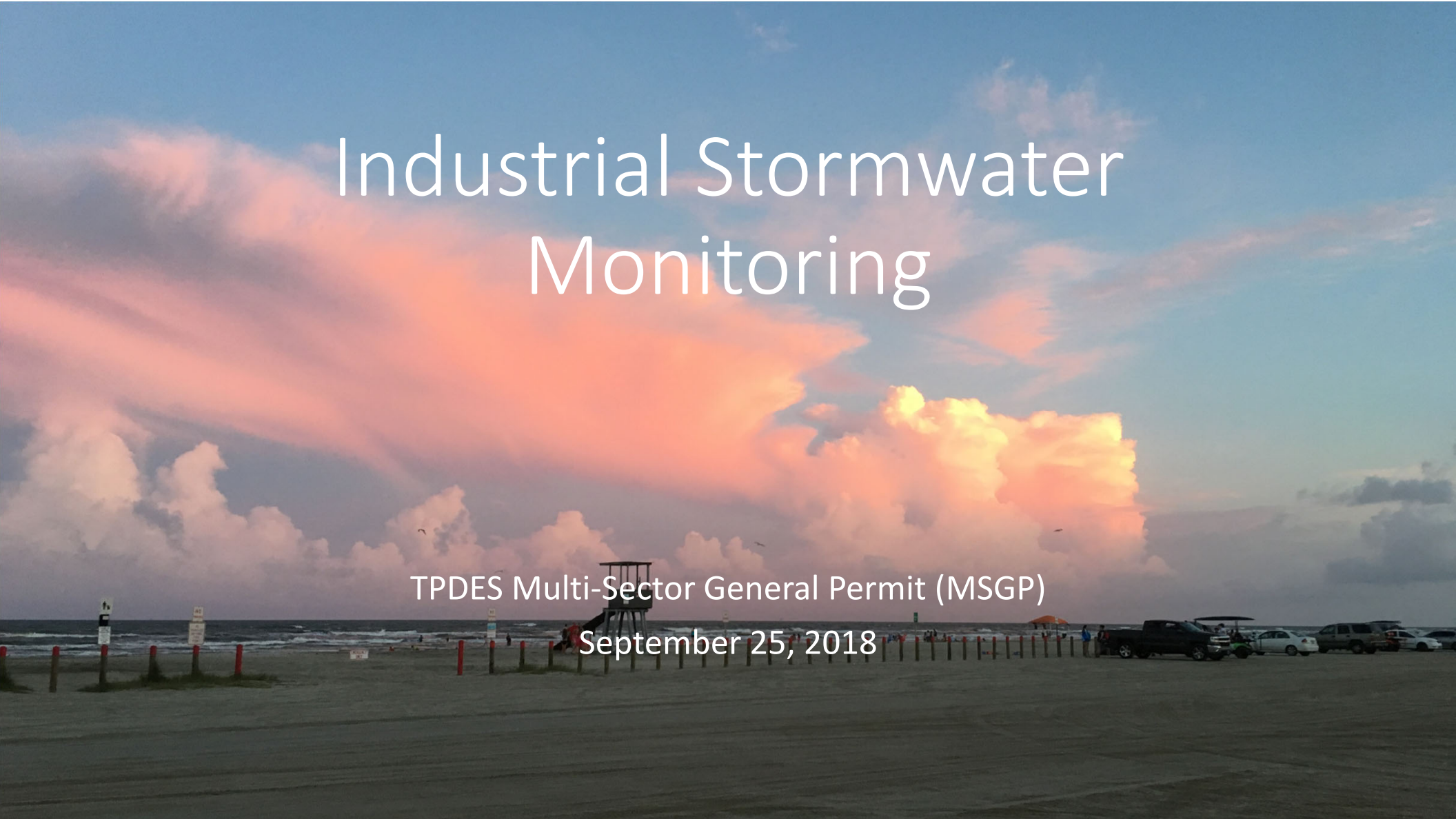


Industrial Stormwater Monitoring

TPDES Multi-Sector General Permit (MSGP)
September 25, 2018



Concepts to Remember

- Stormwater is not treated prior to entering a waterbody
- Section 402 of the Clean Water Act regulates stormwater runoff
- In Texas, stormwater permits can be issued by:
 - TCEQ
 - EPA (for facilities regulated by RRC or on Tribal Lands)
- Major types of stormwater permits include:
 - Individual Permits
 - General Permits
 - CGP (construction); MS4 (municipal); MSGP (industrial);others.....

