



U.S. DEPARTMENT OF  
**ENERGY**

OFFICE OF  
**ENVIRONMENTAL  
MANAGEMENT**

# West Valley Demonstration Project Decommissioning Status

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Department of Energy

Quarterly Public Meeting  
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[www.wv.doe.gov](http://www.wv.doe.gov)

# Phased Decision Making

In 2010, DOE published the Final Environmental Impact Statement and Record of Decision (ROD) for Decommissioning and/or Long-Term Stewardship at the West Valley Demonstration Project (WVDP) and the Western New York Nuclear Service Center (WNYNSC)

- Phased Decisionmaking ROD
- Phase 1 Decommissioning Plan

- Final Decommissioning ROD
- Phase 2 Decommissioning Plan

## Phase 1 Decommissioning (Complete by 2020\*)

### Phase 1 Facility Disposition

- Relocate 275 HLW Canisters to new dry cask storage facility
- Demolish Vitrification Facility (Vit) and Main Plant Process Building (MPPB)
  - Remove ancillary facilities
  - Ship legacy Low Level Waste

### Phase 1 Soil Remediation

- Remove Below Grade Portion of MPPB (including source area of plume), Vit, 01-14
- Remove Lagoons and Liquid Waste Treatment Facility
- Ship Legacy TRU Waste
- Remove Remote Handled Waste Facility and remaining ancillary facilities
- Remediate all WMA 1 & 2 Soil

\* Based on funding at \$75 M/yr

## Phase 2 Decommissioning (Decisions made by 2020)

### Phase 2 Decisions

- HLW Canister Shipment (permanent disposal decision)
- Closure decision for Waste Tank Farm
- Closure decisions for NRC-licensed Disposal Area and State-licensed Disposal Area

# Phase 1 Facility Disposition

- **Scope of work includes:**
  - Complete high level waste (HLW) canister relocation at WVDP
  - Process, ship and dispose of all legacy waste off-site
  - Demolition and removal of the Main Plant Process Building (MPPB)
  - Demolition and removal of the Vitrification (Vit) Facility
  - Complete all work described in the Performance Work Statement
    - Remove ancillary facilities
    - Manage and maintain site infrastructure
    - Conduct environmental monitoring
    - Maintain the underground storage tanks, the NRC-licensed disposal area, and the Permeable Treatment Wall
- **Scope of work performed by CH2M HILL B&W West Valley, LLC (CHBWV) through contract awarded in 2011**

# Phase 1 Soil Remediation

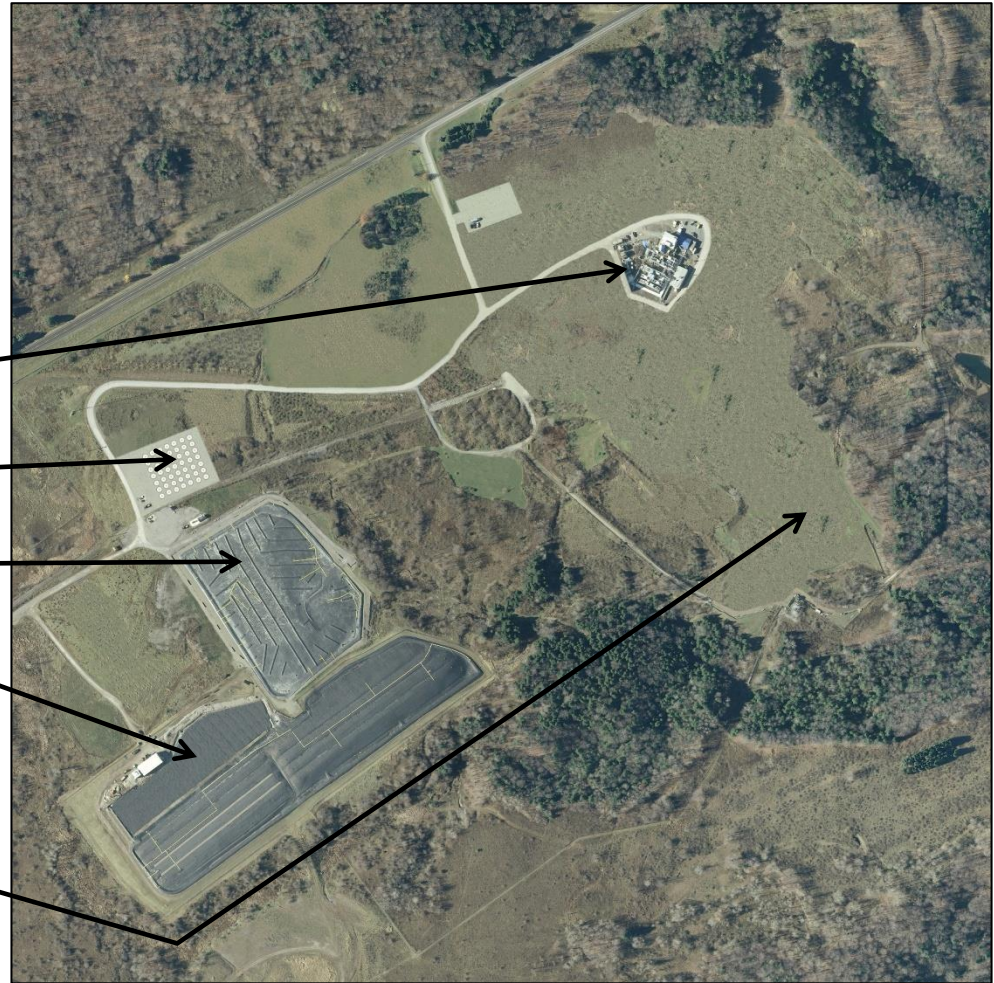
- **Plan scopes of work for Phase 1 soil remediation in ~2018\***
- **Award contract(s) in ~2019\***
- **Planned scopes of work will include:**
  - Remove below grade portions of MPPB and vitrification facility, including the source area of the plume
  - Remove the lagoons and liquid waste treatment facility
  - Ship the legacy transuranic (TRU) waste (potentially)
  - Remove the RHWF and remaining ancillary facilities (after shipment of TRU waste)
  - Remediate WMA 1 & 2 soil

\*Schedules for Phase 1 soil remediation are contingent upon the end date of the Phase 1 facility disposition scope of work.



