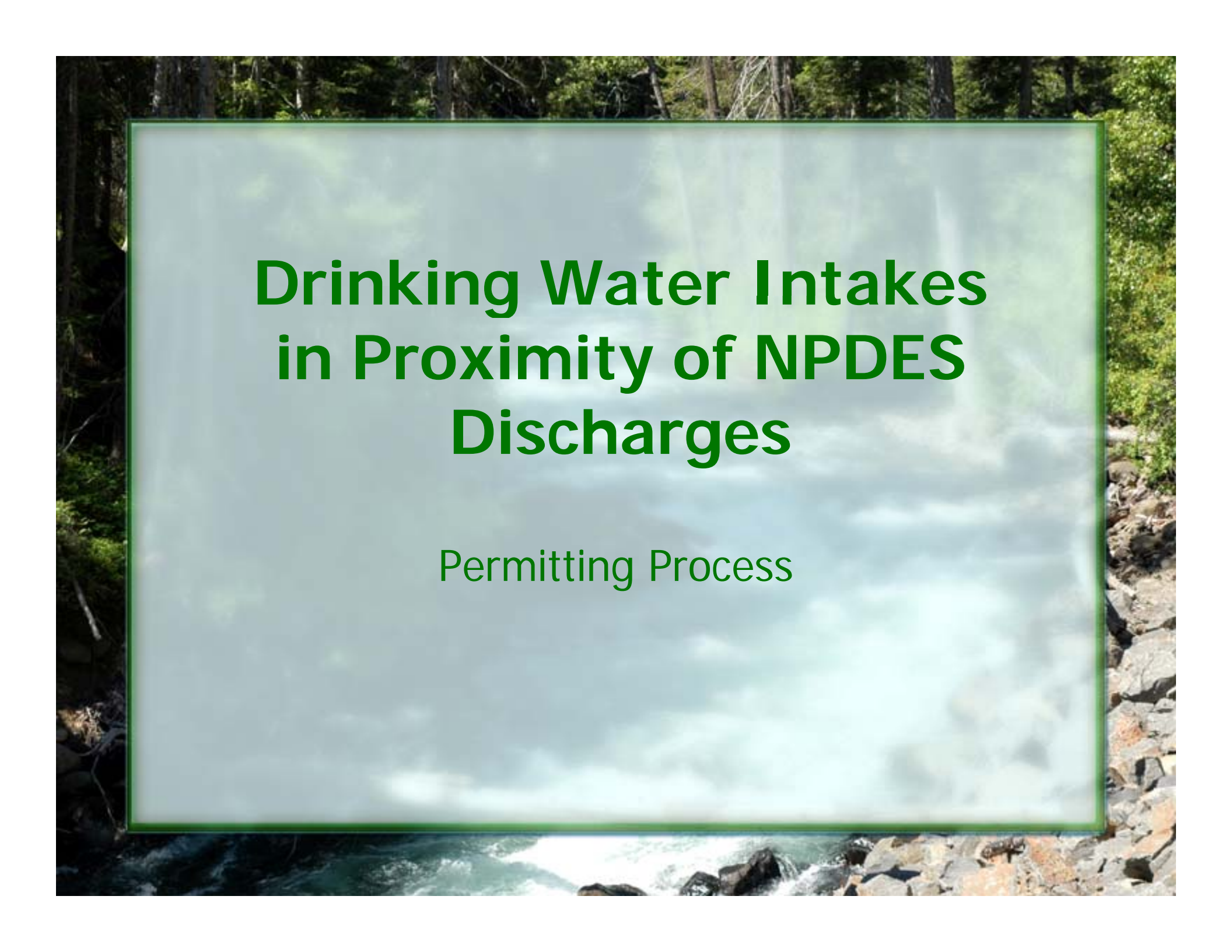




dep

west virginia department of environmental protection



# **Drinking Water Intakes in Proximity of NPDES Discharges**

Permitting Process

# NPDES Program Overview

- As authorized by the Clean Water Act (CWA), the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States.



# Discharge/Facility Identification

(with Proximity to Drinking Water Intakes)

- NPDES permit applications require the following which aid the permit writer in identification:
  - Topographic map and identification of all wells, springs, other surface water bodies, and drinking water wells within 1 mile of the discharge. (47 CSR 10 4.4.a.6)
  - Geospatial data on each discharge (Latitude/Longitude)
- Permit writers may also consult with the Health Department to verify drinking water intake locations.
- Permit writers also use software that identifies drinking water intakes and wells.

# Permit Controls

(for Identified Discharges)

- Once a discharge into a Category A (Water Supply) or C (Water Contact Recreation stream) is identified, the NPDES permit writer implements the following permit controls to ensure that a stream or other water body's designated uses (including human contact and consumption) are protected from pollutants in toxic amounts:
  - Water Quality Standards and Effluent Limitations
  - Notification and Reporting Requirements
  - Other Requirements (Site Specific)



A photograph of a waterfall cascading over rocks in a lush, green forest. The water is white and frothy as it falls, surrounded by dense trees and foliage. The scene is captured from a slightly elevated angle, showing the rocky base of the waterfall.

