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Portsmouth Site Update

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Portsmouth Site History

- 3,700-acre federal site
- Uranium enrichment operations started in 1954
- DOE cleanup mission began in 1989
- Full-scale D&D began in 2010

COLD WAR
1954-1989

- Nuclear Defense

POST COLD WAR
1989-2001

- Commercial Nuclear Power
- Environmental Cleanup

CLEANUP
2001-Current

- Environmental Cleanup
- Decontamination & Decommissioning
- Property Transfer & Reuse

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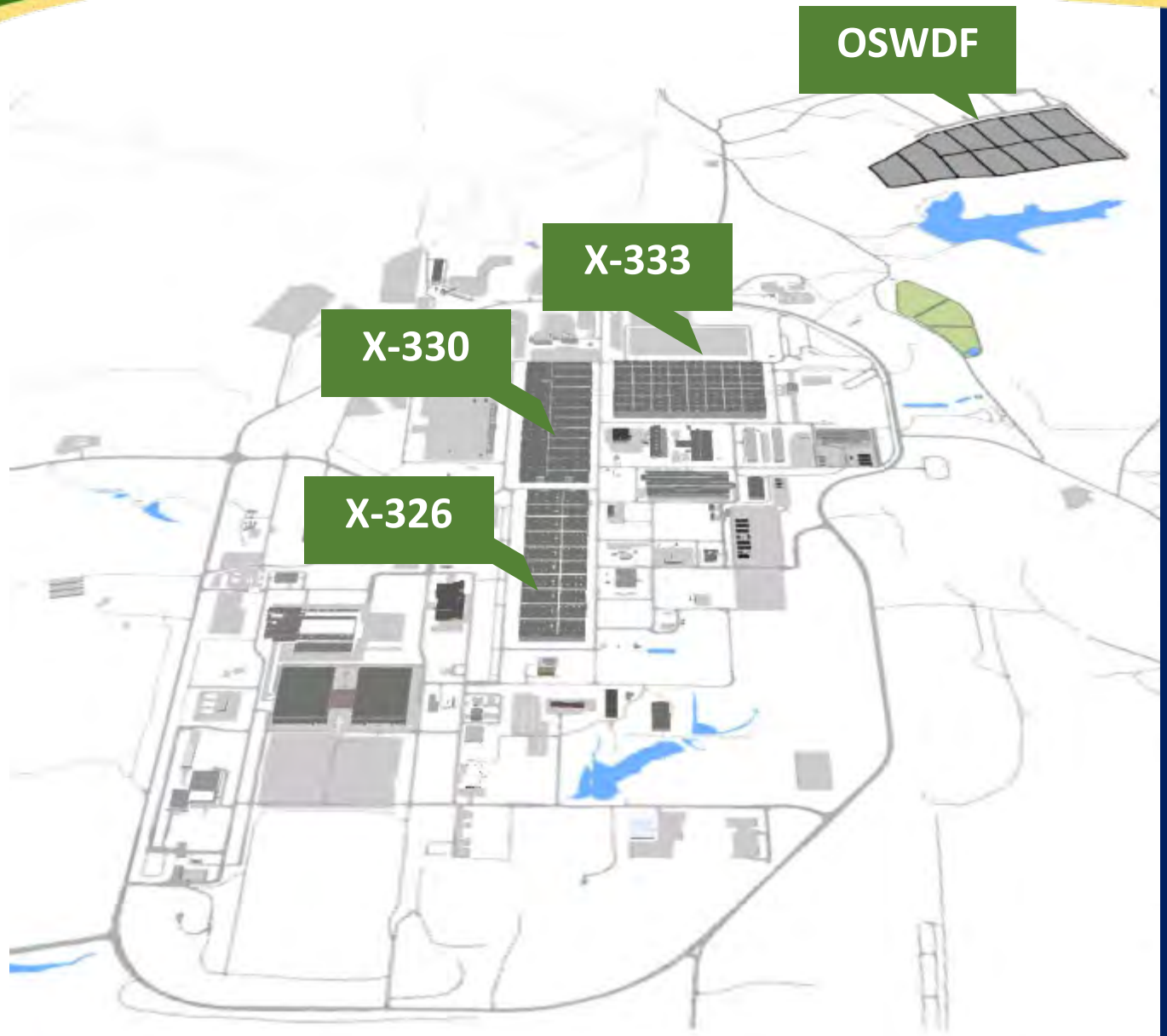
Portsmouth Ten Year Cleanup Focus



