

71<sup>st</sup> WIPP QUARTERLY REVIEW  
 July 18<sup>th</sup>, 2000  
 Hosted by: Energy Minerals, and Natural Resources Department  
 State of New Mexico



**FINAL AGENDA**

9:00	Introductions	Bill Mackie
9:10	Update on DOE issues and activities, to include: (1) Status of audits & shipping from small quantity sites – update on document review schedule; (2) Status of audits and shipping from major sites	Dr. Ines Triay
9:30	Update on EEG issues and activities	Matthew Silva
9:50	Update on New Mexico Radioactive Waste Consultation Task Force issues and activities	Bill Mackie
10:10	Update on NMED Issues and Activities, to include: Status of RCRA Permit related Issues	Steve Zappe
10:30	Break	
10:45	Emergency Management Corrective Actions	Dr. Chuan-Fu Wu
11:00	RH-TRU Authorization Basis and Program Status	Dr. Chuan-Fu Wu
11:40	Status of resolution of exhaust shaft water problem	Lokesh Chaturvedi
12:00	Lunch	
1:30	WIPP RCRA Permit Modification Status and Upcoming Plans	Jody Plum
1:50	Status of Air Monitoring Improvements and Changes and EPA Audit Findings	EEG: Bill Bartlett DOE: Richard Farrell
2:30	Action Item Commitments/Closeout	Bill Mackie
3:00	Adjourn	

Status of Action Items – 70<sup>th</sup> WIPP Quarterly Review

Action Items	Action By
Schedule technical exchange meetings, as soon as possible, to discuss RH TRU waste, EPA recertification criteria, SNL experimental programs and modeling efforts.	Kerry Watson, CAO
Provide EEG, NMED, and CAO with minutes of conference call regarding Ohio shipments	Bill Mackie, NMEMNRD <b>Completed 5/10/00</b>
Provide EEG with <i>Annual Ground Control Operating Plan for the WIPP report.</i>	Jack Gilbert, CAO <b>Completed 5/22/00</b>
EEG suggested setting up committee to discuss the changing of panel horizons.	Jack Gilbert, CAO
Provide EEG with copy of RFT for radiological monitoring system going into Raton	Bill Mackie, NMEMNRD <b>Completed 5/10/00</b>
Set up system to provide EEG with two copies of annual updates with WID publications about WIPP.	Cindy Zvonar, CAO

000729



-11<sup>th</sup> Quarterly

7/18/00

CAO

INEEL certified by NMED yesterday  
NTS <sup>audit</sup> proposed for 7/23/00

intend to aug 1 shipment/mo

INEEL to ramp up from 1 to 5 ~~to~~ 9/mo (still intending to meet agreement volumes)

RFFB 5 now up to 14/mo

LANL first shipment in Dec

EEG

Review comments submitted to NMED on Class 2 mods.

Summary of papers & reports, see if I have EEG-75 (U.8.2.6).

Preliminary results of enviro. surveillance - no evidence of release of

Pu or Am. Sent questions regarding SQS characterization

at TRU WAP/WAC not later this month? Waste characterization

issues - NAS recommendations, SQ Sites

Task Force

- Handout

NMED

- Handout

DOE

check w/

WIPP Emergency Management Program - reviewed by DOE  
indep oversight. Onsite EMP rated marginal, suggested using

worst case scenario of 80 pc-c/d/yr for low probability/high

consequence accidents. Corrective action plan due mid August.

Discussion about how OA may be overly conservative in  
assumption

Larry Bailey - new CAO Deputy Mgr starting  
in Sept.

Ines

SQS update - completed NEPA analysis (supplement to  
EIS). Also proposed amendment to Record of Decision. No  
adverse impact. Public review of ROD amendment.

Class 2 mod package under internal review. NMED  
briefed on WIPP intentions.

WU RH Waste - handout

Intend to follow NAB recommendations for characterization - either driven by regulations or safety considerations - nothing more, no self imposed requirements. Propose performance-based approach. No VOC analysis - assume saturation, adjust CH emission rate to accommodate

Lokesh Status of water in exhaust shaft

Jody Status of mod requests

Litigation

Audits - LANL

Waste Characterization @ WIPP, + RH Waste

Hope to have crude schedule by next quarter w/ my input

Bill Portlett

Richard Ferrell

Transition to new M+O contractor should begin by 8/15 (announcement)

Carrier selection has been made, should be announced next week

Next meeting Oct 17, Tues 9AM





## ENVIRONMENTAL EVALUATION GROUP

AN EQUAL OPPORTUNITY / AFFIRMATIVE ACTION EMPLOYER

7007 WYOMING BOULEVARD, N.E.  
SUITE F-2  
ALBUQUERQUE, NEW MEXICO 87109  
(505) 828-1003  
FAX (505) 828-1062

# LXXI QUARTERLY MEETING

**U.S. Department of Energy  
N.M. Energy, Minerals, and Natural Resources Dept.  
N.M. Environmental Evaluation Group  
N.M. Environment Department  
N.M. Attorney General**

**Matthew Silva  
Environmental Evaluation Group**

**July 18, 2000  
Albuquerque, NM**

## **June 8th Comments on Class 2 Permit Modifications**

- 1) Accuracy range for creosol and pyridines.  
60 -150% to 25-115%.
- 2) Statistical sampling of headspace gas for homogenous waste.
  - Truly random.
  - Not use AK to establish VOC Conc.
- 3) Statistical sampling of headspace gas for waste treated by thermal process.
  - Specify thermal treatment.

