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### Ground Water Quality Protection in Colorado

Paul D. Frohardt

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**GROUND WATER QUALITY PROTECTION  
IN COLORADO**

**Paul D. Frohardt  
Administrator, Water Quality Control Commission**

**June 17, 1992**

**UNCOVERING THE HIDDEN RESOURCE:  
GROUNDWATER LAW, HYDROLOGY AND POLICY LAW  
IN THE 1990s**

**Natural Resources Law Center  
University of Colorado  
School of Law  
Boulder, Colorado**

**June 15-17, 1992**

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**GROUND WATER QUALITY PROTECTION IN COLORADO**

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**I. Clean Water Act provisions.**

- A. Regulation of "waters of the United States", 33 U.S.C. section 1362(7), which is generally interpreted not to include ground water.
- B. See, e.g., Exxon Corp. v. Train, 554 F.2d 1310 (5th Cir. 1977).
- C. EPA policy states: "The primary responsibility for coordinating and implementing ground water protection programs has always been and should continue to be vested with the States." Protecting The Nation's Ground Water: EPA's Strategy For The 1990's; July, 1991.

**II. Colorado's regulatory foundation: The Basic Standards for Ground Water, 3.11.0 (5 CCR 1002-8) (January, 1987).**

- A. Classification and standard-setting by the Colorado Water Quality Control Commission (WQCC).
  - 1. Classification categories (section 3.11.4).
    - a. Domestic use/quality.
    - b. Agricultural use/quality.
    - c. Surface water quality protection.
    - d. Potentially usable quality.
    - e. Limited use and quality.
  - 2. Standards (section 3.11.5 A and B).
    - a. Narrative standards.
    - b. Numeric standards:
      - i. Primary and secondary drinking water standards.
      - ii. Agricultural standards.

- iii. Total Dissolved Solids (TDS) standards.
- c. Case-by-case determination of numeric standards:
  - i. For "surface water quality protection" classification.
  - ii. For "potentially usable quality" classification.
  - iii. For domestic and agricultural classifications, if background value exceeds table value.
- B. Major features of framework.
  - 1. No automatic applicability to any state ground waters.
  - 2. Site-specific classification and standard-setting only by the WQCC.
  - 3. Regulatory framework to be used by other agencies as guidance.
  - 4. "Points of compliance" determinations originally contemplated as part of classification proceeding.
  - 5. Option for WQCC to grant variances.
- C. Revised Point of Compliance Provisions (September, 1990).
  - 1. Eliminates requirement that points of compliance be established during classification proceeding.
  - 2. Initial responsibility to the Water Quality Control Division (WQCD) and other implementing agencies.
  - 3. Criteria adopted to guide point of compliance selection.
    - a. Outer limit: site boundary.
    - b. Inner limit: edge of the disturbed area.
    - c. Intermediate options, considering nature of contaminants, uses to be protected, hydrogeology.

**III. Statewide standards for toxic organic chemicals (August, 1989, revised October, 1991).**

**A. "Interim" numeric standards (section 3.11.5 C).**

1. Standards for approximately 55 pollutants, based on:
  - a. For non-carcinogens, lifetime exposure levels derived from the reference dose, based on EPA health advisories or integrated risk information system (IRIS) data.
  - c. For carcinogens, the  $1 \times 10^{-6}$  risk level.
2. Use of detection levels -- practical quantitation limits (PQLs) -- in implementing the new standards.

**B. Automatic points of compliance established (section 3.11.6).**

1. For existing contamination, if contamination is identified and reported by September 30, 1992, the edge of the plume or the property boundary, whichever is closer.
2. For existing contamination, if not identified and reported by September 30, 1992, the edge of the plume as of September 30, 1989 or the property boundary, whichever is closer. If 1989 plume edge cannot be identified, point of compliance is the edge of the disturbed area.
3. For new contamination, edge of the disturbed area.

**C. Exceptions to statewide application of standards.**

1. Different, site-specific standards and point of compliance may be adopted by the WQCC.
2. Deference to points of compliance established by state implementing agencies.

**IV. Site-specific classifications and interim narrative standard (March and September, 1991).**

**A. Site-specific classifications and standards.**

1. Rocky Flats area.

2. City of Brush wellfield.
  3. Upper Black Squirrel Creek alluvial aquifer.
- B. Interim Narrative Standard.
1. In "clean" areas, compliance with domestic and agricultural use criteria.
  2. In "dirty" areas, no further deterioration of quality.
- C. Standard applies in five regional areas:
1. The South Platte River Basin alluvium and terrace gravel system.
  2. The Arkansas River Basin alluvium and terrace gravel system.
  3. The San Luis Valley Aquifer -- Alamosa Formation and surficial deposits, including river alluvium and terrace gravel systems.
  4. High Plains Aquifer -- Ogallala Formation and surficial deposits, including river alluvium and terrace gravel systems.
  5. Unconfined portions of the Denver Basin Aquifer System -- Dawson, Denver, Arapahoe, Laramie-Fox Hills Formations.

**V. Decentralized implementation: Senate Bill 89-181.**

- A. "Implementing agency" concept (section 25-8-202(7)).
1. WQCC solely responsible for adopting water quality standards and classifications.
  2. Classifications and standards initially implemented by:
    - a. Mined Land Reclamation Division.
    - b. State Engineer.
    - c. Oil and Gas Conservation Commission.
    - d. State agency responsible for RCRA (Hazardous Materials and Waste Management Division in Health Department).



3. Authority for WQCC to step back in, including if:
  - a. Necessary to assure compliance with water quality standards and classifications;
  - b. Necessary to protect present and future beneficial uses of water; or
  - c. The implementing agency fails to provide reasonable assurance that compliance has been obtained through its own programs.
- B. Special ground water point of compliance provisions (section 25-8-202(7)(a)).
  1. WQCC standards and classifications shall not specify points of compliance for activities regulated by implementing agencies.
  2. Implementing agencies to establish points of compliance, in accordance with criteria established through rulemaking after public hearing and consultation with the WQCC and WQCD, so as to protect present and future beneficial uses of water.
  3. Authority for WQCC to step back in, as described above.

**VI. Agricultural chemicals: Senate Bill 90-126.**

- A. Department of Agriculture authority and responsibility to address potential water quality impacts from the use of pesticides and commercial fertilizers (25-8-205.5, C.R.S.).
- B. Initial phase: designate "agricultural management areas" and develop voluntary best management practices (BMPs).
- C. If voluntary BMPs are determined insufficient, regulations may require the use of "agricultural management plans."
- D. If WQCD monitoring indicates continuing problems and consultation fails to resolve issues, WQCC may adopt control regulations.
- E. Program funded by pesticide registration fees and commercial fertilizer inspection fees.

**VII. Point source discharges to ground water (December, 1990).**

- A. Amendments to Colorado Discharge Permit Regulations, 6.1.0 (5 CCR 1002-2), effective July 1, 1993.
- B. Principal focus on discharges from impoundments and land application.
- C. Exclusions for activities regulated by various existing programs, to avoid duplication (6.15.1).
- D. Goal is a flexible, tiered system with extent of monitoring and control requirements dependent on the seriousness of the potential impact.

**VIII. Pending initiatives.**

- A. December 7, 1992 rulemaking hearing to consider adoption of standards for diisopropylmethylphosphonate (DIMP).
- B. March 1, 1993 rulemaking hearing to consider classifications and standards for ground water in the vicinity of public water supplies.
- C. January 3, 1994 rulemaking hearing to consider revisions to the statewide standards for radionuclides.