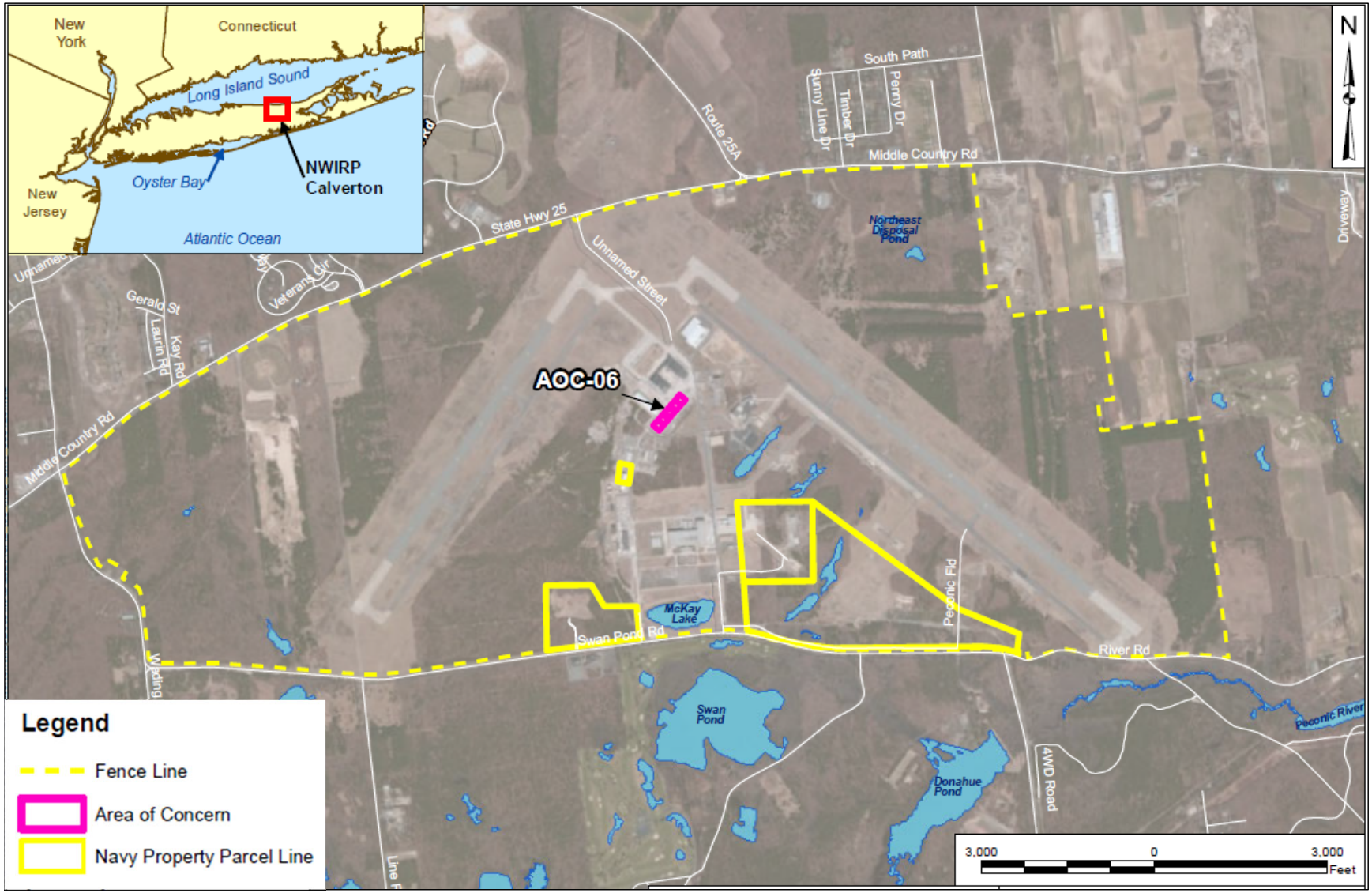
Naval Facilities Engineering Systems Command
NAVFAC MID-ATLANTIC

Update of AOC-06 Per- and Polyfluoroalkyl Substances (PFAS) Supplemental Site Inspection