## **June 23 Comments on Class 2 Permit Modifications**

- 1) Single site on core for VOC sampling.
- 2) Summary category groups for first year miscertification rate
  - Sampling be representative.
- 3) No reason for gross or specific radionuclide measurement if surrogate for VOCs.
  - If required, specify radionuclides.

## Audits

- Emergency Preparedness Audit
- EPA Audit Subpart A

## Status of EEG Reports

- |          |                                     |                               |           |
|----------|-------------------------------------|-------------------------------|-----------|
| * Paper  | Neill & Neill                       | Rail vs. Truck                | June      |
| • EEG-74 | Greenfield & Sargent                | TRUDOCK                       | June      |
| • EEG-75 | Channell & Walker                   | IV.B.2.b                      | June      |
| • EEG-** | Oversby                             | Actinide Chemistry            | In review |
| • EEG-** | Rucker                              | Air Dispersion                | In review |
| • EEG-** | Rucker                              | Probabilistic S.A.            | In review |
| • EEG-** | Gray, Kenney<br>Ballard, Chaturvedi | Environmental<br>Surveillance | In prep.  |

## **Comments**

- Preliminary RH-TRU SAR comments sent to WID.
- Preliminary questions on Small Quantity Site waste characterization initiative.

## **Issues**

- Air monitoring.
- Exhaust shaft in-leakage.
- Change in panel horizon.
- RH TRU WAC and WAP.
- MgO mini-sacks.
- Use of Panel 1.
- Waste Characterization.



