Managing Industrial Stormwater
In Minnesota

Sector S: Air Transportation

Zach Chamberlain
Overview

- History
- General requirements
- SWPPP
- BMPs
- Monitoring – benchmarks
- No Exposure Exclusion
What does industrial stormwater program look like past to present?

- 1992 NPDES stormwater authority granted to Minnesota
- 1997 the first General Stormwater Permit for Industrial Activity is issued
- Permit expired in 2002
- Draft permit on public notice September 2002
- 2003 municipally owned industrial activities required to have General Stormwater Permit
- 2005 EPA public notice of revision to its Multi Sector Industrial Stormwater General Permit
- 2006 Work Group created to provide insight into new permit process
What is stormwater?

Stormwater is site runoff and drainage from:

- Rain
- Snow, sleet, hail

When contaminated with facility materials, stormwater affects water quality.
What industrial materials and activities are significant?

<table>
<thead>
<tr>
<th>Materials</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material-handling equipment</td>
<td>Handling</td>
</tr>
<tr>
<td>Machinery</td>
<td>Storing</td>
</tr>
<tr>
<td>Raw materials</td>
<td>Loading, unloading</td>
</tr>
<tr>
<td>Intermediate &amp; final products</td>
<td>Transporting</td>
</tr>
<tr>
<td>By-products &amp; waste</td>
<td></td>
</tr>
</tbody>
</table>
What industrial materials and activities are not significant?

- Containers and tanks sealed and free from deterioration
- Adequately maintained vehicles
- Completely covered/plugged dumpsters
- Materials that are stored outside that do not contaminate stormwater
- Office buildings and parking lots
Why do we care about stormwater?

Mismanaged fluids and sediments that contaminate stormwater, lead to polluted lakes and rivers and:

- Affect the ability of aquatic life to survive
- Deplete necessary elements
Who must apply for a stormwater permit?

Facilities with activities that fall into one of eleven categories, most with specific SIC codes – these are organized into 30 sectors

Sector S, Air Transportation:
- 4512 Scheduled air transportation
- 4222 Refrigerated warehousing and storage
- 4513 Air courier services
- 4225 General warehousing and storage
- 4522 Nonscheduled air transportation
- 4226 – 4581
- 4581 Airports, flying fields, and airport terminal services

Complete list of SIC codes are in application instructions
Industrial Stormwater Multi-Sector General Permit

Requirements:

- Develop a Stormwater Pollution Prevention Plan (SWPPP)
- Create Best Management Practices (BMP’s)
- Benchmark monitoring – this is new
How do I obtain the permit?

- Apply now, if you currently do not have coverage
- Create a SWPPP
- Apply for new permit
- No permit fee-annual fee only
- If your facility already has an individual NPDES/SDS permit, stormwater requirements will be inserted at time of re-issuance.
Industrial stormwater work group

- Aggregate and Ready Mix Association
- Aggregate Industries
- Salvage yards
- Auto recyclers
- Electric generation
- Mining
- Petroleum refining
- Manufacturing

- MN Chamber of Commerce
- Government agencies (MNDOT, MAC)
- Cities that receive industrial stormwater
- Consultants
- Environmental groups
- MPCA staff
A closed dumpster prevents contaminated stormwater
Cover industrial materials to prevent runoff issues
Improper storage of waste leads to stormwater problems
Sector-specific requirements

Each sector would have specific requirements for:

- What pollutants to monitor and frequency
- Benchmarks
- BMP’s
- Multi-sector requirements
You have choices in BMP’s to use

- Plan your BMP’s early
- Document BMP’s in your SWPPP
- Use your SWPPP as a guide to manage your site
## Areas to assess for pollution potential

- Aircraft fueling & deicing areas
- Aircraft dismantling areas
- Aircraft maintenance areas
- Aircraft painting and washing areas
- Waste material storage areas
Fueling activities – a potential source of contaminated stormwater
Clean up spills immediately
Storm drains from airports impact surface and ground waters
BMPs to help minimize stormwater contamination

- Dedicated deicing areas (pads)
- Cleaning up deicing spills (no matter the size)
- Recycle deicing fluids
- Indoor maintenance of aircraft
- Secondary containment and berming of fueling areas
- Use alternative deicing equipment/materials beside glycol
- Manage/treat/divert contaminated stormwater runoff
- Good housekeeping
## Benchmark monitoring parameters and limits

### Table 1: Airports that use more than 100,000 gallons of glycol-based deicing/anti-icing chemicals and/or 100 tons or more of urea on an average annual basis.

