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Current Issues at the New Mexico Environment Department

Presentation Outline

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Current Issues at NMED

Pharmaceuticals in Ambient Water
NPDES Permitting
TMDL Development in New Mexico
Water Management in New Mexico

Drug Residues in Ambient Water

30-60% of pharmaceutical doses:

- pass through humans
- not always destroyed by conventional sewage treatment
- discharged in sewage

Drug residues widely detected in ambient European waters (ng/L)
Impacts on bacteria, fish and birds documented

Ecological Impacts

Antibiotic-resistant bacteria in rivers and birds, including salmonella in the Rio Grande
Sexual disruption in male fish exposed to ng/L estrogenic hormones discharged in sewage
Intersexuality:

- Appearance of female characteristics in males
- Progressive disappearance of male characteristics
- Threat to survivability of species

New Mexico Surveillance

Initial surveillance - sample at locations where drug residues would most likely occur:

- treated sewage effluent
- surface water receiving sewage
- groundwater contaminated by sewage
- drinking water served by surface water or by contaminated groundwater

SLD developed capability to test for estrogenics and anti-depressants at ng/L

Results

All sewage effluents contained at least one drug residue, but not a complex variety (amitriptyline @ 30 ng/L, caffeine @ 1000 ng/L, phentoin @ 320 ng/L, propoxyphene @ 820 ng/L)

Drugs detected in only two of eight surface-water samples:

•ethynyl estradiol @ 10 ng/L in San Juan at Bloomfield

•caffeine at 200 ng/L in Rio Grande at Sunland Park

•Middle Rio Grande not sampled yet

Drugs not detected in any of eight groundwater samples

Conclusions

No evidence of widespread drug residues, for those tested, in ambient surface water

Estrogenics, often found in Europe, were detected in only one surface-water sample, but not in any sewage effluent

Antibiotics, cholesterol and cardiovascular drugs not included in study due to lack of analytical capability (expected in 2001)

National Pollutant Discharge Elimination System Permits

Current NPDES Permit issues:

- Backlog of expired and non-issued permits
- Integrating NPDES permit requirements with Total Maximum Daily Loads and Water Quality Standards
- Implementation of Storm Water Phase 2 permitting of runoff from smaller urban areas

NPDES Permit Issues

Backlog of expired and non-issued is of concern

- Outdated permits may not be fully protective of current water quality standards
- Backlog problem is not unique to NM
- In last two years, significant progress toward reduction; NMED has reviewed 60 proposed permits for renewal; total of 128 permits in New Mexico

Integration with TMDLs and water quality-based permitting

- NPDES permits are the tool for implementing TMDL plans for Point Source Discharges
- NPDES permits also protect water quality standards and may result in stringent requirements

Implementation of Storm Water Phase 2

- Requires Permit coverage–mostly under general permits–for discharges from certain small municipal separate storm sewers
- Construction activity disturbing more than one-acre of land

What is a Total Maximum Daily Load (TMDL)?

A watershed or basin-wide budget for pollutant influx to a watercourse

Calculated after study of waterbody to determine amount of pollutants that can be assimilated without causing violation of water quality standards

TMDL = (LA + WLA + MOS)

LA= Load Allocation (nonpoint sources)

WLA= Waste Load Allocation (point sources)

MOS= Margin of Safety (uncertainty)

A TMDL is **not** a regulation, but the load calculations in a TMDL are used for both regulatory (NPDES permits) and non-regulatory programs (CWA section 319 projects)

A TMDL is developed with extensive public and stakeholder participation

Required by the Clean Water Act Section 303(d)

(C) Each State shall establish...the total maximum daily load, for those pollutants... suitable for such calculation. Such load shall be established at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety ...

1999 TMDLs

- 47 individual parameters on 11 stream reaches from the 1996 303(d) list
- 21 TMDLs written for the Consent Decree listed parameters
- 26 TMDLs not necessary for the Consent Decree listed parameters
- 5 additional TMDLs written outside of the Consent Decree listed parameters
- Total TMDLs written and approved: 26

2000 TMDLs Drafted

Middle Rio Grande
  Fecal coliform in storm water
Santa Fe River
  Dissolved oxygen
  pH
Cieneguilla Creek
  Metals (aluminum)
Rayado Creek
  Stream bottom deposits
Cimarron River
  Metals (aluminum)

Water Management in New Mexico

Recent events underscore how intertwined water quality and quantity are:

- ESA issues on Rio Grande and Pecos
- TMDLs

Current management structure does not promote integration of quantity and quality

- Decision making compartmentalized
- Not suited to holistic water management

Administration currently looking at ways to better integrate water management decision-making

- Information systems
- Boards and Commissions
- Quality and quantity

Considering options for upcoming session