DRAFT 6-20-00

EEG-XX



**OPERATIONAL RADIATION SURVEILLANCE  
OF THE WIPP PROJECT BY EEG DURING 1999**

Donald H. Gray

Jim W. Kenney

Sally C. Ballard

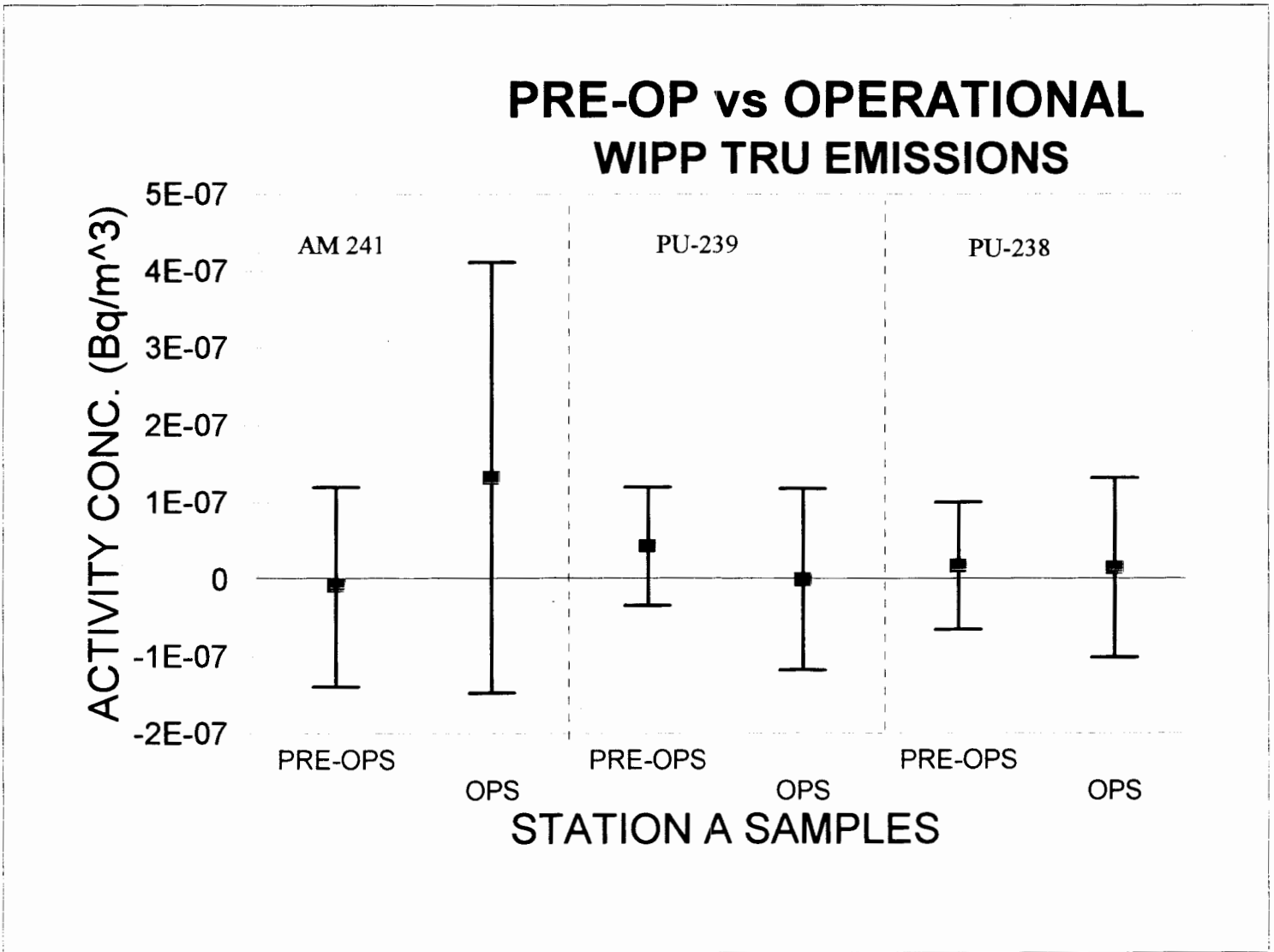
*Lokesh Chaturvedi*

Environmental Evaluation Group  
New Mexico

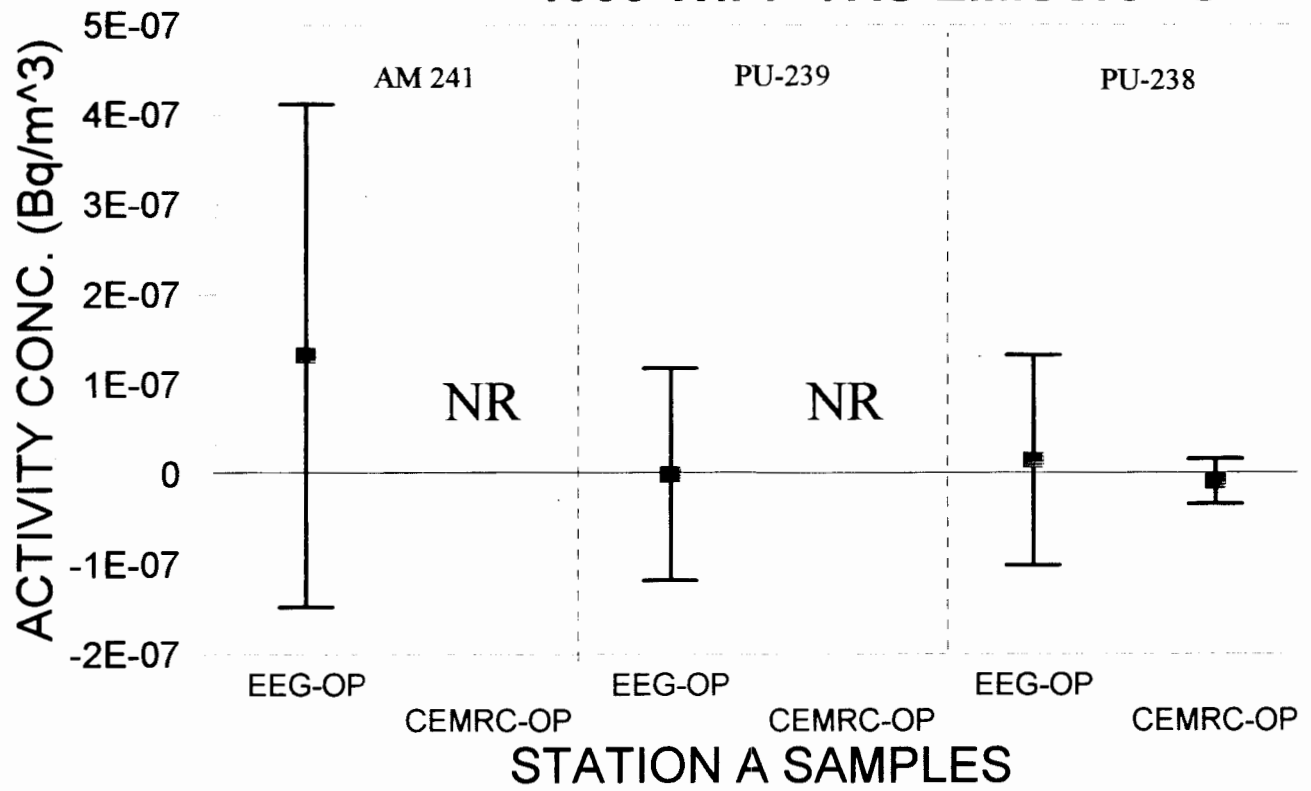
July 2000

**CONCLUSIONS:**

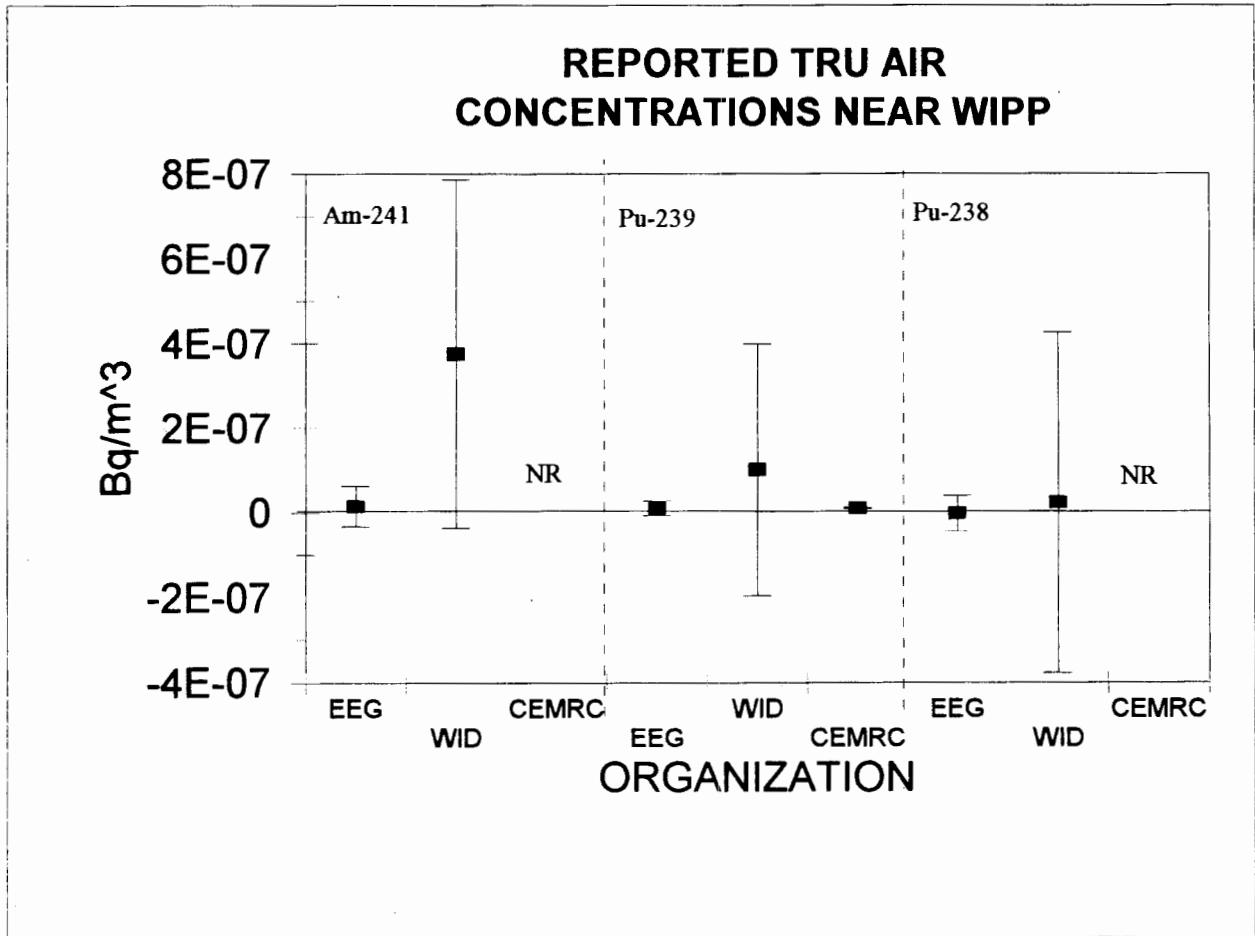
- 1. EEG DATA INDICATE WIPP HAD NO RELEASE OF  $^{238}\text{Pu}$ ,  $^{239+240}\text{Pu}$  OR  $^{241}\text{Am}$  ABOVE BACKGROUND (BASELINE) FROM STATIONS A & B DURING 1999.**



# EEG & CEMRC 1999 WIPP TRU EMISSIONS



2. EEG'S OPERATIONAL AMBIENT AIR RADIONUCLIDE (1999) DATA ARE CONSISTENT WITH PRE-OPERATIONAL DATA REPORTED BY WID (1998) AND CEMRC (1996-1997)



# 71st WIPP Quarterly Review

Presented by

William B. Mackie

Coordinator, New Mexico Radioactive Waste Consultation  
Task Force

Energy, Minerals and Natural Resources Department

July 18, 2000

Santa Fe, New Mexico

# Task Force Activities

- WIPP Working Group:
  - Regular monthly meetings held
    - Meeting Focus:
      - Safe Transportation and Emergency Response Preparedness
      - Training Development
      - FY-2001/2002 Project Management Plan
  - Special meetings held
    - Emphasis placed on WIPPTRAX Planning, and FY 2001/ 2002 Budget
    - Met with DOE-CAO to negotiate FY 2001/2002 State funding - Negotiations continuing

# Task Force Activities

(Continued)

- WIPP Transportation Safety Program Web Site
  - Suzanne Bernadette hired as Communications Director and WIPP Web Site Web Master
  - Web Site updated on continual basis
  - Doing overall evaluation of Web Site to make it more user friendly

# Task Force Activities

(Continued)

- Task Force Performance Variances:
  - WIPP shipment enroute notification and communication protocols still under review