# Water Quality Standards

- Water Quality Standards are the foundation of the water quality based pollution control program mandated by the Clean Water Act. Water Quality Standards define the goals for a water body by designating its uses, setting criteria to protect those uses, and establishing provisions to protect water bodies from pollutants.
- WV Water Quality Standards
  - Title 47, Series 2 of the WV Code of State Regulations

A photograph of a waterfall cascading over rocks in a lush, green forest. The water is white and frothy as it falls, surrounded by dense trees and foliage. The scene is captured from a slightly elevated angle, showing the rocky base of the waterfall.

# Water Quality Standards

## (Continued)

- Water Quality Criteria are developed to be protective of the designated uses.
- Designated uses include:
  - Water Supply (Category A)
  - Water Contact Recreation (Category C)
  - Other (Aquatic Life, Agriculture/Wildlife, Water Supply Industrial – Categories B, D, E)
- Historically, the agency has assumed that all receiving streams are designated for all uses unless otherwise specified in 47 CSR 2.



# Water Quality Based Effluent Limitations (WQBELs)

- The CWA (Section 303(b)(1)(c)) and NPDES federal regulations (40 CFR 122.44(d)) require that the permit writer develop water quality based effluent limits to ensure that water quality standards are attained.



# WQBEL Development

- The following steps are used to develop a WQBEL:
  - Determine the pollutants of concern.
  - Require data collection (as necessary).
  - Gather available information such as receiving stream critical flow and designated uses and discharge characteristics and location.
  - Apply mixing zone and/or metal translator information (if available).
  - Perform a statistically based reasonable potential evaluation to determine the need for a WQBEL.
  - Calculate a WQBEL.

# WQBEL Development

(Continued)

- In the case of Category A and C waters, 47 CSR 2 5.2.c and 5.2.h.6 prescribe additional requirements for human health protection that may affect a WQBEL:
  - Concentrations of pollutants which exceed the criteria for the protection of human health shall not be allowed at any point unless a mixing zone has been assigned by the Secretary after consultation with the Commissioner of the West Virginia Bureau of Public Health.
  - A mixing zone for Category A criteria shall not overlap any ½ mile zone described in section 47 CSR 2, Section 7.2.a.2. (No mixing zone can be granted for Category A criteria within ½ mile of a potable water intake.)
  - No mixing zone for human health criteria (Categories A and C) shall be established on a stream which has a 7Q10 of 5 cfs or less.



# WQBEL Development

(Continued)

- Mixing zones cannot be granted if the discharge makes up more than 80% of the receiving stream during the low flow (7Q10) condition. The percentage of the discharge in the receiving stream at the low flow condition is referred to as the Instream Waste Concentration (IWC).
- The absolute maximum permissible amount of dilution that can be granted for a mixing zone cannot exceed the inverse of the IWC ( $IWC^{-1}$ ).
- A mixing zone cannot be granted without accounting for the existing background level of the pollutant in the receiving stream.
- If a receiving stream is impaired or is exceeding the water quality criteria for a particular pollutant, no mixing zone can be granted for that pollutant.

# Reporting and Notifications

- All NPDES permits impose immediate reporting to the WVDEP in certain cases including:
  - Discharge of pollutants that may endanger human health or the environment (47 CSR 10, Section 5.12.e).
  - Any upsets or bypasses.
  - Violation of a maximum daily permit limit for toxic and hazardous substances.
  - Discharge of any toxic pollutant not limited in the permit if the discharge will exceed notification levels as specified in 47 CSR 10, Sections 5.12.f.1 and 5.12.f.2 (5 or 10 times the amount reported in the permit applications depending on the nature of the discharge).



# Other Reporting Requirements

- In general, specific reporting requirements may be imposed in permits on a case-by-case basis.
- Some facilities that discharge upstream of and in close proximity to a drinking water intake may include specific notification requirements in their permit to notify the water treatment plant of an upset, spill, etc.
  - WV0003336 ArcelorMittal Weirton, Inc.
  - WV0004502 Wheeling Nisshin, Inc.

# Summary

- In summary, the following requirements ensure the protection of human health and a receiving stream's designated uses:
  - Water quality standards and Category A and C water quality criteria.
  - Mixing zone rules and restrictions.
  - Immediate reporting to WVDEP of releases of toxic and hazardous substances not authorized by the permit, above a maximum daily permit limit, or above a notification threshold.
  - Immediate reporting to the local treatment plant operator(s) of releases of any oil spill, release of a toxic or noxious substance, or an irregularity or upset.



A photograph of a waterfall cascading over rocks in a lush green forest. The waterfall is the central focus, with water splashing at the bottom. The surrounding trees are dense and vibrant green.

# Contact Information

**Matthew L. Sweeney, P.E.**  
**NPDES (non-coal) Individual Permitting Supervisor**  
**Department of Environmental Protection**  
**Division of Water and Waste Management**  
**601 57<sup>th</sup> Street, SE**  
**Charleston, WV 25304**  
**(304) 926-0499, x 1019**  
**[matthew.l.sweeney@wv.gov](mailto:matthew.l.sweeney@wv.gov)**