



**Department of Energy**  
 Carlsbad Field Office  
 P. O. Box 3090  
 Carlsbad, New Mexico 88221  
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**Hazardous Waste Bureau**

Mr. John E. Kieling, 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 Waste Isolation Pilot Plant Project 2016 Waste  
 Minimization Report, Permit Number NM4890139088-TSDF

Dear Mr. Kieling:

The purpose of this letter is to provide New Mexico Environmental Department with the Waste Isolation Pilot Plant (WIPP) 2016 Waste Minimization Report.

We certify under penalty of law that this document and all attachments were prepared under our direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on our 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 our knowledge and belief, true, accurate, and complete. We are aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Please contact Mr. George T. Basabilvazo of the Carlsbad Field Office at (575) 234-7488, if you have any questions regarding this certification.

Sincerely,



Todd Shrader, Manager  
 Carlsbad Field Office



Philip J. Breidenbach, Project Manager  
 Nuclear Waste Partnership LLC

Enclosure

cc: w/enclosure  
 K. Roberts, NMED \*ED  
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 CBFO M&RC  
 \*ED denotes electronic distribution



## **Waste Isolation Pilot Plant Project 2016 Waste Minimization Report**

A waste minimization program is in place at the Waste Isolation Pilot Plant (WIPP). The goal of this program is to reduce the volume and toxicity of hazardous and mixed wastes generated at the facility. The purpose of this report is to comply 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.*

## PROGRESS

This report was prepared by the Permittees (the U.S. Department of Energy Carlsbad Field Office and Nuclear Waste Partnership LLC) in accordance with Permit Part 2, Section 2.4. This report describes how the WIPP facility addressed items 1-8 during the period beginning October 1, 2015, ending September 30, 2016. This report describes 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 WIPP Environmental Policy Statement (DOE/WIPP 04-3310) serves as the sites formal declaration, establishing management commitment to environmental stewardship. This document in conjunction with the site's Environmental Management System (EMS) Description (DOE/WIPP-05-3318) and ISO 14001 certification, form the foundation which ensures site commitment to waste minimization and recycling. The Permittees commit to "...continually plan, perform, assess, and improve the environmental performance of the WIPP." The environmental policy statement (DOE/WIPP 04-3310) is current and in effect as of March 2016. The Environmental Management System Description (DOE/WIPP-05-3318) is current and in effect as of September 2016. The sites ISO 14001 certification will remain relevant and active beyond the date of this submitted report.

The Permittees continue to educate staff and implement the Environmental Policy Statement. The facility continues to educate staff and implement the EMS – ISO 14001 standards, which are supported by the WIPP Pollution Prevention (P2) Program Plan, WP 02-EC.11. The P2 plan outlines, identifies and supports the core requirements, stating the core requirements mandated under Executive Order (EO) 13693, DOE Order 436.1 and 436.1-1. The core components include annual P2 targets, defined responsibilities, communication, awareness activities, performing assessments to identify waste minimization or reduction opportunities, a recycling program, training, sustainable procurement, and reporting. Changes made to the plan during fiscal year (FY) 2016 were specific to referencing EO 13693, DOE Order 436.1-1, and adding the word "mixed" as a recycling product descriptor.

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

Every WIPP employee receives General Employee Training (GET). The training includes content related to waste management, P2, waste minimization, sustainability and emergency response procedures. Employees involved in waste generation or handling activities and emergency response receive additional training to ensure that they are fully qualified to perform their tasks. Most of these training programs have elements in which waste minimization, source reduction, and recycling strategies are included. In addition, managers receive manager and supervisor training, as applicable to their positions, which includes a review of the P2 program.



During FY 2016, procurement classes continued to include federal purchasing requirements specific to Recycled content, BioPreferred and/or BioBased content, re-refined content, Energy Star certified products, Water Sense products, less toxic (Safer Choice labeled) products, not purchasing products containing ozone depleting substances (ODS), and SNAP (significant new alternative policy) products that lower site generated greenhouse gas emissions. Changes implemented or updated during the past year include expanding definitions specific to sustainability, the electronic procurement standard, reference to FEMP (Federal Energy Management Program) being the new standard, confirming Energy Star certified as the current minimum expectation. These changes were placed in direct response to federal requirements being re-defined as they pertain to federally funded facilities. These definitions were implemented by the General Service Administration (GSA) to remain compliant with the Federal Acquisition Regulations (FAR).

Broadened implementation of site green procurement standards and the recycling program were the topics of focus during Earth Day week 2016. Poster board presentations were displayed discussing the topic "What is a climate resilient green community," reference pamphlets, and table tents were also produced, distributed and made available to staff for reference. Considerable focus was devoted to raising staff awareness to prepare for local weather related events, encouraging community resilience as suggested by the U.S. Department of Homeland Security and their nationwide Ready.gov campaign.