  - Still awaiting ruling on Rail Road Crossings
  - WIPPTRAX scheduled for August/September postponed until October 2000 due to extensive wild fires involving organizations which were scheduled to participate in exercise



# Task Force Activities

(Continued)

- Participated in the following:
  - WGA conference call on enroute notification protocols
  - TRANSCOM User Group conference call
  - EMS Region III Conference in Ruidoso (Set up booth and provided Road Show Vehicle)
  - Public Outreach for Santa Fe High School “Earth Day” activities - 300 attendees (Set up booth and provided Road Show Vehicle)

# Task Force Activities

(Continued)

- Made Outreach presentations (in preparation to opening I-40 West route) to Emergency Managers in Gallup and McKinley County and Grants and Cibola County.
- Provided Outreach presentation to McKinley County Local Emergency Preparedness Committee

# WIPP Transportation Safety Program

- Provided advanced notification, TRANSCOM monitoring, MTD Inspections and NMSP Chase vehicles for thirteen shipments to WIPP Facility during quarter. (MTD, NMSP, TESD)
- Coordinated and hosted visit by DOE-CAO Transportation Manager. Toured NMSP District 1 and State Emergency Management Center. (TESD)

# WIPP Transportation Safety Program (Continued)

- Responded to inquiries from Environmental Groups and the General Public. (TESD, DOH, NMED)
- Attended Hazardous Materials Safety Board Meetings. (TESD, NMSHTD, NMSP, MTD, SFMO)
- Contract developed to place all MTD Enhanced Inspectors on dosimeter program. (NMED, MTD)

# WIPP Transportation Safety Program (Continued)

- Continue to coordinate with local governments regarding WIPP Emergency Response Preparation (WIPP JPAs). (SFMO)
- Provided CVSA Inspection Training to approximately 30 people. (MTD)