Contents

- Water Quality
- NPDES Program
 - Varieties of Industrial TPDES General Permits
- Industrial Multi Sector General Permit (MSGP)
 - Determination of additional monitoring due to receiving stream
 - Types of monitoring required
- Proper sample collection technique
 - Sample Collection, Preservation, and Transport
- Laboratory Methods
- Data Recording and Reporting



Water Quality

- Federal Water Pollution Control Act of 1948
 - Enacted in response to seriously degraded waters

<https://www.youtube.com/watch?v=UnNWaNRDIJs>

- Clean Water Act was enacted by Congress in 1972
 - Provided a funding mechanism for POTWs
 - Provided a permitting framework for discharges of pollution

<https://clevelandhistorical.org/items/show/63>

Water Quality and the Clean Water Act

- Section 401 – Water Quality Certification
 - Established designated beneficial uses
 - Enforced by the States
- Section 402 – NPDES Permitting
 - Enforced by US EPA
 - Includes a 401 Water Quality Certificate
- Section 404 – Discharge of dredge and fill
 - Enforced by USACE
 - Includes a 401 Water Quality Certificate
- Section 303 – Defines “Impairment” Status of Streams
 - Prioritized for corrective action and TMDL Implementation Plans

National Pollutant Discharge Elimination System (NPDES)

- The Clean Water Act prohibits the discharge of “pollutants” through a “point source” into “waters of the U.S.” without an NPDES Permit
- Permits contain:
 - limits on what you can discharge
 - monitoring and reporting requirements, and
 - other provisions to ensure that the discharge does not hurt water quality or people's health

TPDES Permits for Industrial Sites

- Individual Permits
- General Permits
 - Industrial MSGP Stormwater (TXR05)
 - Construction Stormwater (TXR15)
 - Municipal Separate Storm Sewer System (MS4) (TXR04)
 - Concrete Batch Plant Wastewater (TXG11)
 - CAFO Wastewater (TXG92)
 - Hydrostatic Test Water (TXG67)
 - Petroleum Contaminated Water (TXG83)
 - John Graves Scenic Waterway (TX50)
 - Etc.... <https://www.tceq.texas.gov/permitting/wastewater/general>

Industrial Sectors and the MSGP

- Timber Products
- Paper and Allied Products
- Chemical and Allied Products
- Asphalt Paving and Roofing Materials and Lubricants
- Glass, Clay, Cement, Concrete, and Gypsum Products
- Primary Metals
- Metal Mining (Ore Mining and Dressing)
- Coal Mines and Coal Mining Related Facilities
- Oil and Gas Extraction
- Mineral Mining and Dressing
- Hazardous-Waste-Storage Facilities
- Landfills and Land-Application Sites
- Automobile Salvage Yards
- Scrap-Recycling Facilities
- Steam Electric-Generating Facilities
- Land Transportation and Warehousing
- Water Transportation
- Ship and Boat Building or Repairing Yards
- Air Transportation
- Treatment Works
- Food and Kindred Products
- Textile Mills, Apparel, and Other Fabric Product Manufacturing; Leather and Leather Products
- Furniture and Fixtures
- Printing and Publishing
- Rubber, Miscellaneous Plastic Products, and Miscellaneous Manufacturing Industries
- Leather Tanning and Finishing
- Fabricated Metal Products
- Transportation Equipment; Industrial or Commercial Machinery
- Electronic, Electrical, Photographic, and Optical Goods
- Miscellaneous Industrial Activities

Sector Specific Considerations

- Part V. of the MSGP describes Sectors A through AD of covered industrial activities
- Sectors present additional requirements specific to the activities covered under each sector
- For example, Sector E.- Glass, Clay, Cement Concrete, and Gypsum Product Manufacturing Facilities have specific criteria for the following:
 - Non-stormwater discharges
 - Pollution Prevention Measures and Controls
 - Additional SWP3 Documentation requirements
 - Numeric Effluent Limitations (NELs)
 - Benchmark Monitoring Requirements

Impaired Waters Considerations

- Impaired water require special attention in the SWP3
- Impaired waters: [2014 Texas Integrated Report of Surface Water Quality \(CWA 305\(b\) and 303\(d\)\)](#)
- Discharges of pollutants of concern to impaired waterbodies where there is a TMDL are not eligible for MSGP coverage unless they are consistent with the approved TMDL.
- Must determine if the site discharges to a listed impaired water and/or to a water with a [TMDL](#)