**At the end of Phase 1 decommissioning (Phase 1 facility disposition plus Phase 1 soil remediation) five facilities will remain:**

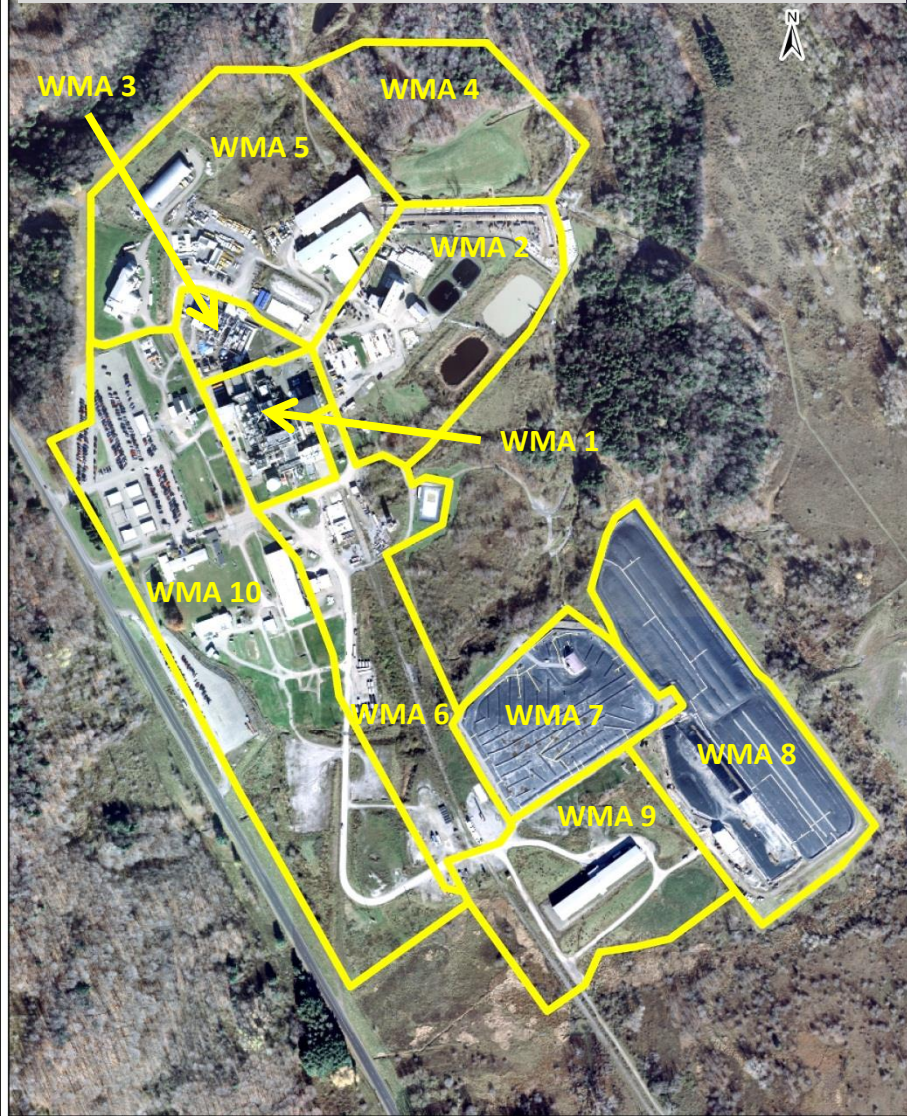
- Tank farm with the tank and vault drying system
- HLW storage casks
- NDA with cap and barrier wall
- SDA with cap and barrier wall
- Construction and Demolition Debris Landfill





# Waste Management Areas

Orthoimage of the West Valley Demonstration Project

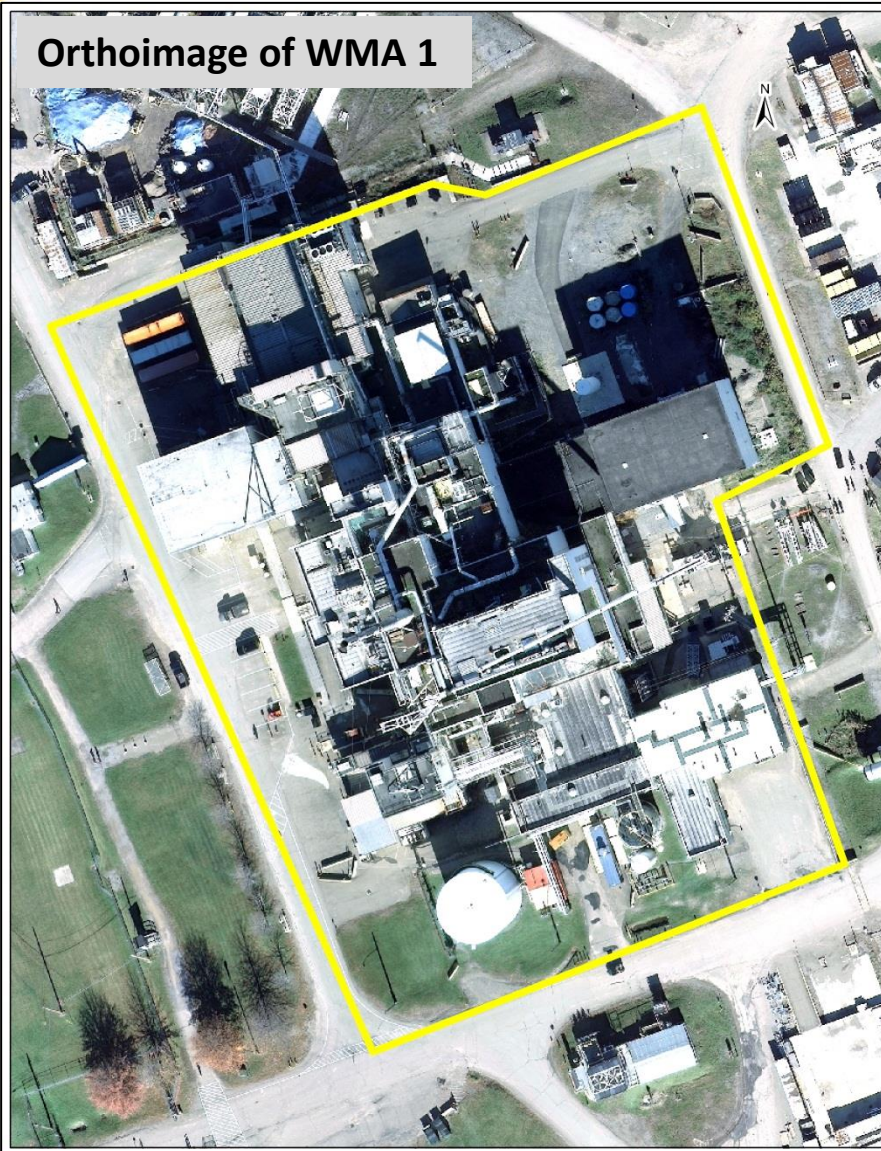


The *Final Environmental Impact Statement for Decommissioning and/or Long-Term Stewardship at the West Valley Demonstration Project and Western New York Nuclear Service Center* addresses the developed portion of the site in 10 waste management areas (WMA)



