

TO: Board of Directors, Rocky Flats Stewardship Council (RFSC)
US Department of Energy (USDOE), Legacy Management (LM)
Colorado Department of Public Health and Environment (CDPHE)
US Environmental Protection Agency (USEPA)
via Rocky Flats Stewardship Council (RFSC)

FROM: Jon Lipsky, MAS and FBI, Retired //s//

DATE: November 1, 2021

SUBJECT: US DOE/LM, RFS, Quarterly Report (Q2 2021) Briefing - Surface Water
Monitoring: Process Knowledge - Public Comment/Inquiry

ADMIN: All comments to be in writing per RFSC COVID-19 announcement,
USDOE has agreed to respond in writing, comments and USDOE
responses to be posted on RFSC web site per RFSC Meeting Packet
for November 1, 2021 scheduled meeting.

BACKGROUND

Since at least June 2006, USDOE has referred to contiguous, mappable extent to determine whether a constituent should be retained or eliminated as an analyte of interest (AOI) based on process knowledge or other criteria involving professional judgement.

In USDOE's June 2006 RCRA Facility Investigation - Remedial Investigation/Corrective Measures Study, Feasibility Study Report for the Rocky Flats Environmental Technology Site, Section 4.0, Nature and Extent of Groundwater Contamination report numerous analytes were eliminated. The eliminated analytes represented chemicals utilized at the former Rocky Flats Nuclear Weapons Plant.

In sum, 4.5.6 AOI Screening Step 6 - Process Knowledge Evaluation "involves the determination of whether a constituent that has a contiguous, mappable extent should be retained or eliminated as an AOI base on process knowledge or other criteria involving professional judgment." AOI screening Step 6 involves other criteria for example, the use of stainless-steel wells or pumps, improper well completion, aquifer geochemistry, and process knowledge) based on professional judgment, that may lead to the elimination of an analyte as an AOI.

As well in USDOE's June 2006 RCRA Facility Investigation - Remedial Investigation/Corrective Measures Study - Feasibility Study Report for the Rocky Flats Environmental Technology Site, Section 5.0, Nature and Extent of Surface

Water and Sediment Contamination numerous analytes were eliminated. The eliminated analytes represented chemicals utilized at the former Rocky Flats Nuclear Weapons Plant.

“Process knowledge is subsequently used to determine whether an analyte is a site-related contaminant and whether it should be retained or eliminated as an AOI. The basis for eliminating or retaining an analyte using process knowledge is documented for each analyte.”

“Process knowledge alone is not used to eliminate or retain an analyte as an AOI. Other analyte criteria such as its areal distribution relative to RFETS activities, its proximity to contaminant sources, accelerated actions performed to remove a contaminant source, and its natural occurrence and distribution in the environment were also considered when evaluating whether to retain or eliminate a constituent as an AOI.”

Hazardous waste determination and recordkeeping requires USDOE to make accurate determinations as to whether that waste is a hazardous waste in order to ensure wastes are properly managed according to RCRA regulations. (40 CFR 262.11). The hazardous waste determination for each solid waste must be made at the point of waste generation, before any dilution, mixing, or other alteration of the waste occurs, and at any time in the course of its management that it has, or may have, changed its properties as a result of exposure to the environment or other factors that may change the properties of the waste such that the RCRA classification of the waste may change. (40 CFR 262.11(a)).

The person then must also determine whether the waste exhibits one or more hazardous characteristics as identified in subpart C of 40 CFR part 261 by following the procedures in paragraph (d)(1) or (2) of this section, or a combination of both. (40 CFR 262.11(d)).

The person must apply knowledge of the hazard characteristic of the waste in light of the materials or the processes used to generate the waste. Acceptable knowledge may include process knowledge (e.g., information about chemical feedstocks and other inputs to the production process); knowledge of products, by-products, and intermediates produced by the manufacturing process; chemical or physical characterization of wastes; information on the chemical and physical properties of the chemicals used or produced by the process or otherwise contained in the waste; testing that illustrates the properties of the waste; or other reliable and relevant information about the properties of the waste or its constituents. A test other than a test method set forth in subpart C of 40 CFR part 261, or an equivalent test method approved by the Administrator under 40 CFR 260.21, may be used as part of a person's knowledge to determine

whether a solid waste exhibits a characteristic of hazardous waste. However, such tests do not, by themselves, provide definitive results. Persons testing their waste must obtain a representative sample of the waste for the testing, as defined at 40 CFR 260.10.

The applicability of the Resource Conservation and Recovery Act (RCRA) at the Rocky Flats Site is not inconsequential. On July 9, 1999 USDOE approved DOE M 435.1-1, Radioactive Waste Management Manual purpose describes the requirements and establishes specific responsibilities for implementing DOE O 435.1, Radioactive Waste Management, for the management of DOE ... and the radioactive component of mixed waste. On page 7, Attachment 2 at "53. Waste Characterization. The identification of waste composition and properties, by review of acceptable knowledge (which includes process knowledge) ..."

PUBLIC COMMENT/INQUIRY

During the pendency of the accelerated Superfund action at the Rocky Flats Site (RFS) 'process knowledge' and 'professional judgment' supplanted "Acceptable knowledge" a comprehensive RCRA term recognized by USDOE Order.

Which USDOE document(s) identify the processes used to generate RFS waste?

Which USDOE document(s) identify site-related analytes with correlation to chemical feedstocks and other inputs to the production process?

Which USDOE document(s) describe other analyte criteria such as its areal distribution relative to RFETS activities, its proximity to contaminant sources, accelerated actions performed to remove a contaminant source, and its natural occurrence and distribution in the environment were also considered when evaluating whether to retain or eliminate a constituent as an AOI?

With the use of chemicals like 1,4-Dioxane as an input to the production process how are contiguous, mappable extents (plumes) and the use of stainless-steel wells or pumps, improper well completion, aquifer geochemistry, and process knowledge based on professional judgment consistent with RCRA Acceptable Knowledge, which led to the elimination of an analyte as an AOI at RFS?

How can the protectiveness of the RFS remedy be reasonably certain when USDOE utilizes process knowledge and professional judgment terms that are inconsistent with RCRA definitions?