<table>
<thead>
<tr>
<th>Subsector</th>
<th>Parameter</th>
<th>Benchmark Concentration</th>
<th>Infiltration Benchmark Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Stormwater outfalls from the airport facility that collect runoff from areas where deicing/anti-icing activities occur (SIC 4512-4581).</td>
<td>Biochemical Oxygen Demand (BOD5)</td>
<td>25 mg/l</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Chemical Oxygen Demand (COD)</td>
<td>120 mg/l</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Total Ammonia</td>
<td>12.5 mg/l</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>TSS</td>
<td>100 mg/l</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>pH</td>
<td>6.0-9.0</td>
<td>NA</td>
</tr>
</tbody>
</table>

* Infiltration is not allowed for stormwater outfalls related to deicing and/or anti-icing activities.
### Benchmark monitoring parameters and limits

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<tr>
<td>b. Stormwater outfalls not associated with deicing or anti-icing activities.</td>
<td>TSS</td>
<td>100 mg/l</td>
<td>none</td>
</tr>
<tr>
<td></td>
<td>Oil and grease</td>
<td>10 mg/l</td>
<td>None, no visible sheen</td>
</tr>
</tbody>
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Table 2. Airports that use less than 100,000 gallons of glycol-based deicing/anti-icing chemicals.
**Table 3. Airports that use less than 100,000 gallons of glycol-based deicing/anti-icing chemicals.**

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<tr>
<td>Stormwater outfalls</td>
<td>TSS</td>
<td>100 mg/l</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Oil and grease</td>
<td>10 mg/l</td>
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** Intentional and/or the specifically structured discharge of stormwater runoff from deicing and anti-icing areas using glycols or similar deicing and anti-icing fluids to infiltration basins, during the seasonal period of deicing (November through April), is prohibited.

** Best management practices shall be used at all areas where deicing and anti-icing is conducted to minimize glycol stormwater runoff and losses to the environment to the extent feasible.
Benchmark monitoring – Sector S

- Implement, manage and maintain BMP’s
- Sample quarterly in the 2nd year of the permit; compare average to benchmark
- If you exceed benchmark, make changes to BMPs (year 3); document in the SWPPP; repeat benchmark monitoring (year 4)
- If benchmark is exceeded again, an individual permit may be needed
What is no exposure?

All significant industrial materials and activities are protected from:

- rain
- snow
- snowmelt
- run-off

by a storm resistant shelter
What is the advantage of achieving no exposure?

- Conditional exclusion from the industrial stormwater permit
- No SWPPP, no annual fee, no annual reports, no monitoring
- Stormwater contamination is avoided = clean waters
How do I obtain no exposure exclusion?

- All significant materials/industrial activity protected from stormwater
- Submit the permit application and No-exposure Certification Section every 5 yrs
- Submit a copy of the certification, upon request, to the municipality in which the facility is located
<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zachary Chamberlain</td>
<td>651-757-2266</td>
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<tr>
<td>Melissa Wenzel</td>
<td>651-757-2816</td>
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<tr>
<td>Chelsea Domeier</td>
<td>651-757-2310</td>
</tr>
<tr>
<td>Lou Flynn (engineer)</td>
<td>651-757-2364</td>
</tr>
<tr>
<td>MPCA</td>
<td>651-296-6300</td>
</tr>
<tr>
<td></td>
<td>1-800-657-3864</td>
</tr>
<tr>
<td><a href="http://www.pca.state.mn.us/water/stormwater/stormwater-i.html">www.pca.state.mn.us/water/stormwater/stormwater-i.html</a></td>
<td></td>
</tr>
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</table>
Questions/Answers

Q: Are infiltration ponds allowed to treat stormwater?
   A: Infiltration Ponds, for treatment of stormwater related to deicing and/or anti-icing activities, are not allowed in the Industrial Stormwater Permit, for sector S, Air Transportation facilities. The industrial stormwater from deicing/anti-icing activities must pass benchmark values before going to an infiltration pond. All other stormwater may be infiltrated-see slides 22-24.  (this is a correction)

Q: Will MPCA grandfather in existing ponds?
   A: Depends on what stormwater the pond receives from the site. Existing ponds will not be allowed to TREAT industrial stormwater runoff. The MPCA recognizes the need to store stormwater away from runways and as long as the water is uncontaminated (or the industrial portion meets benchmark values prior to the water reaching the pond), and the MPCA sees no reason to change this practice.

Q: What about facilities with no ponds—how do we manage our stormwater?
   A: As with many facilities, stormwater may run off the property boundaries or by conveyance systems (swales and ditches) to other surface water systems. Monitor your discharge at the edge of your property or at distinct outfalls. Some sites may need to monitor sheet flow if no defined outfalls exist..
Q: How do we comply with the Industrial Stormwater Permit requirements? What’s the timeline?
   A: Apply for the permit when it’s reissued (estimated: Spring 2009—we will notify you). Implement BMP’s in 2009, sample in 2010. If you pass benchmark limits, all that needs to be done is to continue to make sure BMP’s are working.

Q: When do we need to submit monitoring data?
   A: Quarterly in year 2 unless you don’t pass your benchmarks.