# WMA 1

Orthoimage of WMA 1

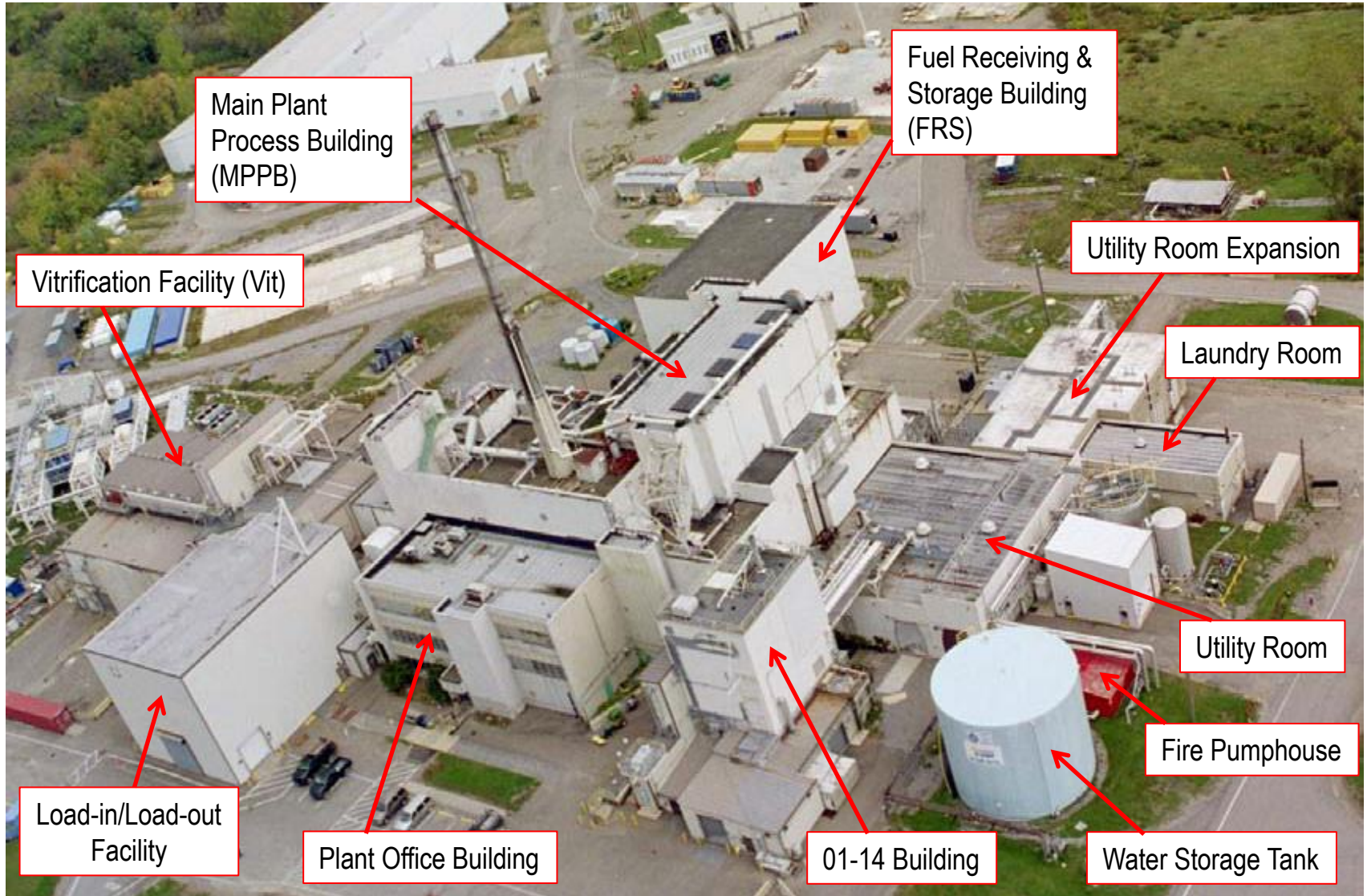


## WMA 1 includes:

- Main Plant Process Building (MPPB)
- Plant office building
- Vitrification Facility
- Load-in/Load-out Facility
- Utility Room
- Fire Pump House
- Water storage tank
- Laundry
- Fuel Receiving and Storage



# WMA 1





# WMA 1 Status

| Facility                    | January 2014 Status  | Planned for End of Phase 1 Facility Disposition | Planned for End of Phase 1 Decommissioning                     |
|-----------------------------|--|---|--|
| Main Plant Process Building | Removed:<br>86% of contaminated vessels<br>84% of piping and conduit<br>95% of asbestos  | Demolished to grade                             | Removal of below-grade structures and source area of the plume |
| Vit Facility                | 99% decontaminated: contaminated equipment removed, floor cleaning & electrical isolations underway; cold chemical building demolished to the slab | Demolished to the slab                          | Removal of below-grade structures                              |
| Fuel Receiving & Storage    | Vent building demolished; pool drained and cleaned; surface & airborne contamination remain  | Remains in place                                | Removal of above- and below-grade structures                   |
| Plant Office Building       | Rooms emptied, asbestos removal underway   | Demolished to grade                             | Removal of below-grade structures                              |

# WMA 1 Status continued

| Facility                             | January 2014 Status                                   | Planned for End of Phase 1 Facility Disposition | Planned for End of Phase 1 Decommissioning   |
|--------------------------------------|---|---|--|
| Utility Room                         | In service, contains significant quantity of asbestos | Demolished to slab                              | Removal of below-grade structures            |
| Load-in/<br>Load-out                 | In service, available for load-out of HLW canisters   | Demolished to the slab                          | Removal of below-grade structures            |
| Water Storage Tank & Fire Pump House | In service  | Operational                                     | Removal of above- and below-grade structures |
| Laundry Room                         | Demolition Ready                                      | Demolished to the slab                          | Removal of below-grade structures            |
| 01-14 Building                       | Demolished to the slab                                | Demolished to the slab                          | Removal of below-grade structures            |