# WIPP Quarterly Review

## July 18, 2000

### Activities Update for NMED's RCRA Permits Program

#### 1. Ongoing Permitting Process

- Current Class 2 permit modification process
  - Public meetings held in Carlsbad (May 16) and Santa Fe (May 18)
  - Public comment periods ended on June 11 and June 25
  - Received comments from 22 individuals and groups
  - Notified DOE on July 10, 2000 of 30-day extension before announcing decision on first set of Class 2 modifications
  - NMED will notify DOE of extension for second set of Class 2 modifications
- NMED received additional permit modification request from DOE/WID
  - June 28, 2000 - Class 1 (on-line integrated sampling systems)
- WIPP Facility Work Plan, RCRA Facility Work Plan/Sampling and Analysis Plan
  - NMED reviewing for completeness
- WIPP Mine Ventilation Rate Monitoring Plan
  - DOE submitted response to Request for Supplemental Information (**RSI**) on May 16, 2000
  - NMED will provide one additional set of comments before approving
- Groundwater Detection Monitoring Program
  - DOE notified NMED on June 14, 2000, of concentrations exceeding background for 15 metals and indicator parameters
  - DOE evaluating cause of exceedance

#### 2. Ongoing Challenges to Permit

- Stipulated Stay of 120 days granted April 18, 2000; expires August 17, 2000
- Financial Assurance
  - Actions by Senator Domenici to prohibit bonding (H.R. 4425)
- Class 1 modification to Permit Condition IV.B.2.b

### 3. RCRA-related Audits

- Hanford Site
  - NMED issued approval of report June 23, 2000
  - Excluded approval of pre-existing RTR and VE data
  - DOE pursuing separate mechanism for qualifying pre-existing data (July 7 suspension of pre-existing data approval, July 11 requirements document)
- INEEL, April 24 - 28, 2000
  - Required follow-up surveillance on May 17, 2000
  - Received preliminary audit report May 26, 2000
  - Received final audit report May 31, 2000
  - NMED issued approval of report July 17, 2000, excluding pre-existing VE data used for miscertification calculation
- Other tentatively scheduled audits
  - WID QA Program/WAP Compliance, August 7 - 18, 2000
  - LANL, August 21 - 25, 2000 (rescheduled twice)
  - RFETS Homogenous Solids, September 18 - 21, 2000
  - SRS, December 11 - 15, 2000

### 4. Other activities

- Phone conference between EPA, DOE, and NMED to discuss PCB disposal, May 9, 2000
- DOE seeking approval from EPA to accept CERCLA off-site waste for disposal at WIPP (letter dated May 23, 2000)
- Received notice from DOE/WID of change in repository disposal horizon for future excavations, June 27, 2000
  - Roof will be at Clay G
- Received notice from DOE/WID of intent to modify portions of Waste Handling Building, July 17, 2000
  - Modification of Overpack and Repair Room, Site-Generated Waste Room
  - Installation of physical and chemical instrumentation to characterize waste
- Name of bureau officially changed to NMED Hazardous Waste Bureau (**HWB**)
- New staff hired to assist with WIPP - starts August 14, 2000

5. How I spent my summer vacation - <[http://homepage.mac.com/steve\\_zappe](http://homepage.mac.com/steve_zappe)>

Status Report  
**DOE/OA Review of WIPP  
Emergency Management Program**

71th Quarterly Review

Santa Fe

July 18, 2000



## WIPP EMP Review Summary

- Conducted by DOE Office of Independent Oversight & Performance Assurance (OA) during May 1-11, 2000
- 5 areas assessed
  - Hazards Survey & Hazards Assessments
  - Program Plan, Procedures & Responder Performance
  - Training, Drills & Exercise
  - Emergency Public Information & Offsite Interface
  - Feedback & Continuous Improvement Process
- Overall rating (3 categories: satisfactory, marginal, or unsatisfactory)
  - Transportation - *Satisfactory*
  - Onsite EMP - *Marginal*

## Emergency Planning Hazards Assessment

- OA suggested
  - use of worst-case radioactivity (80 PE-Ci/drum) for low probability, high consequences accident scenarios
  - inclusion of emergency action levels based on such consequences
- WIPP implemented an administrative control on May 19 to ensure such worst-case situations do not happen

## Corrective Action Plan

- **Preliminary Corrective Action Plan - 5/26**
- **OA comments on Preliminary CAP - 6/21**
  - identification of root cause(s)
- **Interim CAP - 6/26**
  - two root causes: inadequate understanding of DOE O 151.1; insufficient management attention
- **OA Final Report on WIPP EMP Review - 7/13**
- **OA comments on Interim CAP - 7/18**
  - actions to address root causes
  - DOE/EM approval of Final CAP
- **Final CAP due - 8/13**

## Major Actions

- **Senior management team to address findings**
- **Hazards Assessment training**
- **Revision of EPHA (expected completion date - 9/29) to include**
  - worst-case operational events
  - external event (airplane crash)
- **Solicitation of guidance from DOE/HQ**
  - DOE O 151.1 clarifications
  - SO-40 & EM-5 visit (8/8 & 8/9)
- **External independence review**
- **Long-term CAO management oversight**
  - Deputy CAO Manager
  - AB Senior Technical Advisor

