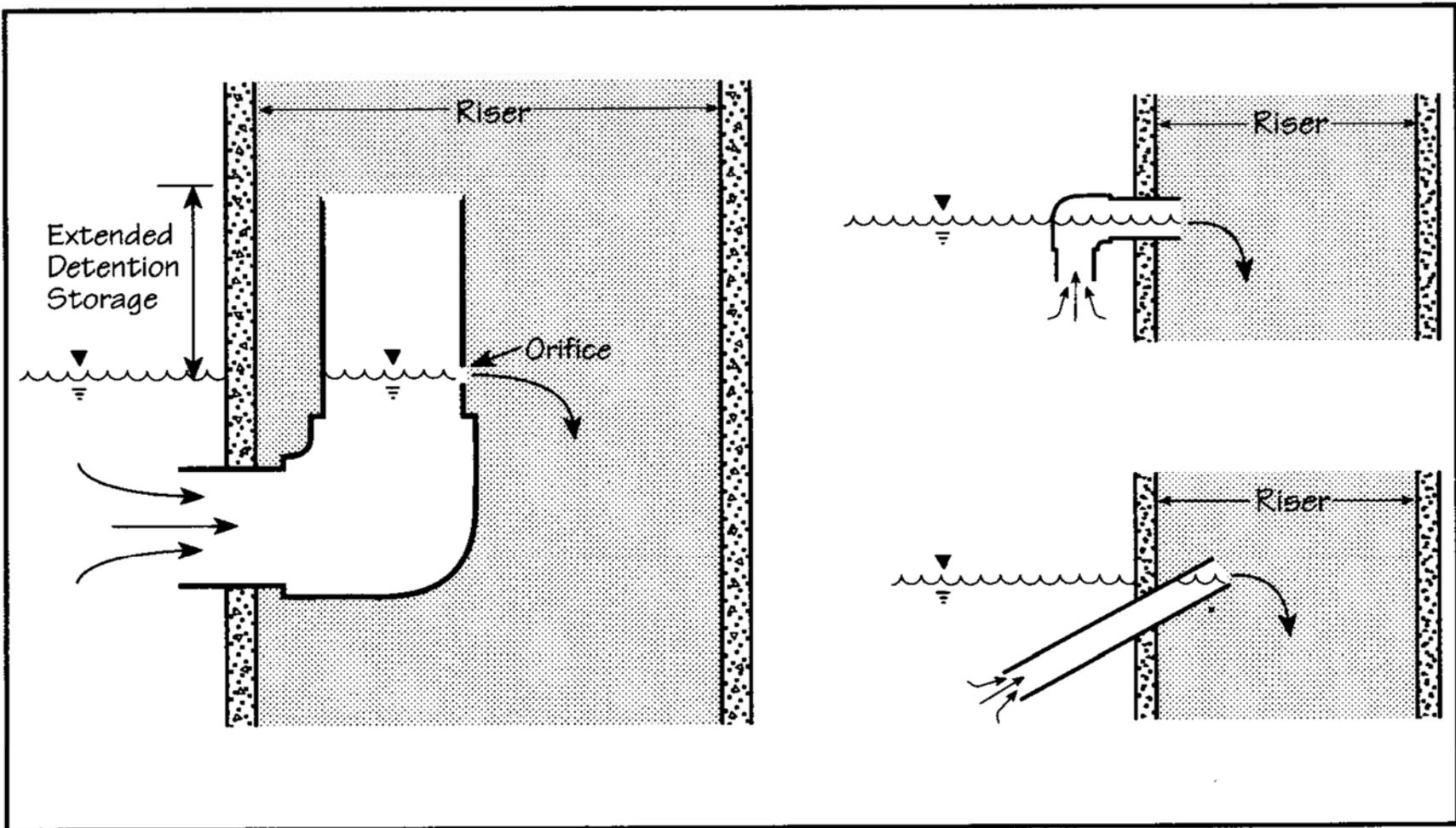


Figure 1-9 Reverse flow structures reduce clogging of slow release and trap floating pollutants

# Water Quality Ponds



**Dry Extended Detention Basin**



**Wet Pond - Solids Settling**

**Wet Pond Designed for Eutrophication**



**Photo Copyright 1999, Center for Watershed Protection**

# Filtering Systems



**Swales and Filter Strips**



**Sand /  
Media  
Filter**

**Biofilter / Bioretention**



Photo courtesy of Environmental Design Group, Inc.