Orthoimage of WMA 2



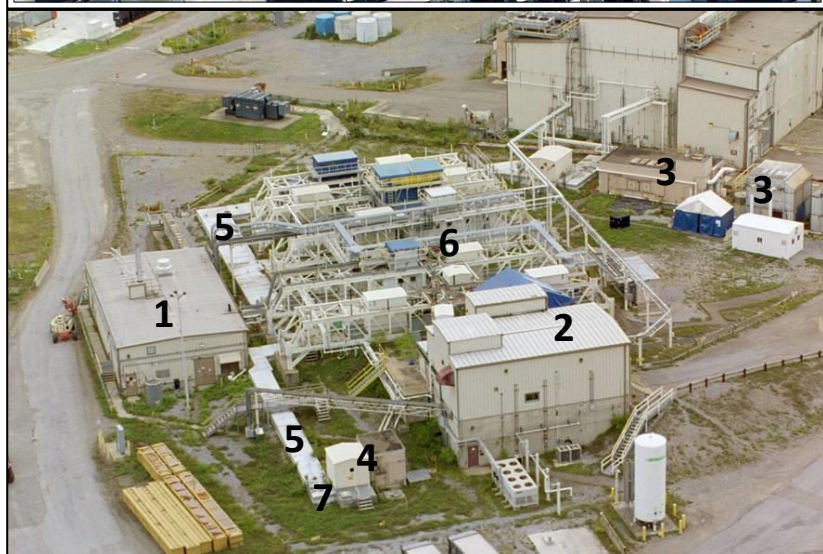
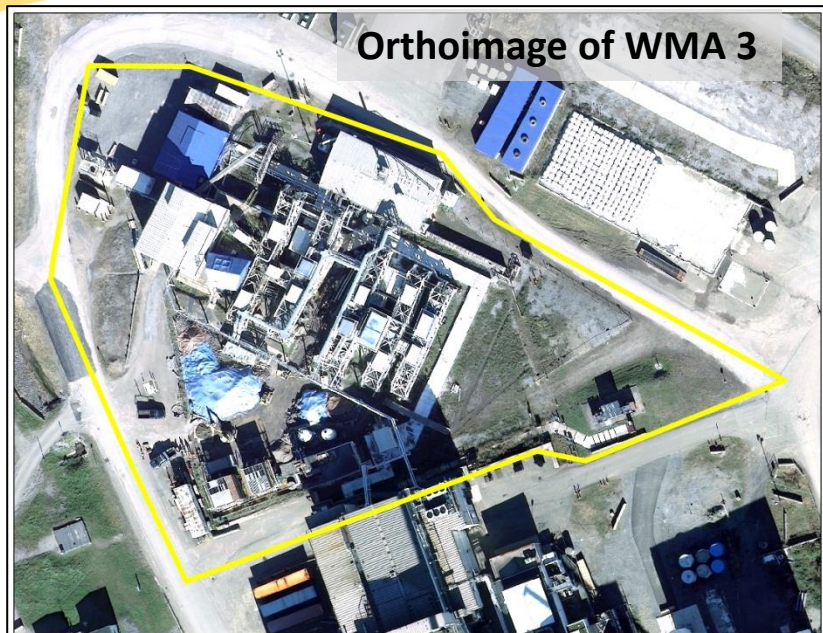
1. Low-Level Waste Treatment Facility 2 (LLW2)
2. Lagoon 2
3. Lagoon 3
4. Lagoon 4
5. Lagoon 5
6. Old interceptor
7. New interceptors
8. Vitrification Test Facility
9. Vehicle Repair Shop
10. Test and Storage Building
11. Maintenance Shop
12. O2 building
13. Lagoon 1 area

# WMA 2 Status

| Facility   | January 2014 Status                    | Planned for End of Phase 1 Facility Disposition | Planned for End of Phase 1 Decommissioning      |
|--|--|---|---|
| Low-Level Waste Treatment Facility 2 & Lagoons 2, 3, 4 & 5         | Operational                            | Operational                                     | Removal; installation of hydraulic barrier wall |
| Old & new interceptors   | Operational                            | Operational                                     | Removal   |
| Vitrification Test Facility  | Operational                            | Facility & foundation removed; area restored    | NA  |
| Vehicle Repair Shop<br>Test & Storage Building<br>Maintenance Shop | Facilities removed, foundations remain | Facilities removed, foundations remain          | Removal   |
| O2 Building  | Facility removed, foundation remains   | Foundation removed; area restored               | NA  |
| Lagoon 1   | Inactive                               | Inactive  | Removal   |



# WMA 3



1. Permanent Ventilation System building
2. Supernatant Treatment System support building
3. Equipment shelter and condensers
4. Con-Ed building
5. High-Level Waste (HLW) transfer trench
6. Two underground, 760,000 gallon carbon steel tanks: 8D-1 and 8D-2
7. Two underground, 14,300 gallon stainless steel tanks: 8D-3 and 8D-4

# WMA 3 Status

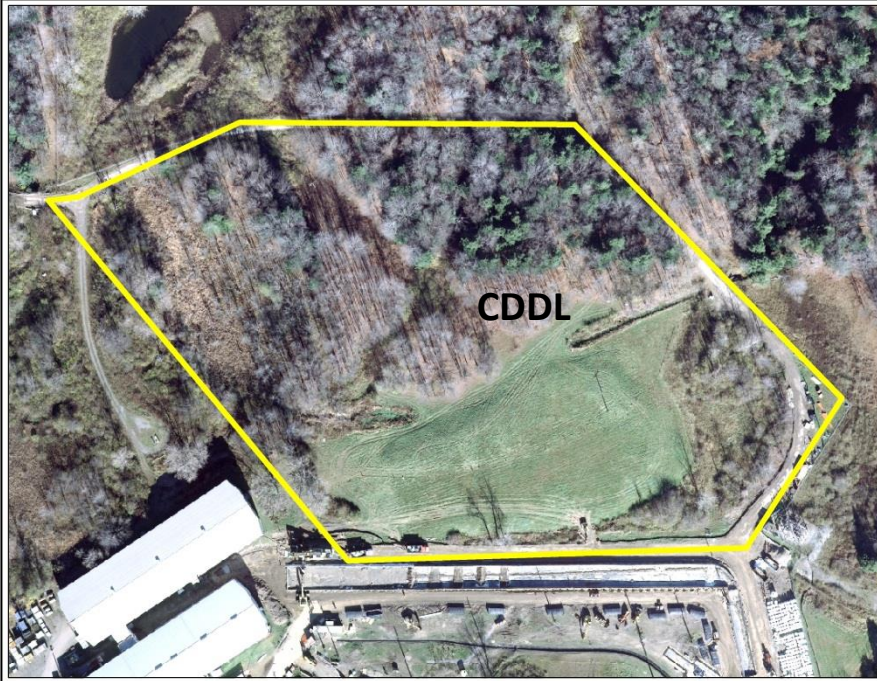
| Facility                                      | January 2014 Status                           | Planned for End of Phase 1 Facility Disposition | Planned for End of Phase 1 Decommissioning |
|---|---|---|--|
| Permanent Ventilation System                  | Operational                                   | Operational                                     | Remains in place                           |
| Supernatant Treatment System Support Building | Operational                                   | Operational                                     | Remains in place                           |
| Equipment Shelter (ES) & Condensers           | Condensers isolated; ES partially operational | Facilities removed; foundation remains          | Removal of foundation                      |
| Con-Ed Building                               | In-active                                     | Facility removed; underlying tanks remain       | Removal of foundation                      |
| High-Level Waste Transfer Trench              | In-place                                      | All lines & trench isolated                     | Remove piping; trench remains              |
| Tanks 8D-1 & 8D-2                             | Isolated                                      | Isolated  | Remain in place                            |
| Tanks 8D-3 & 8D-4                             | Isolated                                      | Isolated  | Remain in place                            |