- Complete deactivation and demolition of X-326, X-333 and X-330 Process Buildings
- Complete construction of On Site Waste Disposal Facility (OSWDF) cells to support disposal of demolition debris
- Excavate landfills and plumes within Perimeter Road for OSWDF fill and provide contiguous land for future economic development
- Transfer land to the Southern Ohio Diversification Initiative (SODI) for reuse

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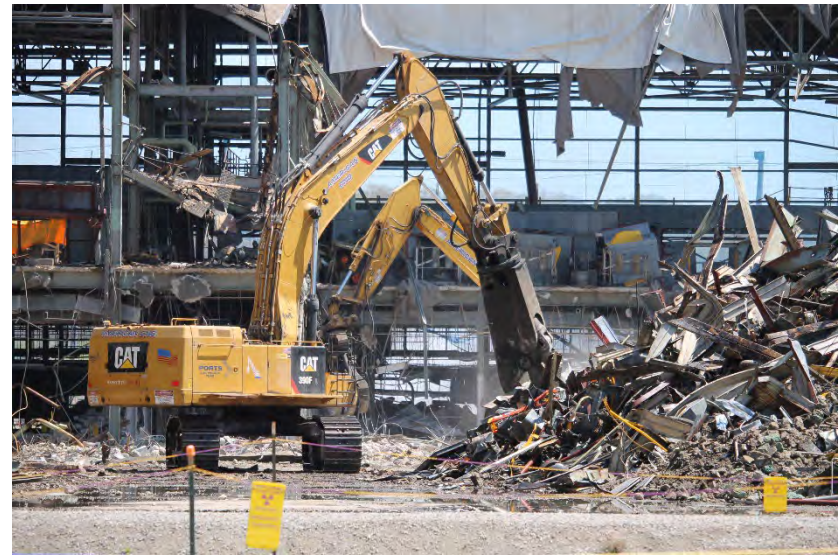
X-326 Process Building Demolition

- Demolition began in May 2021
- Demolition on target for completion by July 2022
- Will generate ~135,000 cubic yards of debris, which is size reduced and sent to the OSWDF for disposal.



Demolition Safety Planning

- A safe and methodical demolition plan, approved by Ohio EPA
- Lessons learned from decommissioning experience at DOE projects across the country
- Hazards removed from the building to make it safe for demolition
- Trained, experienced and capable workforce
- Protective measures to minimize disturbance of any residual radiological or chemical contaminants during demolition
- Robust environmental monitoring program

