Portsmouth EM Site Specific Advisory Board

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Richard H. Snyder

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Gene Brushart
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Lindy A. Coleman
Bobby E. Graff
Stephen E. Martin
Daniel J. Minter
R. Daniel Moore
Larry A. Parker (Chair)
Terri Ann Smith

DOE Deputy Designated Federal Officer
Joel Bradburne

DOE Federal Coordinator
Greg Simonton

Decontamination & Decommissioning (D&D) Subcommittee
May 11, 2010 @ 4:30 p.m.
Agenda

- Review March Summary
- Waste Disposition Options
- Public Resolutions
- Public Comment Period
- Review of Action Items

Adjourn

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Decontamination and Decommissioning (D&D)

Meeting Summary
May 11, 2010 • 4:30 p.m.
The Ohio State University Endeavor Center
1862 Shyville Road, Piketon, OH 45661
Room # 160

Subcommittee Members Present: Gene Brushart, Lindy Coleman, Dan Minter, Daniel Moore, Larry Parker, and Terri Ann Smith

SSAB Members Absent: Bobby Graff and Steve Martin

Board Members Present: Shirley Bandy, Frank Halstead, Val Francis, Sharon Manson, and Michael Payton

U.S. Department of Energy (DOE) Representatives: Greg Simonton

DOE Employees and Contractors: Rich Bonczek and Kristi Wiehle, DOE; Julie Loerch, Fluor; Sandy Childers, LATA/Parallax (LPP); Janie Croswait, Lesley Cusick, Kevin Ironside, John Patterson, and John Sokol, Restoration Services, Inc. (RSI)

Liaisons: Joe Crombie, Ohio Dept of Health; Maria Galanti, Melody Stewart, and Steve Wells, Ohio Environmental Protection Agency (Ohio EPA)

Support Staff: Julie Galloway, Brandy Moore, and Eric Roberts, EHI

Public: Lee Blackburn, Jackson, Ohio; Stephanie Howe and Scott Miller, Ohio University Voinovich Group; Jennifer Chandler, USEC

Larry Parker, Subcommittee Chair, opened the Decontamination and Decommissioning meeting.

1. **Review of March Summary:**
   - ***Minter*** motioned to accept the March Summary, ***Motion seconded.***
     - ***Motion carried, Summary approved***

2. **Waste Disposition Overview:**
   - ***Patterson*** provided a presentation entitled *CERCLA Waste Disposition Evaluation Project* on the following information:
     - Portsmouth Site Environmental Challenges
     - GDP Facility D&D Waste and Equipment Disposition

- Portsmouth Regulatory Structure
- Waste Disposition Evaluation and Alternatives Project
- CERCLA Alternative Evaluations
- Waste NOT Expected to be Generated and/or Allowed in WAC
- Examples of DOE On-Site Disposal
- CD-1 Size Cell (4M yd^3) in Foreground and Fernald 3M yd^3 cell Against Hill
- Portsmouth Entombment CSM
- Generic Conceptual Model
- Treatment/Recycle/Reuse Considerations and Concepts
- Portsmouth Waste Types
- Typical Off-Site Disposal Options
- DOE Nevada Test Site
- Energy*Solutions* Clive, UT
- Waste Control Specialist Andrews, TX
- Waste Disposition Project Timeline
- Portsmouth CERCLA Waste Disposition Project Decision and Evaluation Process

A copy of this handout is available online at:
http://www.ports-ssab.org/10-May-DD-ProjectUpdate.pdf

Question/Comment:	***Answer:***
Roberts asked what type of waste is being transported to the Pike County Landfill.	***Galanti*** Wood, asbestos, misc piping that was not recycled, construction debris and solid waste. Everything that could be thrown away from a construction site. Waste is surveyed before it leaves the Portsmouth Site. No hazardous waste can be transported to the Pike County Landfill.
Francis asked if the waste disposition evaluation project included waste volumes from the existing closed landfill. Are there any ongoing political issues at Energy*Solutions* site in Clive, Utah? ***Francis*** asked if the debris from the Portsmouth Site is separated from the other debris brought into the landfill and does it need to be covered.	***Patterson*** stated that the volume of the closed landfill is not included in the present waste volumes. Also, mentioned that Energy Solutions has attempted to obtain a Class B/C license but they were denied. ***Galanti*** stated the landfill is required to do a daily cover and the debris is labeled as construction, solid waste, and asbestos debris. There is a separate cell just for the asbestos debris.
Parker asked if the buildings or projects are considered in the volume of waste and what type of waste is involved.	***Patterson*** stated that a group of buildings maybe considered as one project volume of waste projection. Discussed Section 11e (2) of the Atomic Energy Act that defines the material and similar example that was used in

	Canonsburg, PA.
Brushart stated he is concerned about the waste going into the Pike County Landfill and the risk that it might cause to the people living nearby from the run-off after a heavy rain. How would this compare to the run-off into Big Run. How is the waste transported to the Nevada Test Site?	***Patterson*** stated the waste would be transported by rail to Arizona and then by truck to the Nevada Test Site. ***Galanti*** stated that the Pike County Landfill is permitted and licensed. TCE is a hazardous waste and the landfill cannot accept it because they have a solid waste permit. The permit tells what they can accept, how much volume per day, and what to monitor for in the wells. Big Run is monitored through USEC's outfall and the Pike County Landfill takes water samples by what is in their permit.
Brushart asked if the 340-acres have ever been considered for the landfill.	***Galanti*** stated yes it was going to be the next one after the 735 landfill.
Smith states she fails to see the benefit in this analysis and asks why you would entertain an idea to give a presentation on Entombment if you cannot control the flooring. Is the waste that Energy*Solutions* accepts only for permanent disposal?	***Patterson*** stated Entombment is a process that is not commonly used but does exist and was used at the Hanford Site on the shutdown reactors. All the waste that Energy*Solutions* receives is for treatment and disposal. If DOE would happen to send Resource Conservation & Recovery Act (RCRA) Waste to Energy*Solutions*, it would be treated and then disposed.
Minter asked how the liner affects the leaching process for the waste streams.	***Patterson*** stated DOE uses and EPA regulates the use a combination of manmade materials and natural materials of compressed clay. Also, discussed the process of compacting to make sure it has the protection that you are looking for.

3. **Public Resolutions:**
   - ***Parker*** stated that in the May 6, 2010 Board packet there were thirteen resolutions from the surrounding counties on supporting Energy Parks at the Portsmouth Site. Parker suggested the subcommittee should acknowledge the support for the Energy Parks and would like to see these resolutions recorded.
     - ***Minter*** motioned to have the thirteen resolutions of support for the Energy Parks listed for future record, ***Motion seconded.***
       - ***Motion carried, Resolutions supported***

4. **Public Comment Period:**
   - None provided

5. **Final Comments from the Board:**
   - ***Parker*** stated he would like to have information provided to the subcommittee on the five landfills such as what we know about them, how much waste was sent to the site, and what the future looks like.