# RH TRU Waste Disposal Program Overview

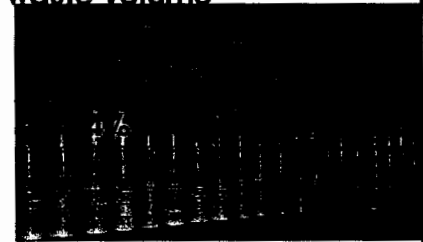
71st WIPP QUARTERLY MEETING

Santa Fe, July 18, 2000



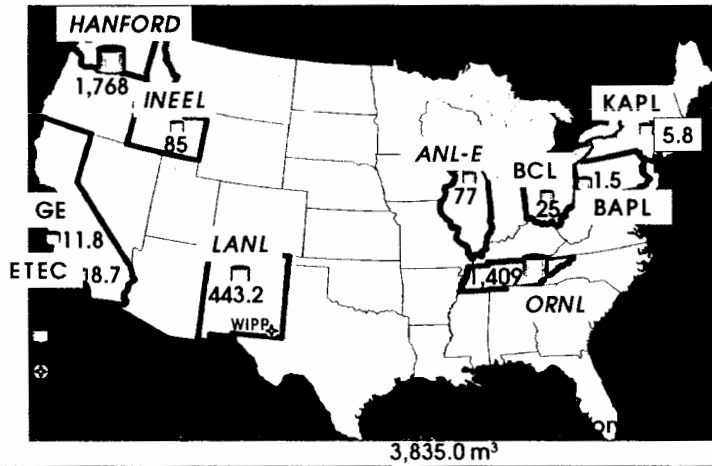
## RH TRU Waste

- 200 mrem/hr < container surface dose rate < 1000 rem/hr
- Homogeneous solids, debris, soil/gravel
- Remote-handled may comprise ~4% of total WIPP TRU waste volume
  - ▶ 7,080 m<sup>3</sup>



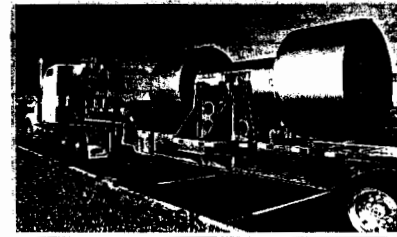
CNS 10-166B

## RH TRU Generators

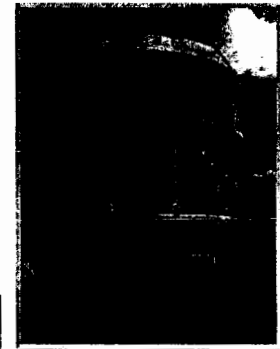


## RH TRU Transportation

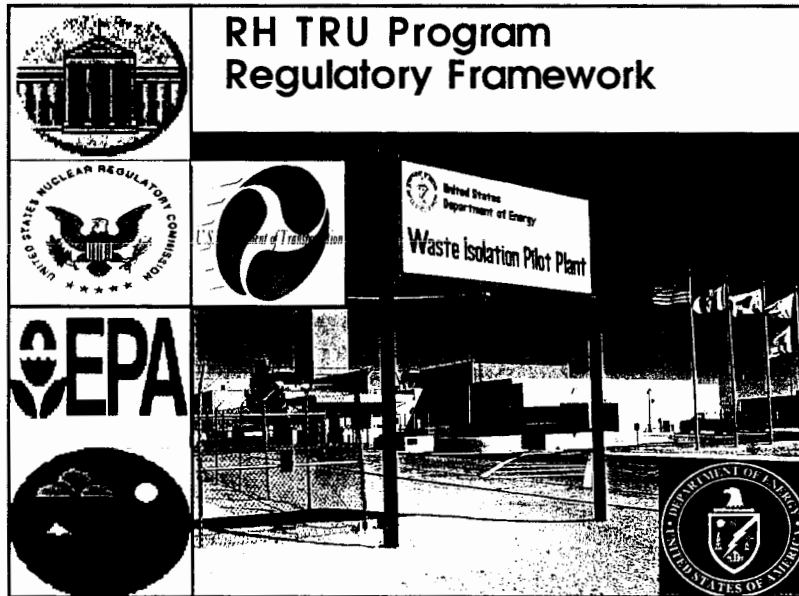
- 3 drums
- Gross vehicle weight 80,000 lb



72-B



- 10 drums
- Gross vehicle weight 105,000 lb
- A potential alternative to 72-B

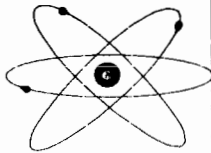


## RH TRU Program Regulatory Framework

## Path Forward to RH Disposal

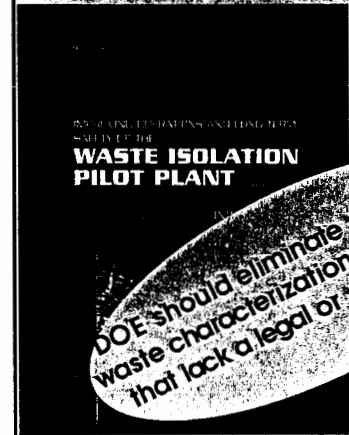
- NMED permit modification for RH disposal
- EPA approval for RH characterization program
- Revision to 72-B SARP
- WIPP SAR (TSRs) & Operational Readiness Review
- Development of WAC and supporting documents

# A COMPARISON OF THE RISKS FROM THE HAZARDOUS WASTE AND RADIOACTIVE WASTE PORTIONS OF THE WIPP INVENTORY



- Maximum postulated exposures to radiation worker risks ~ 2 to 3 orders of magnitude greater than VOC risks
  - Average radiation risks ~ 4 orders of magnitude greater than those from VOC exposure
- EEG-72**  
**July 1999**

# RH-TRU Characterization - The Logical Approach



DOE should eliminate self-imposed waste characterization requirements that lack a legal or safety basis.



