Newtown Creek: 19th Century Maps as Predictors of 21st Century Environmental Legacy

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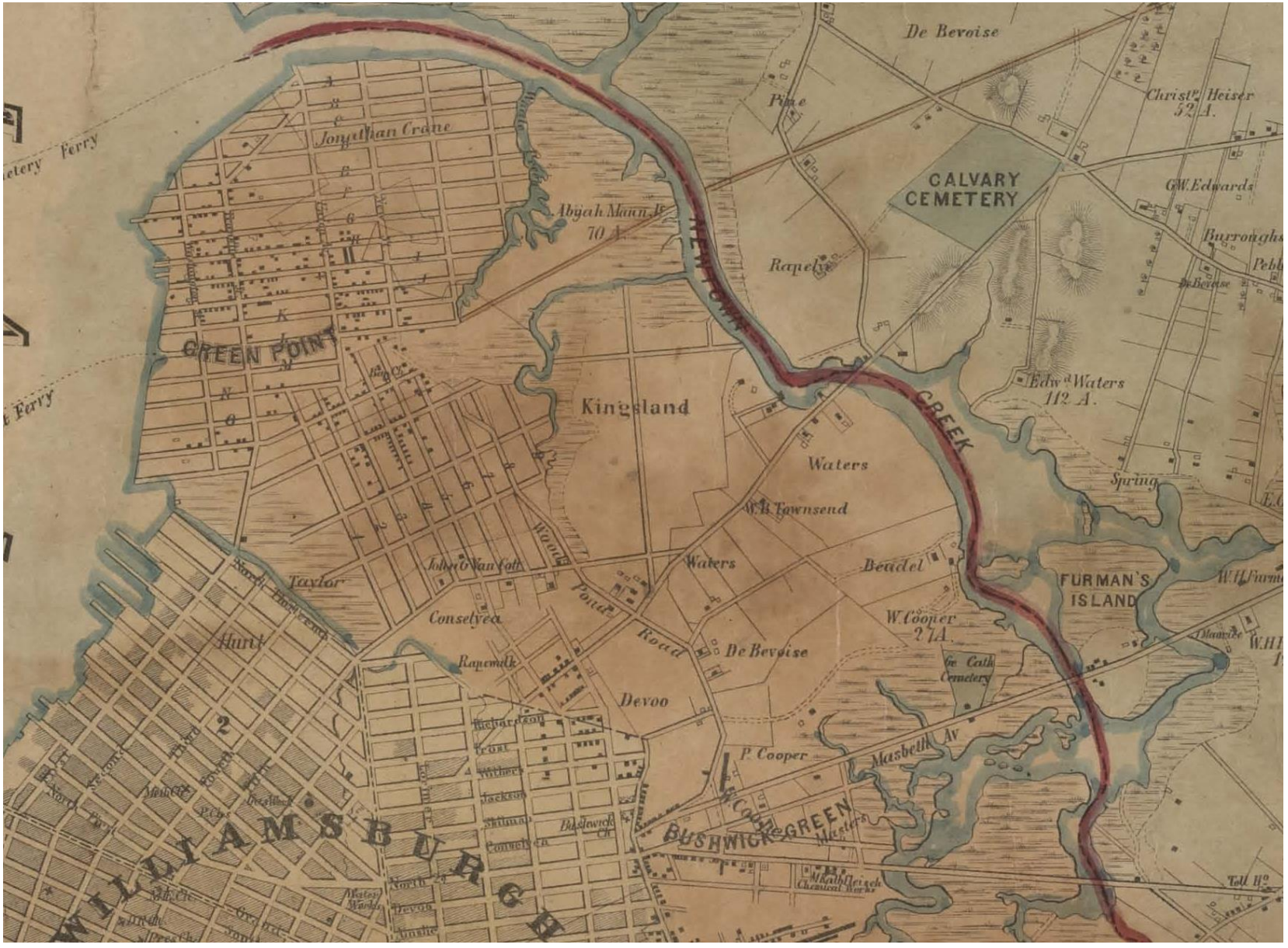
Geographic information, 1775

GI 2015: geospatial referencing

sulfuric acid

1841, Martin Kalbfleisch, Bushwick Chemical Works

Map of Kings and part of Queens counties, Long Island N.Y./ surveyed by R.F.O. Conner (1852)



kerosene from coal

1852, Abraham Gesner, New York Kerosene Oil Works

Detail from Plan of the city of Brooklyn…East New York, with part of Long Island City and Flatbush; J. H. Higginson, publ., 1864.