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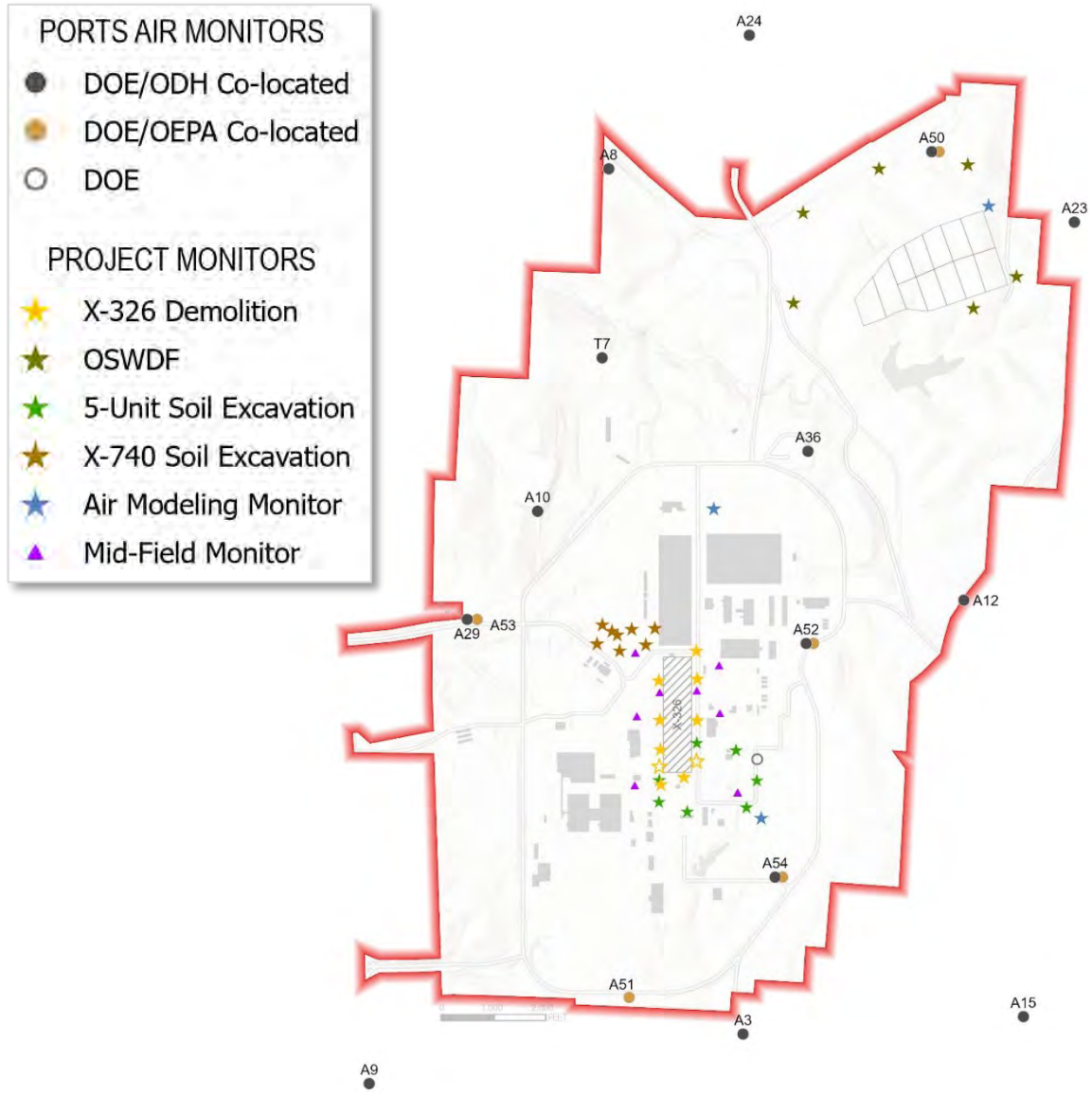
Project Air Monitoring Approach

- Real Time Monitoring provides the first line of defense
- Thresholds are established so emissions at the project boundary meet established limits then assurance is provided that limits at the property boundary will be safe and compliant
- This provides the ability to immediately react to field activity to adjust operations or apply additional controls
- Weather conditions are also monitored real-time to ensure activities are conducted within acceptable conditions



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Co-located Air Monitoring Types

Ohio EPA/DOE Co-Located

- 5 locations on site
- Monitoring for:
  - Particulate matter
  - VOCs
  - Metals
  - Asbestos
- Data is gathered, analyzed and validated independent of DOE
- Data published quarterly

ODH/DOE Co-Located

- 18 locations on site and off site
- Monitoring for:
  - RADs (radiological)
  - Fluoride*
- Data is gathered, analyzed and validated independent of DOE
- Data published quarterly

