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U.S. DEPARTMENT OF ENERGY

# Demolition and Mercury Remediation of Building 197 High Bay

Community Advisory Council Meeting

Jason Remien

Manager, Environmental Protection Division

May 9, 2024

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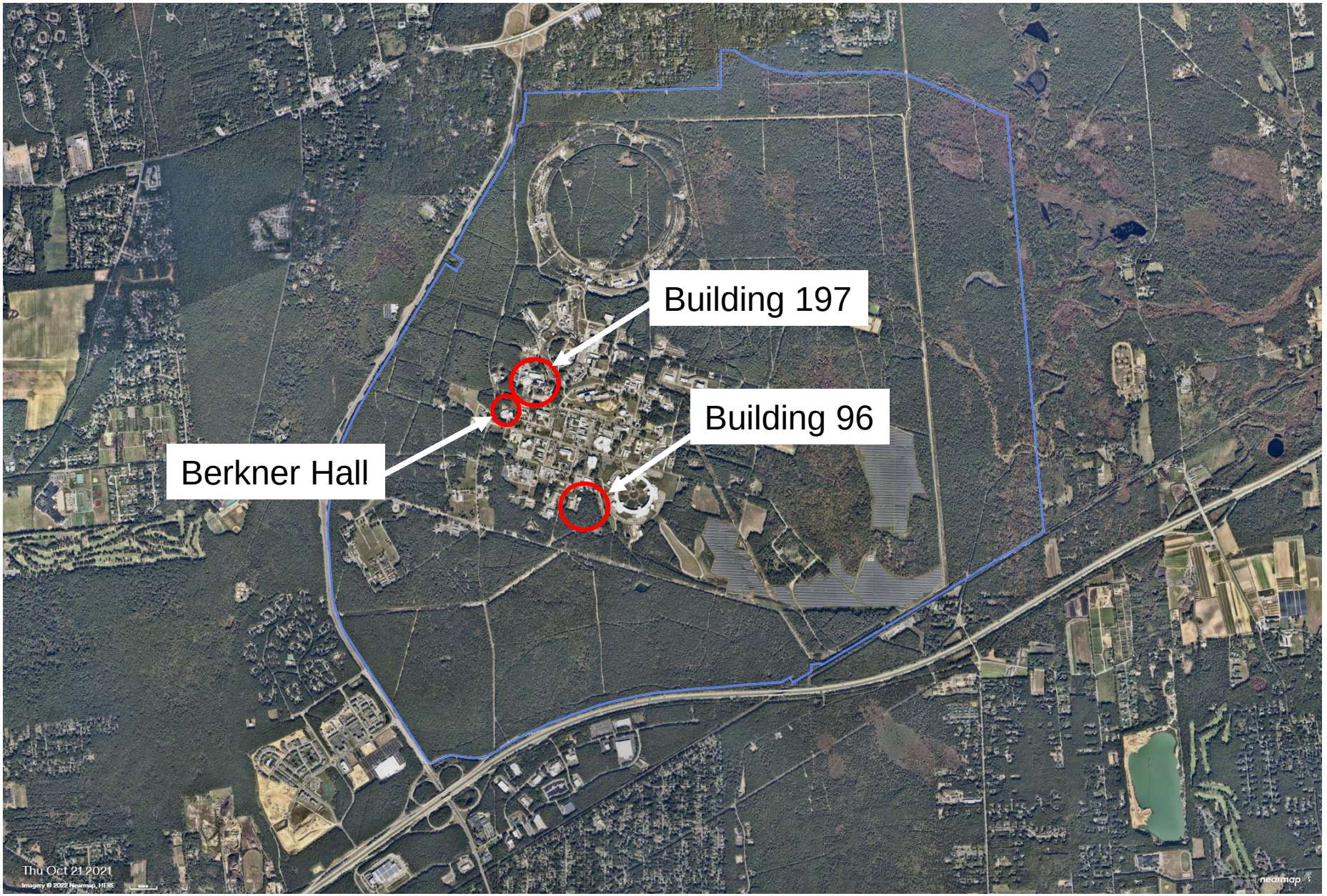


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# Background

- Building 197 originally consisted of a High Bay concrete block, steel, and wood building constructed in 1941 by the U.S. Army and used as a recreation/dance hall until 1947.
- Several additions were built over time for offices, research, design studios, photography development rooms, and storage areas.
- The Nuclear Engineering Department (NED) conducted reactor research projects in the early fifties that led to work on liquid metals, including mercury (Hg). Significant work was done in the building between 1952-1977 that led to some Hg spills.
- In 1997, the high bay crawl space was the subject of a remedial investigation and cleanup of the soil/sand as part of a BNL and Suffolk County Department of Health Services (SCDHS)-initiated Facility Review and Disposition Project (FRDP).



