Site Background

- Former landfill that operated from the 1930s to approximately 1968
- Approximately 170 acres
- Approximately 35 acres of the landfill are on the Great Swamp National Wildlife Refuge, owned by the United States and managed by the United States Fish and Wildlife Service (USFWS)
Data Gaps for Refuge Property

Findings

• Few sediment and surface water samples from Refuge area and directly upgradient

• Concern for contaminated groundwater discharging into Refuge wetlands
  ○ Are sediments/surface water being contaminated at groundwater discharge areas?

• Large areas on Refuge with no surface soil data

• Few subsurface samples in landfill on Refuge (hotspots?)

• Has soil beneath the landfill been contaminated?
Purpose

• This investigation will be conducted to supplement existing data sets

• The combined data will be used to fill data gaps relative to the nature and extent of environmental contamination within sediment, sediment pore water, surface water, groundwater, soil and landfill wastes on Refuge property
2020 Data Gaps Sampling and Analysis Plan

Study Questions/Goals

1) What are the distributions and concentrations of sediment contaminants on, and adjacent to the Refuge portion of the Site in uncharacterized areas?

2) What are the distributions and concentrations of surface water contaminants on, and adjacent to the Refuge portion of the Site in uncharacterized areas?

3) What are the distributions and concentrations of contaminants within pore water and sediment at potential groundwater discharge to surface water areas adjacent to the Refuge portion of the Site in uncharacterized areas?
Study Questions/Goals

4) What are the distributions and concentrations of pore water (shallow groundwater) contaminants on, and adjacent to the Refuge portion of the Site in uncharacterized areas?

5) What are the distributions and concentrations of soil contaminants on the Refuge portion of the Site in uncharacterized areas?

6) What are the chemical properties of the soil between the Landfill wastes and the underlying clay layer on the Refuge portion of the Site (i.e., have contaminants migrated from the overlying landfill into the native soils beneath)?
Wetlands/Geochemical transitional boundary
WILDLIFE REFUGE

LANDFILL WASTE

Native soils

impermeable clay

contaminated groundwater

Wetlands/Geochemical Transition Zone

Wetland sediments
Samples

• Surface and subsurface samples from 30 locations
  ○ 10 locations in NW portion of Refuge
  ○ 20 locations in southern portion of Refuge

• Pore water samples from up to 50 locations
  ○ Oriented along 25 transects
  ○ ~10 locations within terrestrial portions of the Refuge

• Sediment samples from up to 20 locations

• Surface water samples from up to 10 locations
Questions? - Discussion