

Closure and Environmental Remediation of the Former Harrison Avenue Landfill

Prepared For
The Camden Redevelopment Agency





Former Harrison Ave. Landfill

The new Cramer Hill Waterfront Park is located within the footprint of the former 86-acre Harrison Avenue Landfill.

**Cramer Hill
Waterfront Park**

**The Salvation Army
Kroc Center**

Cramer Hill

Harrison Ave

N 19th St

River Ave

E State St

Background

The former Harrison Avenue Landfill was operated by the City of Camden as a municipal landfill (1952 – 1971)

- Wastes disposed at the facility during this period included municipal solid waste, construction & demolition debris, and bulk chemical and medical wastes.
- The landfill was never capped or officially closed.
- Periodic State-approved filling of the Site between 1979-2018 with new volumes of municipal solid waste, construction and demolition debris, and dredge spoils were used to provide interim capping to control the movement and exposure of historic wastes.
- Illegal dumping activities also continued at the Site during this time.



Start of Harrison Avenue Landfill Transformation (2011)
Credit: New Jersey Department of Environmental Protection

Park Construction

NJDEP Office of Natural Resource Restoration (ONRR) provides funding, planning, design, and construction oversight:

- Capping and closure of the former landfill.
- Installation of shoreline protection.
- Natural resource restoration.
- Habitat protection.
- Park construction.

Park Milestones:

- **March 2018:** Construction begins
- **October 2021:** Expected completion.
- **Later this fall 2021:** Fully open to the public.



Operational Area of the Cramer Hill Waterfront Park (October 2019)

Credit: New Jersey Department of Environmental Protection

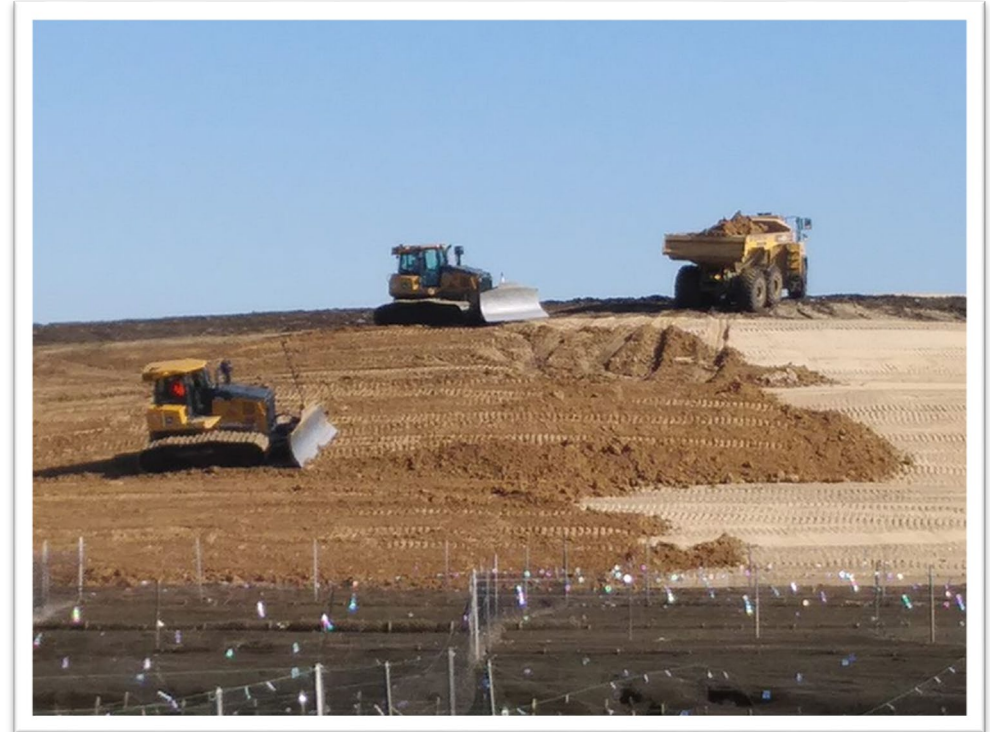
Landfill Closure & Environmental Remediation - Completed

Soil Remediation

- Targeted removal of wastes
- Capping: Placing large volumes of clean fill materials on top of the landfill.
- The capping is planted with grass, trees and shrubs.
- Inspections and monitoring of the cap to assure it remains protective.

