

Stormwater Basics

NEBC Stormwater Conference March 4, 2010




Stormwater Compliance Success







- Know your Permit
 - Industrial General Stormwater Permit
(Issued: January 1, 2010)
 - Construction General Stormwater Permit
(Issued: November 16, 2005)
- Put a complete stormwater program in place
- Have a trained stormwater team
- Stormwater Pollution Prevention Plan (SWPPP)







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Stormwater Program Components




- Notice of Intent (NOI) and fees
- SWPPP (defines your program)
- Best Management Practices (BMPs)
- Inspections
- Maintenance
- Monitoring
- Recordkeeping and reporting
- Spill prevention and response
- Stormwater team
- Training
- “Adaptive management”
- “Corrective Actions”


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Stormwater Pollution Prevention Plan




The SWPPP is a living document, intended to be a useful tool for preventing stormwater pollution.

The SWPPP must be updated any time there is a change in the facility that affects stormwater management

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SWPPP




- Detailed coverage in separate session
- Major elements in SWPPP (look familiar?)
 - Facility / Site Assessment
 - Best Management Practices (BMPs)
 - Inspections
 - Maintenance
 - Monitoring
 - Recordkeeping and reporting
 - Spill prevention and response
 - Stormwater team
 - Training


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Best Management Practices (BMPs)



- Four types of BMPs:
 - Operational source control
 - Structural source control
 - Treatment
 - Runoff rate and volume control
- Erosion control BMPs for construction
- “Presumptive approach” – use Ecology stormwater guidance manuals
- Presumptive approach won’t guarantee you will meet benchmarks!

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Operational Source Control BMPs



- Good housekeeping
- Inspections
- Preventive maintenance
- Spill prevention and cleanup
- “Pollution prevention team”
= stormwater team
- Employee training





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Photographs Spill Prevention/Response



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Structural Source Control BMPs



Structural Source Control BMPs are Physical, structural, or mechanical devices designed to prevent pollutants from entering stormwater.

- Berms
- Grading
- Covering pollutant sources (roof, tarp)
- Separate drainage for washwater (keep out of stormwater)

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Photographs Structural Source Control






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Treatment BMPs

Treatment BMPs are required when operational and structural source control BMPs are not adequate to reduce pollutants.

- Particulate filtration
- Settling ponds
- Treatment swales or wetlands
- Oil/water separators
- Other physical / chemical treatment

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Photographs Treatment









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Erosion Control BMPs





- Preserve vegetation / mark clearing limits
- Control runoff flow rates
- Sediment traps
- Stabilize soils
- Protect slopes









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Inspections - Industrial







- Perform at least monthly
- Inspection includes:
 - Housekeeping
 - Spills
 - BMPs (operational, structural, treatment)
 - Maintenance needs
 - Stormwater drainage
- Record inspection on checklist
- Signed/certified inspection record




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Inspections - Construction






- Perform weekly and after discharge
- Certified Erosion and Sediment Control Lead (CESCL)
- Inspection includes:
 - BMPs (operational, structural, treatment)
 - Stormwater drainage:
 - Turbidity
 - Presence of suspended sediment
 - Discoloration/ sheen
 - Spills
 - Maintenance needs
- **Record** inspection on checklist
- Attach inspection report to Site Log



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Photographs



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Maintenance




- Good housekeeping (sweeping, etc.)
- Spill cleanup
- Maintain structural BMPs
 - Berms
 - Grading
 - Roofing, tarps, etc.
- Maintain treatment BMPs
- Erosion control (construction)




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Monitoring - Industrial




- Quarterly monitoring (minimum)
- Samples representative of facility stormwater
- Document sampling
- Qualified laboratory
- Analyses
 - Turbidity, pH, copper, zinc
 - Additional for specific industries
- Benchmarks

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Monitoring - Construction



- Weekly when discharging
- Samples representative of site stormwater
- Document sampling & analysis
- Analyses
 - Turbidity
 - Transparency
 - pH (concrete work or engineered soils)
- Benchmarks

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Photographs Construction



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Recordkeeping and Reporting




- No job is complete until the paperwork is done
- Keep records of inspections
- **Document** SWPPP review & update
- If no sampling in a period, **document** why to avoid questions
- Industrial reporting
 - Quarterly Discharge Monitoring Report (DMR)
 - Annual Report
- Industrial – maintain records for 5 years

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Stormwater Team




- Have knowledgeable person in charge of stormwater compliance with sufficient authority
- Industrial – Pollution Prevention Team
- Construction – includes Certified Erosion and Sediment Control Lead (CESCL)
- Team training
- Team duties:
 - Know the SWPPP
 - Implement SWPPP
 - Routinely review SWPPP
 - Respond to spills

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Training




- Employees who have duties involving stormwater management
- Industrial
 - Stormwater team
 - General workers
- Training in contents of SWPPP = how to implement the stormwater program for the site/facility

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“Adaptive Management”




- Be proactive
 - don't wait for non-compliance – conditions change
- BMPs don't always work as planned
- Pay attention to inspection & monitoring results
- **Anticipate problems**
- Avoid the need for formal corrective action
- Review and update SWPPP regularly








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Corrective Actions




- Formalized process for industrial permit
- Level 1
 - Exceed any benchmark
 - Revise SWPPP
 - Additional operational BMPs
 - Summarize corrective action in annual report
- Level 2
 - Exceed benchmark for 2 quarters in a year
 - Revise SWPPP
 - Additional structural BMPs
 - Summarize corrective action in annual report

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Corrective Actions (cont'd)

- Level 3
 - Exceed benchmark for 3 quarters in a year
 - Revise SWPPP
 - Additional treatment MPs
 - Changes certified by P.E., geologist, etc.
 - Summarize corrective action in annual report
- Level 4 (new)
 - Benchmarks exceeded after Level 3
 - Site-specific action by Ecology
- If you don't comply, a "third party" is waiting to "help" you

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Thank You!