

Environmental Cleanup Lower Hackensack River

Public Meeting: May 22, 2012

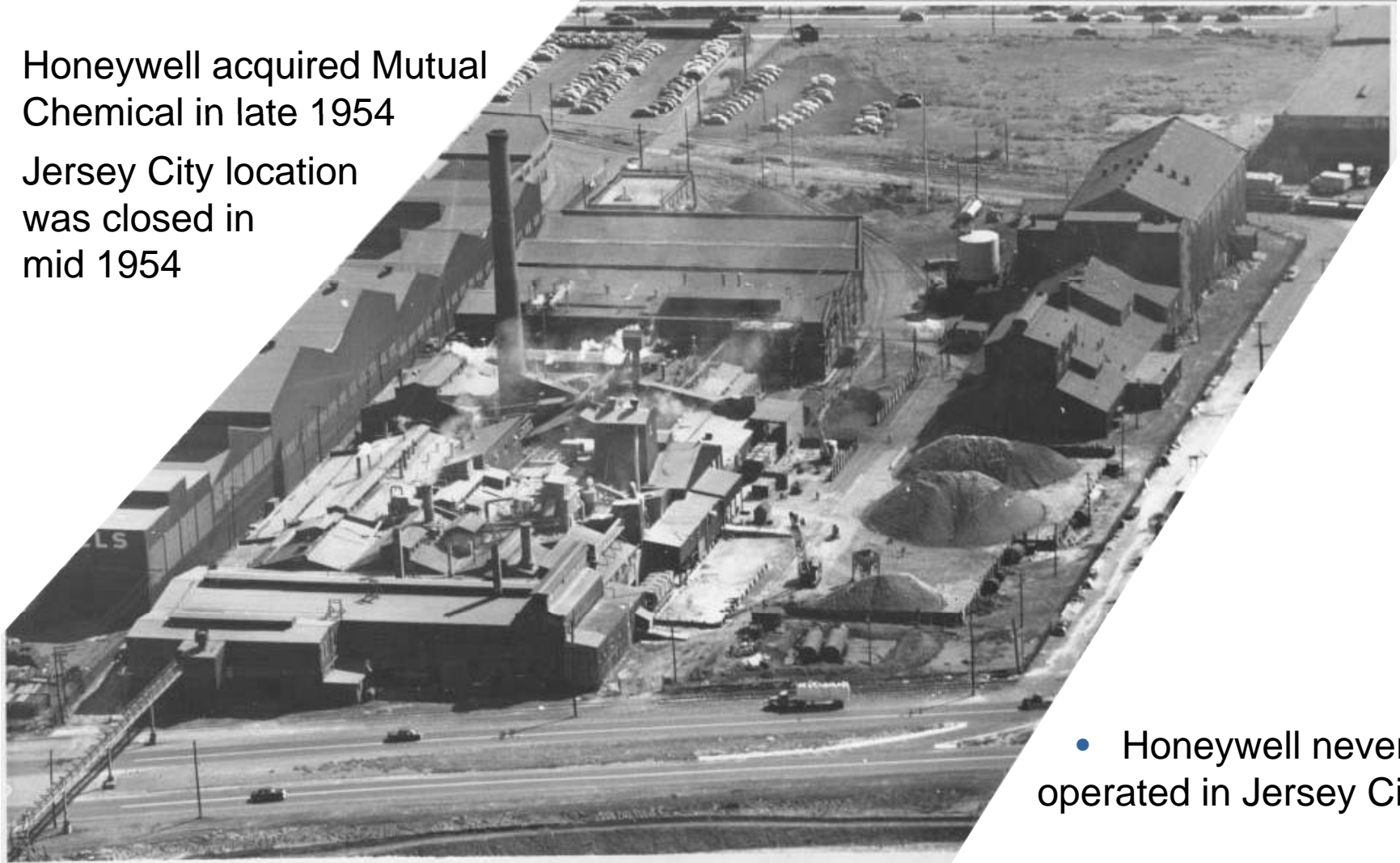
Honeywell

Agenda

- Introductions
- Chromium in the Hackensack River
- Sediment Remediation Plan
- Dredging & Capping
- Performance Verification
- Permits
- Truck Transportation Route
- Project Schedule

Mutual Chemical Company 1905 to 1954

- Honeywell acquired Mutual Chemical in late 1954
- Jersey City location was closed in mid 1954