Landfill Gas (Methane & Hydrogen Sulfide)

- Network of landfill gas vents to remove flammable gasses and control hydrogen sulfide.
- Periodic air monitoring of vents and boundary to make sure vents are working as designed.



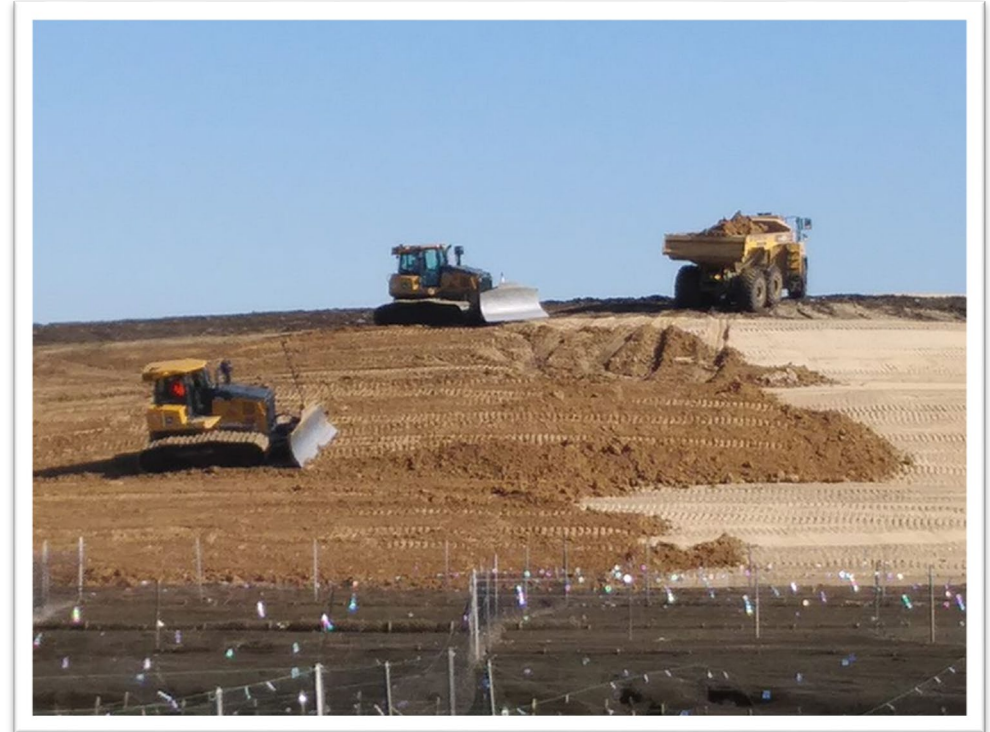
Capping operations underway near the Summit Vista (October 2019)

Credit: New Jersey Department of Environmental Protection

Landfill Closure & Environmental Remediation – In Process

Groundwater Remediation

- Landfilled wastes contaminated the underlying groundwater with metals and VOCs
- The groundwater is not used in Camden, but is still an important environmental resource so it must be remediated
- Too deep to pose any issues for the Cramer Hill neighborhood
- Additional wells are needed to monitor the deep plume
- Will be allowed to naturally dissipate
- Will be monitored quarterly



Capping operations underway near the Summit Vista (October 2019)