# Exemptions from Post Construction Requirements

- Construction which does include the installation of any impervious areas (i.e.. Soccer Fields, Parks)
- Abandoned Mineland Sites, Restoration Activities, Wetland Mitigation,
- Linear construction activities, i.e....Utilities

# Transportation Projects

The construction of new roads and roadway improvement projects by public entities shall implement post construction practices in accordance with ODOT's "Location and Design Manual," Volume Two found at:

<http://www.dot.state.oh.us/Divisions/Engineering/Hydraulic/LandD/Pages/LDManual,Volume2.aspx>

# Offsite Mitigation of Post Construction

Ohio EPA may consider offsite mitigation for Post Construction requirements provided:

- Pre-approved by Ohio EPA
- Discharges to same stream or Hydrologic Unit Code
- Mitigation Ratio is 1.5 to 1
- Ensure mitigated area remains in perpetuity

# Non-Structural Post Construction Alternatives

Ohio EPA may consider the use of non-structural practices such as large buffer zones, preservation areas, or riparian setbacks provided:

1. Intent of Post construction requirements depicted in permit are satisfied
2. Pre-approved by Ohio EPA
3. Legally binding documentation to ensure practice is maintained in perpetuity.

# Use of Alternative BMPs for Post-Construction

Ohio EPA may consider the use of alternative BMP's for post construction provided:

1. Pre-approved by Ohio EPA
2. BMP follows Technology Acceptance and Reciprocity Partnership (TARP) or USEPA Protocols
3. Stand alone maintenance agreement is in place which is required for all Post Construction BMPs to ensure function in perpetuity.

# Notice of Termination Requirements

- The new notice of termination (NOT) language is consistent with federal CGP language
- NOT forms must be submitted to Ohio EPA within 45 days of completing all permitted land disturbance activities
- To terminate CGP coverage, a permittee must either:
  - Achieve final stabilization on the site;
  - Transfer CGP coverage for the entire site;
  - For residential areas, build the homes, temporarily stabilize the lots, & transfer ownership of all lots; or
  - An exception has been granted under Part III.G.4

# Ohio Environmental Protection Agency

Draft Industrial General Permit (OHR000005)



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## Draft OHR000005

- Consistent with USEPA MSGP
- Clearer industry specific requirements
- Existing federal guidance

## Draft OHR000005

- Does not cover the following:
  - Petroleum bulk stations and terminals (SIC code 5171)
  - Marinas (SIC code 4493)
  - Coal surface mining (SIC code 1221)
  - New discharges (no continuous coverage since February 10, 1996) to Superior High Quality Waters, Outstanding State Waters, and Outstanding National Resource Waters
  - Active landfills
  - Metal Mining SIC code 10xx
  - Phosphate Fertilizer Mfg. SIC code 2874

# Obtaining Coverage

## Renewal Coverage

- Within 90 days of being notified:
  - Submit application (NOI & \$350)
  - Revise SWP3 within 180 days of effective date of OHR000005

## Initial Coverage (new)

- Within 180 days of commencing discharge:
  - Develop SWP3
  - Submit application package (NOI & \$350)

No Exposure Certification

## OHR000004 vs. Draft OHR000005

- OHR000005 allows coverage to more facilities
- Includes clearer industry specific requirements
- Effluent limits for discharges currently covered by individual NPDES permits
- OHR000005 includes benchmark monitoring
- Monitoring data to be submitted to Ohio EPA

## New Dischargers Eligible for Coverage

- Discharges subject to federal effluent limitation guidelines
- Sand & gravel operations
- Closed landfills

# Benchmark Monitoring

- Applicable to 19 of 29 Sectors
- Begins January 1, 2012
- Annual samples
  - Exceed benchmark value – Implement corrective actions

# What's Required to be Submitted?

## Monitoring Data

- eDMR
  - Annual effluent limitations guidelines monitoring
  - Annual benchmark monitoring

# Ohio EPA Storm Water Contacts

## DISTRICT OFFICE CONTACTS FOR STORM WATER ISSUES

[Harry Kallipolitis](#) Central District Office (614) 728-3844

[Dan Bogoevski](#) Northeast District Office (330) 963-1145

[Lynette Hablitzel](#) Northwest District Office (419) 373-3009

[Aaron Wolfe](#) Southeast District Office (740) 380-5277

[Chris Cotton](#) Southwest District Office (937) 285-6442

## CENTRAL OFFICE CONTACTS FOR STORM WATER ISSUES

[Michael Joseph](#) Construction / Industrial (614) 752-0782

[Anthony Robinson](#) Municipal / Industrial (614) 728-3392

[Jason Fyffe](#) Municipal / Industrial (614) 728-1793

[Mark Mann](#) Section Manager (614) 644-2023



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**OHIO EPA SPILL LINE**  
**1-800-282-9378**

# Guidance Documents for the Storm Water Program at Ohio EPA

For additional information, see list of guidance documents and additional resources in binder.

**Questions?**