



BNL Environmental Compliance and Groundwater Protection Update

Community Advisory Council

Jason Remien, Manager, Environmental Protection Division

Brian Barth, Manager, Groundwater Protection Group

March 12, 2026



@BrookhavenLab

“Thank you, Doug, for nearly 40 years of dedicated service and lasting impact in environmental cleanup.”



Agenda

- **Environmental Compliance Program**
 - Dashboard - Key Environmental Programs
 - EMS Program Change
- **Groundwater Protection Program**
 - Dashboard - Key Long Term Stewardship Programs/Projects
 - PFAS & 1,4 – Dioxane Monitoring
 - Building 526 Demolition



Environmental Compliance Programs/Processes – How are we doing?

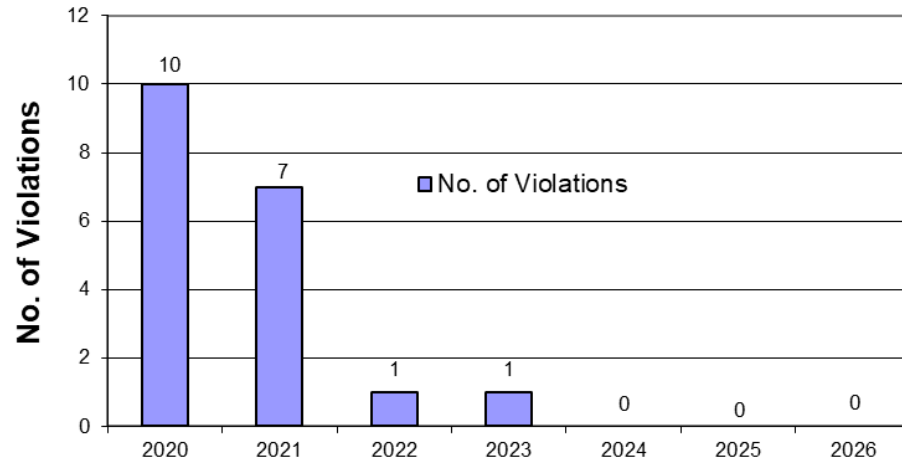


| Environmental Program/Process | Performance |
|--|-------------|
| Drinking Water (Safe Drinking Water Act) | |
| Liquid Effluents (Clean Water Act) | |
| Non-Rad Air Emissions (Clean Air Act) | |
| Spill Response | |
| Radiological Air Emissions | |
| Underground & Aboveground Tank Storage | |
| Waste Management | |
| Energy & Water Efficiency | |
| Environmental Permits | |
| National Environmental Policy Act | |
| Natural Resources | |
| Cultural Resources | |
| Assessments/Regulatory Inspections | |

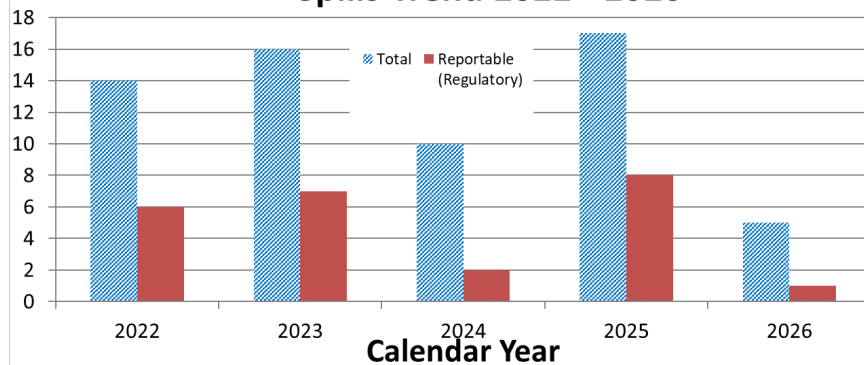
Environmental Program Metrics

State Pollutant Discharge Elimination System (SPDES)

