U.S. DEPARTMENT OF ENERGY | OFFICE OF ENVIRONMENTAL MANAGEMENT

Technical Discussion – Air Monitoring/Sampling Locations

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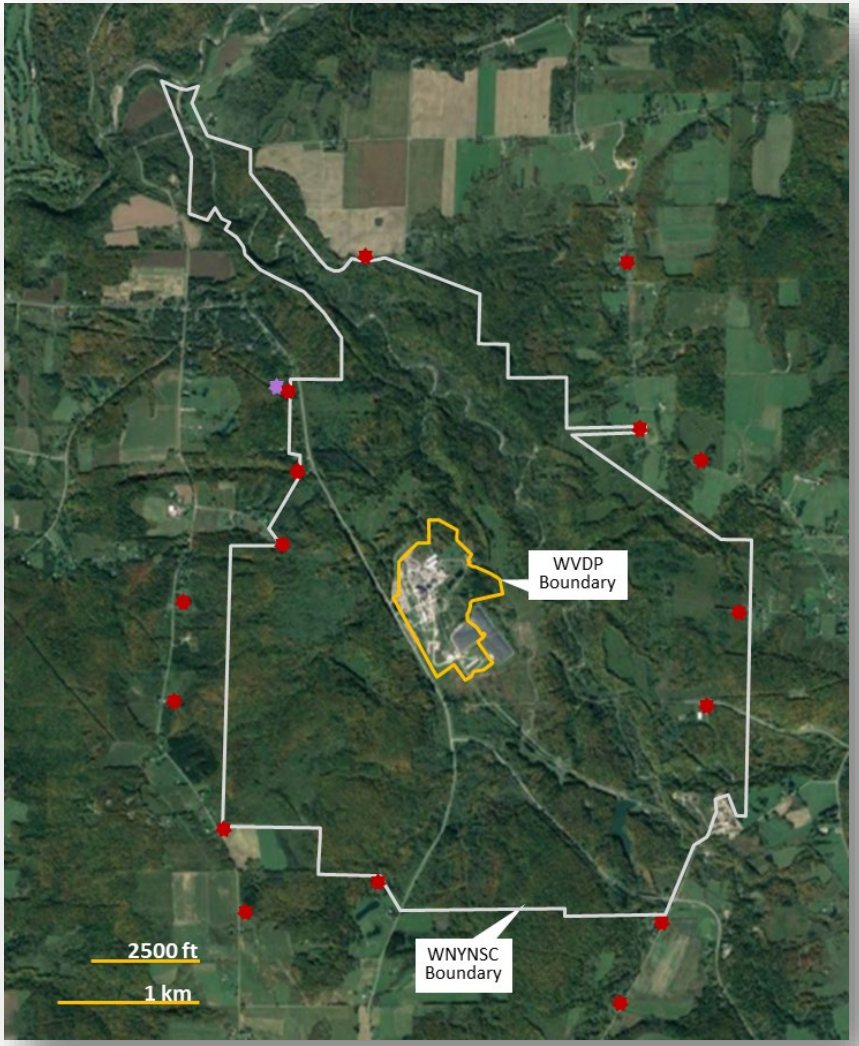
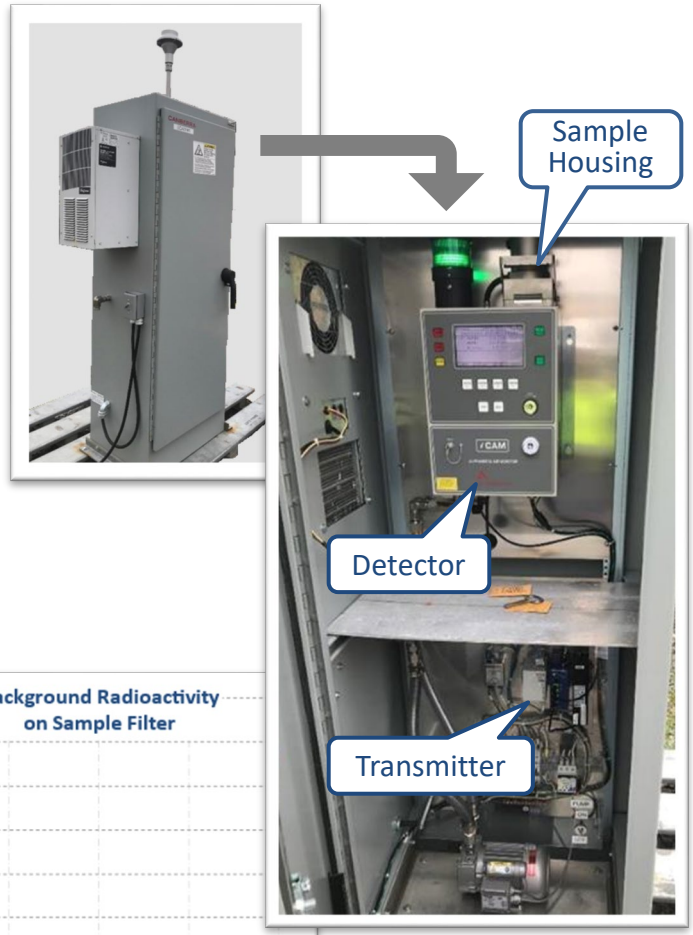
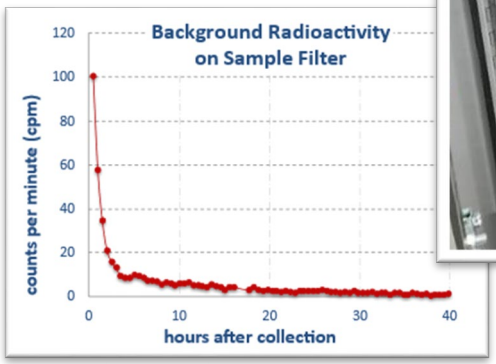
WVDP Air Monitoring