Credit: New Jersey Department of Environmental Protection

General Model of a Groundwater Plume

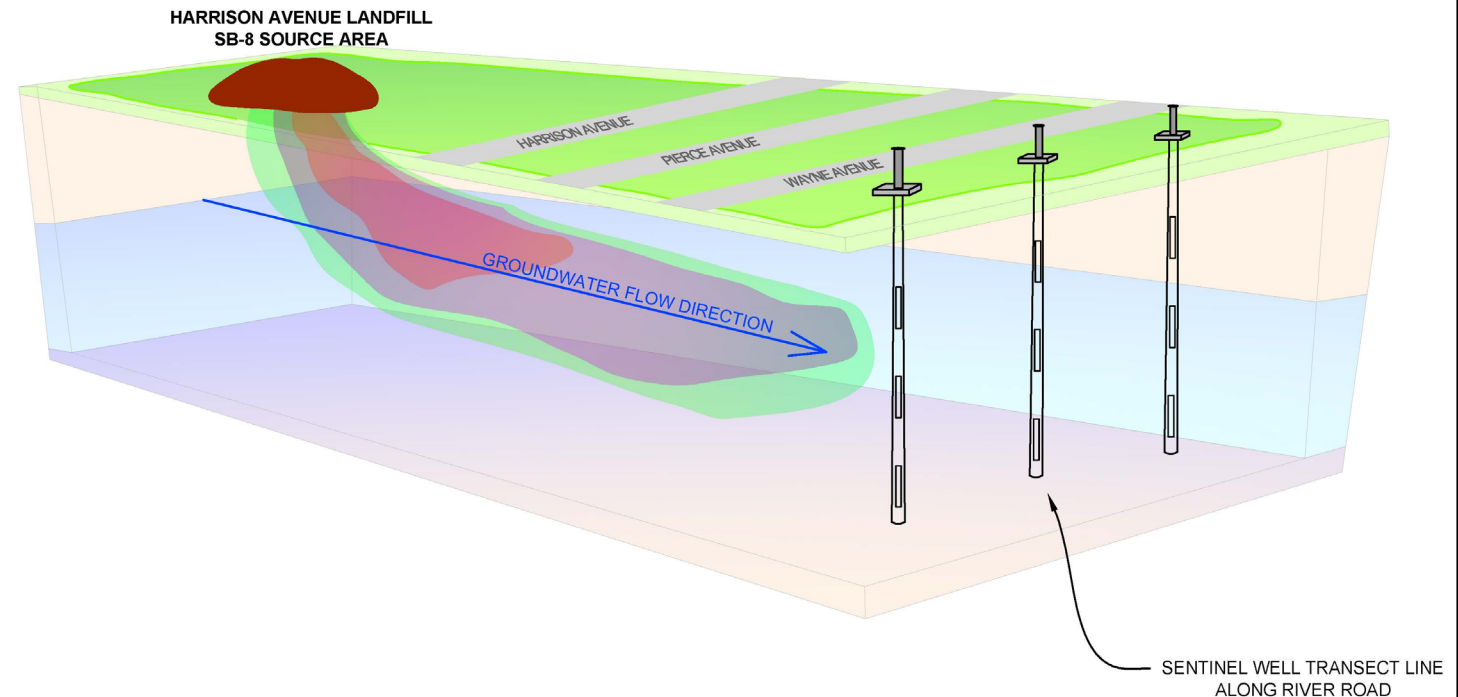
Source Area

- Contamination seeps downward to the water table, dissolves into the water and begins to move with groundwater flow.
- Chlorinated VOCs (cVOCs) are denser than water so they 'sink' and continue to dissolve as they sink.

Plume Area

- Dissolved cVOCs in groundwater form the 'plume'.
- Metals are adsorbed and absorbed to soil.
- cVOCs do not sorb to soil and do not easily break down and typically will occur in elongated plumes.
- Away from the source clean water infiltration from above can create a clean water lense above a plume.