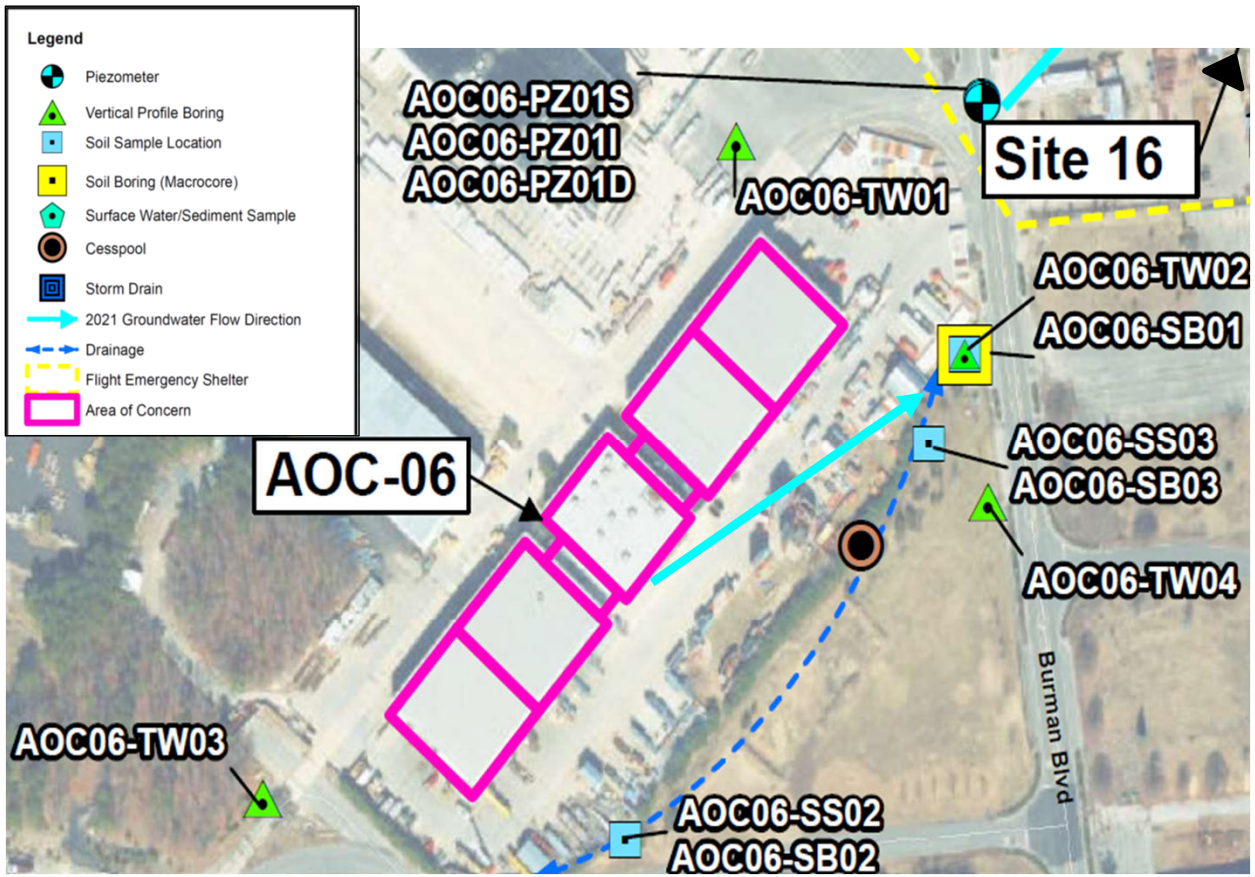
Presented by:
Tetra Tech, Inc
NAVFAC Mid-Atlantic
06 December 2023

