

FINAL
ACTION MEMORANDUM

HIGH FLUX BEAM REACTOR
REMOVAL ACTION FOR WASTE LOADING AREA

October 26, 2007

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ACRONYMS, ABBREVIATIONS, AND UNITS OF MEASURE

ARAR	Applicable or Relevant and Appropriate Requirements
BNL	Brookhaven National Laboratory
CERCLA	<i>Comprehensive Environmental Response, Compensation and Liability Act.</i>
CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
SCDHS	Suffolk County Department of Health Services

I. PURPOSE

The purpose of this Action Memorandum is to document the decision by the U.S. Department of Energy (DOE) to complete the remediation of the radiologically contaminated soil in the Waste Loading Area (WLA). The WLA was part of the Former Hazardous Waste Management Facility (HWMF), Area of Concern (AOC) 1 that was left in-place so that it could be used as a waste staging and railcar loading area for the BGRR and HFBR Projects.

II. SITE CONDITIONS AND BACKGROUND

A. Site Description

BNL is owned by DOE and is located in the Town of Brookhaven, Suffolk County, New York, approximately 60 miles east of New York City. Established in 1947, BNL is now operated and managed for DOE's Office of Science by Brookhaven Science Associates (BSA). One of the 10 DOE national laboratories, BNL conducts research in the physical, biomedical, and environmental sciences, as well as in energy technologies and national security. The Laboratory also builds and operates major scientific facilities available to university, industry, and government researchers.

The Former HWMF is located in the southeastern portion of BNL and is comprised of approximately 12 acres. The Former HWMF was used during the period between 1947 and 1997 as the central receiving facility for storage, processing and limited treatment of waste generated at BNL.

Soil contamination at the Former HWMF resulted from spills of radioactive and hazardous materials during past waste handling operations.

The WLA is an area (about two acres) along the eastern boundary of the Former HWMF (Figures 1 and 2).

Figure 1 -- Location of High Flux Beam Reactor and Waste Loading Area on BNL Property

