



U.S. DEPARTMENT OF
ENERGY

OFFICE OF
**ENVIRONMENTAL
MANAGEMENT**

WIPP Status Update

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for

Idaho National Lab Citizen's Advisory Board

October 27, 2016

WIPP Progress

Path to Resumption of Waste Emplacement

- ✓ Interim Ventilation System (IVS) - **completed**
- ✓ Management Self Assessment - **completed**
- ✓ Contractor Operational Readiness Review - **completed**
- DOE Operational Readiness Review

Schedule Challenges

- Ground Control – withdrawal from south end
- Waste Handling in a Contaminated Environment

Changes to the National TRU Program

- New WIPP Waste Acceptance Criteria (WAC)
- Enhanced National TRU Program Requirements

Shipping Schedules and Near Term Limitations

- Resumption of Waste Emplacement
- Projected Shipment Numbers
- Status of Idaho Recertification

Future projects for return to normal operations

- Additional Surface Storage at WIPP
- Permanent Ventilation System Status

Interim Ventilation System

- The interim ventilation system (IVS) became operational September 9 – air balancing to maximize airflow completed on September 14
- IVS provides an additional 54,000 cubic feet per minute of filtered airflow – doubling existing airflow in the underground
- Supports waste emplacement and allows operation of additional diesel equipment necessary for ground control



Management Self Assessment (MSA)

- Internal review conducted by the M&O Nuclear Waste Partnership (NWP) to confirm operational readiness
- Two weeks of field work - concluded August 26
 - ✓ Reviewed over 950 documents
 - ✓ Conducted 200 interviews
 - ✓ Conducted over 120 performance based field observations
- Identified 5 adverse findings in the areas of configuration management, fire protection, operations and management readiness
- Corrective actions responding to pre-start findings, post-start findings and deficient conditions are in progress

Contractor Operational Readiness Reviews (CORR)

- Conducted by independent team of subject matter experts from across the DOE complex with relevant experience in nuclear operations, engineering, and safety management
- Necessary to confirm the readiness of personnel, equipment, and programs to return to waste emplacement for contact handled waste
- Two weeks of field review and observation – concluded October 14

Operational Readiness Reviews

DOE Operational Readiness Reviews (DORR) – will include:

- Assessment of 17 Core Requirements, as defined in DOE O 425.1D, for the commencement of CH TRU waste emplacement at WIPP
- Assessment of WIPP systems and processes associated with the receipt through emplacement of CH TRU waste in the underground.
- Observation of operational demonstrations of those systems, processes, and procedures using simulated CH TRU payloads
- Verification that Environmental Safety and Health (ES&H) and emergency management programs are adequate to support the waste receipt and emplacement operations
- Verification that sufficient staff is available, trained and qualified (as appropriate) to support all phases of operations

The DOE ORR will begin as soon as corrective actions for all pre-start findings from the CORR have been completed and validated.

Return to Waste Emplacement Operations



Ground Control

Ground control remains a priority but has been made more challenging by –

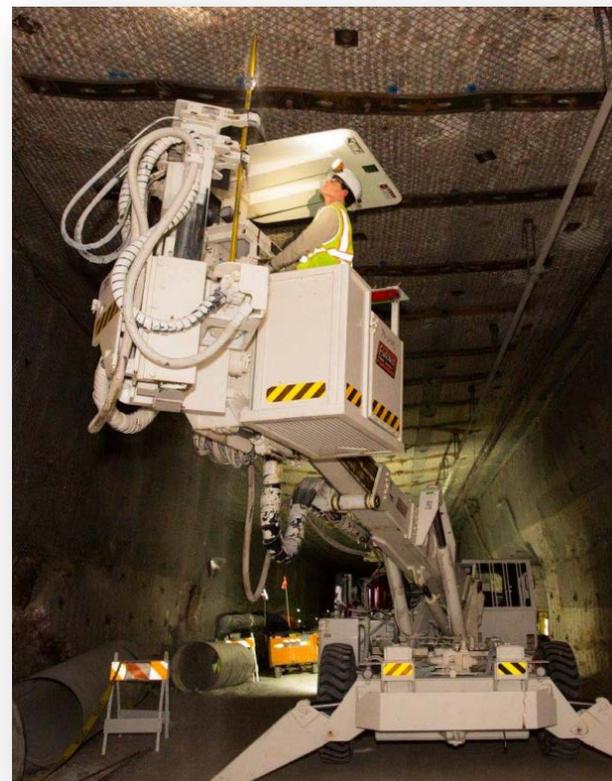
- 9 month hiatus following 2014 events
- Limited ventilation rates
- Working in personal protective equipment and respirators



