

AA:24:01067

November 25, 2024

Mr. JohnDavid Nance, Bureau Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303

Subject: Transmittal of the WIPP Fiscal Year 2024 Waste Minimization Report, Hazardous Waste
Facility Permit Number: NM4890139088-TSDF

Dear Mr. Nance:

The purpose of this letter is to provide you with the WIPP Fiscal Year 2024 Waste Minimization Report.

I certify under penalty of law that this document and enclosure were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

If you have any questions, please contact Mr. Rick Chavez at (575) 234-3225.

Sincerely,

//Signatures on File//

Ken Harrawood
Program Manager
Salado Isolation Mining Contractors

Enclosure

cc: with enclosure

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Waste Isolation Pilot Plant 2024 Waste Minimization Report
Hazardous Waste Facility Permit, Number: NM4890139088-TSDF

The Waste Minimization Program in place at the Waste Isolation Pilot Plant (WIPP) facility is intended to reduce the volume and toxicity of hazardous and mixed wastes generated at the facility. The purpose of this report is to demonstrate compliance with the WIPP Hazardous Waste Facility Permit (Permit) Part 2, Section 2.4 which states:

The Permittees shall implement and maintain a waste minimization program to reduce the volume and toxicity of hazardous and mixed wastes generated at the facility, as required by 20.4.1.500 NMAC (incorporating 40 CFR §264.73(b)(9)). The waste minimization program shall include proposed, practicable methods of treatment and storage currently available to the Permittees to minimize the present and future threat to human health and the environment. The waste minimization program shall include the following items:

- 1. Written policies or statements that outline goals, objectives, and methods for source reduction and recycling of hazardous and mixed waste at the facility;*
- 2. Employee training or incentive programs designed to identify and implement source reduction and recycling opportunities for all hazardous and mixed wastes;*
- 3. Source reduction or recycling measures implemented in the last five years or planned for the next federal fiscal year;*
- 4. Estimated dollar amounts of capital expenditures and operating costs devoted to source reduction and recycling of hazardous and mixed waste;*
- 5. Factors which have prevented implementation of source reduction or recycling;*
- 6. Summary of additional waste minimization efforts that could be implemented at the facility that analyzes the potential for reducing the quantity and toxicity of each waste stream through production process changes, production reformulations, recycling, and all other appropriate means including an assessment of the technical feasibility, cost, and potential waste reduction for each option;*
- 7. Flow charts and/or tables summarizing all hazardous and mixed waste streams produced by the facility by quantity, type, building or area, and program; and*
- 8. Demonstration of the need to use those processes which produce a particular hazardous or mixed waste due to a lack of alternative processes, available technology, or available alternative processes that would produce less volume or less toxic waste.*

The Permittees shall submit to the Secretary a report regarding progress made in the waste minimization program in the previous year. The report shall address items 1 – 8 above, shall show changes from the previous report, and shall be submitted annually by December 1 for the year ending the previous September 30th.

This report is prepared by the Permittees (the U.S. Department of Energy [DOE] - Carlsbad Field Office [CBFO] and Salado Isolation Mining Contractors, LLC [SIMCO]) in accordance with Permit Part 2, Section 2.4. It describes how the Permittees addressed items 1 to 8 during federal fiscal year (FY) 2024 (October 1, 2023, to September 30, 2024) and any changes made since the previous report.

1. *Written policies or statements that outline goals, objectives, and methods for source reduction and recycling of hazardous and mixed waste at the facility.*

The *Waste Isolation Pilot Plant Environmental Policy Statement* (EA02EC14-1-0) establishes and communicates SIMCO's five strategic principles which personnel are to uphold to ensure environmental protection is of central importance during all activities supporting the WIPP project. These principles of operation include goals and objectives fulfilled through the implementation of the *Environmental Management System* (EMS), (WP 02-EC.14) whose suitability, adequacy, and effectiveness are confirmed through continual independent certification to the ISO 14001:2015 standard. This continued certification guarantees continual improvement of various environmental performance indicators through the completion of applicable environmental targets, including those related to waste minimization and recycling efforts. Recertification of the Environmental Management System (EMS) to the ISO 14001:2015 standard occurred on May 28, 2024,.

The Permittees continue to communicate and educate site personnel regarding the data required for accurate reporting under the Waste Minimization Program. These actions are implemented through EMS core support programs including the *WIPP Sustainable Procurement Plan* (WP 02-EC.07) and the *WIPP Pollution Prevention (P2) Program Plan* (WP 02-EC.11). These core program plans implement standards that outline, define, and support the waste minimization strategy. Core program components are captured and reported through the EMS. Additional waste minimization methods specific to hazardous and mixed wastes are described in the *Low-Level and Mixed Low-Level Waste Management Plan* (WP 02-RC.05) and the *Hazardous and Universal Waste Management Plan* (WP 02-RC.01). The *WIPP Industrial Hygiene Program – Hazard Communication and Hazardous Materials Management Plan* (WP 12-IH.02-4) also stresses the importance of minimizing waste and hazardous materials.