6. **Action Items:**
   1. DOE will provide the area of Energy*Solutions* waste cell in Clive, Utah.
   2. DOE will provide information on what DOE has sent to Pike County Sanitation Landfill.
   3. EHI will provide the PORTS Landfills report to the D&D Subcommittee that was provided by the Ohio EPA.

Brushart motioned to adjourn the meeting, ***Motion seconded.***

- ***Motion carried, Meeting adjourned***

Next Meeting Tuesday, June 8, 2010, at 4:30 p.m.

Portsmouth Gaseous Diffusion Plant

CERCLA Waste Disposition Evaluation Project

Project Update

Site-Specific Advisory Board
Waste Management Subcommittee
May 11, 2010

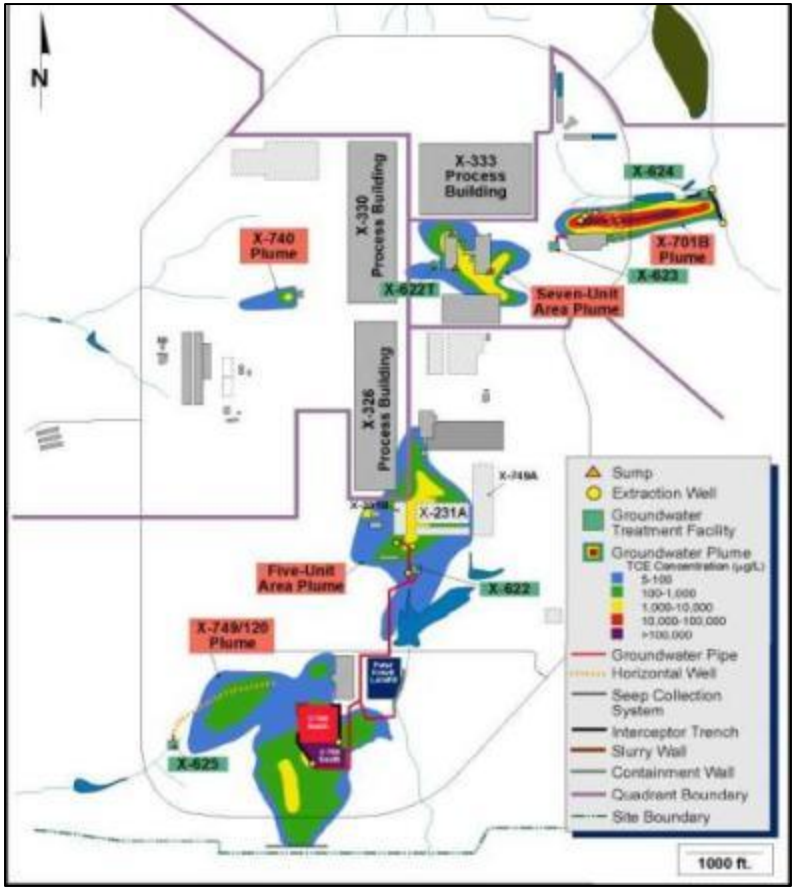
Discussion Topics

- Project challenges, scope, and overview
- Waste Disposition Evaluation Project alternatives
- CERCLA* Waste Disposition Evaluation Project Timeline
- Public participation/input

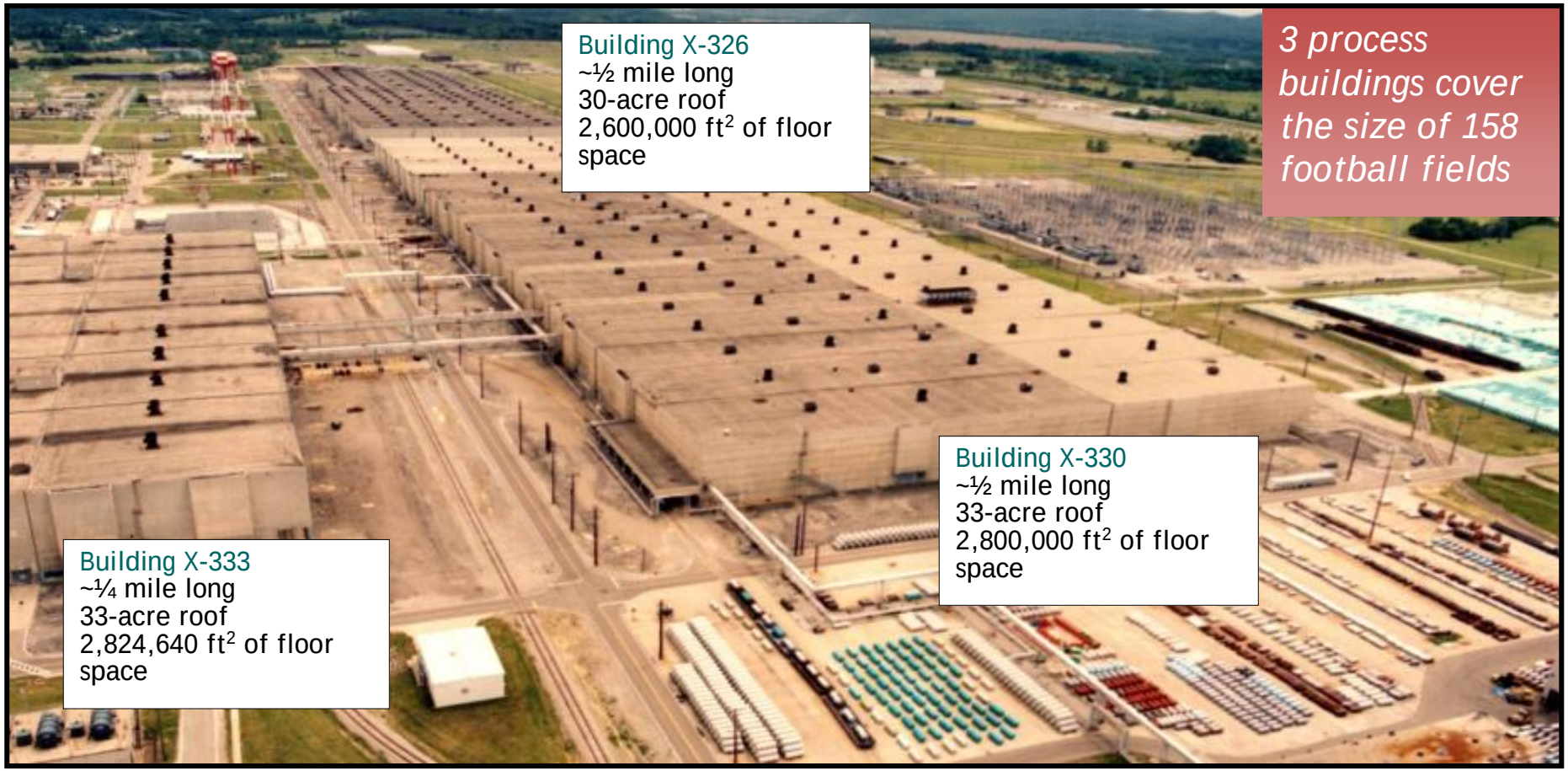
*CERCLA – Comprehensive Environmental Response and Compensation Liability Act of 1980