AOC-06 at Former NWIRP Calverton

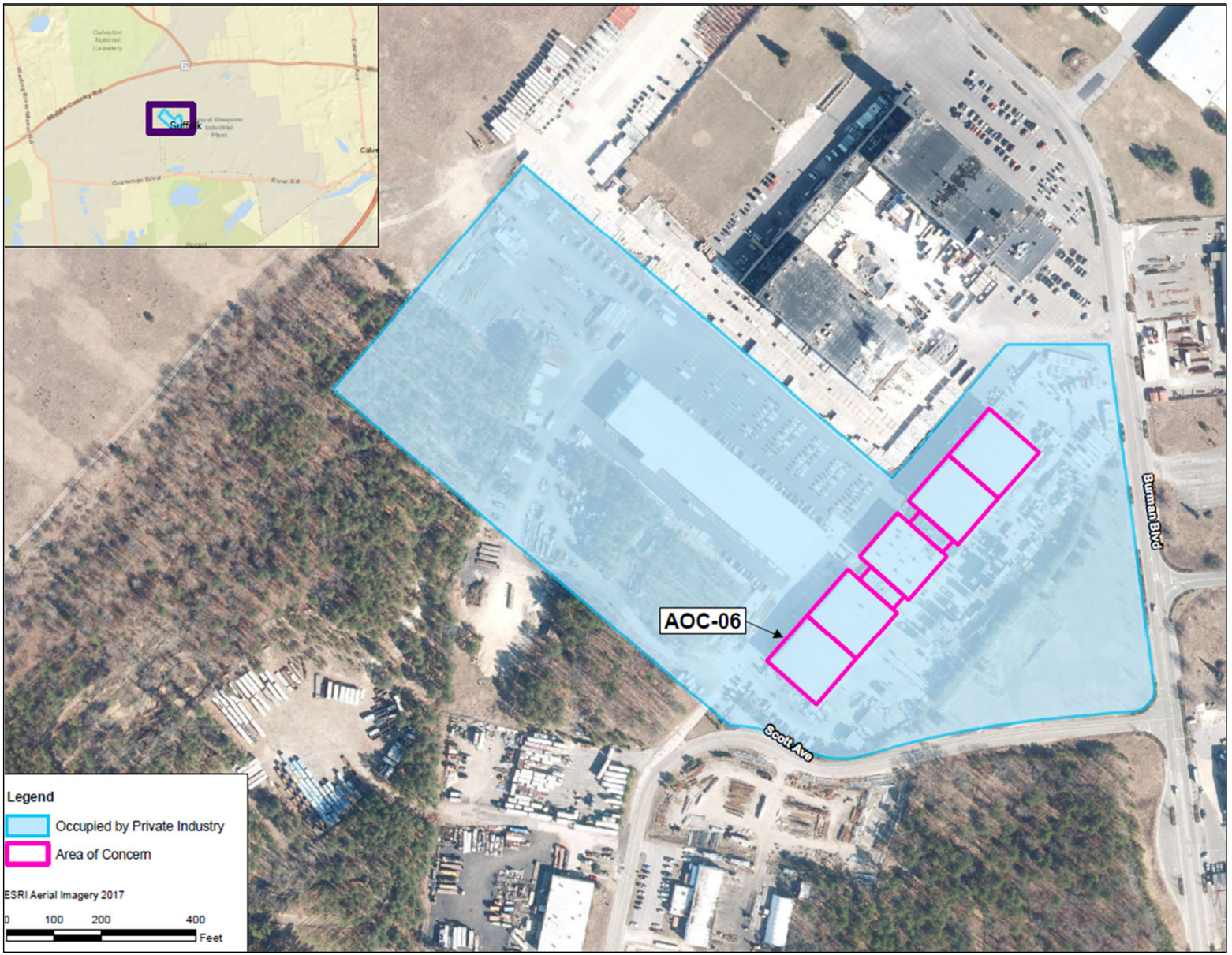


PFAS Area of Concern
AOC-06 Aircraft Development Systems Building and Hangars 5, 6, 7, and 8

- **AOC-06 Overview:**
  - Hangars equipped with AFFF fire suppression systems.
  - AFFF stored in ADSB Building.
  - Groundwater flow is expected to Northeast.
- **Previous Site Inspection Results:**
  - PFAS concentrations in soil less than screening levels.
  - PFAS concentrations in groundwater slightly greater than screening levels.
    - PFOA
    - PFOS
    - PFNA