# WMA 3 Status of Tanks

- Tank & Vault Drying System (T&VDS) installed and operational in December 2010
  - Status of tank liquids
    - Tank 8D-1 – all liquid evaporated
    - Tank 8D-2 – all liquid evaporated
    - Tank 8D-3 – all liquid evaporated
    - Tank 8D-4 – 4,630 gallons of liquid/sludge remain
  - Status of vaults and containment pans
    - Tank 8D-1 vault liquid is below level indicator (<2 inches and may be dry)
    - Tank 8D-2 vault liquid is below level indicator (<2 inches and may be dry)
    - All liquid in containment pans of tanks 8D-1 and 8D-2 evaporated
    - Tank 8D-3/8D-4 vault liquid evaporated
- At the end of Phase 1 decommissioning the T&VDS will be operational; tanks and their support structures will remain in place

**Orthoimage of WMA 4  
Construction & Demolition Debris Landfill**



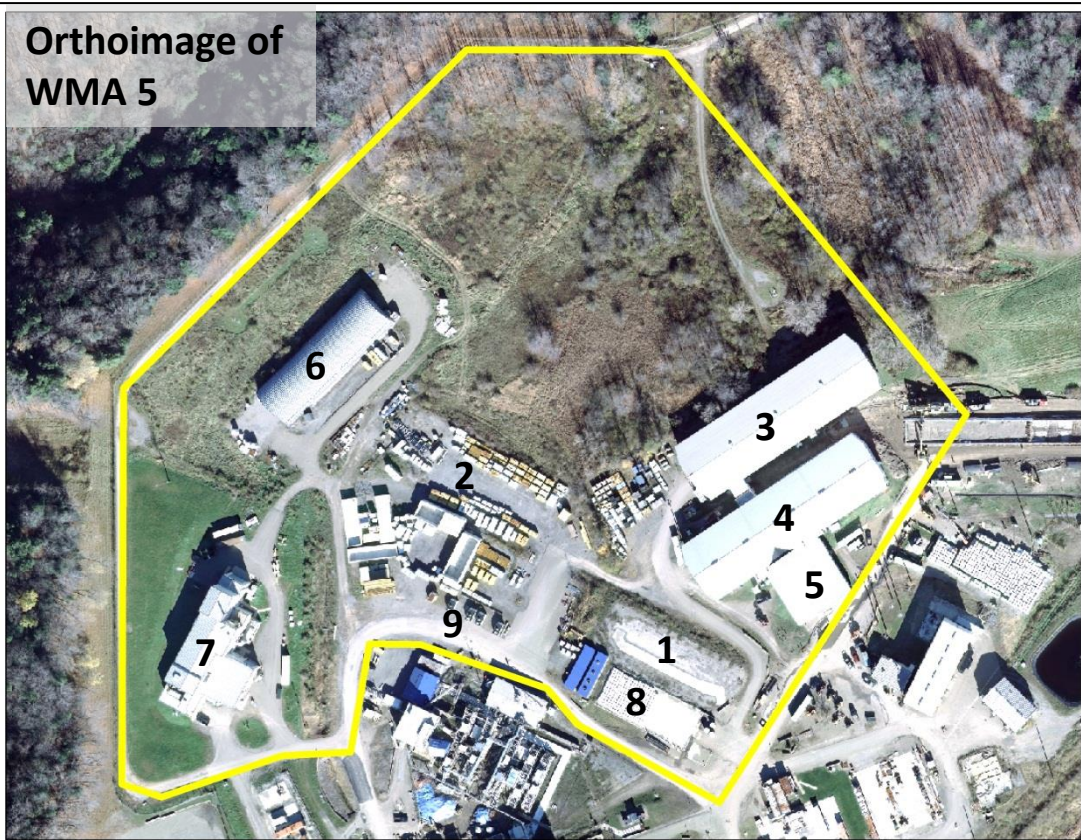
## The Construction and Demolition Debris Landfill (CDDL) Status

- CDDL is inactive
- Monitoring and maintenance will continue through Phase 1 decommissioning



# WMA 5

Orthoimage of  
WMA 5



1. Lag Storage Area 1
2. Lag Storage Area 2
3. Lag Storage Area 3
4. Lag Storage Area 4
5. Shipping depot
6. Chemical Process Cell  
Waste Storage Area
7. Remote-Handled Waste  
Facility (RHWF)
8. Lag Storage Building
9. Four Hazardous Waste  
Storage Lockers