2. *Employee training or incentive programs designed to identify and implement source reduction and recycling opportunities for all hazardous and mixed wastes.*

WIPP project employees (inclusive of subcontractors) receive General Employee Training that incorporates content outlining the EMS program, waste management and recycling expectations, pollution prevention strategies, waste minimization strategies, and sustainability expectations. Employees involved in universal or special site-generated waste management and/or low-level waste handling activities receive Hazardous Waste Worker Initial training (HWW-101), including but not limited to classroom and hands-on training to ensure that they are qualified to perform their assigned tasks. Classroom and hands-on field training emphasizes the importance of waste minimization, source reduction, and recycling strategies. Refresher training is required annually (HWW-102).

The hazardous waste worker training courses include practical information concerning the methods for reducing the amount of hazardous waste generated. This includes the procurement and use of less hazardous chemicals/materials, opportunities for recycling, reuse, and reducing the quantities purchased. Additionally, Environmental Management System Awareness Training (ENV-100) is required of all employees and provides an outline of the EMS and includes the expectations of continued environmental protection, waste minimization, pollution prevention, and procurement of sustainable products and services.

Comparable to FY 2023, the primary focus of FY 2024 has been developing sustainable acquisition training and continuing one-on-one training with applicable personnel on the requirements for the proper handling and disposition of recyclable materials. Coordinating with WIPP's Training and Procurement Organizations to develop a Sustainable Acquisition and Procurement eLearning course remained a priority of FY 2024. Additionally, efforts have been underway to update the Sustainability SharePoint site on WIPP's internal website, WIPP Central, which includes information and resources on sustainable procurement and pollution prevention activities, programs, and expectations.

In previous years, the P2 program implemented a single stream recycling method, which required personnel to be more conscious of placing the proper materials in the correct recycling containers. During this reporting period, the single stream recycling continued, and recycling education and awareness was reinforced by distribution of emails and flyers encouraging the participation and proper use of the appropriate recycling bins and associated recycling centers.

Earth Day 2024 activities included a weeklong "Lunch and Learn" in which employees assembled in the auditoriums at the WIPP site and the Skeen-Whitlock Building during lunch to learn about aspects of the EMS, Sustainability, and P2 Programs. Topics discussed during these lunch sessions included a description of the EMS Program, recycling, and water and energy savings at home. Site Environmental Compliance (SEC) personnel coordinated with the WIPP Communications Organization to inform employees of both efforts through email and flyer distributions.