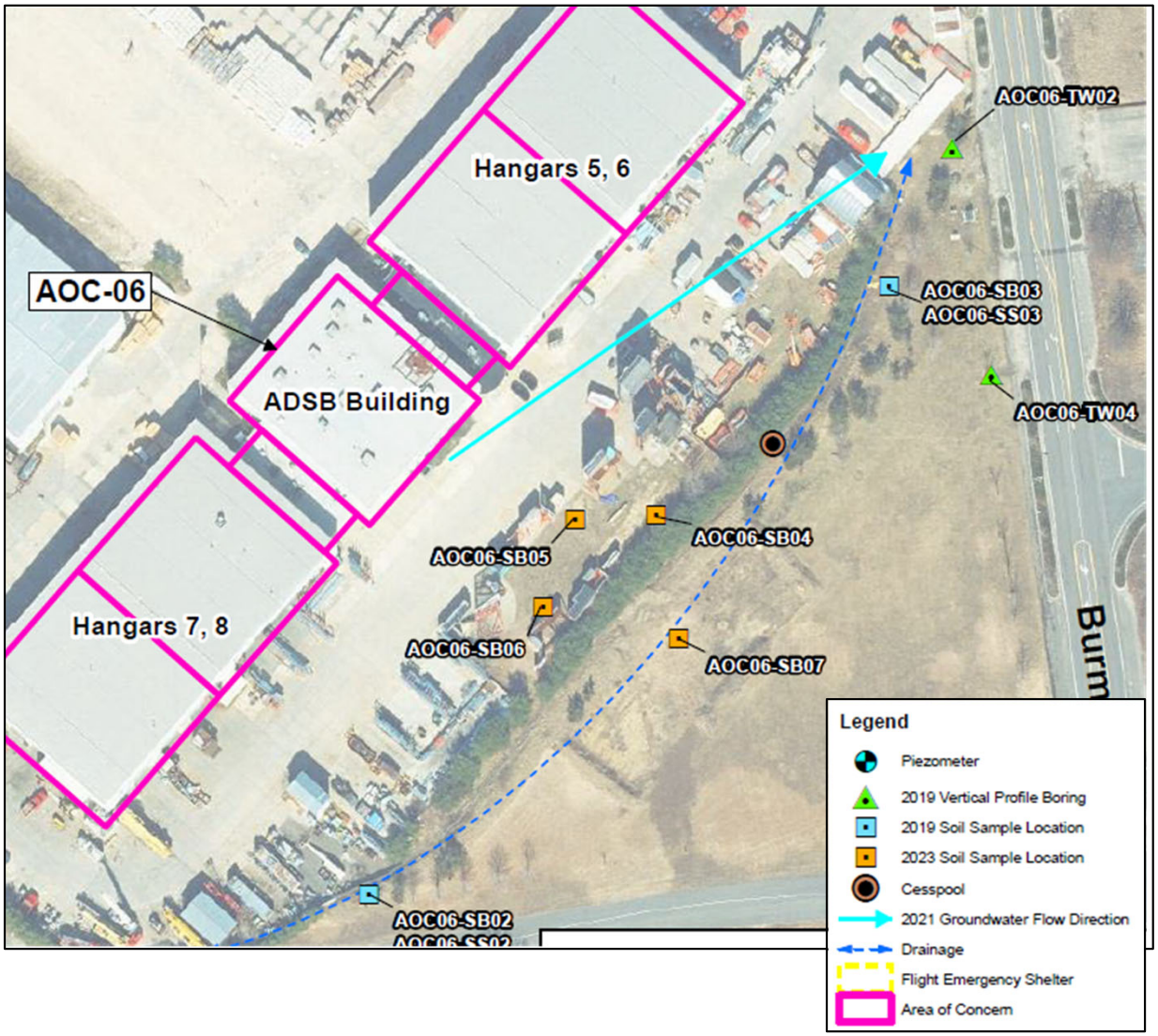


AOC-06 Real Estate Access



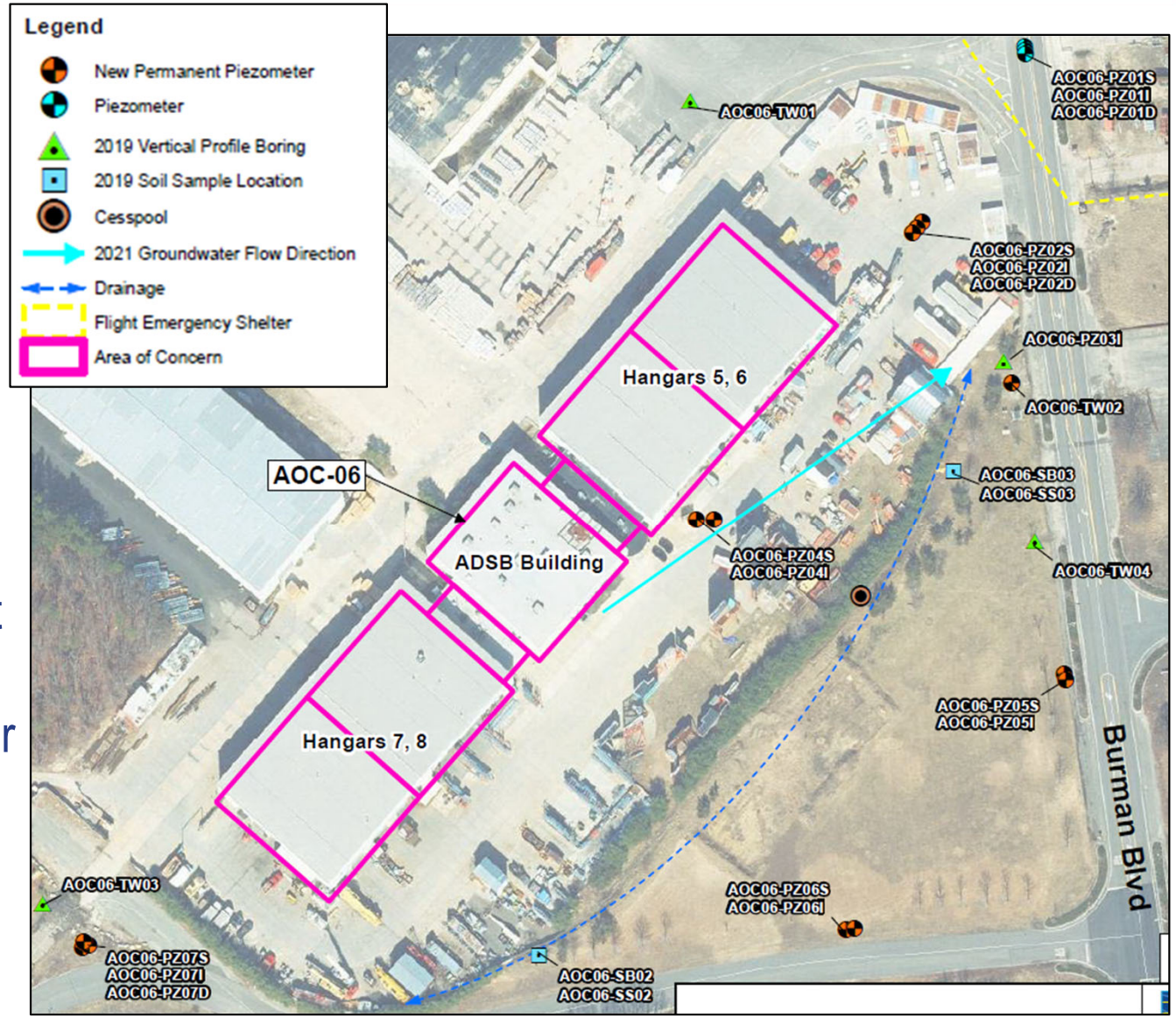
2023 Supplemental Site Inspection at AOC-06

- **Fieldwork conducted August 14 – 30, 2023**
- **Soil Investigation:**
  - Soil samples from four new locations:
    - Three upgradient and one within south-eastward drainage pathway to evaluate potential runoff.
  - Sampled three depth intervals below ground surface (bgs):
    - Surface Soil (0-2 inches bgs).
    - Shallow Surface Soil (2-24 inches bgs).
    - Subsurface Soil (24-48 inches bgs).



2023 Supplemental Site Inspection at AOC-06

- **Groundwater Investigation:**
  - Thirteen new permanent piezometers installed and developed for groundwater sampling.
  - Sixteen total piezometers sampled (13 new and 3 existing).
  - Water level measurements at piezometers used to refine understanding of groundwater flow.