SCHEMATIC ILLUSTRATION OF TYPICAL GROUNDWATER CONTAMINANT PLUME
with SENTINEL TRANSECT LINE



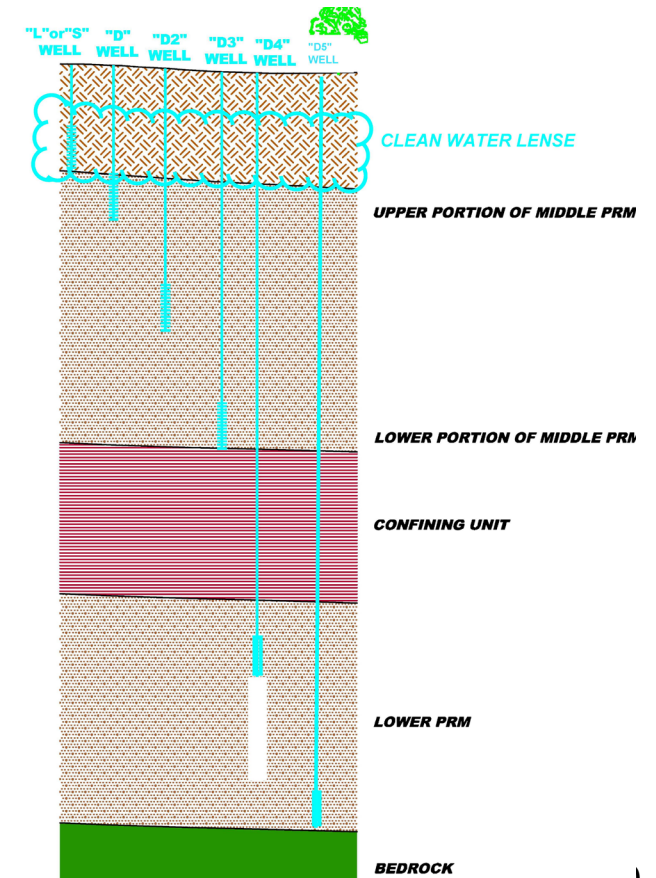
Former Harrison Avenue Landfill



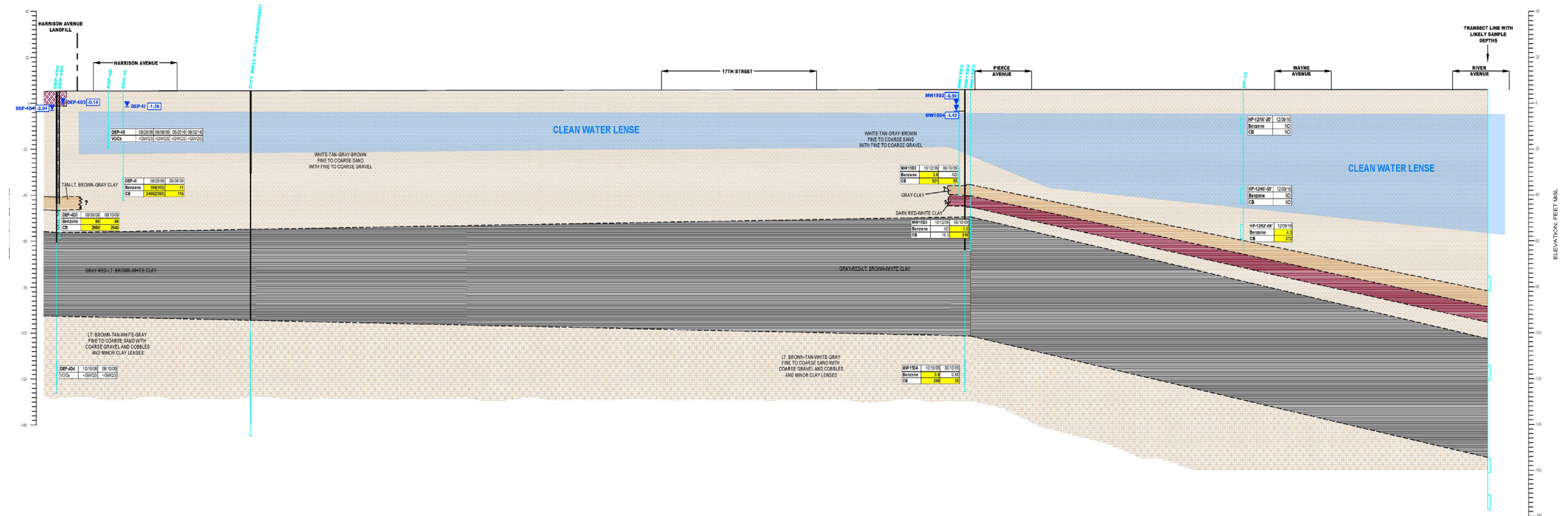
The entire landfill site including the cVOC plume has been evaluated for potential impact to residents in accordance with the NJDEP Technical Requirements for Site Remediation (NJAC 7:26e)

-
- SB-8 VOC SOURCE AREA**
SHALLOW GROUNDWATER IMPACT IS PRESENT
- TSAC PARCEL**
- CENTRAL AXIS OF VOC PLUME**
(GROUNDWATER FLOW DIRECTION)
- THE MOST SHALLOW GROUNDWATER AT MW-DEP-4S ATTAINS NJDEP VAPOR INTRUSION SCREENING LEVEL - ALL DATA BELOW (SOUTHEAST) CONFIRM SHALLOW GROUNDWATER CLEAN**
- 2012 PIERCE AVENUE TRANSECT LINE**
- 2016 WAYNE AVENUE TRANSECT LINE**
- Block 810 Lot 18.0
- HARRISON AVENUE
- PIERCE AVENUE
- WAYNE AVENUE
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LEFT – There are no residences north of Harrison Avenue. Beginning at MW-DEP-4S along Harrison Avenue all data from well clusters (dark and light blue) and Membrane Interface Probes (pink) below (southeast) of Harrison Avenue demonstrate a clean water lense.



Geological Cross-Section – Harrison Avenue to River Avenue



- Data demonstrates clean water lense, shown above in blue, at the top of the water column once southeast of Harrison Avenue.





Questions?

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