Broken roof bolts



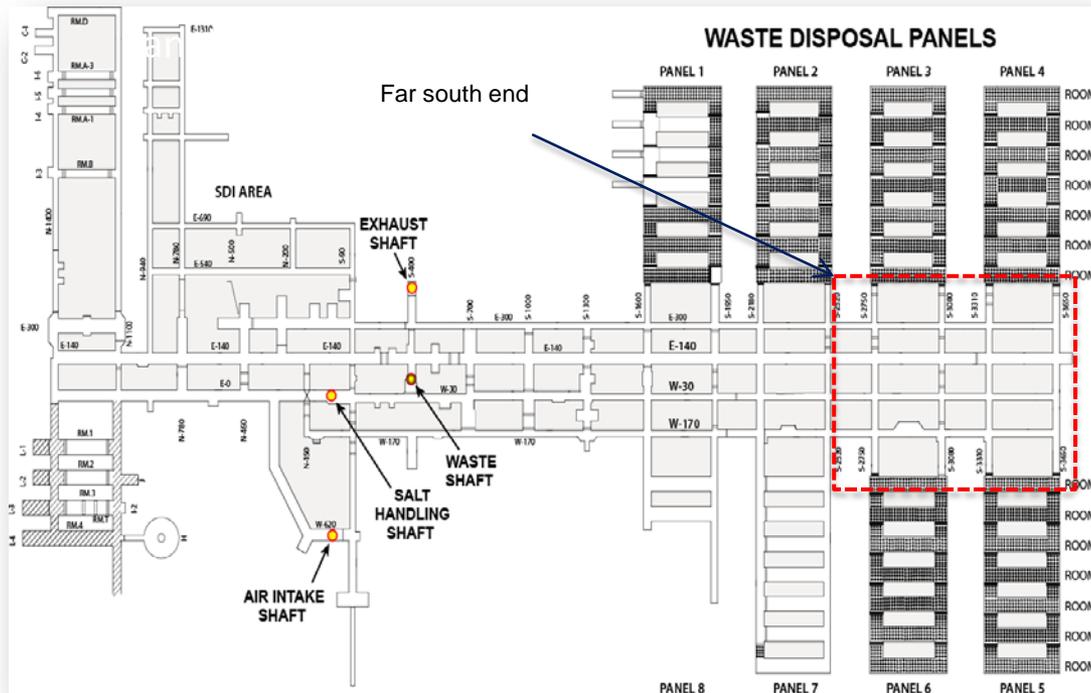
Floor heave



Hybrid bolter

Ground Control

Ground conditions in the south end of the mine have continued to degrade - a recent series of rock falls in prohibited areas influenced the decision to permanently withdrawal from the area -