Air Monitoring/Sampling Technology

- Continuous Air Monitors
  - Contain both a sampling system and a detection system
  - Airborne particulate is collected on a filter that is continuously checked by a radiation detector
  - State-of-the-art software compensates for interference from background radiation
  - Detection capability for on-site monitoring





Air Monitoring/Sampling Technology

- On-site Fixed Air Samplers
  - Consist of a sampling system only; no integrated detection system
  - Airborne particulate is collected by drawing air through a filter at a higher volumetric flowrate
  - Filters are removed daily and screened immediately for elevated levels of radioactivity
  - Follow up analysis with more sensitive radiation detection equipment performed on a separate on-site system
  - Up to 1,000 times more sensitive than monitors; however, do not provide real-time results

Air Monitoring/Sampling Technology

- Ambient Air Samplers
  - Similar in operation to fixed air samplers but significantly larger sample volumes
    - 60 – 400x volume of on-site fixed air sampler
  - Samples sent to an off-site laboratory where radioactive materials are chemically separated and analyzed by very sensitive instruments
  - Provides excellent detection for low levels of airborne radioactivity
  - Up to one million times more sensitive than air monitors; however, does not provide real-time results

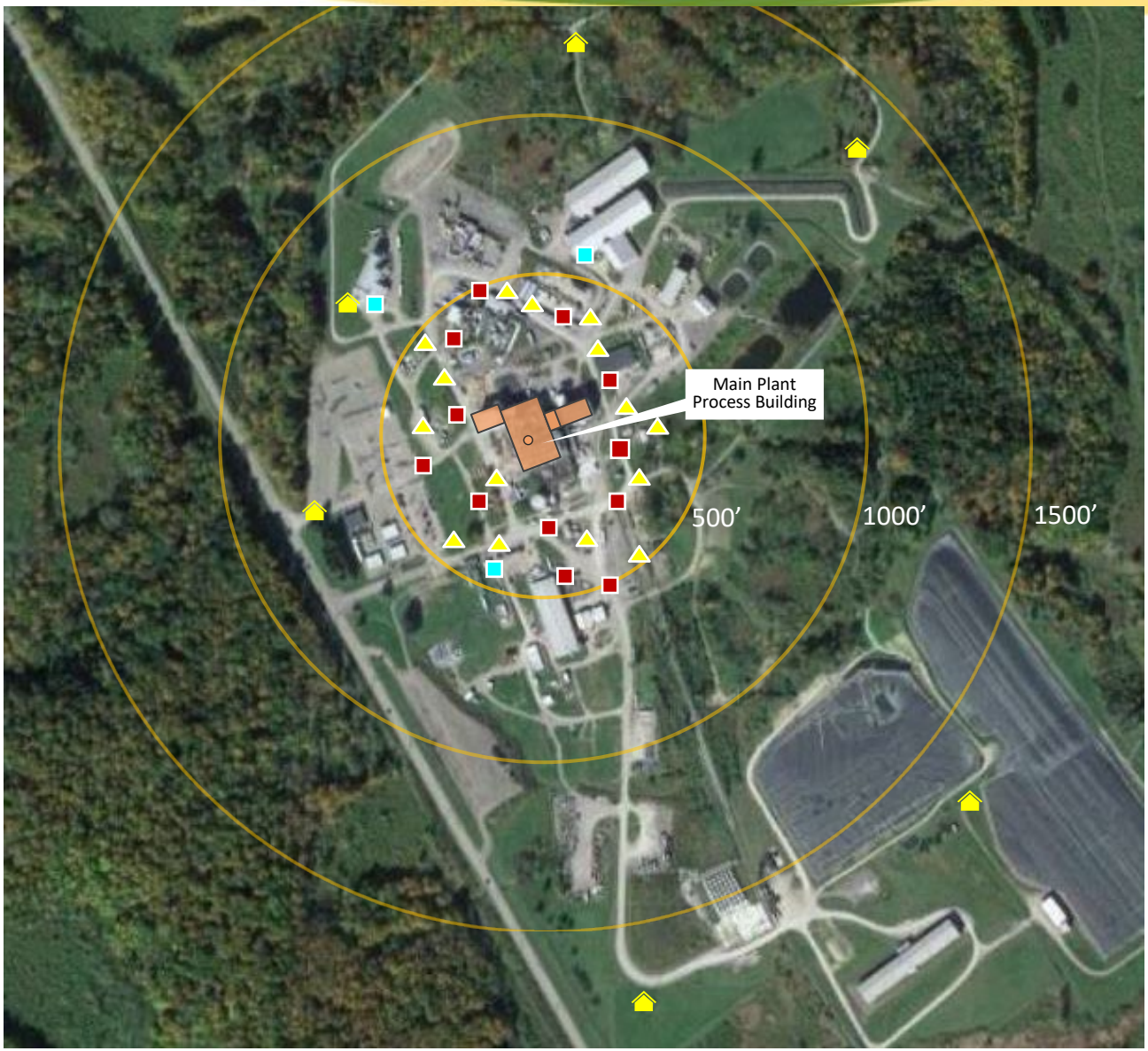
Progressive Monitoring Rings Demo Area and Site Perimeter