Portsmouth Site Environmental Challenges

- Hundreds of contaminated facilities
- Contaminated process equipment
- Approximately 2.2 M yd^3 of D&D waste
- Groundwater contamination (i.e., plumes)
- Contaminated environmental media



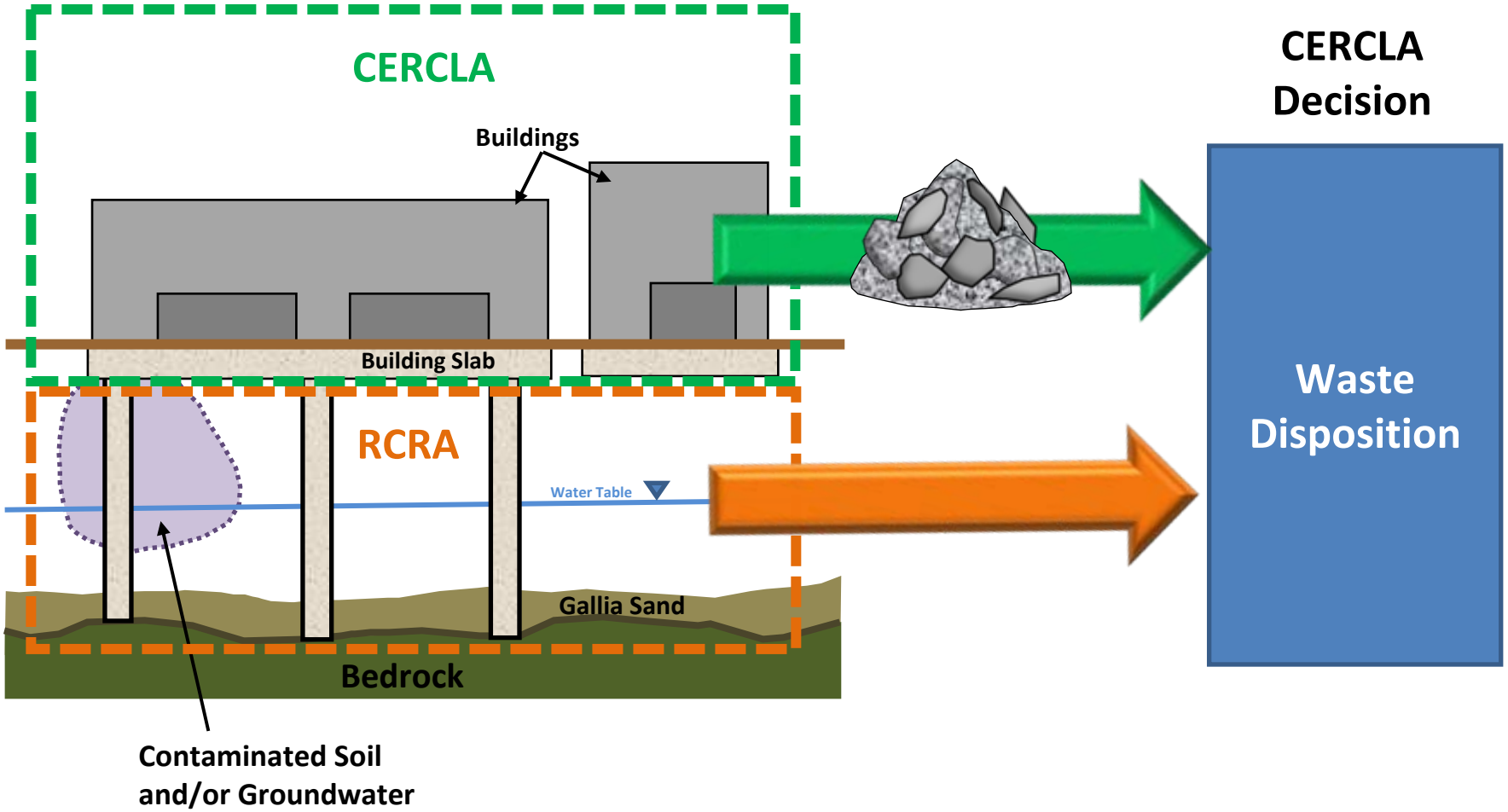
GDP Facility D&D Waste Disposition



GDP Equipment Disposition

- Pumps & Motors
- Convertors (many sizes)
- Misc. Process and Industrial Equipment

Portsmouth Regulatory Structure



Waste Disposition Evaluation Project

Scope Summary and Approach:

- Identify CERCLA projects and their waste volumes
- Develop waste disposition alternatives
- Evaluate and compare each waste disposition alternative
- Reach a CERCLA waste disposition record of decision

Waste Disposition Project Alternatives

Typical CERCLA Waste Disposition Alternatives:

1. No Action - required by CERCLA for benchmarking
   - No site-wide integrated waste disposal option
2. On-Site - Disposal of waste in an on-site facility
   - Will include an off-site disposal component for waste not meeting on-site waste acceptance criteria (WAC)
3. Off-Site – Disposal of waste at off-site facilities

❖ CERCLA process requires consideration of treatment such as volume reduction, recycle/reuse, etc.

