



# STFATE Runs for Bay Ridge Red Hook Dredged Material Disposal at HARS

## ERDC Dredging Operations Technical Support Program (DOTS)

U.S. ARMY CORPS OF ENGINEERS

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### Response Summary:

Performed Short Term Fate of Dredged Material (STFATE) model runs of open water disposal of eight reaches of Bay Ridge Red Hook dredged materials at the Historic Area Remediation Site (HARS). Analyzed the standard elutriate test results for the contaminant of concern as part of the Tier 2 analysis. Analyzed the water column toxicity results to determine the dilution required for the limiting permissible concentration as part of the Tier 3 analysis. Summarized the disposal boundary offset values and time to achieve water quality compliance as a function of barge size (3500 and 6000 cubic yards) in a table documenting the results of the review and modeling for the Tier 2 COC (Copper) and the Tier 3 LPC for all reaches.

### Period of Performance:

Start date: 20 September 2024      Completion Date: 10 October 2024

### Benefits of the Response to the USACE Dredging/Navigation Program:

The modeling and analysis provided the technical documentation to demonstrate water column compliance with MPRSA 103 requirements.

### Deliverable:

The technical response to the New York District included STFATE model input and output files, spreadsheet for calculating dilution requirements and materials volumetric fractions, and a table of required placement offsets from the disposal site boundaries and times to achieve water quality compliance within the disposal site for suspended phase toxicity LPC in a Tier 3 evaluation. Evaluation of the standard elutriate results determined that the copper concentration for seven reaches were in exceedance of acute water quality criteria. Similarly, the toxicity results for the same seven reaches yielded LC50/EC50 below 100%.



Providing environmental and engineering technical support to the U.S. Army Corps of Engineers  
Operations and Maintenance navigation and dredging missions

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