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# Demolition Activities


| Scrap metal (Tons) | Concrete to Borrow Pit (Tons) | Asphalt to Borrow Pit (Tons) | C&D (Tons) |
|---|---|---|---|
| 88.3 | 738 | 93.6 | 1004.5 |


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# Project Scope

**Estimated Project Cost:**
$3.3 million

**Project Scope:**
Demolition of the wood frame building, soil excavation and disposal of remaining mercury contamination.

**Benefits:**
Eliminate deferred maintenance and repair needs, reduce environmental, safety and health risks

**Project Status:**

- Community Air Monitoring Plan (CAMP) and Remedial Work Plan are in final stages of development for submission to regulators.
- Transportation and Disposal contract is out for bid.
- Inspection of the on-site railroad tracks has been completed and a SOW for maintenance repairs is in development.
- Long reach special heavy equipment rental contract is in place and awaiting approval to call in equipment needed to assist with demo and excavation of mercury soil.
- Waste packaging and PPE is in hand with additional respirators and filter cartridges on order.
- BNL Work Planning development for inhouse labor is in progress.

# Project Schedule

- **May** – Submit plans to regulators, address any comments
- **June** – Finalize work planning documents, initiate demolition activities
- **July** – Complete mercury soil remediation
- **August** – Waste loaded into rail cars and shipped for disposal
- **September/October** – Prepare and submit Closeout Report

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# OU III Building 96 Source Area Optimization

Community Advisory Council Meeting

Brian Barth

*Groundwater Protection Group*

May 9, 2024

@BrookhavenLab

# Operable Unit III Building 96 (AOC 26B) Source Area Optimization

**2021 CERCLA Five-Year Review:** "..*The current concentrations warrant the continued operations of extraction well RTW-1 and could indicate that this area may not achieve the cleanup goal for PCE of 5 µg/L by 2030..*"

- Current operation of the groundwater treatment system combined with the 2010 source area excavation have resulted in a dramatic reduction in both concentrations and the overall extent of groundwater contamination.
- At the time of the excavation, the water table was several feet higher than its current elevation, limiting the depth of excavation.
- Residual source area PCE contamination likely exists below the deepest extent of the excavated soil and is slowly being released to groundwater.
- ***"An active remediation technology should be considered to reduce concentrations near source area monitoring well 085-379."***
- Liquid carbon injection and zero valent iron (ZVI) was evaluated to capture dissolved residual source area compounds and treat them in-situ.
- Treatment area is relatively small and not very deep, this technology is cost effective compared to other source area treatment approaches.
- Not expected to negatively impact groundwater geochemistry or the operation of the groundwater treatment system.