- Honeywell never operated in Jersey City

Source of Chromium in the Lower Hackensack River

Mutual Chemical

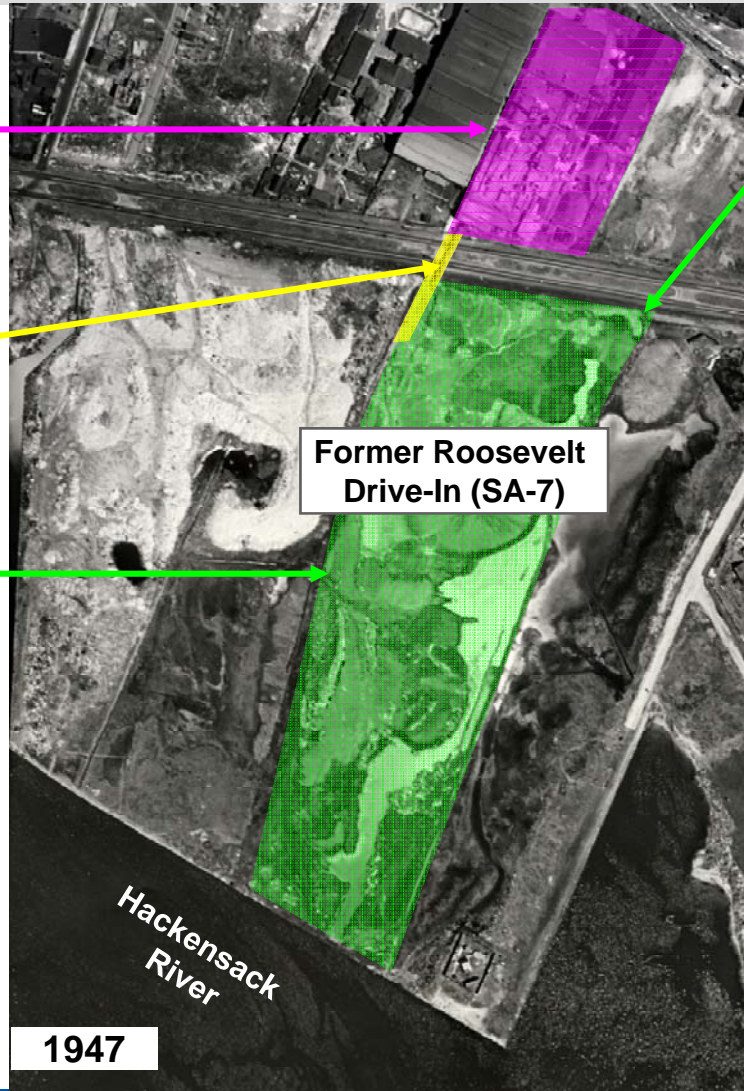
- Operated 1905 – 1954
- Hexavalent Chromium

Pipeline Discharge

- Ore Residue Pumped
- Created New Land

Study Area 7

- 34 Acres
- Land Sold in 1954
- Drive-In Theater
- Department Store



Cleanup Progress

Soil Cleanup

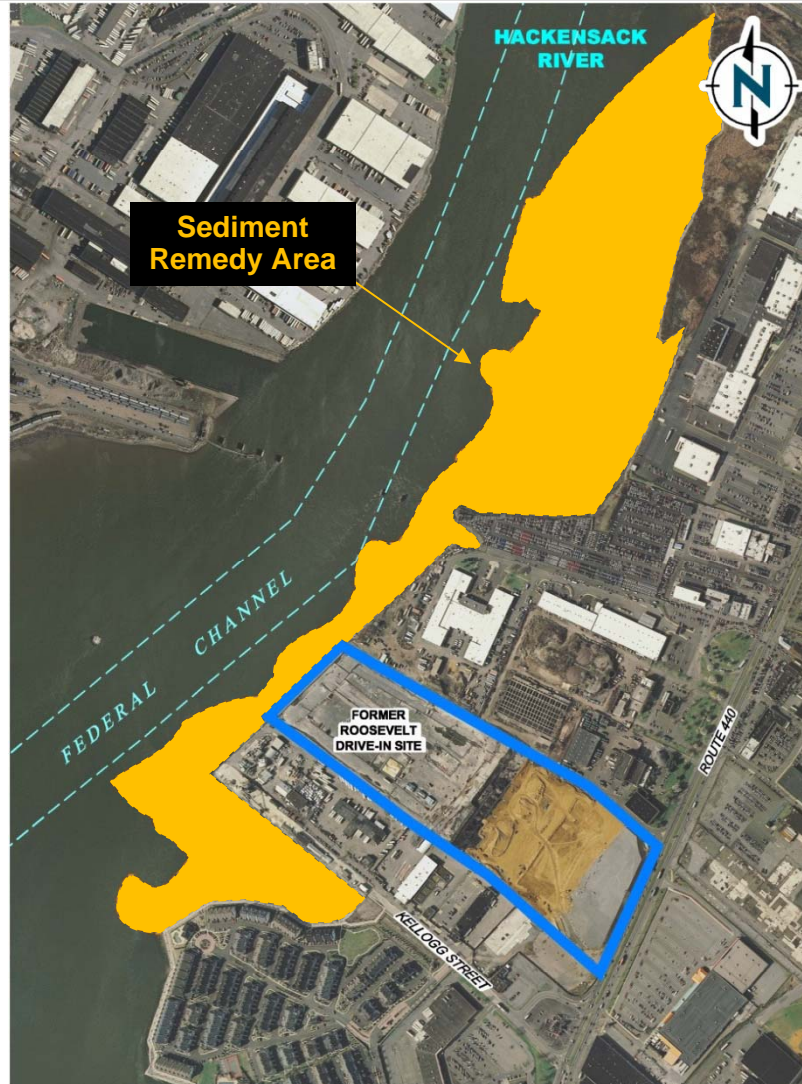
- All of SA-7 excavated and transported to licensed landfill
- Job completed in 2009