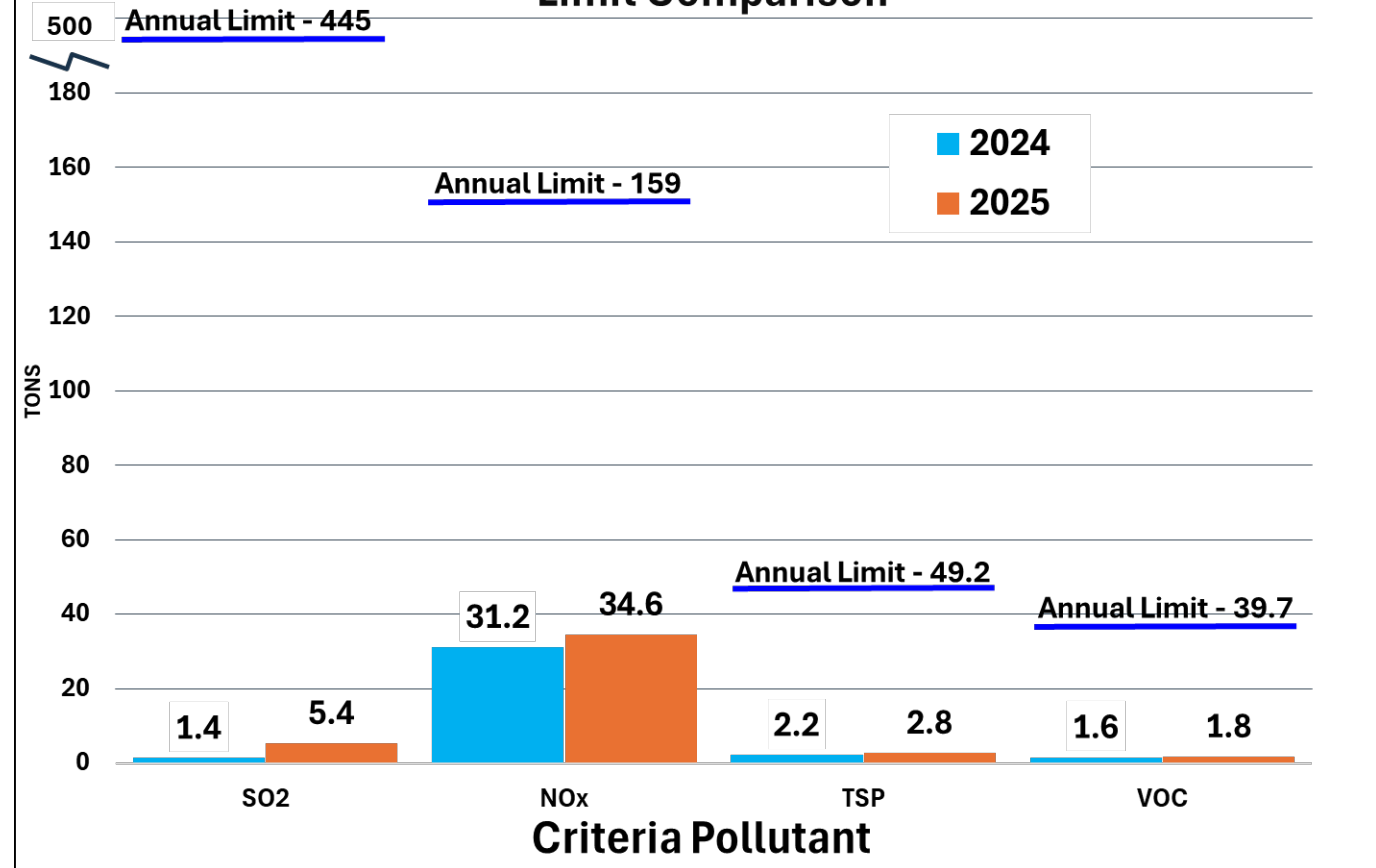
SPDES Limit Violations



Spills Trend 2022 - 2026



Central Steam Facility Annual Air Emission Total vs Limit Comparison



SO₂ – Sulfur dioxide

TSP – Total Suspended Particulates

NO_x – Nitrogen Oxides

VOC – Volatile Organic Compounds

New Aboveground Storage Tanks (12/22/25)