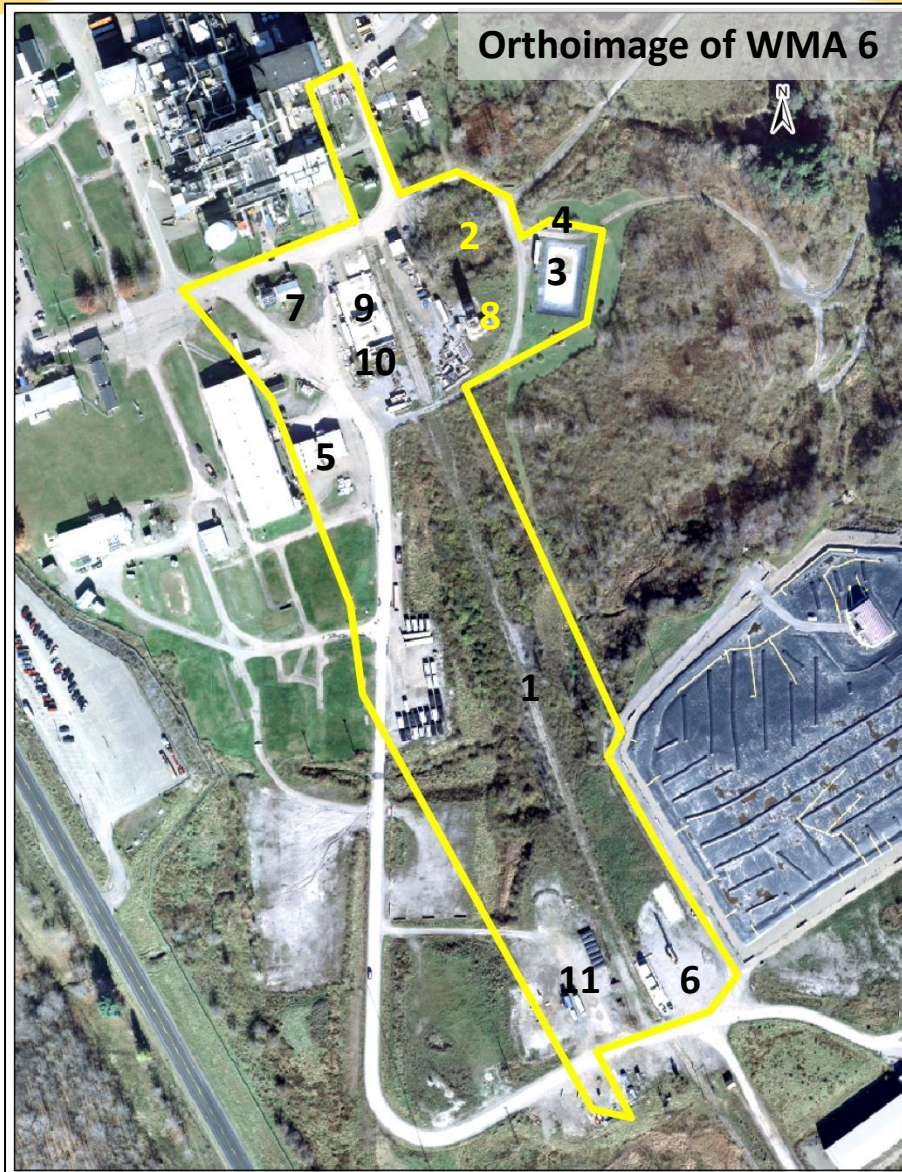
# WMA 5 Status

| Facility                                   | January 2014 Status | Planned for End of Phase 1 Facility Disposition | Planned for End of Phase 1 Decommissioning                      |
|--|---------------------|---|---|
| Lag Storage Area 1                         | Demolished to slab  | Foundation remains                              | Remove foundation   |
| Lag Storage Area 2                         | Operational         | Waste removed; hardstand remains                | Remove hardstand  |
| Lag Storage Areas 3 & 4 and Shipping Depot | Operational         | All waste removed; facilities remain            | Remove facilities & foundations                                 |
| Chemical Process Cell Waste Storage Area   | Operational         | Demolish facility & foundation                  | NA  |
| Remote-Handled Waste Facility              | Operational         | Operational                                     | Remove after remote-handled TRU waste has been shipped off-site |
| Lag Storage Building                       | Demolished to slab  | Foundation remains                              | Remove foundation   |
| Hazardous Waste Storage Lockers            | Demolished          | NA  | NA  |



# WMA 6

Orthoimage of WMA 6



1. Rail spur
2. Demineralizer sludge ponds (inactive)
3. Equalization basin
4. Equalization tank
5. Sewage Treatment Plant
6. Low-level waste rail packaging and staging area
7. Cooling tower
8. Two waste tank farm test towers
9. Old warehouse
10. Product Storage Area
11. HLW storage pad

# WMA 6 Status

| Facility                      | January 2014 Status | Planned for End of Phase 1 Facility Disposition | Planned for End of Phase 1 Decommissioning |
|-------------------------------|---------------------|---|--|
| Rail Spur                     | Operable            | Operational                                     | Operational                                |
| Demineralizer Sludge Ponds    | Inactive            | No further action                               | Area restored                              |
| Equalization Basin            | Operational         | Remove facility & foundation                    | Area restored                              |
| Equalization Tank             | Operational         | Remove facility & foundation                    | Area restored                              |
| Sewage Treatment Plant        | Operational         | Remove facility & foundation                    | Area restored                              |
| Rail Packaging & Staging Area | Operational         | Operational                                     | Removed                                    |



# WMA 6 Status continued

| Facility                    | January 2014 Status       | Planned for End of Phase 1 Facility Disposition | Planned for End of Phase 1 Decommissioning |
|-----------------------------|---------------------------|---|--|
| Cooling Tower               | Demolished                | Remove foundation                               | Area restored                              |
| Waste Tank Farm Test Towers | Demolished                | Remove foundation                               | Area restored                              |
| Old Warehouse               | Demolished                | Area graded                                     | Area restored                              |
| Product Storage Area        | Demolished                | Area graded                                     | Area restored                              |
| HLW Storage Pad             | Pad construction complete | HLW canisters stored in casks on the pad        | HLW canisters stored in casks on the pad   |

## Orthoimage of WMA 7 NRC-Licensed Disposal Area (NDA)



## NRC-Licensed Disposal Area Status

- A geomembrane cap and barrier wall were installed in 2008 to prevent water infiltration
- Liquid Pretreatment System is operable
- The NDA will remain in place during Phase 1 decommissioning