Groundwater Cleanup

- Groundwater prevented from discharging to the Hackensack River
- Captured groundwater is pumped to treatment plant
- Only treated water discharged, under NJDEP permit, to the River

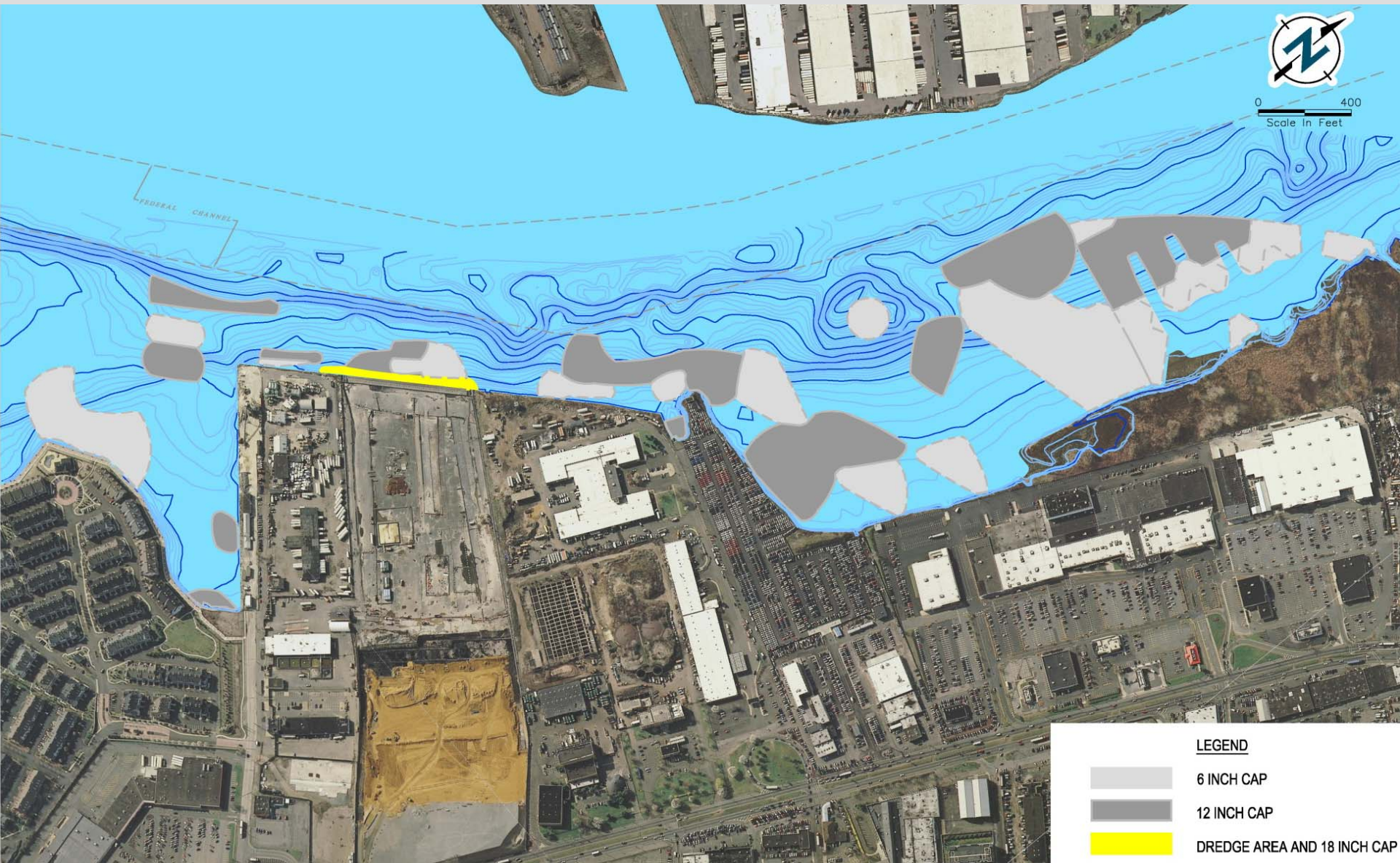
Sediment Remedy in Lower Hackensack River