- (2) 10,000-gallon double-walled, fire-rated, UL-2085 certified steel tanks
 - Regular gasoline and E-85
- Existing Underground Storage Tanks will be removed in accordance with requirements
 - Soil sampling, regulatory oversight, and closeout report

Natural Resource Management

- Deer Management

- Current population estimated at 450-600 (birth rate ~50%)
- Acceptable population is 80-250 (10-30 per sq. mile)
- Target max is 250
- One weekend of static shooting - 12 deer taken
- Two additional weekends planned (March/ April)
- Meat samples will continue to be tested for Cs-137 prior to release for consumption (Over 31,000 lbs. donated to date)



- Forest Management

- 66 acres of forest mechanically thinned
- Preparing for prescribed burns to improve forest health and reduce the risk of future, dangerous wildfires



Assessments/Regulatory Inspections

| Assessment Completed | Results |
|---|---|
| NEPA and Cultural Resources | <ul style="list-style-type: none">• Program is sound and effectively implemented. The assessment team identified one strength, six opportunities for improvement, and no findings, indicating no noncompliance issues.• The opportunities for improvement focus on enhancing clarity in procedures, updating forms and guidance, and increasing awareness of NEPA and Cultural Resource requirements across organizations. |
| Regulatory Inspection | |
| Quarterly Sewage Treatment Plant Inspection (including Sample Collection) | <ul style="list-style-type: none">• Facility received an overall inspection rating of “Satisfactory”, no corrective actions required, and sample results were within established permit limits |

Environmental Management System Program Change

An **Environmental Management System (EMS)** is a structured framework of processes and procedures that enables an organization to reduce its environmental impacts, ensure regulatory compliance, and improve operational efficiency

2001: BNL fully certifies to ISO 14001

2007: EO 13423: All Federal Facilities must have an EMS

- Most DOE Laboratories “Declare Conformance” to the DOE instead of obtaining external certification

2007 – 2025: Over 24 years of maintaining certification has resulted in a very mature program. BNL has incorporated the structure for effective management of the environment into its procedures.

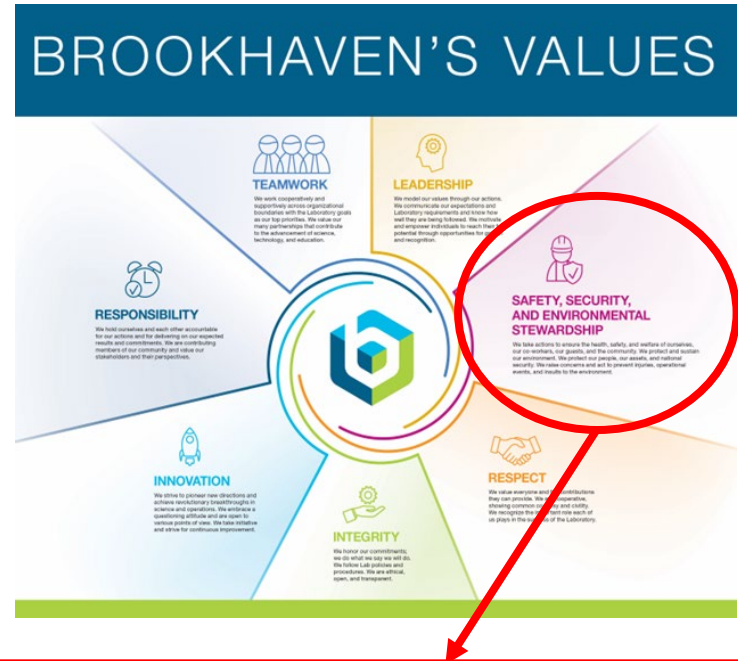


Environmental Management System Program Change

2025:

The federal requirement for an EMS is rescinded and requirement to maintain an externally certified EMS is removed from BNL's contract

- DOE HQ and BNL's peer group of Battelle Laboratories agree to maintain their existing EMS's and peer review assessment program (to replace the external certification assessments)
- We are currently reviewing and revising our program to make it leaner and more inline with the parts of the EMS that have proven to be the most effective in ensuring compliance with requirements, maintaining stakeholder involvement, preventing impacts to the environment and continuing to look for opportunities to improve



“We take action to ensure the health, safety, and welfare of ourselves, our co-workers, our guests, and the community. We protect and sustain our environment. We protect our people, our assets, and national security. We raise concerns and act to prevent injuries, operational events, and insults to the environment.”



