Performance Based Approaches to Nutrients Permitting

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Overview

 Brief History of Nutrients Regulation in Colorado

 Current regulatory challenges

Future Regulatory Strategies
 Delayed Implementation of standards for nutrients
 Colorado's "Incentive Program"



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History of Nutrients Management in Colorado



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Sources of nutrients in Colorado

Biggest source of nutrients is from domestic wastewater treatment facilities • State's largest facilities are the biggest contributors in loading Other sources: Stormwater runoff Non-point source pollution SIC-20 (food processors)



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Nutrients Regulation in Colorado

Colorado has a "Control Regulation" approach

- State-implemented technology based treatment requirements adopted in regulation
- Adopted by Colorado's Water Quality Control Commission (Regulation #85)

Key Components

- Scientifically-based numerical values
- Implementation of limits in permit renewals after 2012
 "Delayed" application to small WWTFs (less than 2 MGD) and large facilities that aren't in high priority watersheds



Current regulatory strategy

 Technology-based limits: Total inorganic nitrogen=15 mg/L \bigcirc Total phosphorus=1 mg/L 0 Reasonable step to making some reductions in nutrients Not the ultimate solution Not protective of underlying beneficial uses 0 • Intended to serve as a "bridge" to reaching the underlying water quality standards





Monitoring Requirements



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Progress on Implementing Regulation #85

- Implementation in permits
 - Slower than expected
 - ~15% of permits have been adopted with numeric nutrients limits
- Issues
 - Permits backlog slows implementation
 Watershed schedule: issuing most difficult permits (with nutrient limits)



2017: Revising the Control Regulation Approach



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Regulation #85 Triennial review

Review current regulatory approach

 Plan for implementation of use-protective standards

• Predicted: ~3mg/L TIN

• Predicted: ~0.3 mg/L TP

 Take global view of upcoming standards and impacts on the regulated public



Colorado Nutrient Management Plan and 10-Year Water Quality Roadmap

- Adopt approvable nutrient standards
- Adopt ammonia and selenium standards
- Recognizing competition for treatment resources
 - POTWs have budget constraints driven by rate concerns
- Develop feasibility information including DSVs and other tools for implementation in permits
 Further delay justified



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Making progress in the meantime

Modifying technology based effluent limits? Decreasing TP and TIN values 0 Expanding to smaller facilities (1 MGD or larger) 0 Voluntary approaches ? non-point source controls Assistance from large to small facilities 0 Trading agreements? Not practical due to Colorado's geography 0



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Solution: Delay plus incentive

Delay implementation of TIN and TP standards, but offer incentive for early reductions now Offered biggest loading reductions of all options considered







TIN Load Scenario Analysis (lbs/day)

- Excluded (1 MGD and less)
- Delayed (control regulations)
- Reg. 85 Facilities

Excluded (disadvantaged community) Delayed





Reg. 85 Facilities

Components of Incentive Program

Compliance Schedule (CS) Incentive

 Available to all facilities, including those not currently subject to Reg #85 Incentive designed to encourage enhanced biological nutrient reduction Incentive limitations thresholds selected based on 0 survey of eBNR limitations Incentive -based approach takes pressure off of permit reissuance to ensure reductions



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Incentive Compliance Schedule: Interplay with Existing Framework

• Completely voluntary

- Early reductions=more time to comply with numeric nutrient standards
- Incentive earned 2018 thru 2027

Duration of CS calculated based on annual reporting
 Incentive compliance schedule applicable in permits issued after 2027



Incentive program details (statewide)

- Linear scale to calculate months between upper and lower bounds
- Facility can earn up to 7.5 years each for TIN and TP reductions independently
 - Total incentive earned after adding TIN and TP together <u>cannot exceed 10 years</u>
- Total incentive additive with permit compliance schedule
 - Sum of all compliance schedules <u>cannot exceed 15</u> <u>years</u>.



Accumulation of incentive months

Total phosphorus annual median (mg/L)	≥1.0	≤0.7
Months earned	0	12
Total inorganic nitrogen annual median (mg/L)	≥15	≤7
Months earned	0	12



Other issues: Scaling for DSVs

- Facilities that obtain a DSV where no additional feasible pollution control alternative exists will not be able use incentive credit for an extended compliance schedule
 Facilities that obtain a DSV where a feasible
 - pollution control alternative exists will be able to use incentive credit but the years earned as part of the incentive program will be reduced by 33 percent.



EXAMPLE "cap" for incentive compliance schedules for WQBEL vs. DSV AEL 20 Length of compliance schedule (years) 0 5 0 10 11 Cap=15 years Outstanding Issue Cap=10 years WQBEL DSV AEL Incentive compliance schedule Underlying compliance schedule

Other issues: Nutrient trading

- Nutrient trading is available.
- No trades have happened to date.
 - One has been proposed
- There is interest in incentives provided for trades or division led trading examples.
- Challenges include division resources to lead efforts, identifying areas where trades will be successful.



Other Issues: Safety Clause

In implementing the Incentive Program the division maintains its authority to: • WQCA - Issue orders to address public health emergencies • Regulation #61 - Modify permits to address endangerment to public health or classified uses Purpose: Transparency in the context of nutrients regulation and Incentive Program





Industry Specific Limitations for Dischargers of Nutrients



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Effluent Limits for <u>Existing</u> Non-domestic Treatment Facilities with a Standard Industrial Classification Code in the Major Group 20 (SIC 20)

Parameter	Parameter Limitations (annual median)	Parameter Limitations (95th percentile)
Total Phosphorus	10 mg/L	25 mg/L
Total Inorganic Nitrogen	20 mg/L	27 mg/L



Effluent Limits for <u>New</u> Non-domestic Treatment Facilities with a Standard Industrial Classification Code in the Major Group 20 (SIC 20)

Parameter	Parameter Limitations (annual median)	Parameter Limitations (95th percentile)
Total Phosphorus	5 mg/L	13 mg/L
Total Inorganic Nitrogen	10 mg/L	20 mg/L



Next Steps:

• Developing tools to encourage incentive program adoption

- Nutrients "road show"
- Encouraging voluntary adoption of other ideas





Questions?

AND STORES



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