- Project developed in coordination with Riverkeeper
- Work done under supervision of U.S. District Court
- Overseen by a Special Master
- Permits issued by US Army Corps of Engineers & NJDEP



- No significant environmental impact
- Non-hazardous materials
- Odor controls
- No impact on air quality
- Noise abatement measures

Sediment Remediation Plan



Dredging

Dredge Components

- Bulkhead improvements have been completed to enable dredging
- Dredge volume approximately 2,700 yards
- Dredge material non-hazardous – to be taken by barge to local processing facility
- Dredge area back-filled with cap to within six inches of original bottom

Dredging Operations

Debris Removal



Mechanical Dredging

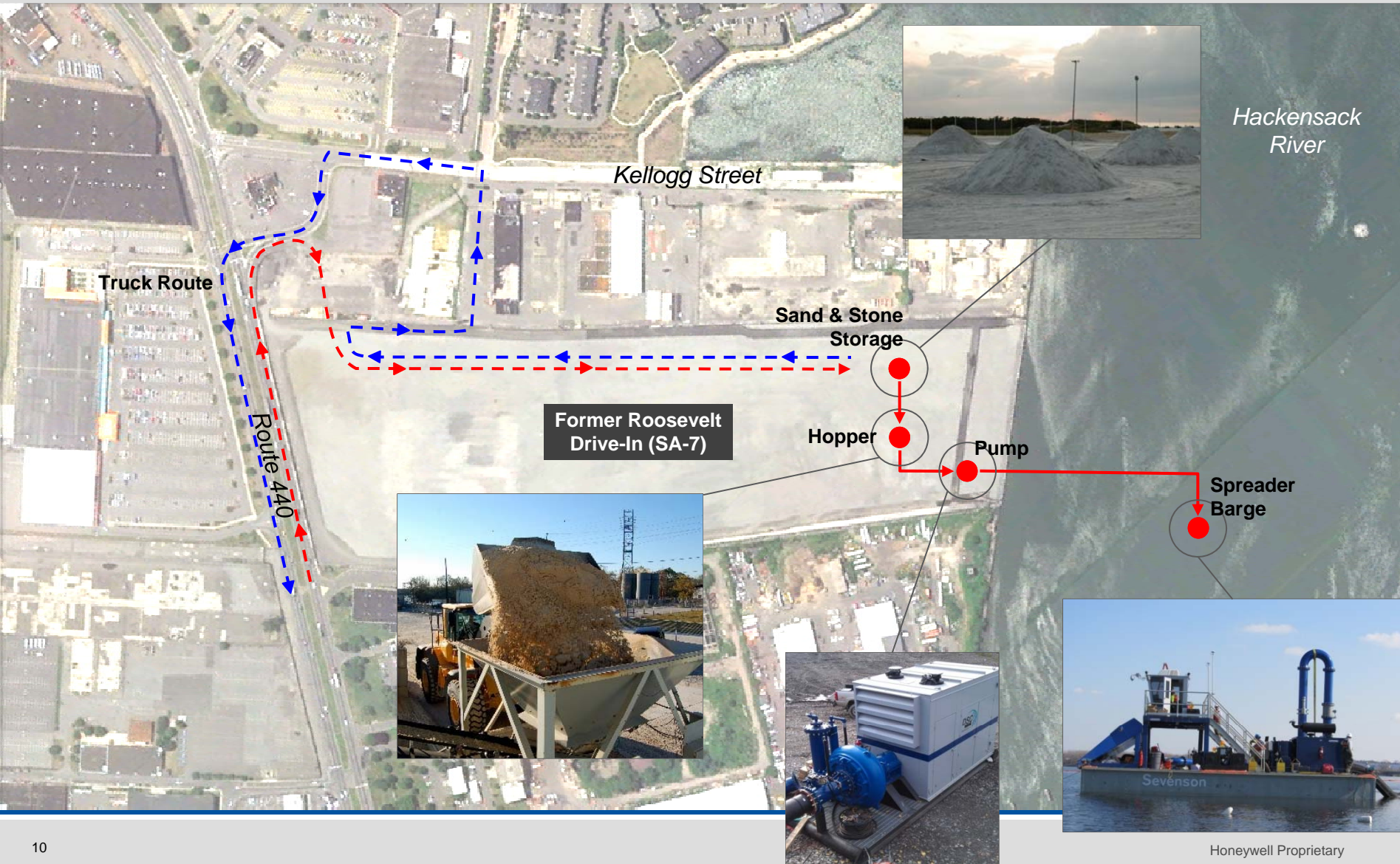


Sediment Processing