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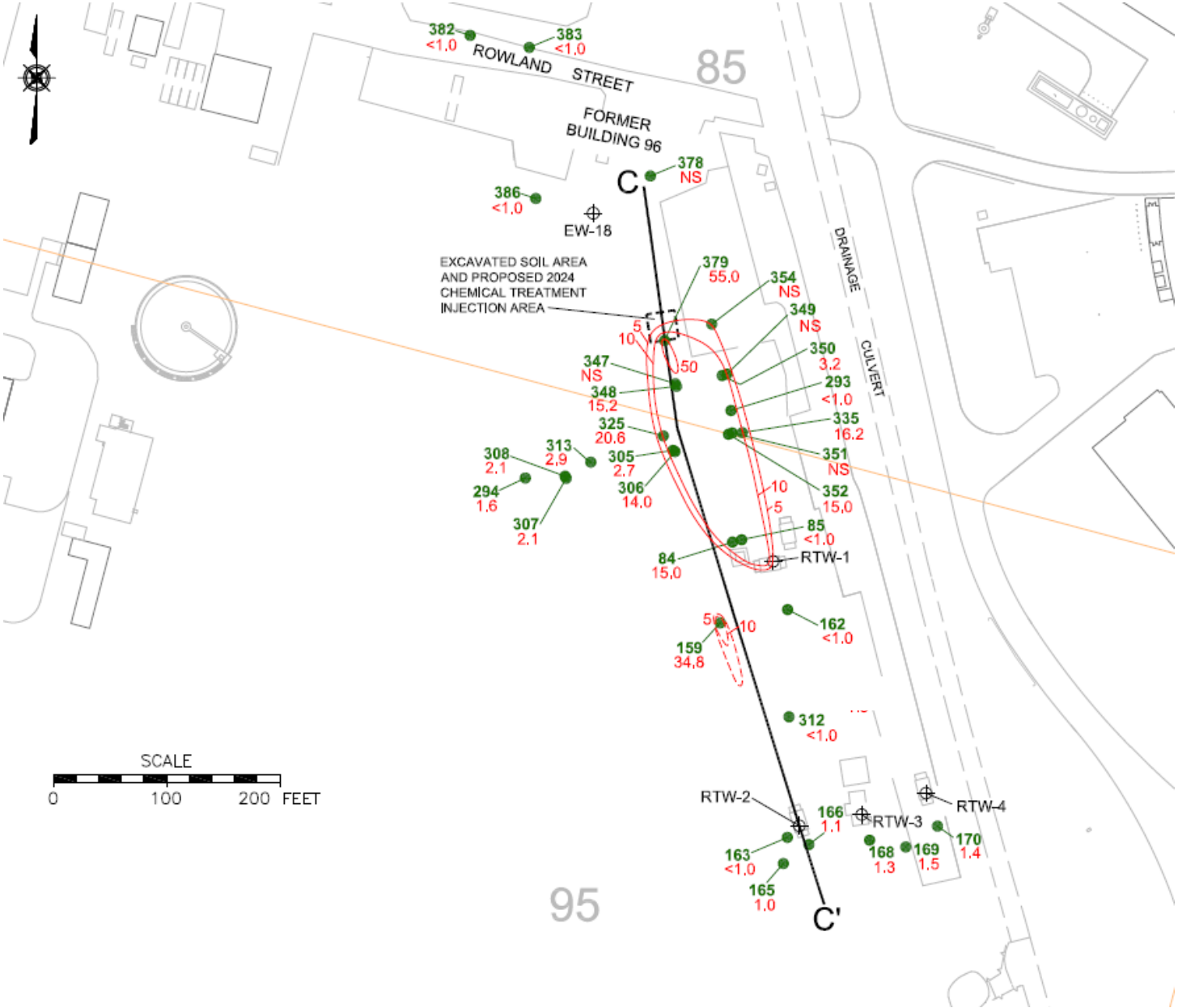
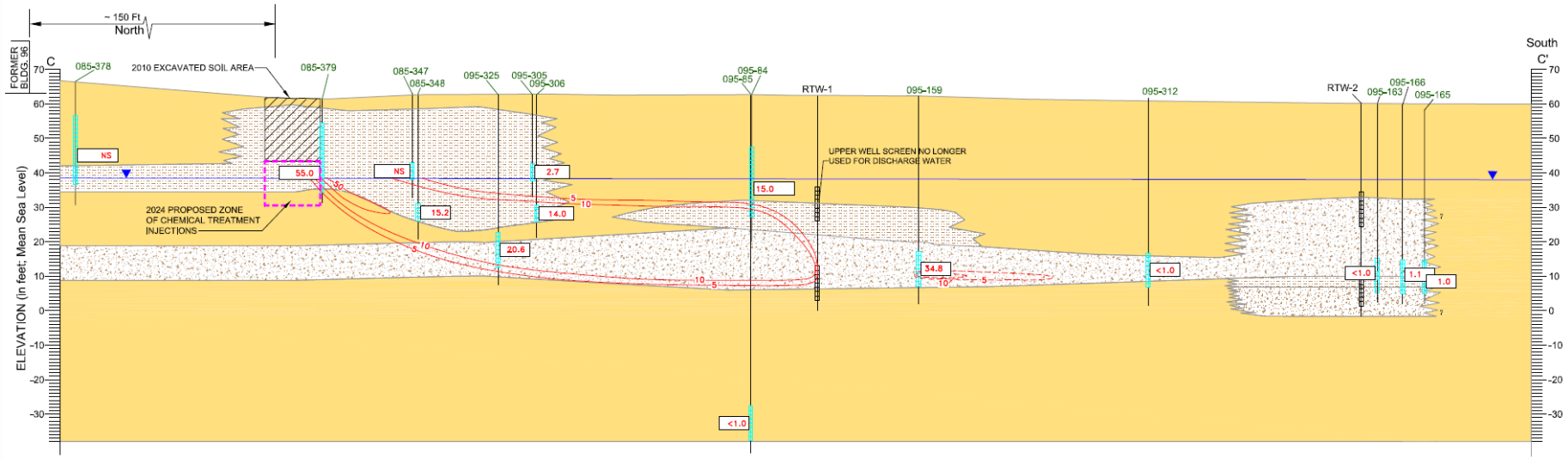
# Plan View


382
<1.0
383
<1.0
ROWLAND STREET
85
FORMER BUILDING 96
C
378
NS
386
<1.0
EW-18
EXCAVATED SOIL AREA AND PROPOSED 2024 CHEMICAL TREATMENT INJECTION AREA
379
55.0
354
NS
349
NS
350
3.2
293
<1.0
335
16.2
351
NS
352
15.0
347
NS
348
15.2
325
20.6
313
2.9
308
2.1
294
1.6
307
2.1
305
2.7
306
14.0
5
10
50
10
5
85
<1.0
84
15.0
RTW-1
DRAINAGE
CULVERT
162
<1.0
159
34.8
312
<1.0
SCALE
0
100
200 FEET
RTW-2
166
1.1
RTW-3
RTW-4
163
<1.0
165
1.0
168
1.3
169
1.5
170
1.4
95
C'

# Cross Section View

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