## Demonstrating Compliance A Performance-Based Approach

RCRA requires

↓  
Knowledge of waste form,  
prohibited items, and  
hazardous waste codes

↓  
Why

↓  
To assure that what is  
known is sufficient to  
safely manage and  
dispose of the waste

• What else must  
be considered?

- Transportation
- Operational Safety
- Long-term Performance



## Safety Considerations

*Guide*  
DOE G 435-1:

“Indirect methods  
are appropriate for  
characterizing waste  
and complying with  
ALARA principle.”

*“Flexibility in the RCRA  
requirements is emphasized  
so that the ALARA  
concept can be  
incorporated into the mixed  
waste testing activities.”*



Joint NRC-EPA Guidance  
1997

## RH TRU VOCs

### Assumptions

- Maximum Gas pressuration rate per borehole
- 730 RH boreholes per room
- All canister headspace contains saturated concentrations at WIPP temperature

### Conclusion

- RH contribution is only a small fraction of total VOC
- VOC room emission rate is bounded by reduced maximum allowable rate from CH TRU

## RH TRU Characterization

- Primary - AK
- Secondary
  - › Radiography
  - › VE
  - › Assay
  - › Dose rate measurement



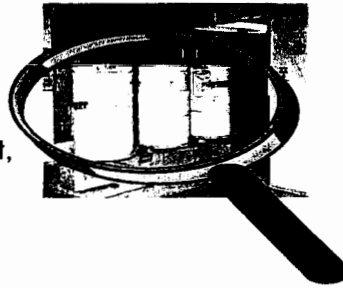
## Quality Assurance for RH-TRU

### Programmatic QA

-NQA-1 implemented through the WIPP QAPD

### Characterization QA

-Specified in RCRA Permit, Compliance Certification, and Certificate of Compliance



## RH Program Tentative Schedule

7/00 Provide draft WAC revisions and WAP to generator sites for review

8/00 Meet with regulators, generators, and EEG to present RH program

8/00 Submit two Class 2 permit modification requests (WAP & facility mod.) to NMED