Brookhaven™
National Laboratory



U.S. DEPARTMENT OF
ENERGY

Groundwater Protection Update

Brian Barth, Manager
Groundwater Protection Group



@BrookhavenLab

VOC Remediation System Status

| System | Operations | Status | |
|---|--------------------|-------------------------------|---|
| OU I – South Boundary | 1996 – 2019 | Closed – Monitoring Ongoing | |
| OU III – Middle Road/South Boundary | 1997 – | In Operation | |
| OU III – Industrial Park & Modification | 1999 – 2025 | Closed – Monitoring Ongoing | |
| <i>OU III – Carbon Tetrachloride</i> | <i>1999 – 2010</i> | <i>Closed – Goals Met</i> | |
| OU III – Building 96 | 2001 – | In Operation | Anticipate Petition for Shutdown in 2026-2027 |
| OU III – Western South Boundary | 2002 – | In Operation | |
| <i>OU III – Industrial Park East</i> | <i>2004 – 2014</i> | <i>Closed – Goals Met</i> | |
| OU III – North Street | 2004 – 2020 | Closed – Monitoring Ongoing | |
| OU III – North Street East – VOCs | 2004 – 2020 | Shutdown – Monitoring Ongoing | |
| OU III – North Street East – EDB | 2020 – 2026 | Shutdown – Monitoring Ongoing | |
| OU III – LIPA | 2004 – 2025 | Closed – Monitoring Ongoing | |
| OU III – Airport | 2004 – | In Operation | |
| <i>OU III – Freon-11</i> | <i>2012 – 2019</i> | <i>Closed – Goals Met</i> | |
| <i>OU IV – ASVE</i> | <i>1997 – 2003</i> | <i>Closed – Goals Met</i> | |
| <i>OU V – MNA of VOCs</i> | <i>NA</i> | <i>Closed – Goals Met</i> | |
| OU VI – EDB | 2004 – | In Operation | |

| Legend |
|-----------------------------|
| On track |
| Concerns on Attaining Goals |
| Closed – Goals Met |

Radiological Remediation Status

| System | Operations | Status |
|---|-------------|-------------------------------|
| Operable Unit (OU) I – Former Hazardous Waste Management Facility Strontium 90 (Sr-90) | NA | Monitoring Ongoing |
| OU III – Brookhaven Graphite Research Reactor/Waste Concentration Facility (BGRR/WCF) (Sr-90) | 2005 – | In Operation |
| OU III – Chemical Holes (Sr-90) | 2003 – 2018 | Shutdown – Monitoring Ongoing |
| OU III – High Flux Beam Reactor (HFBR) Pump & Recharge (Tritium) | 1997 – 2019 | Closed – Monitoring Ongoing |
| OU IV – Building 650 Sump Outfall (Sr-90) | NA | Monitoring Ongoing |
| OU VIII – g-2 & Brookhaven Linac Isotope Producer (BLIP) (Tritium) | NA | Monitoring Ongoing |