CERCLA Alternative Evaluations

Threshold Criteria

1. Protective of Human Health and the Environment
2. Attainment of ARARs* or waivers as appropriate

*ARARs – Applicable or Relevant and Appropriate Requirements

Balancing Criteria

3. Cost
4. Long-term protection
5. Short-term protection
6. Implementability
7. Reduction in volume, toxicity and/or mobility

Modifying Criteria

8. State Acceptance
9. Community Acceptance

Waste NOT Expected to be Generated and/or Allowed in WAC

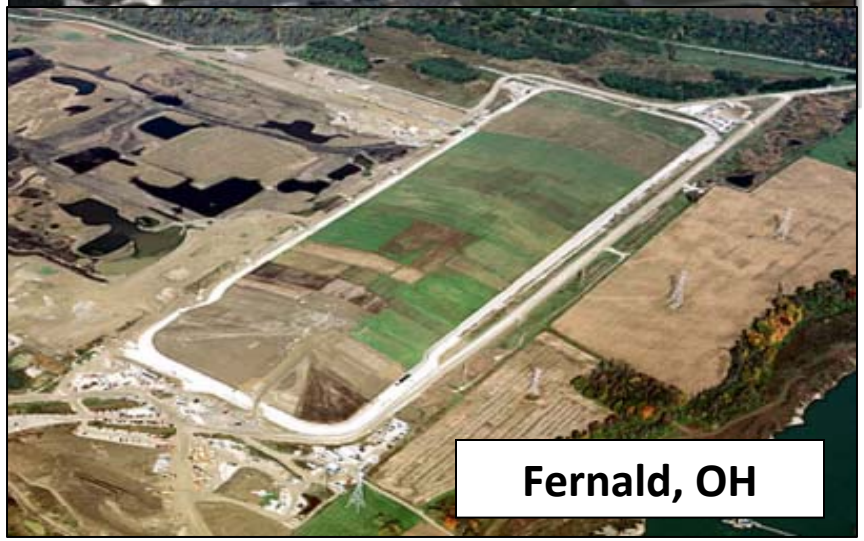
Waste Types

- High-level waste
- Spent nuclear fuel
- Transuranic waste
- Byproduct material defined by Section 11e(2) of the AEA

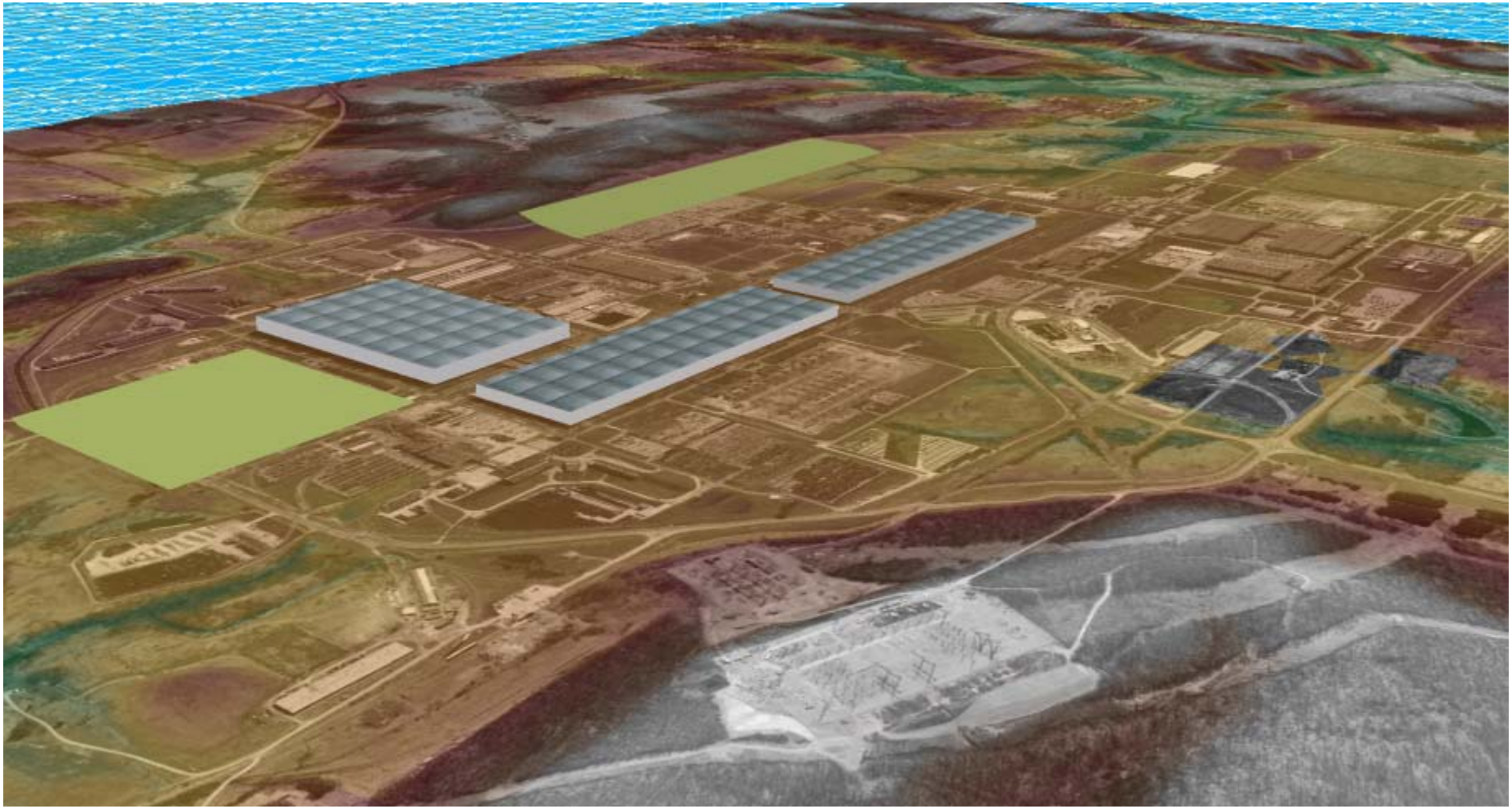
Waste Forms

- Liquid waste (e.g., oils)
- Pyrophoric waste
- Infectious waste
- Explosive waste
- RCRA *listed* or RCRA *characteristic* waste NOT meeting RCRA LDRs