kerosene from petroleum

1868, the Charles Pratt Oil Works

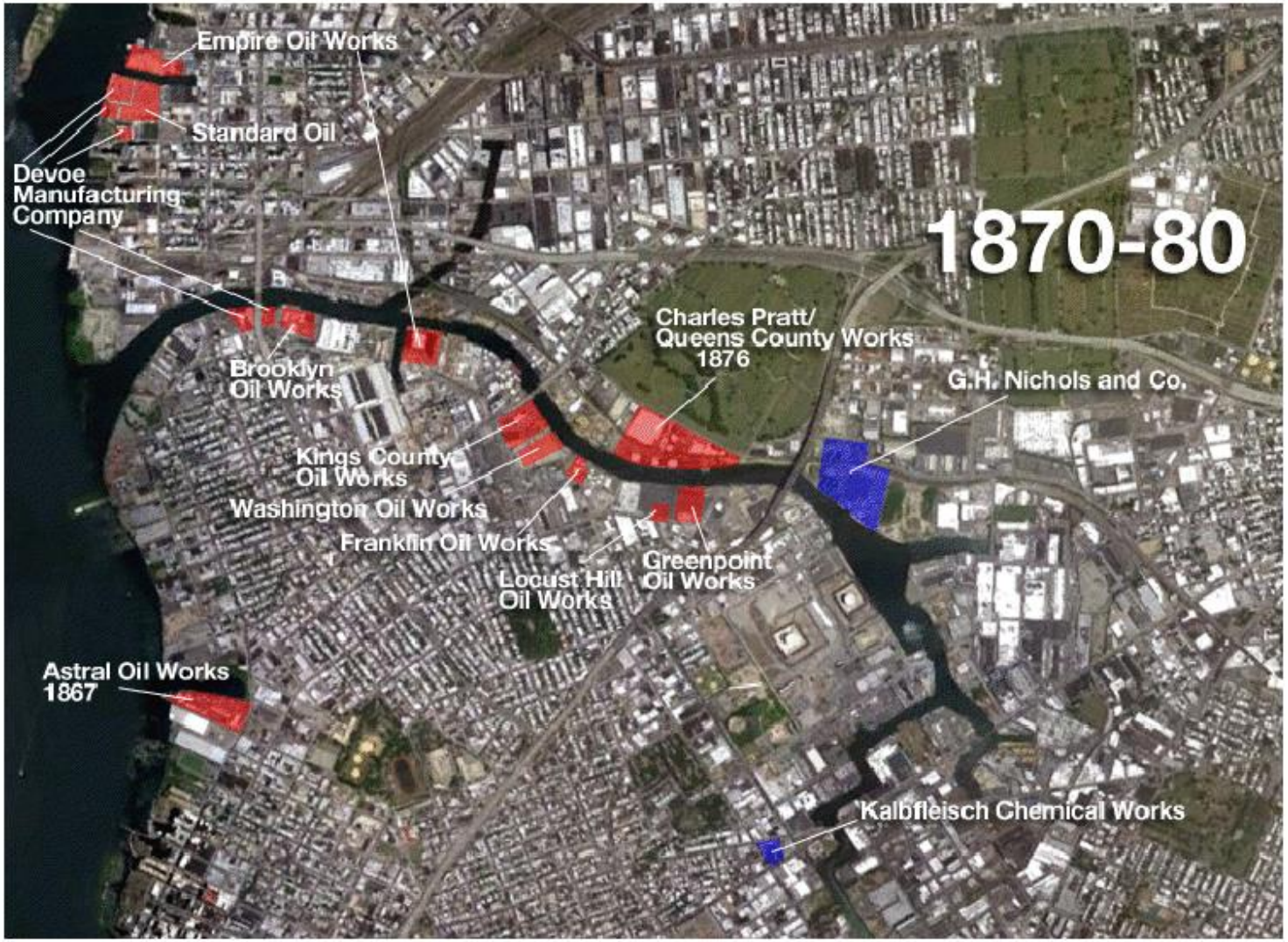
Charles Pratt Oil Works on site of former New York Kerosene Works, Higginson's Insurance Maps of the City of Brooklyn L. I., surveyed, drawn & published by J. H. Higginson, 1868