PFAS Remediation System Status

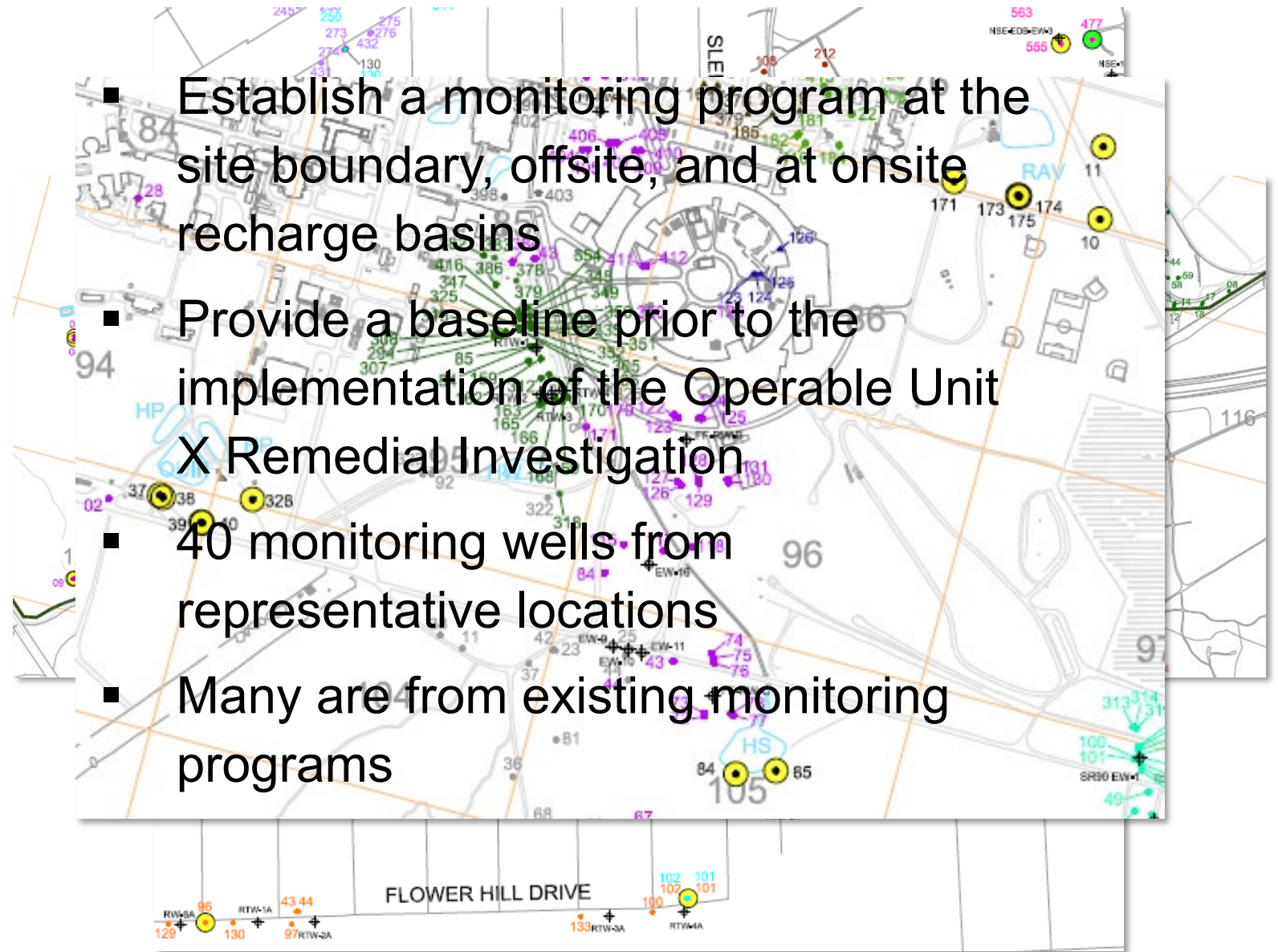
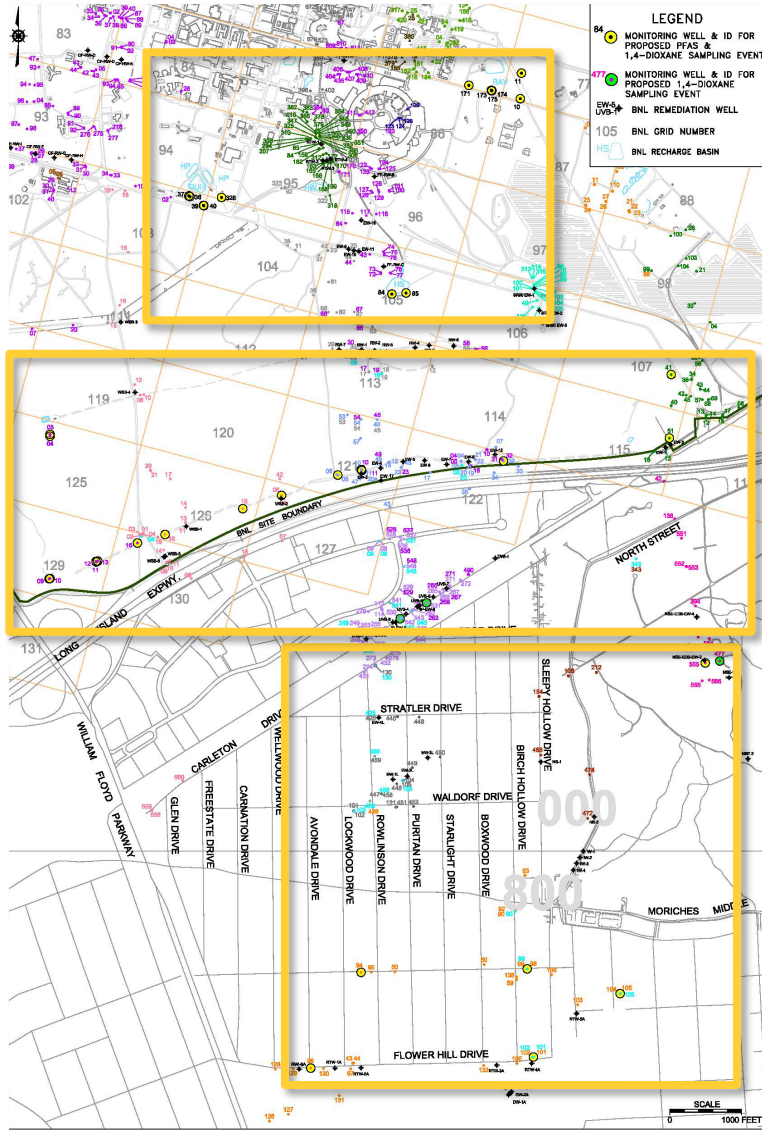
| System | Operations | Status |
|---------------------------------------|------------|--------------|
| OU X – Current Firehouse/Building 170 | 2022 – | In Operation |
| OU X – Former Firehouse | 2023 – | In Operation |