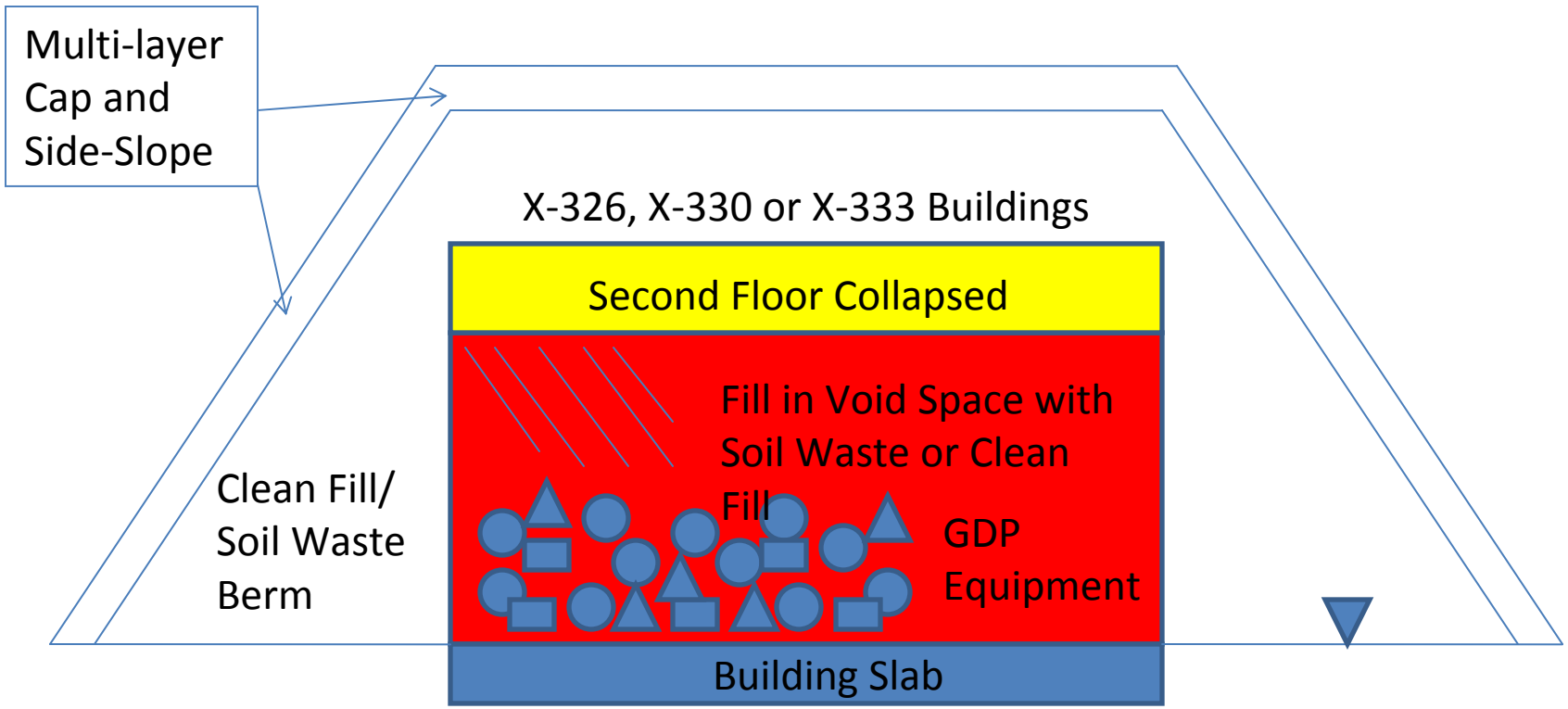
Examples of DOE On-Site Disposal



CD-1 Size Cell (4M yd^3) in Foreground and Fernald 3M yd^3 cell Against Hill



Portsmouth Entombment CSM



Generic Conceptual Model

Analytical WAC Development

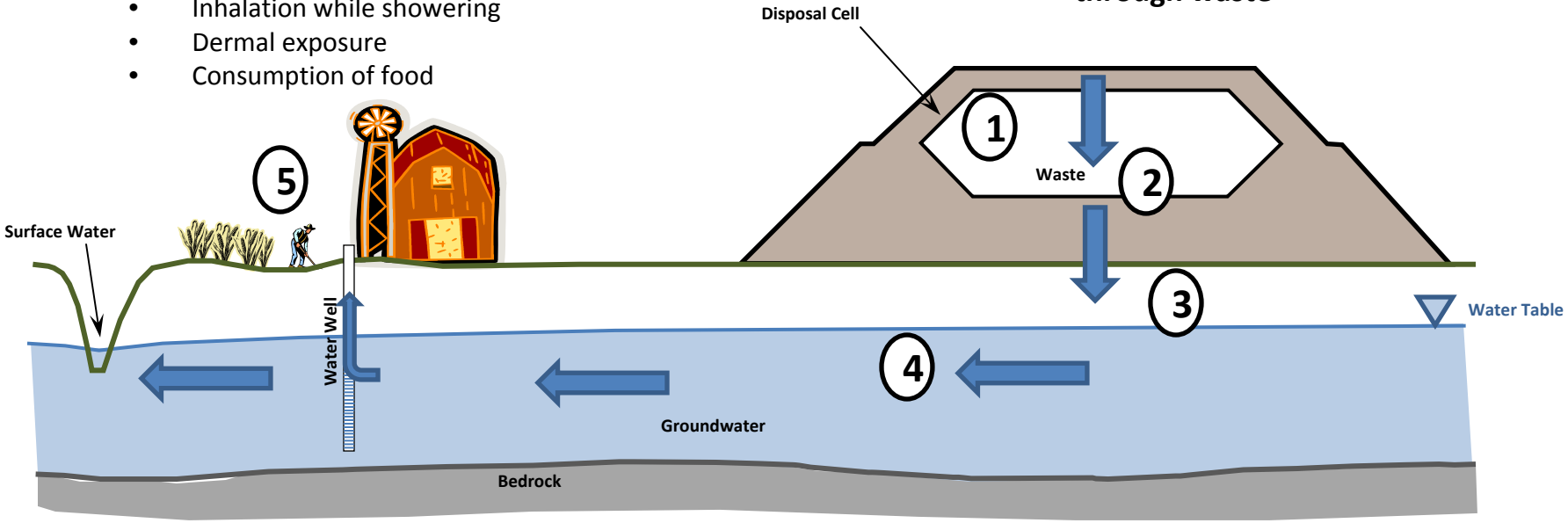
5. Calculate Dose/Risk

Residential farmer scenario

- Ingestion of water
- Inhalation while showering
- Dermal exposure
- Consumption of food

1. Source Estimate

2. Infiltration/leaching rate through waste



If calculated dose/risk < performance measures, then increase source/WAC (continue iterative process to determine WAC)

3. Leaching rate to Saturated Zone

4. Lateral migration rate through Saturated Zone

Treatment/Recycle/Reuse Considerations and Concepts

Considerations:

- Some waste will require treatment by regulation
- Effectiveness in reduction of volume, mobility or toxicity
- Capital cost and rate of return (cost:benefit)
- Market for metals and other assets

Concepts:

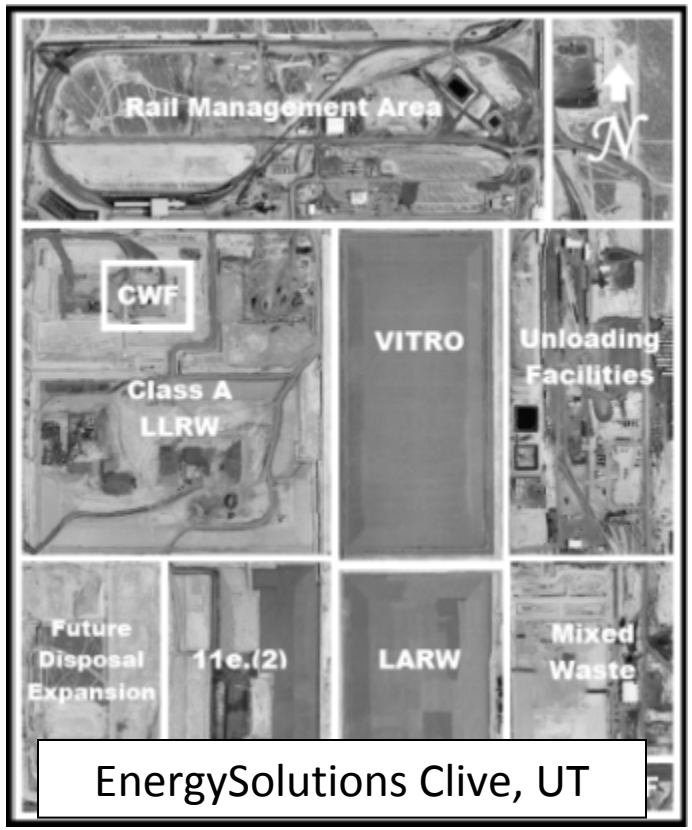
- Metal Melter
- Volume reduction by shearing, crushing, etc.
- Treatment to meet RCRA LDR requirements (e.g., macroencapsulation)
- Recycle/reuse metals

Portsmouth Waste Types

Typical D&D/Cleanup Waste Forms

Current Volume Estimate (2.2M yds^3)	Low-End Volume Range (~1.0M yds^3)
Miscellaneous Debris 640,000 yds^3	Miscellaneous Debris - ~500,000 yds^3
Concrete 400,000 yds^3	Concrete - ~100,000 yds^3 if concrete is reused on-site
Soil waste 260,000 yds^3	Soil - waste 260,000 yds^3
D&D waste (metals) 900,000 yds^3	D&D waste - ~200,000 yds^3 if most metal is melted for recycle/reuse

Typical Off-Site Disposal Options



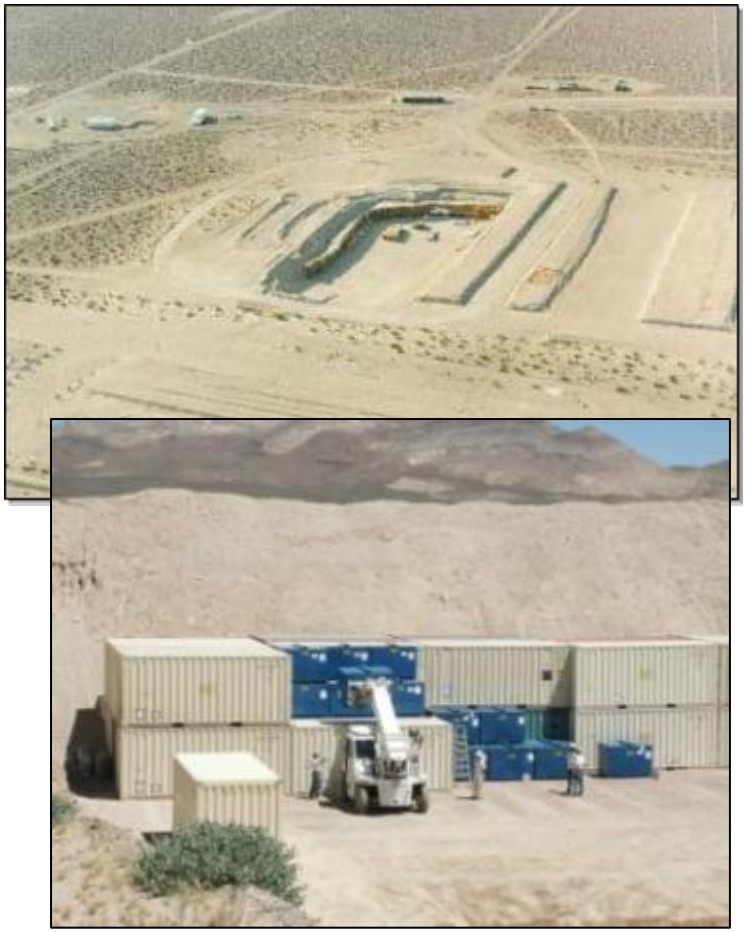
EnergySolutions Clive, UT

DOE Nevada Test Site, NV

Waste Control Specialist, TX

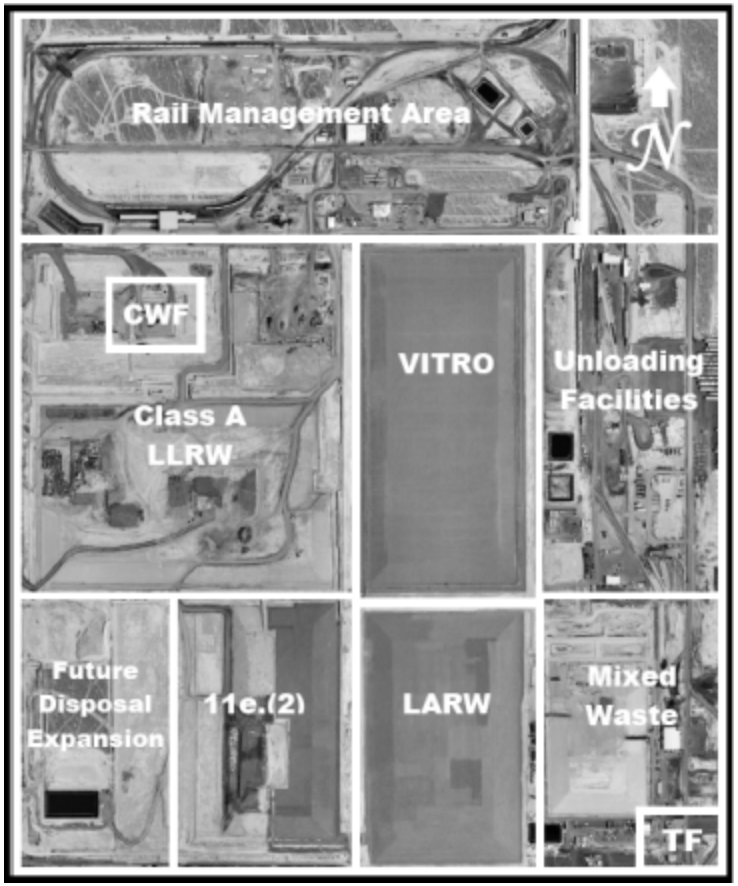
DOE Nevada Test Site

- Disposal operations since 1960
- Currently disposing of ~75,000 cy per year
- ~150,000 cy of annual peak capacity
- Approved for:
  - LLW and MLLW RCRA/TSCA
  - Classified waste
  - NRC Class A/B/C waste