- Barges transported to Clean Earth facility in Jersey City, NJ
- Dredged material stabilized using cement or another similar material
- Stabilized sediment transported to licensed landfill



Hackensack River Capping Process



Capping Operation

Typical Capping Sand Feed System



Loading Sand Into Hopper



Pumping Sand to
Sand spreader



Spreading Sand Over Sediments

Capping System Spreader Barge



Cap Placement

- Long-reach excavator to place cap material in obstructed areas
- Excavator on a float system
- Capping in near shore areas where sand spreader cannot reach even at high tide



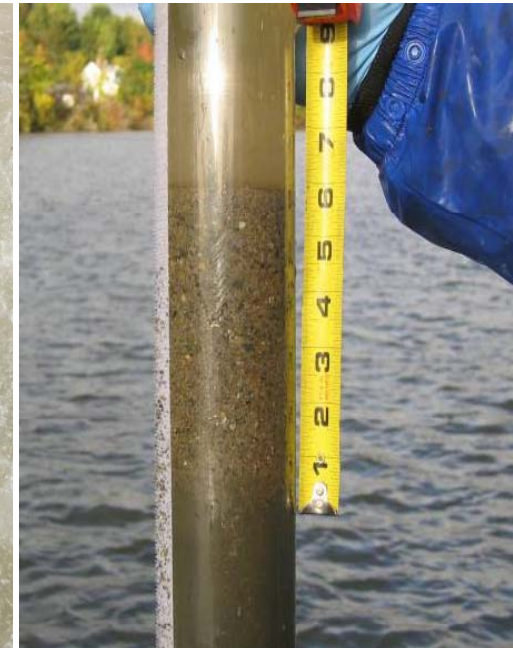
Performance Verification Process

Quality Control/Assurance

- Real-time monitoring
- Frequency higher during initial phase
- Long term monitoring & repair if needed



