

Response to Comments
*Draft Policy and Implementing Guidance for Control and Disposition of Drinking Water
Treatment Residuals Containing Technologically Enhanced Naturally Occurring Radioactive
Material (TENORM), January 2006*

This document was developed through a year-long stakeholder process that involved eight work groups consisting of Department staff and stakeholder groups. Department staff were drawn from solid waste, water quality, drinking water, discharge permitting, beneficial reuse and radioactive materials units. Stakeholder groups include the Water Utilities Council and the Rural Water Association, as well as individuals representing specific water utilities, waste management companies, composting facilities, and others.

The process was initiated by a workshop where all potential stakeholders were invited to participate in identifying issues that needed to be addressed in the process, and the eight work group topics were defined. Draft document sections focusing on specific aspects of the guidance, such as risk assessment, were developed and circulated among the work group members. Subsequently, the guidance document was compiled and work group comments solicited, followed by a formal public comment process that lasted most of the spring of 2006. In addition, three public meetings were held across the state in Grand Junction, Pueblo, and Northglenn.

Comment Overview

Over 475 comments were received, primarily from attorneys representing organizations that participated in the work groups, but in some cases the comments reflected views not necessarily provided during that process. Other commenters included Adams County, EPA, the State of Washington, and representatives from academia. Many of the comments received from the attorneys representing water utilities were identical or similar, tended to focus on authority questions rather than the technical or regulatory aspects of the guidance, and primarily addressed disposal of sludge, with little or no input on how to manage higher activity residuals from ion exchange or liquid residuals.

Commenters

The formal comment period started in January 2006 ending in April 2006. At the request of several water utilities, the comment period was extended through May 2006. Formal comments were received from the following:

Mike Brennan, Washington Department of Health
Bonnie C. Gitlin, Acting Director, Radiation Protection Division, USEPA
Norman Higley, attorney for the City of Englewood
Asimakis P. Iatridis, Berg Hill Greenleaf & Ruscitti, attorney for the Colorado School of
Mines
Dr. Jim Ippolito, Colorado State University
Howard Kenison and Stewart N. Bennett, Lindquist & Vennum, attorneys for Adams
County Board of County Commissioners
Andrew L. Logan and Steve J. Tamborini, RTW Professional Engineers and Consultants
Curt McCormick, USEPA Region 8 Industrial Pretreatment Program
Curtis Mitchell, Colorado Springs Utilities
Thomas C. Mountfort, Environmental Compliance Supervisor, Denver Water

David B. Nelson, Clean Harbors Environmental Compliance
Jessica L. Pault, Assistant City Attorney, City of Greeley
Theresa A. Pfeifer, Denver Metro Wastewater District
Leonard Slosky, Rocky Mountain Low-Level Radioactive Waste Compact Board
Anne E. Winans, Attorney, Denver Water
Bob Yost, A-1 Organics

General Comments

One major comment expressed by several entities questioned the authority of the Department over radioactivity in water treatment residuals. As discussed in the guidance, by both statute and regulation the Department has the responsibility for the management of solid waste and radioactive materials. Water treatment plant sludge that exceeds a certain radioactivity action levels is already subject to regulation as a radioactive material. The radioactive material regulations include disposal requirements. This process has been exercised for at least twenty years, and part of the purpose of the guidance was to make the process for Department approval more transparent, predictable and consistent. Multiple commenters, including those that participated in the process, mistakenly maintain that this regulatory authority has been newly created by the Department. Most of the entities raising this comment have sought and received Department approval for addressing TENORM disposal in the past as solid waste or radioactive material, so the context of the comment is difficult to understand. The Department believes that this issue is a legal authority issue that will not be decided in the context of the guidance document, and therefore, it will only be addressed briefly in this response to comments.

A similar comment has been raised that the Department provided no technical basis for the tier levels presented in the guidance, and that disposal limits should be based solely on risk and science (presumably ignoring social and local government's considerations). A risk assessment work group was formed during this process that evaluated available risk assessments, including those site-specific assessments prepared by consultants for many of the entities commenting on the issue. These risk assessments, along with risk assessments and related documents from national efforts, were all used to develop the levels presented in the guidance. Those levels were also specifically discussed throughout the work group process, and adjusted based on comments received from work group participants. A group of utilities submitted another risk assessment to the Department in May 2006 for alum sludges to rebut the levels presented in the guidance. The risk-informed values derived during this process were coupled with regulatory limits and concentration limits acceptable to the receiving facilities.

Another trend in the comments is a stated concern that disposal options under the guidance would not be subject to local government control. The Department has stated in the guidance that local approval for disposal must be taken into account where required. The guidance sets out the criteria for determining the appropriateness of specific disposal mechanisms; however, it does acknowledge that local governments may have authority over landfill disposal. Alternately, several commenters insisted that water treatment residuals were exempt from all regulation, including county approval by issuance (or denial) of a Certificate of Designation. The Department believes that policy decisions are based on a variety of considerations, that this is a legal authority issue that will not be decided in the context of the guidance document, and is addressed only briefly in this response to comments.