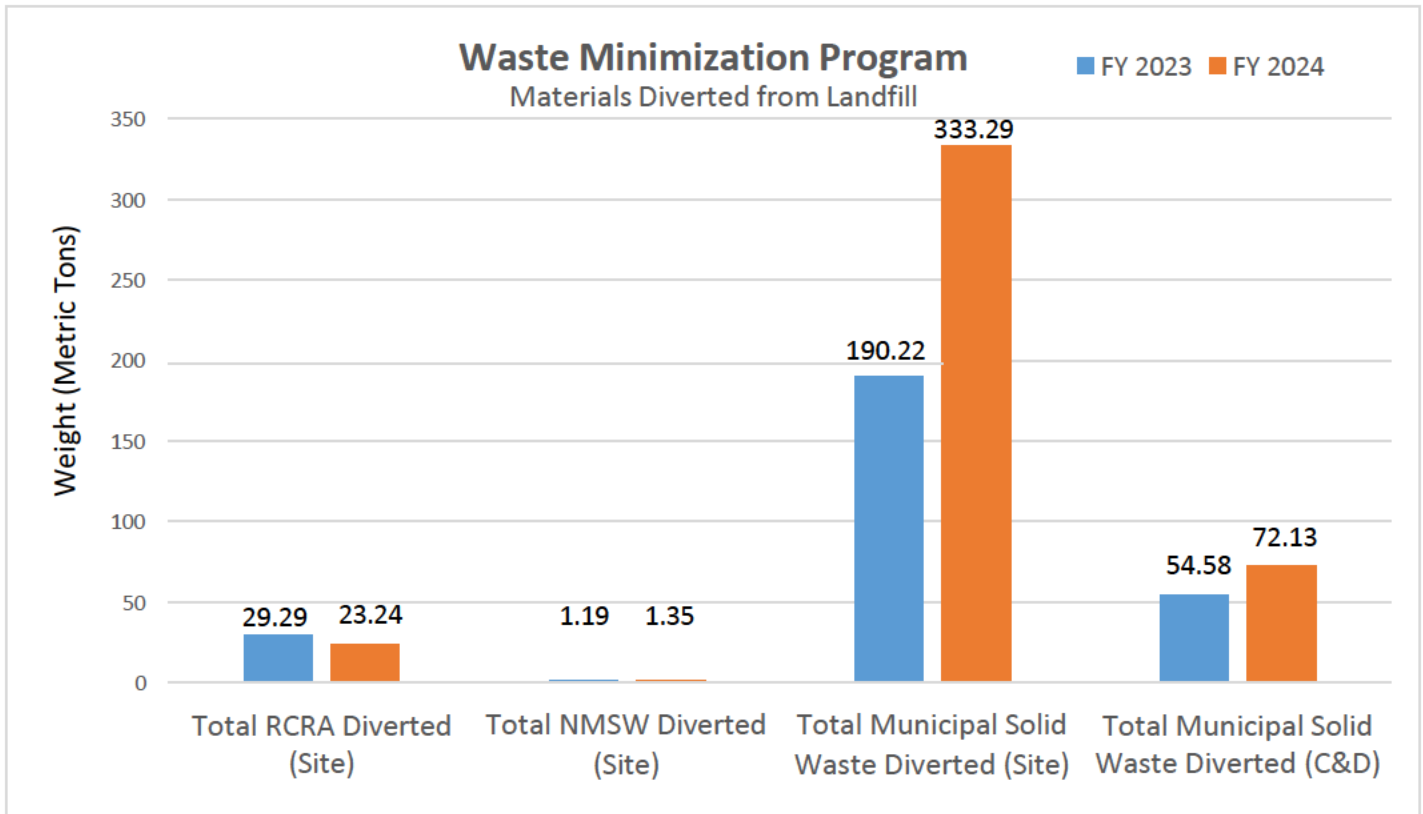
3. *Source reduction or recycling measures implemented in the last five years or planned for the next federal fiscal year.*

The Permittees maintain an active recycling/reuse program and strive to continually improve performance in this area while being vigilant in exploring new recycling venues. Future plans include eliminating fluorescent and high-intensity discharge lamps site-wide and changing to light-emitting diode (LED) lighting, and changing Hilti cartridges used in the underground (UG) to a lead-free product. Over the past 5 years, the recycling/reuse program for the WIPP project has encompassed the following materials:

- Aluminum Cans
- Antifreeze
- Asphalt/Concrete
- Batteries (e.g., NiCad, Lithium-ion, Alkaline, Lead-acid)
- Cardboard
- Circuit Boards
- Electrical Ballasts
- Electronics
- Office Equipment
- Ink/Toner cartridges
- Lamps/Lighting Fixtures
- Mixed Metals
- Paper
- Number 1 PET Plastic
- Tires/Rubber
- Wood Pallets
- Used Oil and Oil Filters
- Hard Hats & Safety Wear
- Single Serve Coffee Pods

In FY 2024, the WIPP project diverted 333.29 metric tons of municipal solid waste materials from New Mexico landfills. This total is including all diverted RCRA materials, New Mexico special waste (NMSW), and diverted solid waste from both project- and construction-related activities. This increased significantly from FY 2023, in which 190.22 metric tons of municipal solid waste were diverted from landfills. This resulted from an increase in mixed metals recycling from the two ongoing capital projects: the building of the Safety Significant Confinement Ventilation System (SSCVS) and the sinking of Shaft 5, and an increase in the project's mixed materials recycling, summarized below as "Total Municipal Solid Waste Diverted (C&D)." There was also 38.82 metric tons of electronic equipment recycled this FY compared to 5.78 recycled last FY. This electronic waste volume is included in the Total MSW Diverted (Site) totals in the graph below.

The following graph shows the category of wastes diverted from the landfill in FY 2024 as compared to FY 2023:



4. *Estimated dollar amounts of capital expenditures and operating costs devoted to source reduction and recycling of hazardous and mixed waste.*

The FY 2024 budget for promoting and implementing P2 and waste minimization was \$263,286. This funding allocation was used for staffing compensation, environmental awareness, and implementation of the EMS and Waste Minimization Programs.

As in previous years, significant focus was placed on continuous improvement, reaching out to and educating employees, recycling clean, empty and dry items and sustainable procurement methods.