EnergySolutions Clive, UT

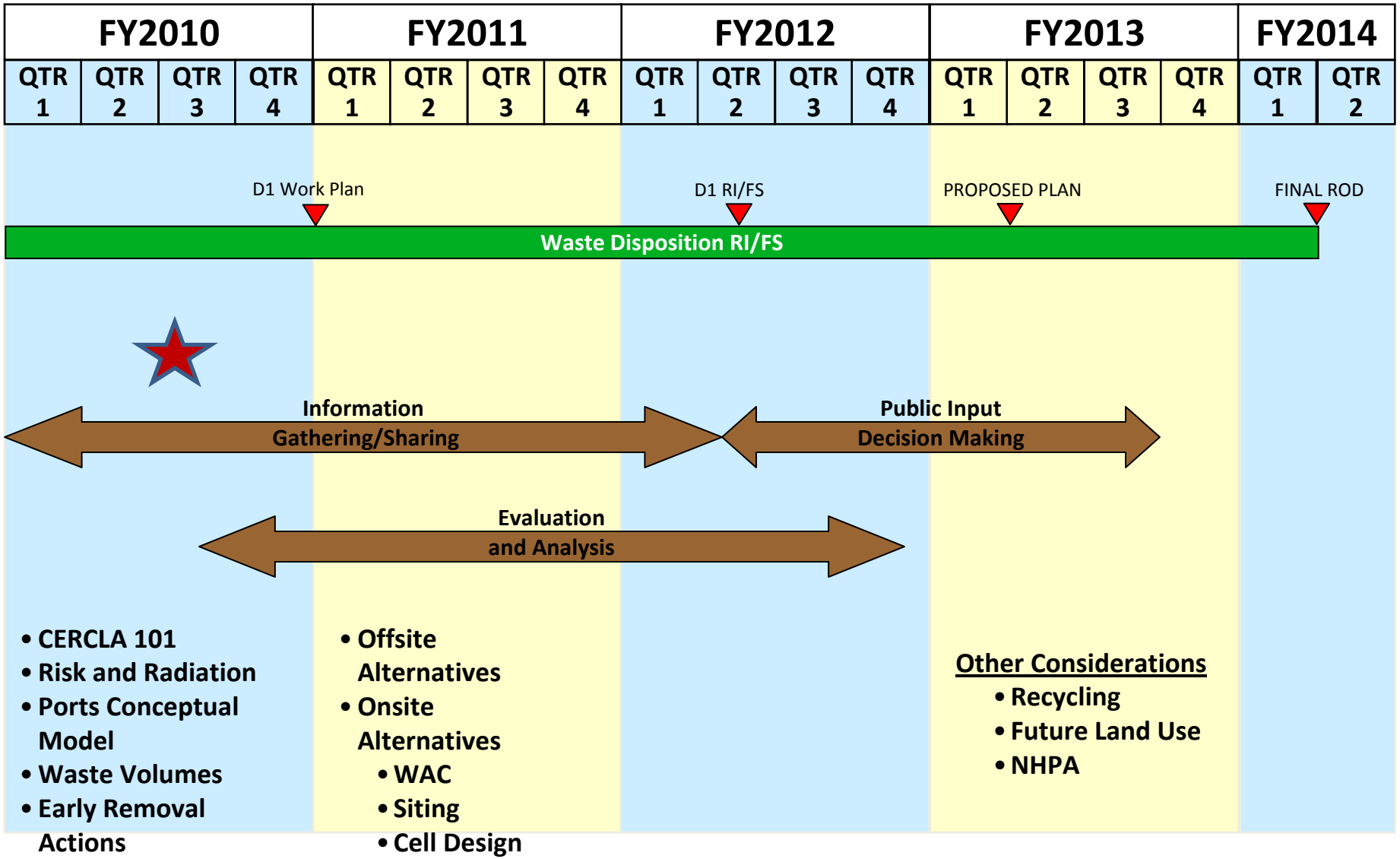
- Currently licensed for:
  - Byproduct waste disposal
  - LLW disposal (Class A only)
  - Mixed waste disposal
- Currently accepts:
  - Soils, Debris, oversized-debris, and large components
  - Bulk and/or containerized waste
  - Rail or truck delivery



Waste Control Specialist Andrews, TX

- Currently licensed for:
  - RCRA waste disposal
  - Byproduct waste disposal
  - LLW disposal (Class A, B & C (containerized-only))
- Currently accepts:
  - Soils
  - Debris
  - Oversized-debris

Waste Disposition Project Timeline



Portsmouth CERCLA Waste Disposition Project Decision Process

- ✓ Planning and preliminary analyses
- ✓ Project Initiation Meeting with Ohio EPA
- ➢ **<u>Gather public input</u>**
- Preliminary Evaluation Report
- Remedial Investigation/Feasibility Study (RI/FS) Work Plan
- RI/FS Report
- Proposed Plan
- Record of Decision

Portsmouth CERCLA Waste Disposition Evaluation Process

Public Participation Goals:

- Education and outreach
- Provide opportunities to participate
- Facilitate meaningful public input
- Enable two-way communication
- Communicate key issues