Impaired Waters Considerations continued

- The MSGP describes:
 - Requirements for new discharges to impaired waterbodies
 - Requirements for existing discharges to impaired waterbodies with an approved TMDL
 - Requirements for existing discharges to impaired waterbodies without an approved TMDL
- Some requirements that may apply include:
 - Preventing exposure of stormwater to the pollutant of concern
 - Documenting that the pollutant of concern is not present on site
 - Analytical data showing a discharge is not expected to exceed a water quality standard

Impaired Waters Considerations continued

- General requirements for new discharges, the permittee shall either:
 - Prevent the exposure of stormwater to the pollutant of concern
 - Document in the SWP3 that the pollutant of concern is not present on site
 - Demonstrate through analysis that runoff is not expected to cause or contribute to an exceedance of a water quality standard
- Prohibits discharge to “Tier 3” Streams

Impaired Waters Considerations continued

- General requirements for existing discharges with an approved TMDL
 - An existing discharge to an impaired waterbody with an approved TMDL may only be authorized under the MSGP if the permittee complies with additional controls required by the TCEQ in the TMDL, TMDL implementation plan, or as otherwise directed by writing by the executive director.
 - If the TMDL or implementation plan does not identify monitoring requirements for the permittee, then additional monitoring is not required

Impaired Waters Considerations continued

- General requirements for existing discharges to an impaired water body without an approved TMDL, the permittee shall either:
 - Prevent exposure of stormwater to the pollutant of concern and document such prevention in the SWP3
 - Document in the SWP3 that the pollutant of concern is not present on site
 - Obtain analytical data showing a discharge from the site is not expected to cause or contribute to an exceedance of a water quality standard (see MSGP for further details on requirements)

Discharges in the Edwards Aquifer Recharge Zone

- MSGP Part II Section B (8)
- Additional requirements under 30 TAC Chapter 213- Edwards Aquifer Protection Rule
- Water Pollution Abatement Plan if in recharge zone
- Discharges located 10 miles upstream of the recharge zone must submit a copy of NOI to the appropriate TCEQ regional office

Water Quality Monitoring Requirements

- Quarterly Visual monitoring
- Semi-annual benchmark monitoring
- Annual hazardous metals
- Numeric effluent limitation monitoring

Quarterly Visual Monitoring

- Visual monitoring of stormwater discharge on a quarterly basis
- Monitoring is conducted in normal hours of operation and must be collected in a clean, clear, glass or plastic container and examined in a well lit area
- Findings including the below must be documented
 - Color
 - Clarity
 - Floating solids
 - Settled solids
 - Suspended solids
 - Foam
 - Oil sheen
 - Noticeable odors
 - Other obvious indicators of stormwater pollution

Semi-Annual Benchmark Monitoring

- Part IV. Of the MSGP
- Two periods, January-June; July-December
- Sector specific sampling requirements
- Benchmark exceedances- investigate within 90 days
- Background concentration exceedances
- Exception at inactive/unstaffed sites/ “Adverse” weather conditions

Benchmark Monitoring Requirements

- Parameters listed in Part V of the MSGP for specific sectors
- Samples must be collected every six months following permit issuance
- Waiver: if annual average for first two years is below the benchmark value, then a waiver may be obtained for years 3 and 4 with limitations
 - Waiver does not relieve having to monitor constituents required in Numeric Effluent limitation monitoring
- Submit results to the TCEQ on form provided by the executive director by March 31 of each year
- Annual average by SIC code is reported, not by outfall

Annual Hazardous Metals Monitoring

- Conducted once per year
- Sample collected must be representative of the discharges that would reach surface water in the state
- Submit DMRs to the TCEQ
- Exceedances are a Numeric Effluent Limitation (NEL) and are a violation of the Clean Water Act
- Waivers: Permittee may certify the absence of metals and exempt themselves from performing metals monitoring

Daily Maximum Effluent Limitations

Parameter (total)	Discharges to Inland Waters (mg/L)	Discharges to Tidal Waters (mg/L)	Frequency
Arsenic	0.3	0.3	1/Year
Barium	4.0	4.0	1/Year
Cadmium	0.2	0.3	1/Year
Chromium	5.0	5.0	1/Year
Copper	2.0	2.0	1/Year
Lead	1.5	1.5	1/Year
Manganese	3.0	3.0	1/Year
Mercury	0.01	0.01	1/Year
Nickel	3.0	3.0	1/Year
Selenium	0.2	0.3	1/Year
Silver	0.2	0.2	1/Year
Zinc	6.0	6.0	1/Year