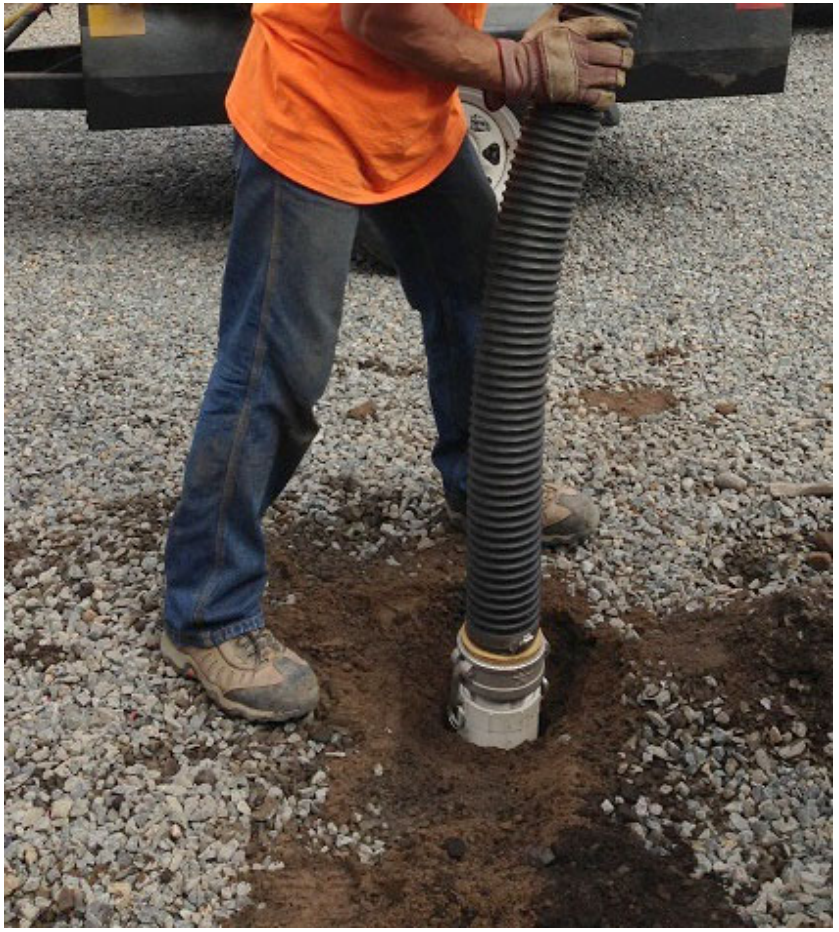


Utility Clearance

- Subcontractor (Ground Penetrating Radar Systems – GPRS):
  - Cleared 10 ft x 10 ft area for piezometers on 08/14/23.
  - Identified anomalies (stormwater lines, manholes, pipes, etc.) that need to be avoided.
  - Piezometer locations were adjusted within the cleared area based on locations of utilities.
- Contacted NY Call Before You Dig and had utility company mark outs.

Utility Clearance

- Air Knifing
  - Delivers pressurized airflow into soil to break it up without risking damage to underground utilities.
  - Driller (Unitech) conducted air knifing to 6 feet at each location.
- Hand Auger
  - Soil borings for sampling were cleared using a hand auger.



Stock Image:
https://static1.squarespace.com/static/57b5f31e579fb32986dbeab9/t/57c86cb4bebafb4a07d4b8e7/1472752835659/

Drilling and Soil Boring

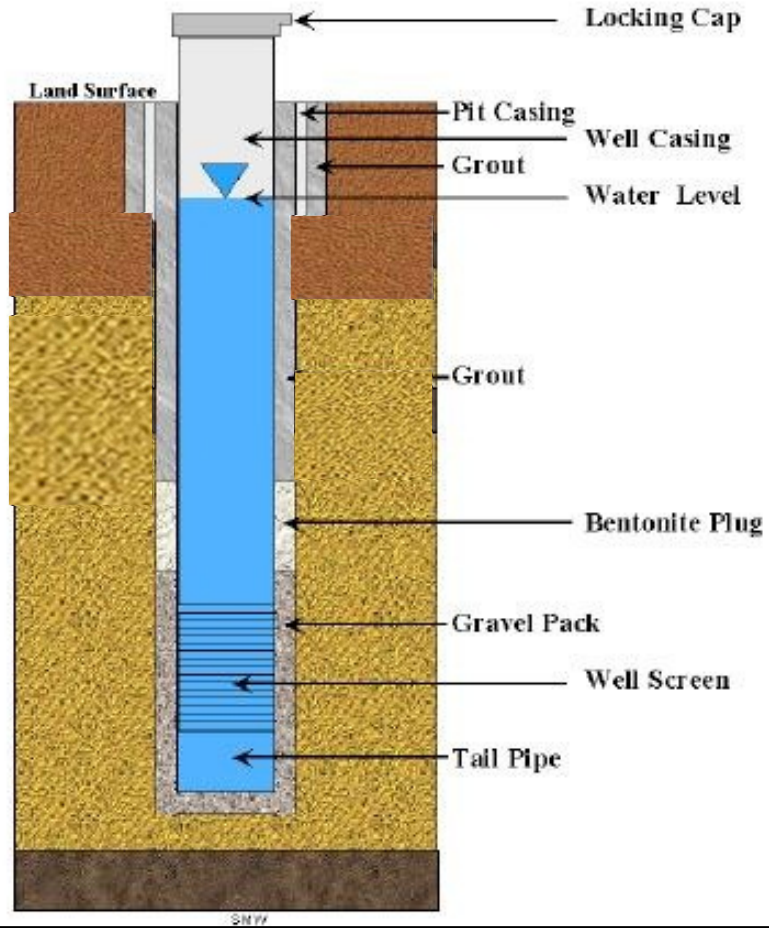
- **Direct Push Technology (DPT)**
  - Collected continuous cores to identify soil layers at four piezometer locations.
- **Hollow Stem Augers**
  - Used to install piezometers.
- **Hand Augering**
  - Used for soil sampling.