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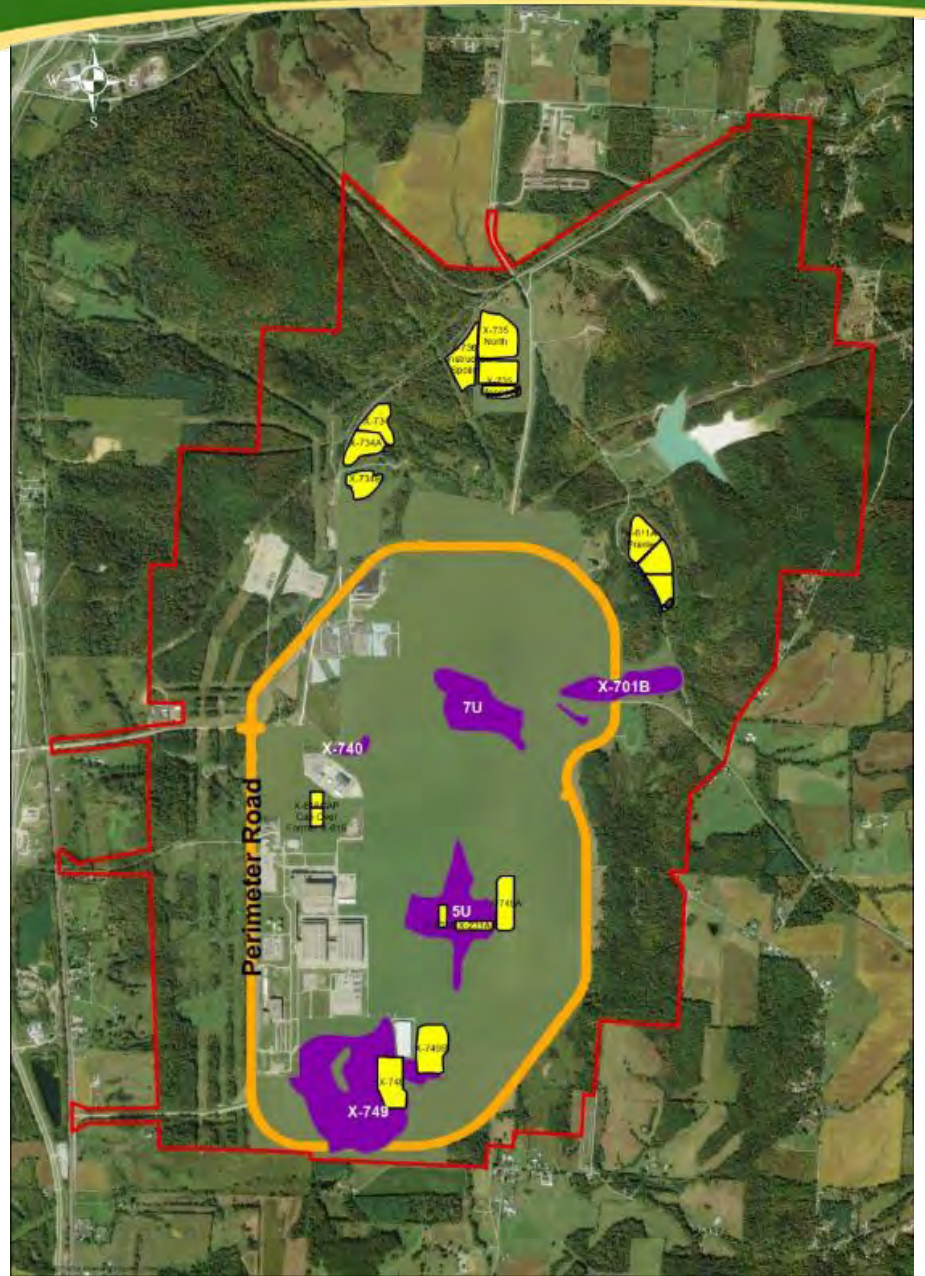