5. *Factors which have prevented implementation of source reduction or recycling.*

The EMS Program continues to be supported by the Environmental Management System Steering Committee (EMSSC). The committee, composed of cross-departmental personnel, helps drive continual improvement of environmental performance via the EMS.

There are standard factors that hinder the full implementation of the Waste Minimization Program. There are limited municipal and commercial recycling programs in the area around the WIPP facility, thereby restricting what is considered recyclable through the P2 Program. With some of the waste generated at the WIPP facility, there are no facilities

available to send the waste for recycling. Additionally, certain activities generate radiologically contaminated items, including personal protective equipment (PPE), that are not able to be reused or recycled regardless of the original material. However, these activities have become less impactful as the efforts to recover from the 2014 radiological event have been completed. Although awareness campaigns and training are continually being created and distributed to project personnel, a lack of employee participation of the Waste Minimization Program will always limit reduction and recycling efforts.

Communication and training to educate employees of waste minimization and recycling requirements will persist through the next FY, including an increased emphasis from senior leaders through their support of the *Waste Isolation Pilot Plant Environmental Policy Statement*.

6. *Summary of additional waste minimization efforts that could be implemented at the facility that analyzes the potential for reducing the quantity and toxicity of each waste stream through production process changes, production reformulations, recycling, and all other appropriate means including an assessment of the technical feasibility, cost, and potential waste reduction for each option.*

In FY 2020, the SEC group integrated two processes that assisted in meeting the goal of reducing the amount and toxicity of hazardous materials used for the WIPP project, thereby reducing the potential for hazardous waste generation. A third process was subsequently implemented. These processes have shown to be effective methods of sustainable education and accountability.

- a) SEC continues to review Approval/Variance Request forms and their associated Safety Data Sheets related to subcontract work for the WIPP project. This allows the opportunity to screen chemicals associated with a project for replacement with suitable less-hazardous chemicals (e.g., paints, lubricants, cleaning supplies, etc.).
- b) SEC continues to review Environmental Compliance Review forms to ensure P2 and hazardous waste considerations are accounted for prior to any new project work or alterations.
- c) SEC continues to review credit card purchases for sustainability requirements which is an added opportunity to screen for hazardous materials and to recommend environmentally friendly alternatives.

7. *Flow charts and/or tables summarizing all hazardous and mixed waste streams produced by the facility by quantity, type, building or area, and program.*

The following two tables summarize the type and amount of hazardous waste and radioactive waste generated between October 1, 2023, and September 30, 2024. The tables also include the data from FY 2023 for a side-by-side comparison. In FY23 5.90 tons of the hazardous waste stream was comprised of contaminated brine. In FY24 the volume of contaminated brine increased to 23.07 tons. This large increase in volume is largely due to changing weather conditions that are beyond our control.

Hazardous Waste Generated	Area/Program	FY 2023 Metric Tons	FY 2024 Metric Tons
Hazardous Waste			
Flammable or Ignitable, Corrosive, Reactive, and/or Toxic (Spent Hilti Cartridges, Contaminated Brine, Off-Spec and Expired Materials, Gasoline & Diesel Fuel)	Emergency Response / Maintenance	6.73	23.20
Total Hazardous Waste		6.73	23.20

Radioactive Waste Generated	Area/Program	FY 2023 Metric Tons	FY 2024 Metric Tons
Mixed Low-Level Waste			
Lead Acid and Lithium-Ion Batteries from UG, and Photo Ionization Detectors (PIDs)	Recovery Activities	1.23	0.04
Low-Level Waste			
High Efficiency Particulate Air (HEPA) filters, PIDs, UG Vehicle Oil, Brine Water, Sealant, Roof Bolts, Tires, Rims, and PPE	UG Maintenance	21.33	15.82
Total Radioactive and Mixed Waste		22.56	15.86

8. *Demonstration of the need to use those processes which produce a particular hazardous or mixed waste due to a lack of alternative processes, available technology, or available alternative processes that would produce less volume or less toxic waste.*

Processes required for successful operations that contribute to the generation of site hazardous, mixed low-level, and low-level radioactive waste as noted in the table above are necessary to safely complete the mission of the WIPP project. However, there are ongoing efforts to review programs, work packages, and procurement acquisition to reduce the generation of hazardous and universal wastes. Currently, two projects are in-works to reduce hazardous and universal waste. One project is replacing the fluorescent lamp and high-intensity discharge lamp fixtures with energy saving LED light fixtures, reducing the generation of waste with mercury. The other project will evaluate the replacement of lead-containing Hilti cartridges used in the UG with lead-free cartridges.

This report will be placed on the Information Repository in accordance with Permit Part 1, Section 1.14.2.