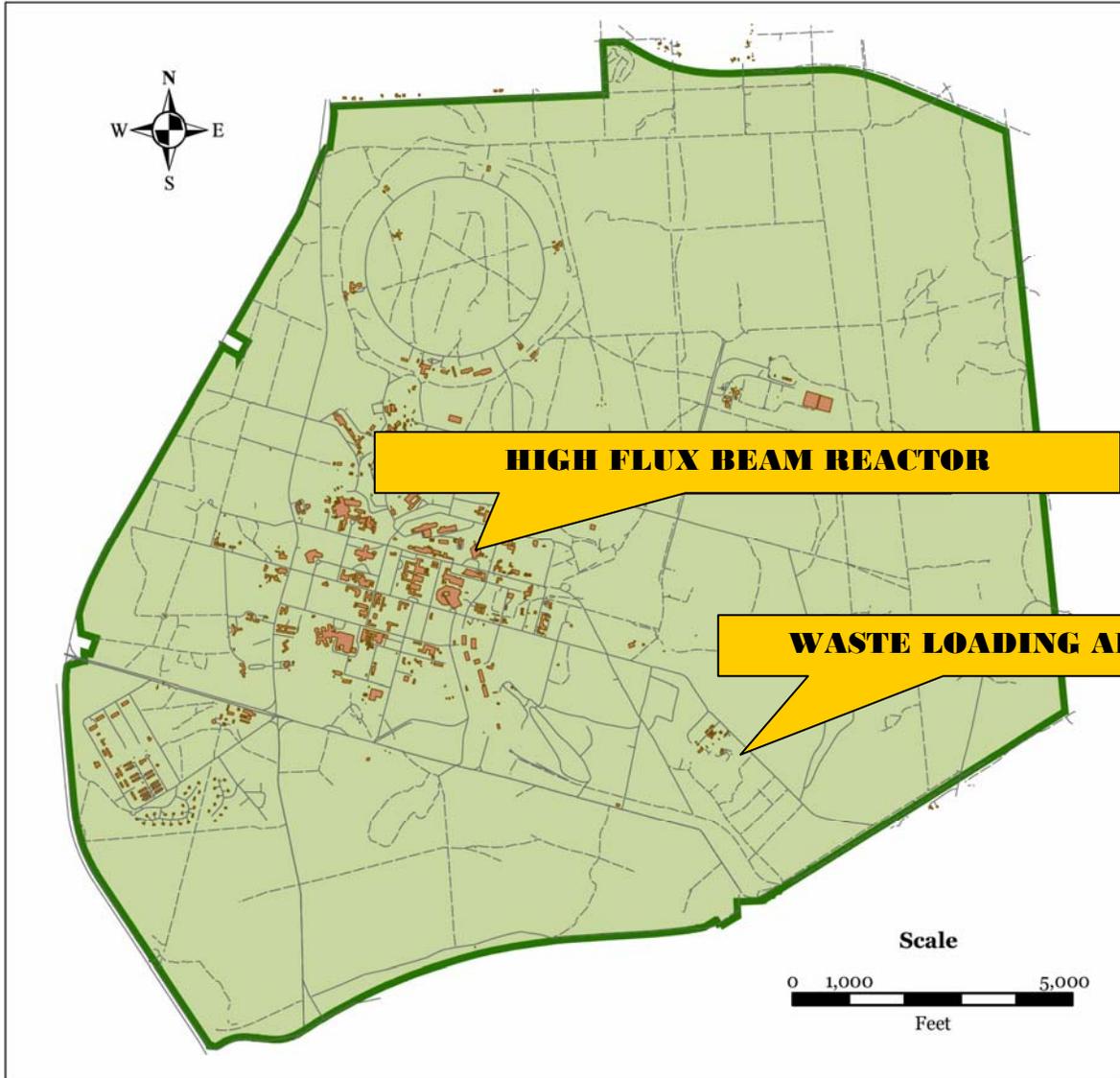
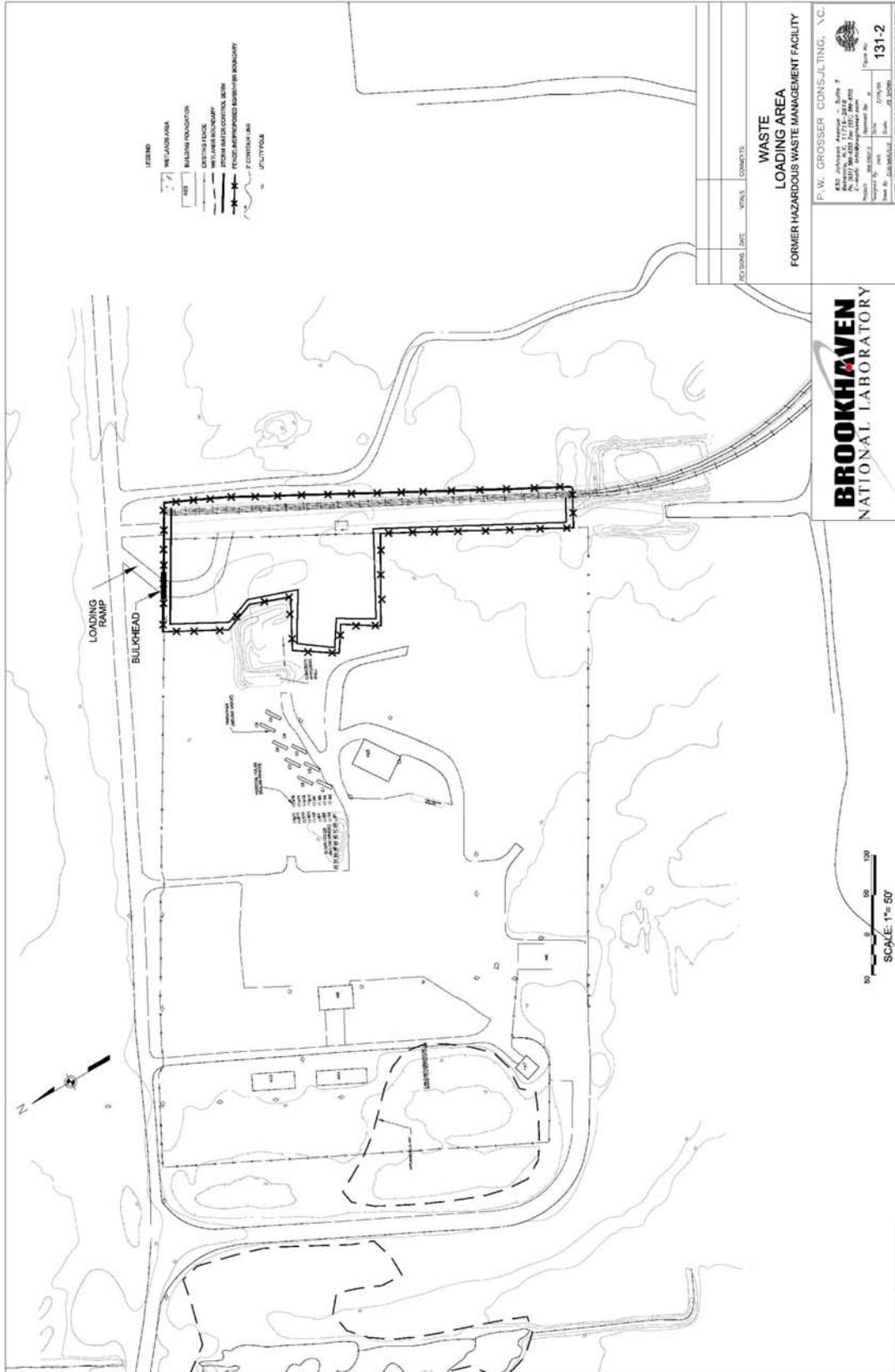