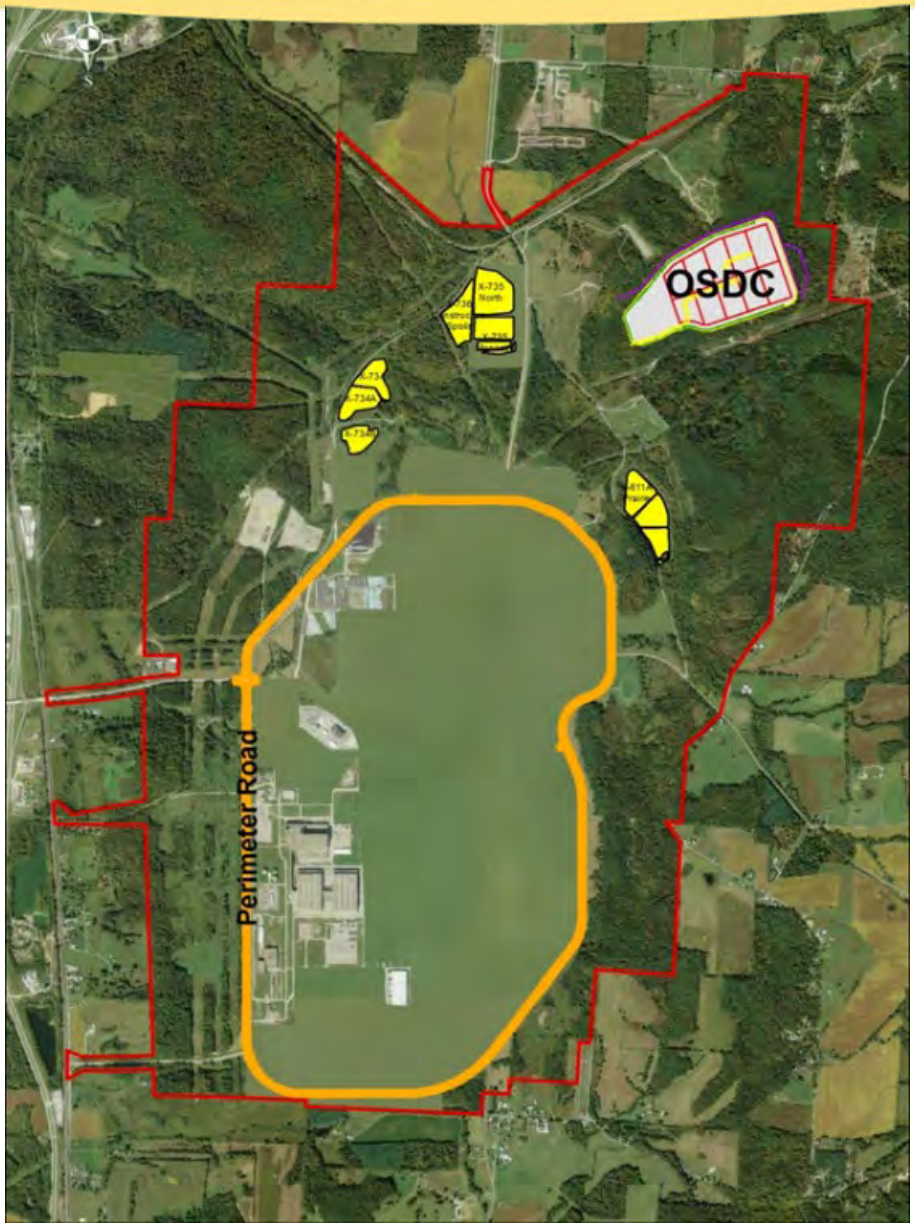
Landfills and Plumes Excavation