Demo Area Monitoring Ring

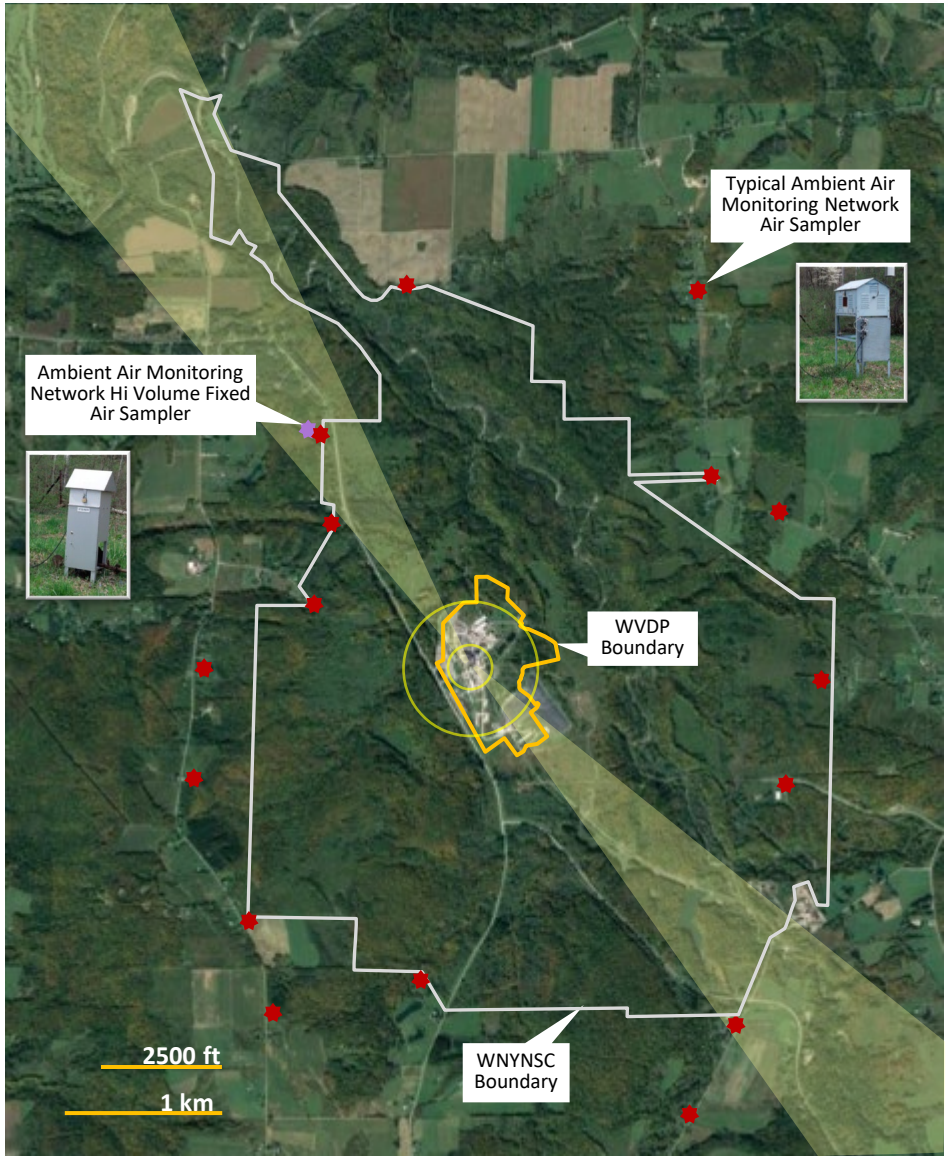
- Environmental Continuous Air Monitor (12)
- Facility Continuous Air Monitor (3)
- Fixed Air Sampler (15)

On-Site Perimeter Monitoring Ring

- Fixed Air Sampler (6)



Progressive Monitoring Rings Ambient Air Sampler Locations



- EPA-approved ambient air monitoring system
- Network of 16 samplers within 2 miles of the site
  - Positioned in proximity to nearest resident in each compass direction
- Network detection limit better than the required EPA detection limit (achieves detection of 2% of the standard as compared to 5% of the standard as required by EPA)
- System operates continuously and is used to demonstrate compliance with EPA annual dose standard (10 mrem/year)

Summary

- WVDP has deployed state-of-the-art technology that best matches the set up and location of the site.
  - Continuous Air Monitors are placed close to the demolition site for continuous monitoring, which allows for fine-tuning of demolition operations
    - Provide early warning if actions need to be taken
    - Provide near real-time capability, but are less sensitive
  - Fixed Air Samplers near demolition area, analyzed daily for trending purposes throughout demolition
    - More sensitive, but not real-time
  - Ambient Air Samplers are located within 2 miles from demolition area in close proximity to public receptors, and verify emissions remain far less than EPA's dose standard
    - Most sensitive, but longest time needed for results

Questions?