Benefits from closing the south end -

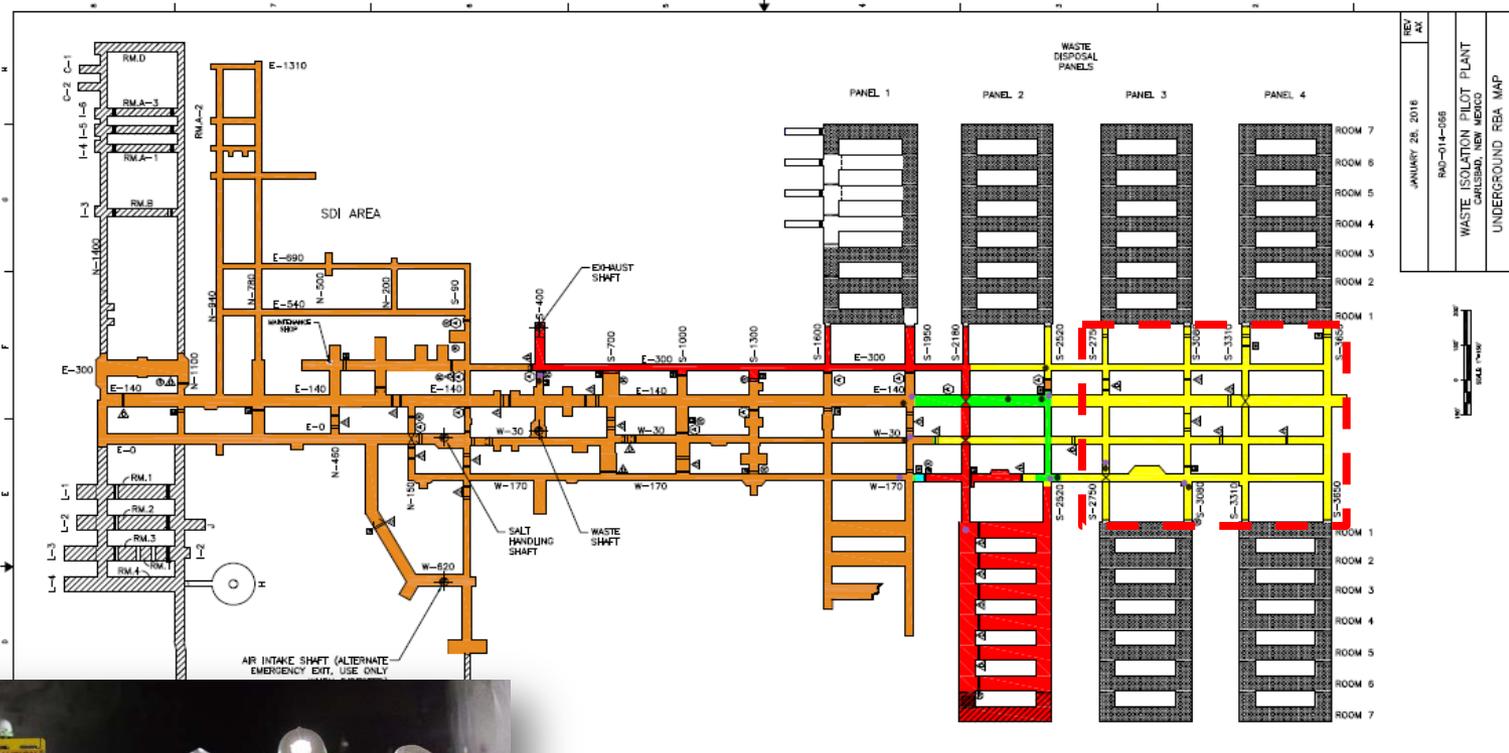
- Reduces potential employee exposure to ground control hazards;
- Reduces potential employee exposure to VOCs;
- Reduces the active area of the underground facility and the resources needed in these areas;
 - Decreases maintenance costs;
 - Allows workforce and resources to focus on ground control in active area;
 - Reduces footprint of the accessible contaminated area (approximately 60% reduction in contaminated area); and,
- Increases available ventilation to Panel 7 and occupied areas of the mine.

Waste emplacement in contaminated environment –

- Will take place in Panel 7 rooms 1-5
- Will require a transition from clean to contaminated zones near the opening of Panel 7
- Waste handling operators will be in personal protective clothing and powered air purifying respirators



Radiological Control Areas



DATE: 01/28/15
R. GROVES

DEFINITIONS	LEGEND
RBA - < 20 dpm/100cm ² ALPHA REMOVABLE < 200 dpm/100cm ² BETA REMOVABLE	CONTROLLED AREA
CA - > 20 dpm/100cm ² ALPHA REMOVABLE > 200 dpm/100cm ² BETA REMOVABLE	RBA
HCA - > 2,000 dpm/100cm ² ALPHA REMOVABLE > 20,000 dpm/100cm ² BETA REMOVABLE	CONTAMINATION AREA
ARA - > 0.3 DAC	CONTAMINATION AREA/AIRBORNE RADIOACTIVITY AREA
PANEL 7 - 2,000-17,000 dpm/100cm ²	HIGH CONTAMINATION AREA/AIRBORNE RADIOACTIVITY AREA
PANEL 7, ROOM 7 - > 1 million dpm/cm ² ALPHA ON THE EXPOSED WASTE	CAM
	PAS
	INACCESSIBLE
	NOTES
	1. DRIFT WIDTHS NOT TO SCALE, ENLARGED 2X FOR CLARITY.
	2. EXISTING EXCAVATION REFLECTS STATUS AS OF 08/19/14.