- 5 landfills and plumes closed within Perimeter Road
- Fill for OSWDF
- Established regulatory commitment tied to OSWDF
- Offers large contiguous site for reuse



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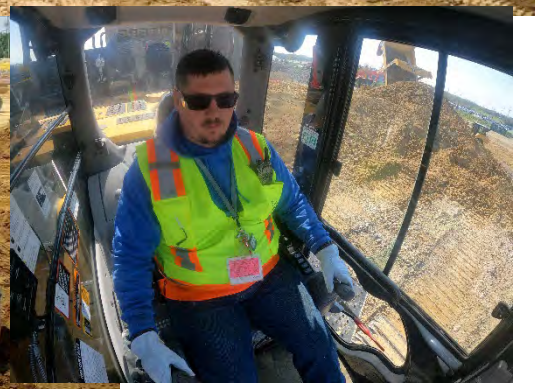
Contaminated Plume Excavation

- Provides compaction fill for debris disposal at OSWDF
- Leaves behind more acreage for site redevelopment

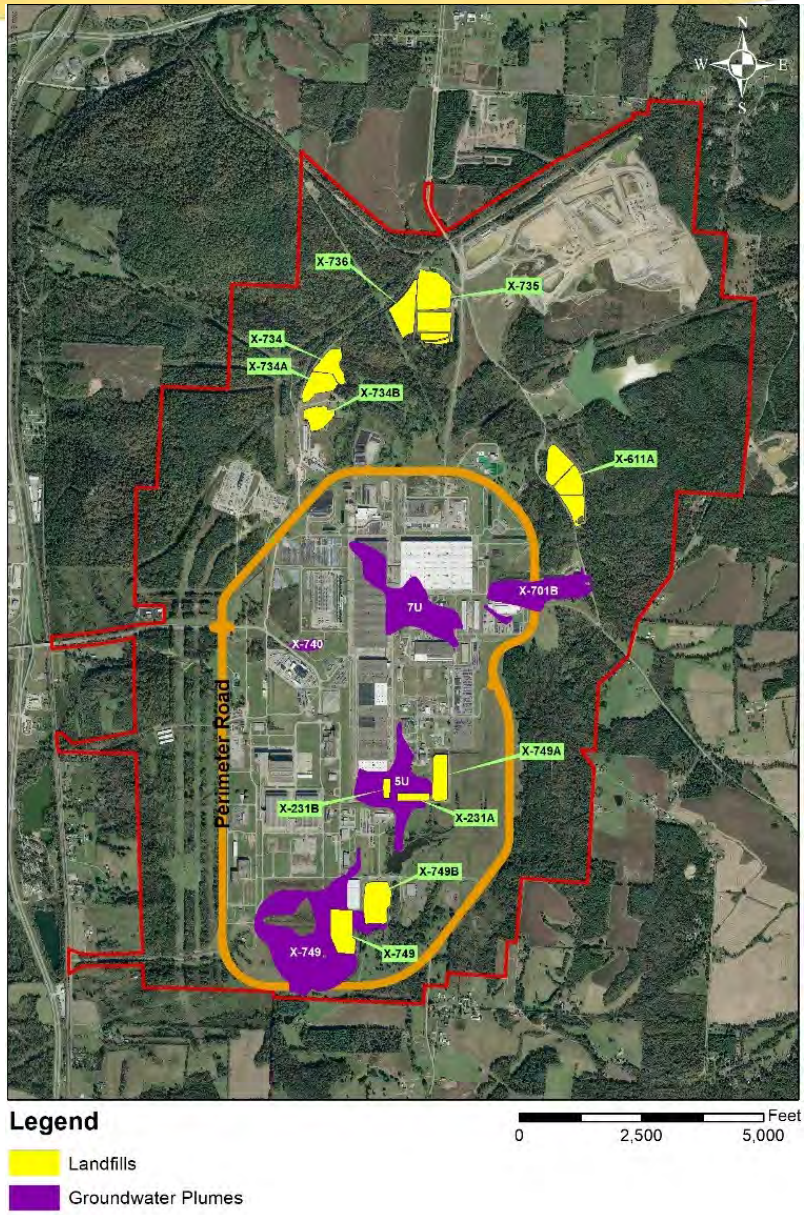


X-740 Plume Excavation

- Excavation complete
- Delivered 40,000 cubic yards of soil/fill to the OSWDF

X-231B Plume Excavation

- In progress
- Excavation anticipated to be complete summer 2022



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Contaminated Plume Excavation

First of five groundwater plumes excavated and remediated

- 130,000 cy overburden
- 24,500 cy impacted soil
- NRD obligation of 14,000 cy impacted soil per the DFF&O
- Backfilled and regraded the area
- Installed monitoring wells

Excavation underway on the second groundwater plume

- Site prep complete
- Installation of 2M gallon modular sedimentation tank
- ~25% of 190,000 cy excavated
- Remainder targeted in 2022

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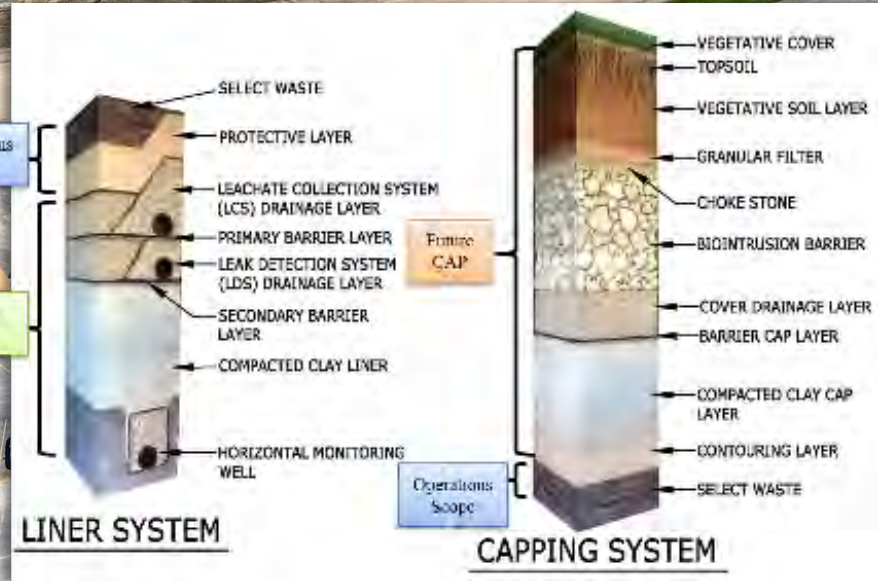
On-Site Waste Disposal Facility