Groundwater Updates

- OU VI ethylene dibromide system back online after repairs to treatment system piping completed
- Design plans for Middle Road/South Boundary and Current Firehouse/Building 170 extraction wells are expected in April - May
- CERCLA Five-Year Review draft submittal to DOE in April
- Implementing onsite and offsite PFAS and 1,4-dioxane monitoring program
- Preparation for Building 526 demolition



PFAS & 1,4-Dioxane Monitoring



- Establish a monitoring program at the site boundary, offsite, and at onsite recharge basins
- Provide a baseline prior to the implementation of the Operable Unit X Remedial Investigation
- 40 monitoring wells from representative locations
- Many are from existing monitoring programs

Building 526

Project Scope:

Demolition of the concrete building, basements, and foundation

Benefits:

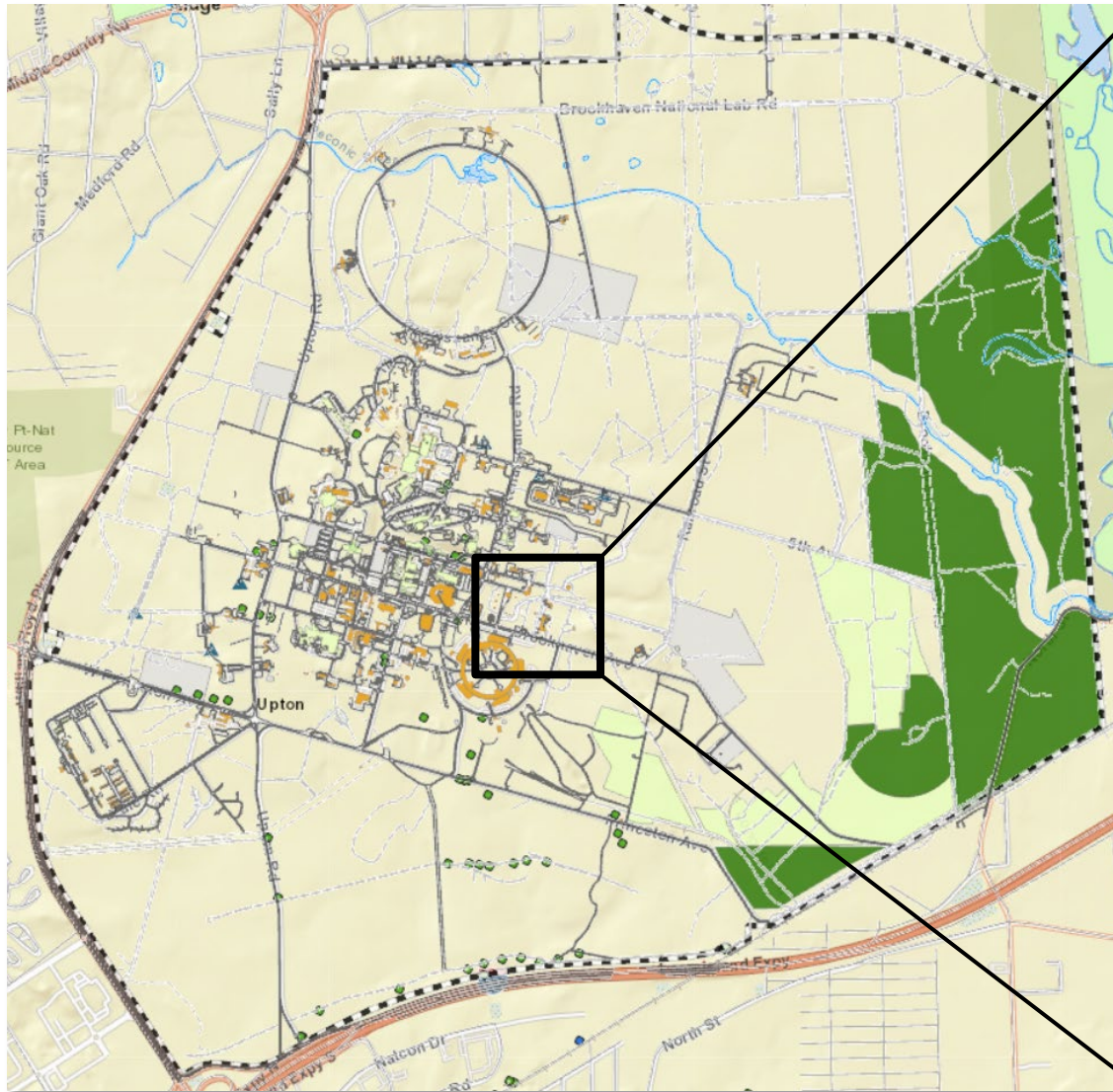
Eliminate deferred maintenance and repair needs, reduce environmental, safety, and health risks



Purpose of Sampling Prior to the Planned Demolition:

- Complete the portion of the OU X Remedial Investigation associated with AOC 33G (PFAS)
- Characterize soil beneath Building 526 prior to removing the building and slab

Building 526



Building 526

Background:

- Low-Mass criticality Facility operated from ~1955 through the mid-1960s for nuclear research
- Later used for researching high efficiency heating systems from ~ 1970 through the early 1990s
- Area of Concern (AOC) 17 associated with historic nuclear research – Investigation led to No Further Action
- AOC 33G (PFAS) associated with former fire suppression system related to later research with flammable materials



THANK YOU!

Questions/Feedback/Open Discussion