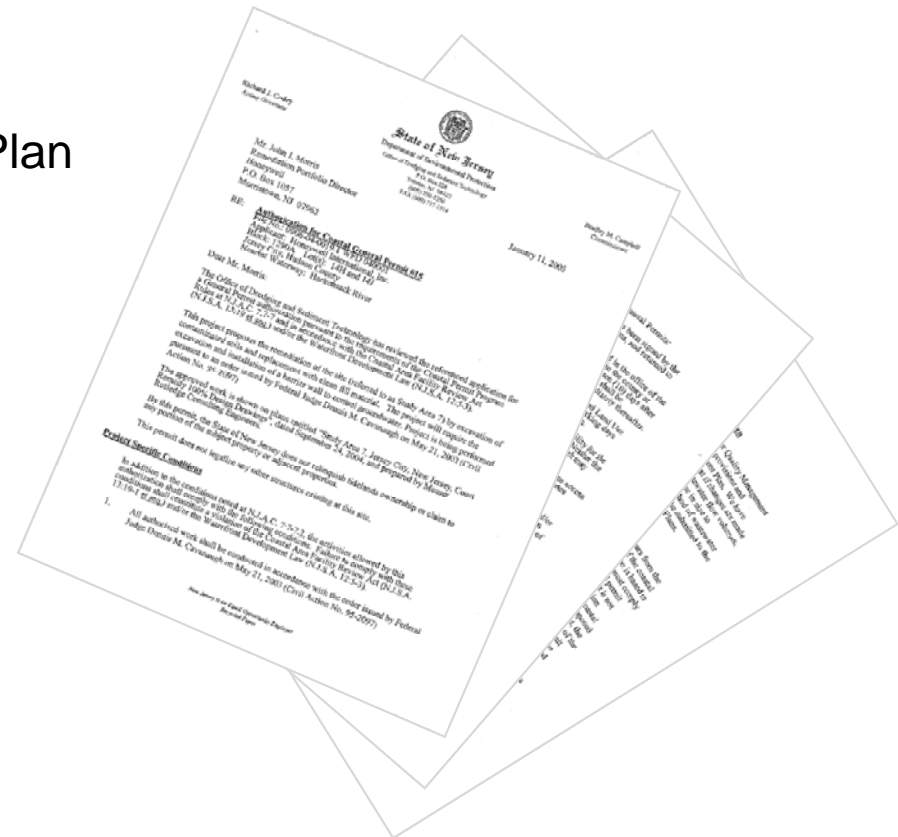
Pan Sampling



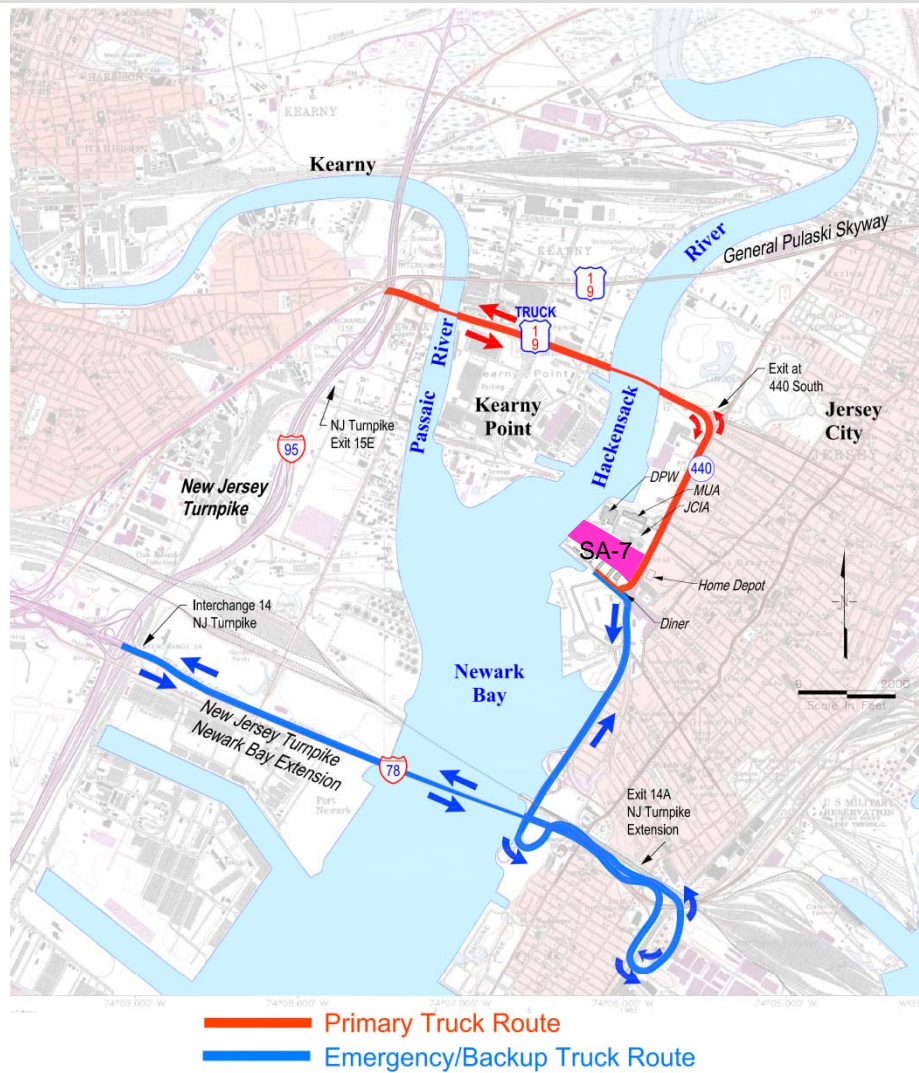
Core Sample

Permits

- NJDEP Waterfront Development Permit
- State of New Jersey Tideland Conveyance
- U.S. Army Corps Permit
- Soil Erosion and Sediment Control Plan
- Jersey City Construction Approval



Sediment Remedy Truck Transportation Route



Project Schedule