- The **OSWDF** is a specially engineered disposal site with a multi-layer liner and cap system designed to consolidate demolition debris and rubble into one centralized confined space that protects public health and the environment
- Accommodates more than 5M cubic yards of waste and engineered fill
- Divided into individual cells (12). One process building takes up approximately 3 cells



Prohibited and Permitted Wastes

WAC Prohibited Wastes

Prohibitions in the Record of Decision
Waste generated off site
Liquids, oils, refrigerants from equipment
Bulk liquid hazardous waste
Hazardous waste above treatment standards
Explosive or reactive wastes
Transuranic and high levels of wastes
Pyrophoric waste
Building X-326 converters, compressors and coolers
Containerized nuclear compounds greater than 20% enrichment
Additional Ohio EPA Approved Prohibitions from Design Plans and Public Input
Residues removed from process gas equipment & piping regardless of enrichment
Equipment and piping that do not meet nuclear safety limits (criticality incredible)
Depleted uranium or converted uranium material
Nickel barrier tubes from enrichment converters

WAC Permitted Wastes

- ✓ Building debris, including piping, wiring, structural steel, transite, concrete and roofing materials
- ✓ Portions of process gas equipment from lower enriched operations
- ✓ Soil from old groundwater plumes and landfills
- ✓ Acceptable debris from landfills

DOE commitment to remove plumes and landfills inside Perimeter Road established in OSWDF Remedial Design/Remedial Action Work Plan.

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OSWDF Status

- ✓ First 3 cells constructed
- ✓ First waste placement - May 2021
- ✓ >3M yds^3 of soil moved
- ✓ ~2M ft^2 of 80-mil HDPE installed and welded
- ✓ >500,000 tons of stone installed
- ✓ 21 acres of waste disposal capacity
- ✓ 32-acre soil management area
- ✓ Initiated Third Capital Asset Project

2022 GOAL: Complete Disposal of X-326 Demolition Debris

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X-333 Process Building Deactivation

- The next building to be demolished, it is the largest of the three process buildings (66 acres of floor space)
- The material sizing area has reached steady-state operations of large component disassembly for safe placement in the OSWDF.

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Depleted Uranium Hexafluoride Conversion

DUF6 Mission

Convert DOE's inventory of DUF6, produced during uranium enrichment, into a more stable uranium oxide for:

- Reuse
- Storage
- Transportation
- Disposition

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DUF_6 Conversion Project

Approximately 67,000 cylinders initial DOE inventory

- DUF_6 resulted from the uranium enrichment process at three Gaseous Diffusion Plants (GDP) at Portsmouth, OH, Paducah, Kentucky, and Oak Ridge, Tennessee
- DUF_6 placed in steel cylinders that accumulated over time in site storage yards
- Facilities constructed at Portsmouth and Paducah that convert DUF_6 into aqueous hydrofluoric acid (HF), which is recycled into commerce, and stable uranium oxide for storage, beneficial reuse, or disposal

DUF_6 Cylinders

- Typical size for a cylinder is four feet high (48 inches in diameter, ~12 feet long)
- 48Y: 10-ton thick-walled cylinder weighs 4,500 lbs. (can hold 20,000 lbs. of DUF_6)
- 48G: 14-ton thin-walled cylinder weighs 2,600 lbs. (can hold 28,000 lbs. of DUF_6)