sulfuric acid, more concentrated and in greater volume

1870, the G. H. Nichols Chemical Company,
later the General Chemical Company

1907 General Chemical Works
successor to Nichols Chemical Company

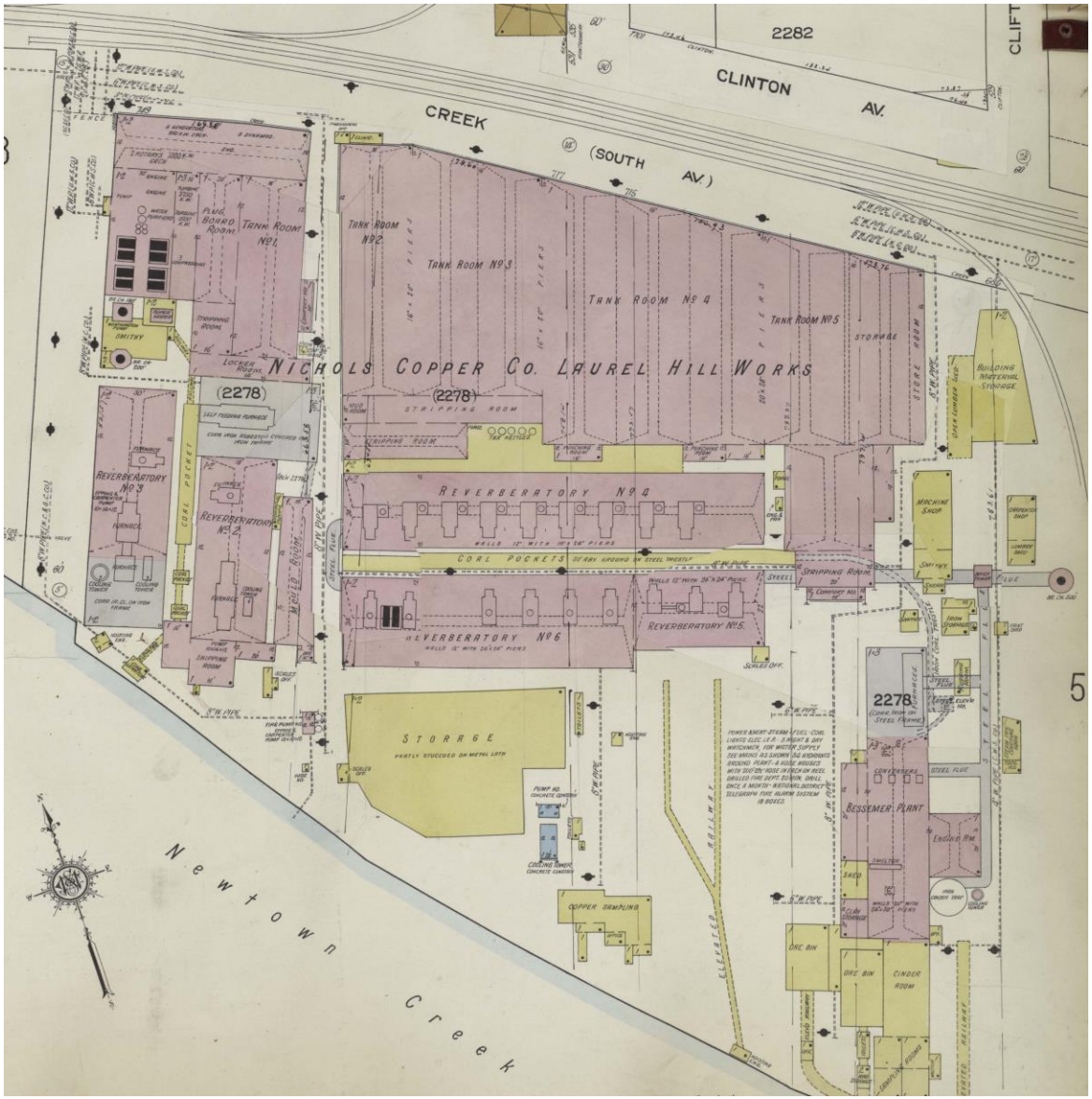
1870-1880, Newtown Creek, sulfuric acid producers and petroleum refineries



copper from pyrite minerals

1890, J. B. F. Herreshoff, the Nichols Copper Company

Nichols Copper Co. Laurel Hill Works, from Queens V. 3, Plate No. 4, Sanborn Map Company, Insurance Maps of New York [1884-], Atlas 137a. Vol. 3, 1914



1924 aerial photograph

polycyclic aromatic hydrocarbons and copper in Newtown Creek sediment

2015, findings under RI/FS Phase 1 of Newtown Creek Superfund Process

Newtown Creek Superfund Site
Phase 1 Investigation Findings
CSTAG Meeting, May 19, 2015

Subsurface Sediment - PAHs

Total PAHs (µg/kg)

- < Screening Level (≤ 2,900 µg/kg)
- 1 - 10 x Screening Level (2,900 - 29,000 µg/kg)
- 10 - 100 x Screening Level (29,000 - 290,000 µg/kg)
- > 100 x Screening Level (>290,000 µg/kg)

Notes:
Sediment Screening Level = 2,900 µg/kg
All results were above the screening level
Subsurface sediment sample with highest PCB concentration presented
Bottom depth of sample noted next to sample result.