8/00 Submit proposed characterization program to EPA

9/00 Submit 72B SARP revision to NRC

11/00 CAO approve RH SAR

12/00 Permit modification decisions from NMED

5/01 Determination of characterization program adequacy

09/01 NRC approves SARP revision

10/01 Operational Readiness Review at WIPP facility

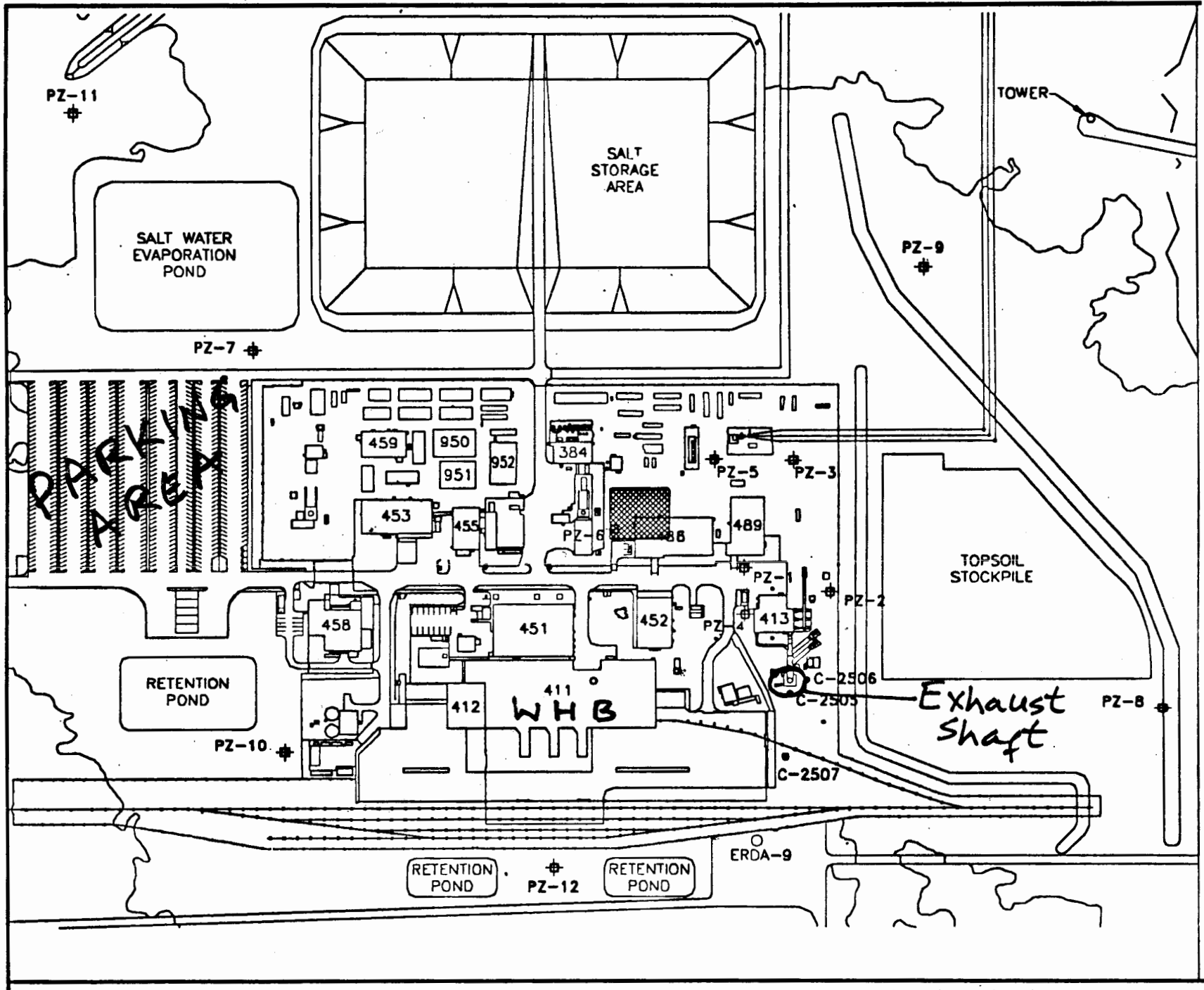
01/02 File receipt of RH waste at WIPP

# Status of Resolution of the Exhaust Shaft Water Problem

Lokesh Chaturvedi, EEG

71st Quarterly Meeting, Santa Fe, July 19, 2000

- Water is seen seeping in the exhaust shaft at about 75 ft below the surface and lower, at least since 1995. The moisture mixed with salt dust gets deposited on the air filters at Station A, requiring filter replacement at frequent intervals creating difficulties in air monitoring.
- The source of water appears to be infiltration from the evaporation and retention ponds, creating a perched shallow aquifer.
- At a meeting held on June 15, 2000 at the DOE/CAO office, the decision was made to conduct a feasibility study to solve this problem by grouting the shaft to prevent water inflow. Feasibility of stopping or reducing water infiltration from the surface ponds and reducing the water head by pumping in the vicinity of the shaft will also be examined. The WIPP M&O Contractor, WID, will prepare a scope of the study, and share it with EEG before its implementation.



# **Alpha Air Monitoring in the WIPP Underground**

**William T. Bartlett  
EEG Health Physicist**

## **Collaborators:**

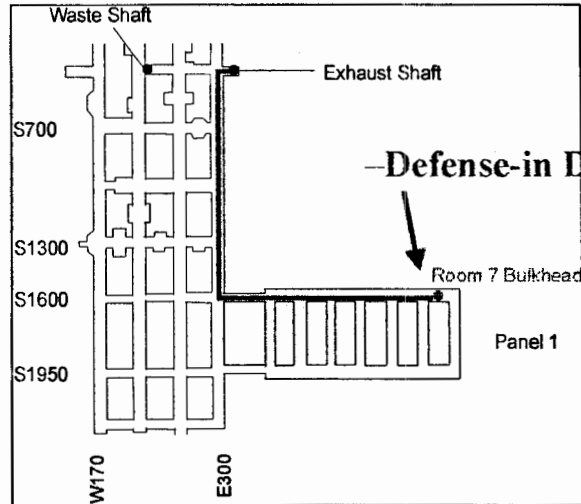
**Westinghouse Corporation  
Waste Isolation Division  
Anne Strait**

**Sandia National Laboratories  
Carlsbad  
Charles Bryan**

**Andy McFarland  
Texas A&M University**

**John Rodgers  
EEG Consultant**

## Location of Defense-in-Depth Monitors



## General Observations

### Station A

Water In-Leakage

### Station D

Texas A&M Testing

EPA Review

Comparison Testing to Station A

Series of Slides of SEM Sampling Filters

## **EEG Review**

Inspect Station D

Do Comparative Study between Stations A & D  
(Several Months)

Investigate ECAM (Particle Separation)

Still in Discussion Stage

**71<sup>st</sup> WIPP Quarterly Review**

July 18, 2000  
WIPP Air Monitoring  
EPA Inspection Results

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**EPA Inspection of WIPP**

- Inspection Conducted by the Office of Radiation and Indoor Air (ORIA)
- June 21 - 23, 2000

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**EPA Inspection of WIPP**

- Areas Inspected
  - Air effluent Sampling/Monitoring  
40 CFR 191, Subpart A
  - Waste Emplacement  
Approve Compliance Cert Agreement
  - Long-term Compliance Monitoring  
40 CFR 194

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**EPA Inspection Preliminary Results**

- Indications at the Inspection Closeout were that the Inspection Went Well
- Program Elements In Place To Satisfy Applicable EPA Regulations
- EEG Representatives Observed and Provided Input

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**EPA Inspection Preliminary Results**

- One Concern: The documentation of Computer Dispersion Modeling for Accidental Releases (GXQ) Implementation was not Satisfactory
- One Observation: Effect of Continuous Air Monitor (CAM) Filters Dust Loading on Sensitivity

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**EPA Inspection Preliminary Results**

- For Potential Accidental Releases at WIPP
  - CAM Actuated Shift to Filtration will Function for Unobserved Accidental Releases
  - WIPP is Capable of Quantifying the Consequence of Accidental Releases

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**WIPP Air Monitoring  
Improvements**

- Development of an Underground Representative Continuous Sampling Location (Station D)
  
- Underground Operations Adjustments to Reduce Dust Loading

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**WIPP Air Monitoring  
Improvements**

- Equipment Improvement
  - Sampler With Moving Filter
  - Improved CAMs
  
- Continuous Mining Adjustment to Reduce the Amount of Fine Dust Produced

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**WIPP Air Monitoring  
Improvements**

- RCRA Permit Modification to Allow Reduction in Air Flow Through Unoccupied Waste Disposal Rooms

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