Figure 2 -- Waste Loading Area



B. Actions to Date

1. Previous Actions

The cleanup of the WLA was transferred to the HFBR scope of work through a modification to the Remedial Design Implementation Plan (RDIP) for the Former Hazardous Waste Management Facility (FHWMF).

This transfer was finalized in September 2005, following review and approval/concurrence by the U.S. Environmental Protection Agency (EPA), New York State Department of Environmental Conservation (NYSDEC), New York State Department of Health (NYSDOH), and Suffolk County Department of Health Services (SCDHS).

2. Current Actions

The remediation (by excavation) of this area will be performed using the same cleanup goals and methodology required for AOC 1 in the Operable Unit (OU) I Record of Decision (ROD).

3. Planned Actions

A Proposed Remedial Action Plan for the HFBR facility is being prepared for public review and comment. It will include the WLA in the scope of work. Following public comment the selected remedy for the HFBR facility will be documented in a Record of Decision and implemented accordingly. This removal action will be documented in the HFBR ROD.

C. National Priorities List Status

Brookhaven National Laboratory was added to the National Priorities List in 1989.

III. THREATS TO PUBLIC HEALTH OR WELFARE AND THE ENVIRONMENT STATUTORY AND REGULATORY AUTHORITIES

This action is being undertaken as a removal action under the Interagency Agreement among the DOE, EPA, and NYSDEC.