Soil Sampling

- Tetra Tech collected all soil samples by hand augering.
- Decontaminated equipment before and between uses.
  - Removed excess soil.
  - Scrubbed with water and Alconox.
  - Rinsed with PFAS-free water.
- Soil samples collected from three depth intervals bgs at each location.
- Samples sent to Battelle for laboratory analysis for PFAS by Method 1633.

Piezometer Installation

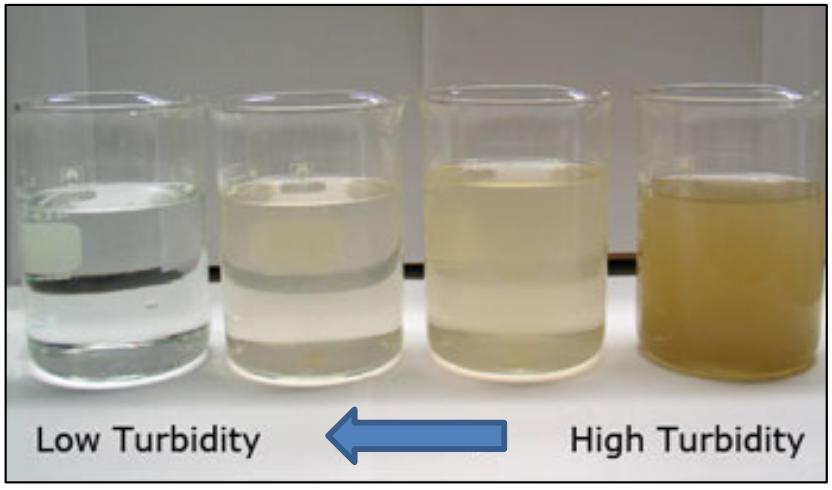
Typical Monitoring Well Construction Details



- Careful consideration of materials to avoid cross contamination of PFAS

Piezometer Development

- Tetra Tech developed wells via purging to remove:
  - stagnant water.
  - fine soil particles from water and well screen.
- Development complete when:
  - Minimum purge volume met.
  - Water quality parameters stabilized within 10%.
  - Turbidity below 10 NTUs.



Piezometer Sampling

- Tetra Tech sampled groundwater from the 16 piezometers.
- Wells purged to remove stagnant water and stabilize the chemistry of the water prior to collecting a representative sample.
  - pH
  - specific conductivity
  - temperature
  - dissolved oxygen
  - turbidity
  - oxidation reduction potential
- Samples shipped to Battelle for laboratory analysis for PFAS by Method 1633.

Decontamination Procedures

- Decontamination of equipment done before any work done on site and before drilling at each piezometer location.
  - Augers were decontaminated using a steam cleaner and rinsed with PFAS-free water.

IDW Management

- Investigation Derived Waste (IDW):
  - Consisted of soil removed during drilling and water from piezometer development/purging.
  - Stored at dedicated staging area for short-term until characterization completed.
  - Thirty-four 55-gallon drums of soil.
  - Approximately 300 gallons of aqueous waste.
- Waste characterization samples
  - Organics, inorganics, corrosivity, ignitability, reactive cyanide and sulfide, PCBs, and PFAS.
- Transportation and Disposal
  October 20, 2023
  - Solid IDW transported offsite for disposal (Dale Transfer Corporation).
  - Liquid IDW transported offsite for disposal (Bergen Point Wastewater Treatment Plant).

Surveying

- Borbas Surveying and Mapping, LLC surveyed the new piezometers and soil boring locations on August 29, 2023.
  - Provided location information (horizontal coordinates and vertical elevation data) for each piezometer and soil boring.

QUESTIONS?