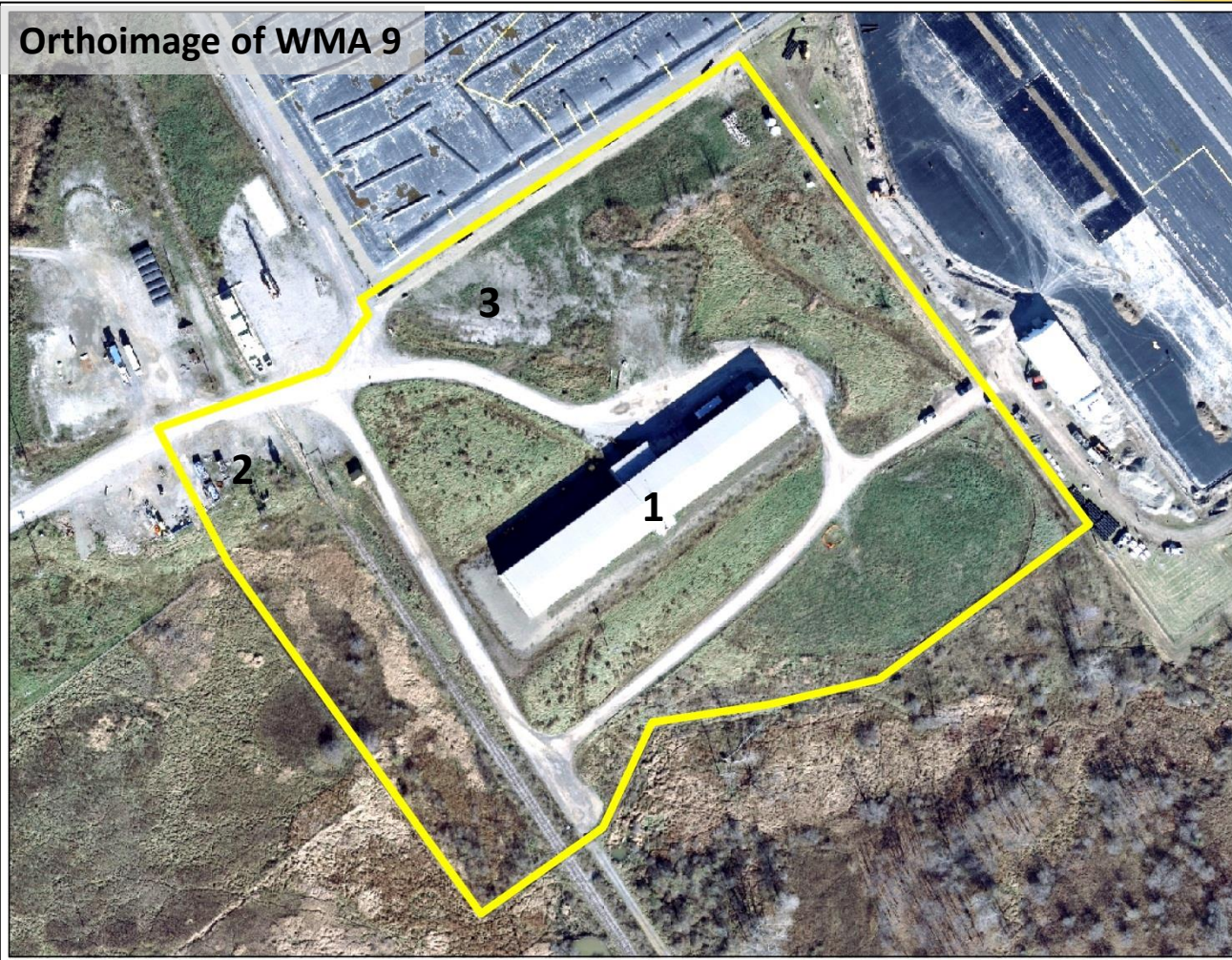


## State-Licensed Disposal Area Status

- The geomembrane cap and barrier wall prevent groundwater infiltration into the disposal area
- The leachate treatment facility was clean-closed and no longer stores mixed waste
- The SDA will remain in place during Phase 1 decommissioning



Orthoimage of WMA 9

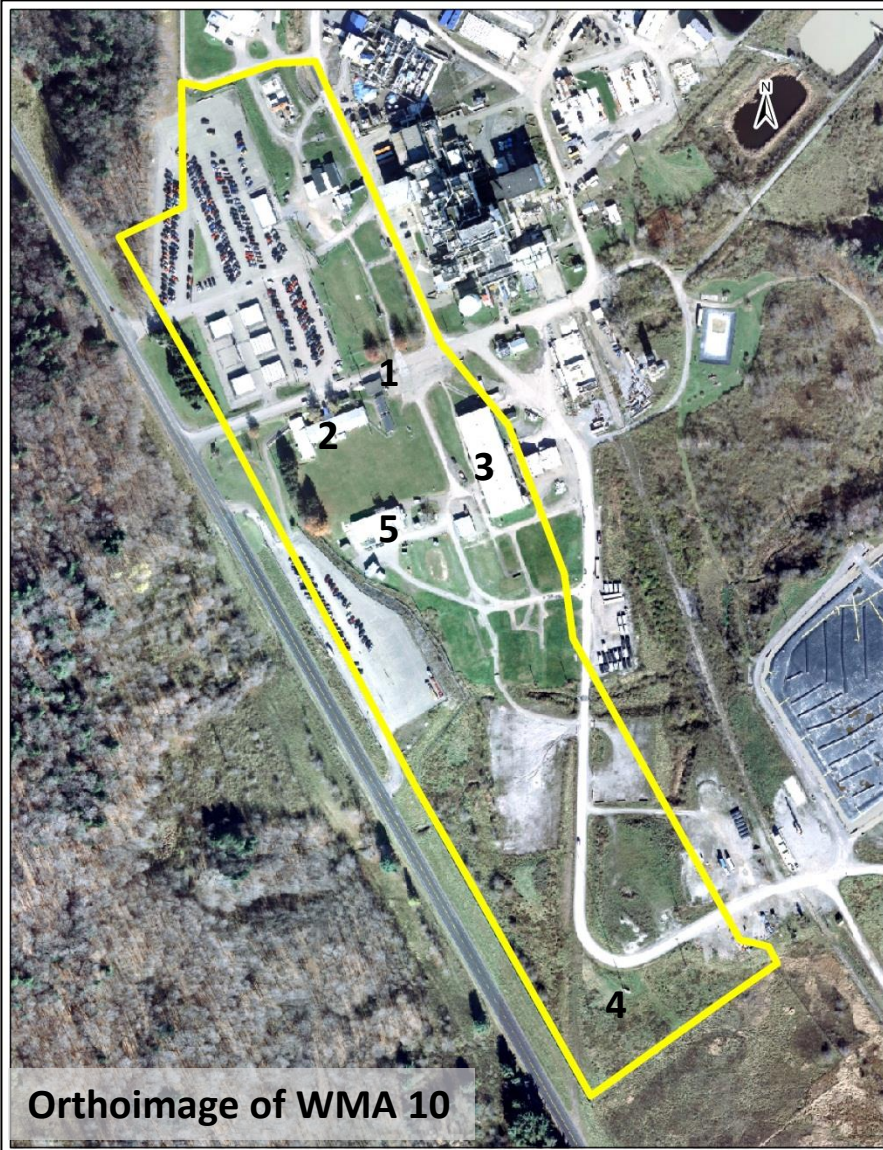


1. Drum Cell
2. Subcontractor Maintenance Area
3. NDA Trench Container Area Pad



# WMA 9 Status

| Facility                       | January 2014 Status                     | Planned for End of Phase 1 Facility Disposition | Planned for End of Phase 1 Decommissioning |
|--------------------------------|---|---|--|
| Drum Cell                      | Operational; all waste has been removed | Facility & foundation removed; area restored    | No further action                          |
| Subcontractor Maintenance Area | Operational                             | Operational                                     | Removed                                    |
| NDA Trench Container Area Pad  | Operational                             | Operational                                     | Removed                                    |