Q: How are leased facilities at airlines regulated? Do they need their own permit? When does the owner of the Airport have to take responsibility?
   A: Leased facilities involved in industrial activity need to get their own permit. Both the owner of the airport and the leased facilities have responsibilities in properly managing stormwater runoff, particularly if they share the same outfall.

Q: How are mobile fueling operations regulated, given their temporary nature?
   A: Mobile fueling operations must apply for a permit, and must maintain BMP’s just like the Airport. They must clean up their spills immediately and will also have benchmark monitoring requirements.
Questions/Answers

Q: Monitoring-who’s responsible when a benchmark is exceeded?
   A: The permitted facility (or mobile operations) is responsible whether it’s the leased facility/mobile operation company that caused the benchmark to be exceeded. The airport will want to be sure that these companies are operating within their permit requirements if outfalls are shared.

Q: What about lack of precipitation and an inability to monitor quarterly? When do we monitor?
   A: Research shows that significant precipitation events happen in all parts of the state on at least a quarterly basis. In the event that a significant precipitation event does not occur, MPCA has created a waiver for sampling. Sampling must be conducted twice in the following quarter.

Q: Are there kits developed so municipally-owned airports can conduct their own monitoring?
   A: Commercial kits have been created for many industrial stormwater facilities to sample, not just for airports and not just for municipalities. The MPCA will have a list of these companies as well as training videos on the MPCA website to help facilities monitor before the monitoring requirements begin.
Questions/Answers

Q: What if operations are continuous or we exceed our benchmark requirements? Why do we need to monitor?
A: Because industrial stormwater pollution isn’t as obvious as construction stormwater pollution, it’s harder to see contaminated runoff. Passing the benchmarks shows that your BMP’s are working. No further monitoring is needed in this permit term (except in a few instances) after you pass year 2’s sampling. In the next permit term, you likely will need to repeat benchmark monitoring to demonstrate ongoing BMP effectiveness.

Q: Will the SWPPP requirements be the same as the ones we’ve already created?
A: With the exception of the benchmark monitoring and other minor exceptions, yes, the new SWPPP requirements will be similar. MPCA recommends using your existing SWPPP when you update your new SWPPP. MPCA has created a SWPPP checklist, available on the MPCA Web site, to help identify SWPPP requirements.

Q: Can benchmarks be flexible?
A: Benchmarks are an indication for a facility to know how their BMPs are working. They are set to provide assurance that the BMP’s are effective. There are different sets of requirements for benchmarks, based on the amount of glycol-based deicing/anti-icing chemicals an airport uses annually.
Q: What’s the timeline for submitting a SWPPP and monitoring?
   A: No SWPPP is required to be submitted. It is a tool for a regulated facility to use to help them manage their stormwater. Monitoring results will need to be submitted quarterly in year two. Forms and instructions will be available on the MPCA’s website when the monitoring requirements begin.

Q: Why do we have to pay $400 if we’ve passed our benchmark?
   A: This is the fee a facility pays annually to maintain an Industrial Stormwater permit. The funds go to the general fund which partially finance MPCA environmental programs (currently less than 30% of WQ programs are covered by WQ permit fees). The balance of what is required to operate the MPCA Water Program comes from EPA and other funds directed by the Legislature. General permit fees are much lower than individual permit fees (ranging from $500–several thousand dollars).

Q: Are agricultural spray activities regulated?
   A: No, not by the MPCA. MN Department of Agriculture regulates such activities.
Q: Sea planes are landing/taking off and no other industrial activity is occurring at an airport: do we qualify for No Exposure?
   A: If no fueling, de-icing, or maintenance of these planes are occurring at an airport (sea planes or traditional planes), a facility can qualify for No Exposure, as long as these planes are properly maintained and are not leaking fuel/waste.

Q: Are deicing and refueling considered “exposure”?
   A: Yes.

Q: How do we certify No Exposure?
   A: Currently in the Industrial Stormwater Application, there is a section dedicated to the No Exposure Exclusion. If a facility can answer “no” to all of the questions about Exposure, one signs and mails in the application. No SWPPP has to be created, no annual reports, sampling, or fees. The certification needs to re-applied every 5 years.

Q: When can we submit public comments?
   A: The public comment period for all sectors/facilities will be later this summer. The MPCA welcomes comments at any time until the permit is issued.
Questions/Answers

Comment: We feel that smaller airports were not taken into consideration when the permit/sector requirements were drafted!
A: We have taken comments and concerns into consideration and are making changes to the requirements.

Comment: Many municipalities where airports are at are also regulated by MS4 so these two programs are working together! That’s a good thing!
A: While the MPCA agrees, we appreciate hearing this! Stormwater is a shared issue and the MPCA is working on building connections between Industrial, Construction and Municipal Stormwater.

Comment: No two airports are the same.
A: The MPCA agrees and welcomes the opportunity to work with Airports to make sure their concerns are being addressed. Thank you for the opportunity to work with you in our shared goals of protecting Minnesota Waters!

http://www.pca.state.mn.us/water/stormwater/stormwater-i.html