New and Enhanced Federal Oversight of Contractor Activities

- Increased oversight by Carlsbad Field Office and EM/HQ
- Clearer roles and responsibilities
- More direct oversight of the Site Generators



New Waste Acceptance Criteria (WAC)

- WAC Revision 8 issued June 27, 2016 – Effective July 5, 2016
- Includes changes resulting from findings from the Accident Investigation Board
- Incorporates requirements from the recently approved Documented Safety Analysis (DSA) and chemical compatibility studies
- Temporary suspension of waste certification activities at generator sites



New Requirements

- Enhanced Acceptable Knowledge - detailed verification of source documentation for potentially incompatible materials and to ensure the adequate information basis
- Chemical Compatibility Evaluations – identifying the range of possible chemical combinations that could occur in each waste stream using EPA approved methodology



New Requirements

- Basis of Knowledge for Oxidizing Chemicals – waste certification programs to identify and potentially treat waste to avoid effects from oxidizing chemicals
- Generator Site Technical Reviews (GSTR) - performed by CBFO and NWP to ensure waste packaging and treatment activities meet new enhanced WIPP WAC requirements
- Re-certification Audits – required before shipping waste certified under new WAC revision 8

Recertification Schedule -

- CCP and AMWTP procedures are currently in document review
- Recertification Audit for Idaho is scheduled for 4th QTR 2016 – 1 week of field observations with final report due in 30 days
- GSTR for Idaho is scheduled for 1st QTR 2017 – 2 weeks of field work with a final report within 30 days

Previously certified Waste –

- Some waste currently in WHB was ID waste (S3114) and has already been verified to meet the current WAC
- Similar S3114 waste:
 - Containers of homogenous sludge from Rocky Flats repackaged twice
 - No chemical compatibility issues
 - Currently going through the enhanced Acceptable Knowledge with CCP
 - Will be added to Waste Disposal System and, once approved by CBFO, available for shipment

When Waste Emplacement Resumes –

- Waste in Waste Handling Building (WHB) at WIPP will be emplaced first – Expected to take 90 days
- Shipments to WIPP will begin after WHB waste is emplaced.
 - New shipments will be based initially on an estimated emplacement rate of up to five shipments per week
- Shipping schedule for the first 6 months of operations is currently being developed



Out Year Shipping Rates

Potential increases -

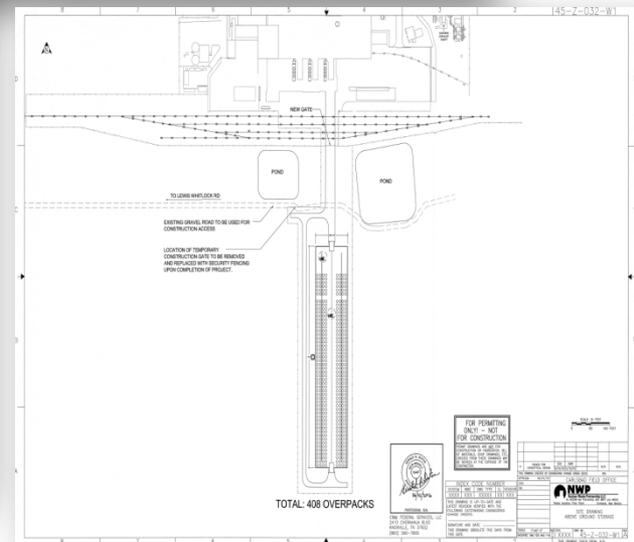
- Ramp up of shipping rates limited by air flow in the underground
 - Air flow will be significantly increase with new Permanent Ventilation System (PVS) to be complete in 2021 or later
- Shipping may be temporarily reduced periodically due to maintenance outages for aging site infrastructure



Engineered Concrete Overpacks – design used at SRS –

- Surface storage capacity for CH waste – 408 containers/136 shipments/8 weeks of capacity @ 17/week
- Storage of any single container not to exceed 1 year
- Increases the available weeks for TRU waste shipments
 - Receipt of shipments can continue during mining operations or during maintenance outages when waste emplacement operations will need to be on hold
- Continue CH TRU waste receipt during normal operational fluctuations and maintenance outages
- Class 3 Permit modification request (PMR) was submitted to NMED in late September
- Public meetings on PMR are being held this week in Carlsbad and Albuquerque

Above Ground Storage Project



Permanent Ventilation System

- New shaft and 55,000 sq. ft. ventilation building located east of the existing exhaust shaft
- Geotechnical Analysis for the building has been completed - data used to determine bearing capacity, seismic design parameters and foundation design
- Will provide enough airflow underground for mining and waste emplacement activities to occur concurrently
- Preparatory work is underway for boring tests for shaft including –
 - Construction of equipment pad
 - Groundwater test wells
 - 4" core down to 2150ft.



Questions