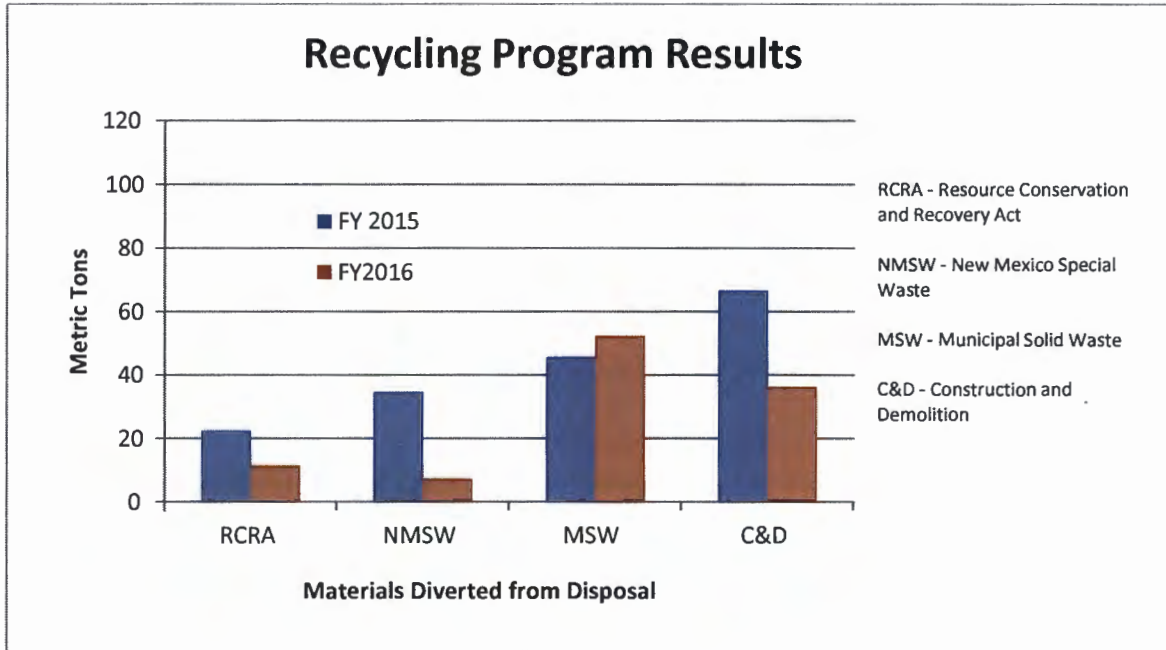
*3. Source reduction or recycling measures implemented in the last five years or planned for the next federal fiscal year.*

The Permittees maintain an active recycling/reuse program and strive to continually improve performance in this area. Over the past five years, the Permittees recycling/reuse program at the WIPP Project has encompassed the following materials:

- Aluminum Cans
- Antifreeze
- Asphalt
- Batteries (e.g., NiCad, Lithium, Alkaline, lead acid)
- Cardboard
- Chain-link fence
- Circuit boards
- Electrical Ballasts
- Electronics
- Office Equipment (e.g., file cabinets)
- Lamps
- Metals (various)
- Mined salt
- Paper
- Plastic
- Tires

- Ink/Toner cartridges
- Used oil and oil filters
- Wood pallets
- Wood waste (broken pallets, empty wooden spools, miscellaneous raw timber, and other miscellaneous crating materials)

In FY 2016, the site diverted 88.81 metric tons of material for recycling/reuse. The graph below compares FY 2015 and FY 2016.



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

The Permittees' FY 2016 budget for promoting and implementing P2 and waste minimization was \$150,000. This funding allocation was used for staffing to maintain and implement the WIPP waste minimization program and to maintain P2 awareness.

FY 2016, significant focus was placed on continuous improvement. P2 continued to assess how best to replace existing and/or worn recycling bins across the WIPP site. February 2016, management agreed to have P2 propose a redesign plan to update the recycling center bins across the site. The proposed redesign plan focused on assuring that P2 delivers a consistent visual message, to enhance form and function which will by design foster increased participation. At the end of FY 2016, the proposed redesign plan was implemented and by the end of FY 2016, succeeding in reconditioning and rebranding of 3 of the proposed 15 recycling center bins, and was ready to phase in the proposed pilot program that would introduce recycling center bins (Ergo Cans) composed of 3D graphic imaging panels.

The reconditioning and rebranding of the site recycling center bins cost \$5,627. The proposed pilot program introducing the recycling center bins composed of 3D graphic imaging panels have commenced and were planned to be purchased during FY 2017, a process that has begun.