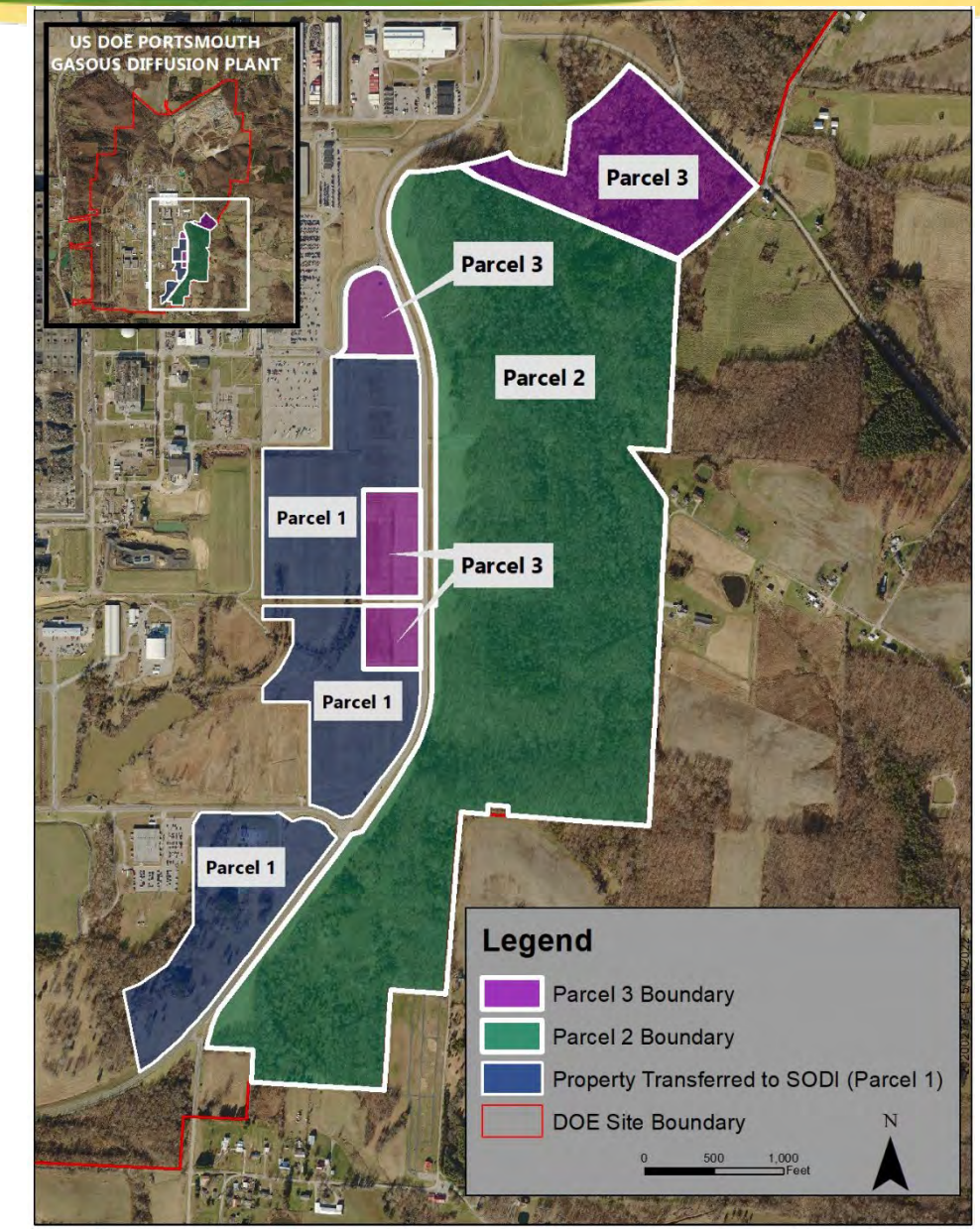
DUF_6 10-Year Strategic Plan

- Safe processing of DUF6 materials at the Paducah and Portsmouth DUF6 facilities
- Oxide transportation and disposal

Future of Portsmouth Site

Site Reuse

- DOE is implementing a systematic approach to turn over parcels of the Portsmouth Site for potential reuse by private industry
- The parcels are transferred to the Southern Ohio Diversification Initiative (SODI), the recognized Community Reuse Organization
  - Parcel 1 – 80 acres
  - Parcel 2 – 227 acres
  - Parcel 3 – 48 acres
- SODI is working to find industries/companies interested



QUESTIONS?