Numeric Effluent Limitations: Categorical

- The CWA includes NELs for specific categories of industrial dischargers
- Standards are “technology-based” meaning
 - Limits are based on performance of treatment and control technology
 - Limits are *not* based on potential impacts to receiving waters
- Codified in Title 40 of the CFR Chapters 405 - 471
 - <https://www.epa.gov/eg/industrial-effluent-guidelines>
 - Limits are updated periodically based on changing treatment and control technologies
 - Standards do NOT become less restrictive over time

Let's Talk About Outfalls

- Outfalls are defined as the point (or area) where runoff
 - Exits the property and/or
 - Enters a receiving water and/or
 - Enters the MS4 system
- Should provide a sampling point that is representative of the drainage area
- Should be accessible and safe for sampling

Let's Talk About Substantially Similar Outfalls

- Substantially Similar Outfalls must have
 - Same drainage area
 - Same activities, processes, and materials exposed
 - Same controls in place
 - Same runoff coefficient (surface conditions)
- Applicable to quarterly visual, benchmark, and annual metals monitoring
- Not applicable to outfalls with:
 - Categorical NELs
 - Any non-stormwater discharges

Proper Sample Collection Technique

- Now that you know what you're testing for....
- Prepare your sample kits
 - Which type of analysis are you performing?
 - How many outfalls?
 - Indelible ink
 - Ice chest with ice
 - pH meter or test strips, when testing for pH

Qualifying Storm Event

- Measurable storm event that results in a discharge from the facility that follows the preceding storm even by at least 72-hours (3 days)
 - The permittee may document that local qualifying rain events are less than 72-hours apart
 - Snow melt must be monitored when a measurable discharge occurs.
 - For facilities with retention ponds, the first discharge sampled may be considered as a result from the last qualifying storm event.

Samples that are “representative” of discharge

- Samples must be collected within the first 30 minutes of discharge
 - If not feasible, then collect within 60 minutes and document why
- If runoff combines with another permitted flow, the samples must be collected before they combine
- Authorized non-stormwater discharges only need to be sampled when they combine with stormwater runoff

Exceptions to Monitoring

- Adverse Weather Conditions
 - Dangerous to sampling personnel
 - No access to the outfall
 - Document and re-sample during the next monitoring period
 - If it can not be monitored during the next monitoring period, then both are permanently waived.
- Inactive Facility Waiver
 - Notify the ED in writing
 - Notify 48 hours prior to going back to “active” status

At the outfall...

- Sample downstream of all treatment controls (BMPs)
- Approach from downstream
 - Do not step in the area where you plan to collect the sample
- Collect a sample that is representative of the flow
 - Surface flow may carry different pollutants than the deeper portions of runoff
- “Grab” samples consist of a single collection from the discharge
- Do not transfer samples from a collection vessel to the sample jar
- Avoid use of plastic for collection of oil and grease
- Label samples in indelible ink
- Keep samples on ice

Sample Transportation

- Do not put glass sample jars on dry ice for storage or shipping
- Samples may require a “custody seal”
- Complete the Chain of Custody (CoC) in ink
 - Include all relevant information
 - Sign as “sampler”
 - Sign at lab when handing off, or to another transporter
- If shipping samples, place CoC in a sealable bag and place inside the cooler or box, then tape the whole box closed

Lab Methods – 30 TAC 319

- *Standard Methods for the Examination of Water and Wastewater* or the Environmental Protection Agency manual entitled *Biological Field and Laboratory Methods for Measuring the Quality of Surface Waters and Effluents* (1973).
- Sample containers, holding times, and preservation methods shall meet requirements specified in 40 Code of Federal Regulations (CFR) Part 136.
- Analyzed according to test methods specified in 40 CFR Part 136 or more recent editions of *Standard Methods for the Examination of Water and Wastewater* than those cited in Part 136.

Lab Methods – 30 TAC 319

- Flow measurements, equipment, installation, and procedures shall conform to those prescribed in the Water Measurement Manual, United States Department of the Interior Bureau of Reclamation, Washington, D.C.
- NELAC Laboratories

Data Reporting and Recordkeeping

- Electronic Data Rule
 - Use NetDMRs online via the Central Data Exchange
 - <https://cdxnodengn.epa.gov/oeca-netdmr-web/action/login>
- Discharge Monitoring Reports (DMRs)
 - Metals and NELs for certain sectors
- Benchmark Monitoring Report – due March 31
 - Paper copy still acceptable for the benchmark reporting
- Keep all records with the SWPPP for three years following the Notice of Termination

Questions?

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