The Department has reviewed all comments submitted and has modified the document where comments have indicated an appropriate change. The following sections discuss various issues raised and the response to them.

Technical Comments

Some commenters identified the radionuclide concentration thresholds for the different management options as unclear and confusing. In the revised document, these values are presented in a table and identified in the Introduction or Executive Summary, and the section language clarified.

Although the guidance document is intended to provide guidance for the management of drinking water residuals containing TENORM, the Radiation Management Unit clarified the policy for TENORM management such that it clearly applies to all TENORM materials. This was done to simplify the Department's ability to maintain consistency in regulatory requirements for like materials and provide a mechanism for stakeholder involvement in the process. Several commenters took issue with this approach; however, the Department believes that this consistency is appropriate. Implementation of this guidance is potentially most troublesome for water treatment plant residuals, and the implementation guidance is focused on these facilities. The document has been clarified to eliminate potential confusion about the applicability of the policy and the guidance.

Several commenters requested that the guidance be changed to specifically allow down-blending (dilution) of waste materials to meet the tier levels specified in the document. Dilution of waste materials to reduce disposal costs is a counterproductive approach to waste management, and is not allowed under state or federal environmental laws. Down-blending of raw water is allowed and encouraged as a relatively practical method to ensure a safe and adequate drinking water supply.

Concern was expressed regarding the cost of implementing the policy and the tiered disposal levels. Several commenters expressed concern regarding the social and economic impact of the "new regulation." In actuality, the policy reflects little change from current practice or currently incurred costs; however, by clarifying the policy and using the accumulated risk assessments and other information, the Department has developed guidelines that allow a water treatment utility to select the appropriate disposal option without having to perform a situation-specific risk assessment. Most of the major utilities have indicated a preference for performing their own risk assessments to achieve their desired disposal mechanisms; however, the small and rural facilities are least likely to be able to do this and the policy and guidance relieves them of this additional cost. The policy and guidance is an attempt to address the potential impacts associated with the increased removal of radioactive materials from drinking water as a result of EPA regulations implemented several years ago.

While many residuals will be able to be managed as solid waste, and therefore available to be used for beneficial reuse or disposal in a municipal solid waste landfill, other residuals will contain sufficient radioactivity such that they will have to be managed under a radioactive

materials license, and in a few instances, facilities may require a specific radioactive materials license for their treatment columns while in operation. The document has been edited to more clearly spell out these distinctions and thresholds.

Legal Comments

Radioactive Materials versus Solid Waste. Several commenters stated that disposal of drinking water treatment residuals may only be regulated under the Solid Waste Disposal Act (SWDA, C.R.S. § 30-20-100.5 *et seq.*) The SWDA defines solid wastes to include “sludge from a . . . water supply treatment plant, . . .” C.R.S. § 30-20-101(6)(a). The SWDA covers the disposal of radioactive materials and materials contaminated by radioactive substances, except for “materials handled at facilities licensed pursuant to the provisions on radiation control in Article 11 of Title 25, CRS”. See CRS 30-20-101(6)(b)(V) and 30-20-110(1)(c). Drinking water treatment residuals (DWTR) are subject to the Solid Waste Regulations unless they are at a facility licensed pursuant to the Radiation Control Act pursuant to C.R.S. § 25-11-103(2).

The Radiation Control Act applies to “. . . any material . . . which emits ionizing radiation spontaneously.” C.R.S. § 25-11-102(3). It also allows TENORM containing radioactive materials to be regulated as solid waste, but does not require this. Thus, DWTRs that emit ionizing radiation spontaneously are subject to both the Solid Waste Act and the Radiation Control Act. The policy and guidance sets up a process where these requirements (and others) can be integrated by the Department to simplify the understanding of the requirements and compliance with them.

SWDA requirements to impoundments. The applicability of SWDA requirements to on-site DWTR impoundments was discussed in some of the stakeholder meetings; however, some commenters felt that additional stakeholder input should be gathered before any guidance on this issue is adopted. This is not a new requirement, but emphasis on an existing requirement; therefore, no additional comment period is needed for inclusion in the guidance. However, the guidance is expected to be a “living document” and future comments are encouraged.

All facilities that “store, treat or dispose” of solid wastes in impoundments are subject to Sec. 9 of the Solid Waste Regulations unless the waste “will be beneficially reused.” 6 CCR 1007-2 § 9.1.1(G). Once a material is a “discarded material,” it is a waste subject to the SWDA, even if it is still on-site at the facility where it was generated.

Only solid waste disposal sites and facilities need CDs. A solid waste disposal site and facility is a facility where “the deposit and final treatment of solid wastes occur[s].” Solid Waste Regulations § 1.2. Therefore, a drinking water treatment plant needs a CD only if it disposes of a solid waste, such as DWTRs, on-site.

If an impoundment used for storing or treating DWTRs at a drinking water treatment plant leaks, it is disposing of DWTRs and needs a CD or must cease leaking DWTRs through the bottom of the impoundment.