Orthoimage of WMA 10

1. Gatehouse
2. Administration Building
3. Warehouse
4. Meteorological Tower
5. Environmental Laboratory

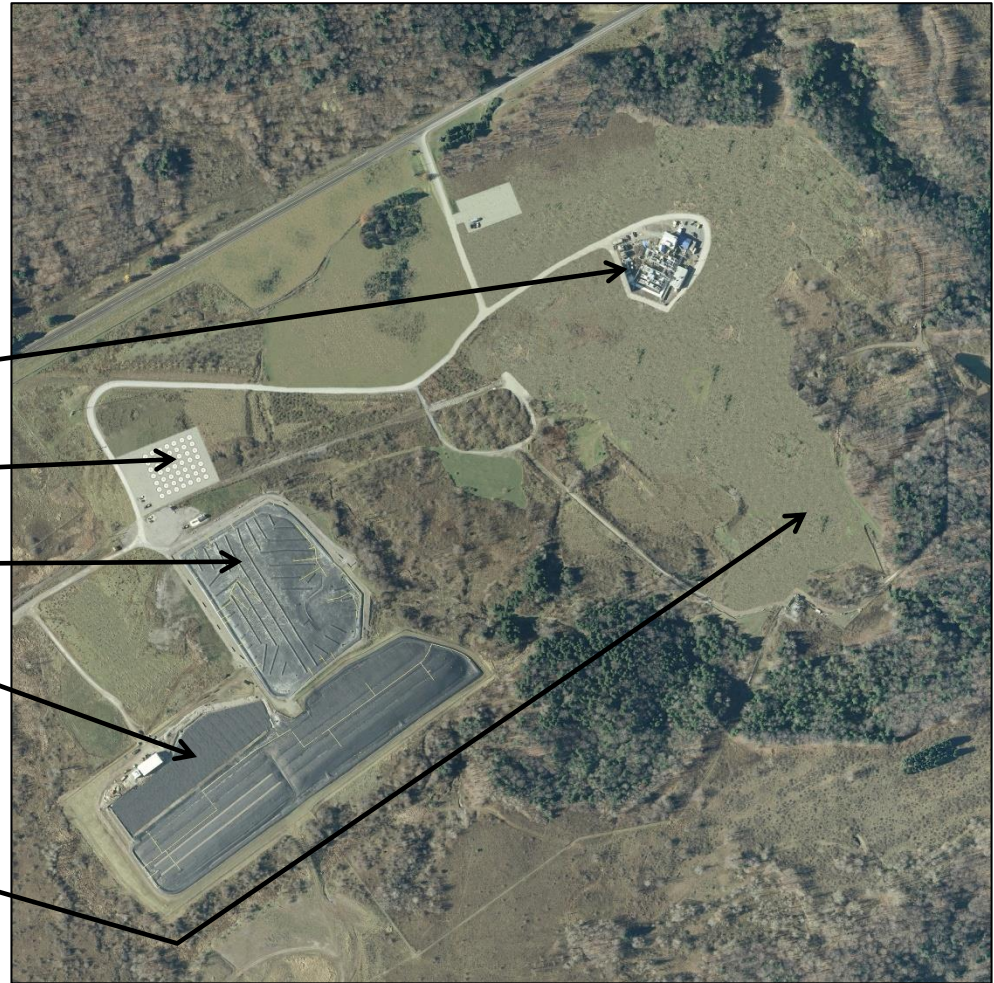


# WMA 10 Status

| Facility                 | January 2014 Status | Planned for End of Phase 1 Facility Disposition | Planned for End of Phase 1 Decommissioning |
|--------------------------|---------------------|---|--|
| Gatehouse                | Operational         | Operational                                     | Remains operational                        |
| Administration Building  | Operational         | Facility & foundation removed; area restored    | No further action                          |
| Warehouse                | Operational         | Facility & foundation remain                    | Facility & foundation removed              |
| Meteorological Tower     | Operational         | Operational                                     | Remains operational                        |
| Environmental Laboratory | Demolished          | Foundation removed; area restored               | No further action                          |

**At the end of Phase 1 decommissioning (Phase 1 facility disposition plus Phase 1 soil remediation) five facilities will remain:**

- Tank farm with the tank and vault drying system
- HLW storage casks
- NDA with cap and barrier wall
- SDA with cap and barrier wall
- Construction and Demolition Debris Landfill





# Phase 2 Decommissioning

- The Phase 2 decommissioning decision includes WVDP and WNYNSC facilities:
  - NRC-Licensed Disposal Area
  - State-Licensed Disposal Area
  - Waste Tank Farm
  - Construction and Demolition Debris Landfill
  - Contaminated soils and sediments
    - Non source area of the plume
    - Cesium prong
    - Streams

# Phased Decision Making

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- Phased Decisionmaking ROD
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## Phase 1 Decommissioning (Complete by 2020\*)

### Phase 1 Facility Disposition

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  - Remove ancillary facilities
  - Ship legacy Low Level Waste

### Phase 1 Soil Remediation

- Remove Below Grade Portion of MPPB (including source area of plume), Vit, 01-14
- Remove Lagoons and Liquid Waste Treatment Facility
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- Remove Remote Handled Waste Facility and remaining ancillary facilities
- Remediate all WMA 1 & 2 Soil

\* Based on funding at \$75 M/yr

## Phase 2 Decommissioning (Decisions made by 2020)

### Phase 2 Decisions

- HLW Canister Shipment (permanent disposal decision)
- Closure decision for Waste Tank Farm
- Closure decisions for NRC-licensed Disposal Area and State-licensed Disposal Area