Acronyms:
µg/kg = micrograms per kilogram
PAHs = polycyclic aromatic hydrocarbon

N E S W

0 0.125 0.25 0.5 Miles

Figure 2
Total PAH Concentrations in Subsurface Sediment
Newtown Creek Superfund Site
Brooklyn and Queens, New York

CDM Smith

Surface Sediment: Copper

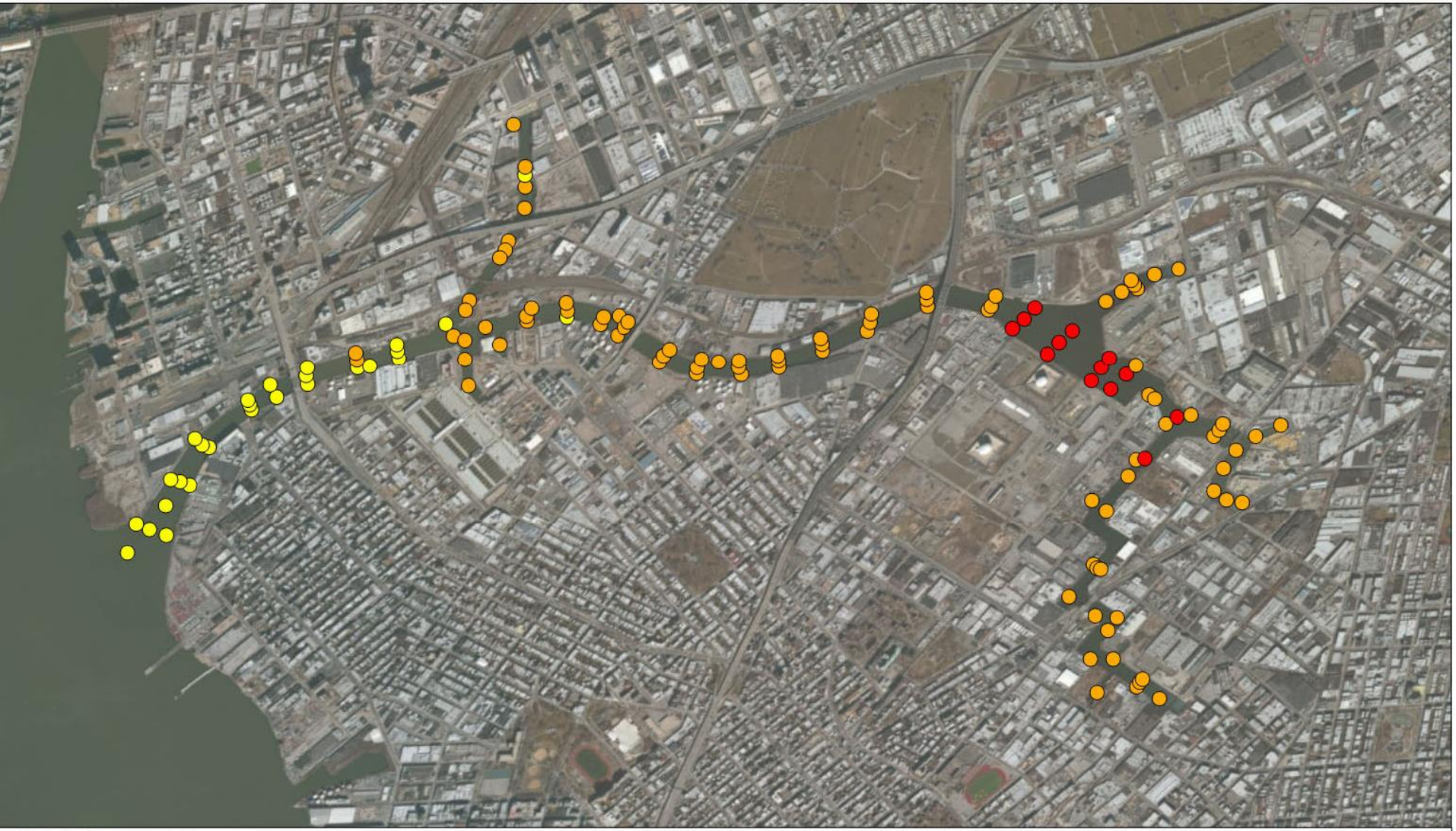


Figure 1
Copper Concentrations in Surface Sediment
Newtown Creek Superfund Site
Brooklyn and Queens, New York

CDM Smith

In summary

1. By 1870, Newtown Creek had become one of the nation's most significant centers for production of chemicals and petroleum.

2. In the late 1880s, electrolytic refining of copper, developed as a spin-off from sulfur recovery form chalcopyrite, a third high-volume industry.

3. Essentially all industrial operations at Newtown Creek predate the environmental protection legislation of the 1970s, but the environmental legacy of the industries are subject to CERCLA. Newtown Creek assessment and plan for recovery are presently in process.

Thank you.

This work has been made possible in part by two major grants from the National Endowment for the Humanities. Because democracy demands wisdom.

All old maps presented here were found and are available at The Lionel Pincus & Princess Firyal Map Division, The New York Public Library.

Aerial photography provided by NYC Department of Information Technology and Telecommunications**.**

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