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

There continues to be no factors that have prevented the implementation of the WIPP waste minimization program to reduce the volume and toxicity of hazardous waste generated. Proposed waste streams that could generate hazardous wastes are reviewed regularly to ensure minimization of the hazardous constituents and to incorporate waste reduction, recycling and reuse whenever possible.

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.*

The WIPP site utilizes a designated 45 foot recycling connex for processing P2 recyclable materials. The connex is used to sort, package and prepare for shipping all site generated recyclables. The connex serves another basic purpose, which is to provide the P2 program and staff with a visible consistent and physical presence, which serves to enhance and emphasize site management's commitment to support the P2 program. The recycling connex has established electrical power, including A/C and heat, the space also contains a shipping scale, a pallet jack, shelving, packaging supplies, and work desk.

A core component of the WIPP P2 program is maintaining site commitment to conducting pollution prevention opportunity assessments (PPOAs). However, site management noted that focus and priority would be directed to concentrate on functions that ensure and/or support restart operations. As a result the P2 program carried forth the FY 2015 PPOA's. This opportunity provided the new P2 coordinator to review and implement this crucial process. Summary regarding P2 waste minimization efforts during FY 2016 activities are as follows.

Emergency Operations Center

The updated WIPP Emergency Operations Center (EOC) and the reported design improvements allowed WIPP to access EOC operations specific to staff accommodations, enhancing equipment operation, and drill proficiency training. This process and mechanism for improvement lead to further improvements in EOC capability during FY 2016. These efforts were completed emphasizing recycled content office supply products, electronics that meet Federal Energy Management Program (FEMP) standards, encouraging the use and placement of formaldehyde free construction materials. This project completed the majority of purchases



and implemented design modifications by applying the best management practices approach strategy specific to sustainable procurement, as recommended by the General Services Administration.

Training Program Improvements

The WIPP facility continued to support improvements within site training programs. Continued emphasis was placed on continuity regarding P2 related concepts, designed to ensure the site is delivering a clear, consistent, methodological rationale regarding P2 and sustainability related endeavors. This continuous improvement approach and business rationale continues to work to achieve this goal. The training department purchased several new flat panel monitors that met the Federal Energy Management Program (FEMP) standard, simultaneously meeting Energy Star/EPEAT Gold certification standard. The P2 program coordinator encouraged this procurement specifically because these units have a lower operating cost, increased life expectancy, and are easier to recycle than similar units.

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 table summarizes hazardous, low level waste and mixed low level waste generated by the Permittees, at the WIPP Facility from October 1, 2015 thru September 30, 2016; displayed data does not include materials that were reused (donated) or recycled.

<b>Hazardous and Mixed Waste Summary Table</b>			
<b>Type of Waste Generated</b>	<b>Area/Program</b>	<b>FY 2015 Metric Tons</b>	<b>FY 2016 Metric Tons</b>
<b>Hazardous Waste</b>			
Lab Waste	Lab	0.01	0.01
Waste Water	Waste Shaft and Exhaust Shaft Interception Borehole	0.00	0.00
Off-spec and Expired	Lab	0.09	0.00

<b>Hazardous and Mixed Waste Summary Table</b>			
<b>Type of Waste Generated</b>	<b>Area/Program</b>	<b>FY 2015 Metric Tons</b>	<b>FY 2016 Metric Tons</b>
Spill Clean-up (Gasoline, Floor Stripper)	Emergency Services	0.22	0.29
Broken Fluorescent Lamps	Maintenance	0.00	0.00
Miscellaneous (i.e. gasoline and water mixed, non- punctured aerosol cans, paints and coatings)	Maintenance	0.13	2.00
<b>Total Hazardous Waste</b>		<b>0.45</b>	<b>2.3</b>
<b>Rad Waste</b>			
<b>Mixed Low Level Waste</b>			
Spent Filters, Personal Protective Equipment, NiCad Batteries	Recovery Activities	2.43	6.91
<b>Low Level Waste</b>			
Brine Water, Miscellaneous clean-up debris	Recovery Activities	14.63	27.72
<b>Total Mixed Waste</b>		<b>17.06</b>	<b>34.63</b>
<b>Total Waste</b>		<b>17.51</b>	<b>36.93</b>

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 at the WIPP Project generate hazardous/mixed waste as noted in the table above. The waste minimizations program to reduce the volume and toxicity of hazardous and mixed wastes generated has been implemented and maintained. Processes that have the potential to generate hazardous/mixed waste are monitored to ensure present and future protection of human health and the environment. Processes were historically and are planned to remain and evaluated through PPOA process, as appropriate to identify any new options/technology for waste minimization or recycling.

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