Questions

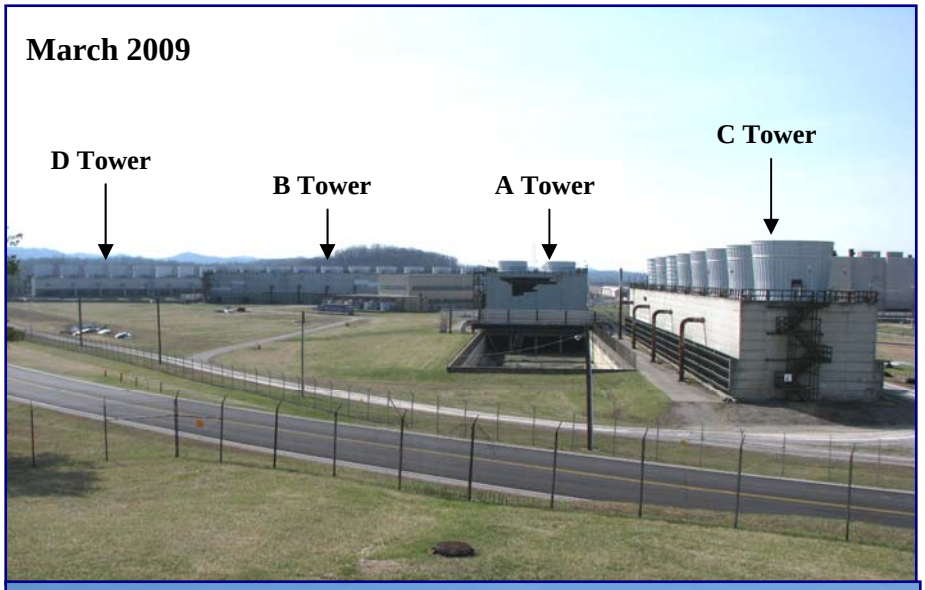
Portsmouth Gaseous Diffusion Plant

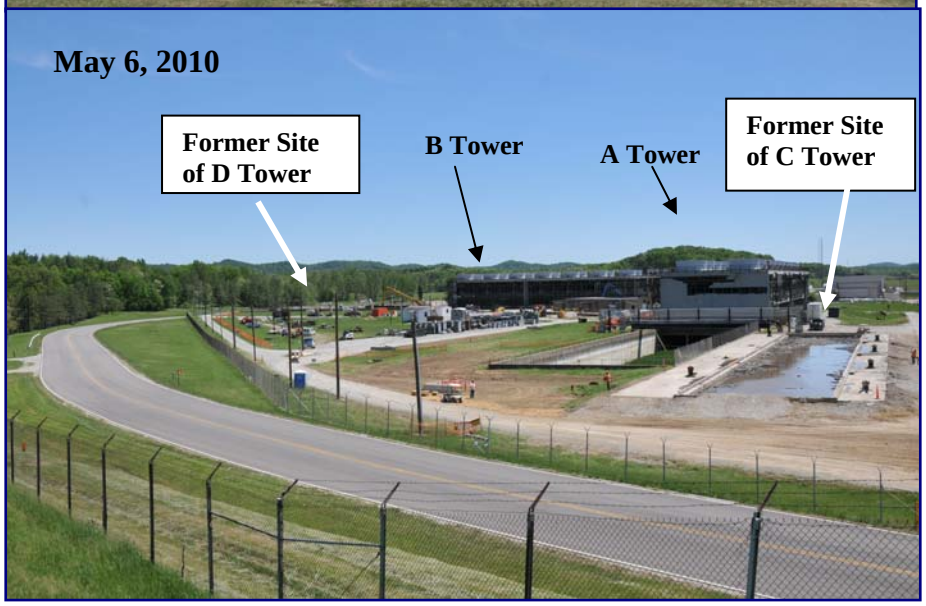
May 11, 2010

Projects Update to the Site Specific Advisory Board D&D Subcommittee

X-633 Cooling Tower Complex Decontamination and Decommissioning Update:

- Extensive progress has been made with removal of asbestos-containing transite panels from the cooling towers and equipment from inside the pump house.
- Towers C and D have been demolished as of the first week in May 2010; demolition of A and B ongoing.
- Completion of the American Recovery and Reinvestment Act (ARRA) project is expected in June 2010.





The X-633 Cooling Tower Complex is pictured at left. The top left photograph was taken in March 2009 prior to start of demolition work under the American Recovery and Reinvestment Act. The bottom left photograph was taken on May 6, 2010, after Towers C and D have been removed, leaving only A and B Towers and the pump house to be taken down. The photo below shows demolition activities at the C tower on April 22, 2010.

May 11, 2010

Projects Update to the Site Specific Advisory Board D&D Subcommittee

X-533 Switchyard Decontamination and Decommissioning Update:

- 79 of 160 steel towers removed.
- Removed 245 of 850 tower concrete footer foundations.
- Completed asbestos abatement activities.
- Sampled 114 of 228 soil locations in the switchyard.
- Continued staging of materials for potential transfer to community reuse organization.

Demolition work began in the middle sections of the X-533 Switchyard. To date, 79 of the steel towers have been removed (about 50%).

Portsmouth Gaseous Diffusion Plant

May 11, 2010

Projects Update to the Site Specific Advisory Board D&D Subcommittee

The photo at left shows the X-533 Switchyard D&D Project activities on May 6, 2010. Some of the large concrete footers that have been removed can be seen in the center area of the photograph.

X-701B Groundwater Plume TCE Source Removal

- Completed treatment at 17 of the 46 cells; 14,784 ft^2 of the total 42,000 ft^2 source treatment area being funded under ARRA have been completed.

Pictured at right, work continues in late April at the 18th cell location to excavate soils and treat the X-701B groundwater plume TCE-contaminated source area with sodium persulfate oxidant. Under the ARRA project, a total of 46 cells are planned for treatment to a depth of 30 ft on the western portion of the groundwater plume to chemically break down the TCE. TCE was an industrial cleaning solvent formerly used at the plant.

Portsmouth Gaseous Diffusion Plant

May 11, 2010

Projects Update to the Site Specific Advisory Board D&D Subcommittee

X-760 Chemical Engineering Building Decontamination & Decommissioning Update:

- Asbestos abatement completed and loose equipment removal nearly complete prior to D&D.
- Run-off collection and containment system being installed.
- Remedial Action Work Plan approval pending.

Pre-D&D actions at the 8,000 ft^2 X-760 Chemical Engineering Building (shown at left), including removal of windows and loose equipment, are nearly complete and ready for demolition work. In the foreground, the remaining concrete pad and footers have been removed from the adjacent site of the former X-770 Mechanical Test Facility and the soils graded. The white "super sacks" shown contain contaminated soils removed from the site and readied for shipment to Utah for disposal.

2010 Waste Disposition: January–April 2010 Container Shipments (7,645 m^3 Total)

**** Besides the shipments noted in the table at right, there were also 241 roll-off containers (totaling 5,680 m^3) of industrial waste from the X-633 Cooling Tower and X-533 Switchyard D&D Projects that went directly to the Pike County Landfill. In addition, a total of 4 tankers containing 22,500 gallons of oils drained from the X-533 transformers were shipped to a vendor for reclamation by SODI.***

Waste containers listed in the chart include supergondola rail cars, T-hoppers, 55-gallon drums or B-25 waste containers.

DESCRIPTION	Jan	Feb	Mar	Apr	Total Containers
X-345 Lab Cleanout	0	3	7	0	10
X-746 D&D	9	14	0	.3	23.3
Uranium Management Center	22	1	261	85	369
X-770 Pad	0	0	36	72	108
X-701B	0	1	0	4.5	5.5
X-760 D&D	0	1	0	0	1
DMSA 11 & 12	18	16	13	7	54
Small Cylinders	0	14	7	26	47
TOTAL CONTAINERS *	**49**	**50**	**324**	**195**	**618**