The appropriateness of the removal action is based on the following:

- Factors listed in 40 Code of Federal Regulations (CFR) 300.415 (b) (2) of the regulations implementing *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA), including:
 - Actual or potential exposure to human populations, animals, or the food chain from hazardous substances or pollutants or contaminants.
 - Weather conditions that may cause hazardous substances or pollutants contaminants to migrate be released.
- Final remedy for the Former HWMF described in the OU I ROD

IV. IDENTIFICATION OF REMOVAL ACTION OBJECTIVES

The removal action objectives are the same as the following remedial objectives established in the OU I ROD:

- Minimize threats to human health and the environment from site contaminants;
- Prevent or minimize the leaching of contaminants from the soils into the underlying aquifer as a result of the infiltration of precipitation;
- Prevent or minimize the migration of contaminants present in surface soils via surface runoff and windblown dusts;
- Prevent or minimize human exposure including direct external exposure, ingestion, inhalation, and dermal contact (for future residents, trespassers, site workers, and construction workers) and environmental exposure to contaminants in the surface and subsurface soils; and
- Prevent or minimize the uptake of contaminants present in the soils by ecological receptors.

V. PROPOSED ACTION AND ESTIMATED COSTS

A. Proposed Action

This Action Memorandum addresses the remediation of the radiologically contaminated soil in the WLA using the dose-based cleanup goal and methodology specified for the Former HWMF in the OU I ROD.

Technical specifications and design criteria for the Former HWMF Soils Removal Project were developed in accordance with the remedial actions described in the OU I ROD.

The remedial design, presented in the *Remedial Design and General and Supplemental Specifications for Remedial Action Operable Unit I Contaminated*

Soil and Debris (URS, October 2000), the *Remedial Action Work Plan, Operable Unit I, Area of Concern 1, Former Hazardous Waste Management Facility* (BNL, March 2003), and the *Remedial Design Implementation Plan, Operable Unit I, Area of Concern 1, Former Hazardous Waste Management Facility* (BNL, March 2004) was developed by BNL to satisfy the requirements specified in the OU I ROD.

The WLA cleanup activities include:

- Detailed Planning
- WLA Remediation
- Final Status Survey
- ORISE Verification Survey
- Site Restoration
- Waste Transport and Disposal

B. Contribution to the Remedial Performance

This removal action will contribute to the overall cleanup of contaminated soils at BNL. The Former HWMF was identified as Area of Concern 1 in the Interagency Agreement. A future Record of Decision will document the final remedy selected for the HFBR facility. This action will be documented in the HFBR ROD.

C. Description of Alternative Technologies

The remediation of WLA will be performed using the same or similar excavation, staging and shipping methods employed for the balance of the Former HWMF. No alternative technologies are required for the implementation of this action.

D. Applicable or Relevant and Appropriate Requirements

The federal and state applicable or relevant and appropriate requirements (ARARs) pertinent to this action were identified in OU I ROD.

E. Project Schedule

The current working schedule calls for the removal action beginning with detailed planning to be initiated in October 2007 and completed by March 2008.

F. Estimated Cost

The cleanup will cost approximately \$1,900,000.

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

A delayed action or no action may increase the potential for migration of contaminants present in surface soils by surface runoffs.

VII. PUBLIC PARTICIPATION

BNL Community Relations

The BNL Community Relations Plan was written in September 1991 and is supplemented by activity specific plans. In accordance with these plans and the CERCLA Sections 113 (k)(2)(B)(i-v) and 117, the community relations program focuses on informing and involving the public. A variety of activities are used to provide information and to seek public participation, including compilation of a stakeholders mailing list, holding community meetings, availability sessions, site tours, workshops, and preparing and distributing fact sheets. The Administrative Record, which documents the basis for removal and remedial actions was established and is maintained at the libraries listed below:

Mastics-Moriches-Shirley Community Library
301 William Floyd Parkway
Shirley, NY 11967
631-399-1511

Brookhaven National Laboratory
Research Library
Bldg. 477A
Upton, NY 11973
631-344-3483

U.S. EPA - Region II
Administrative Record Room
290 Broadway, 18th Floor
New York, New York 10007
212-637-4308

Community Involvement Related to WLA

The community involvement activities conducted for the final remedy selection process for OU I (of which the Former HWMF and the WLA were part) included a formal public review of the OU I Proposed Remedial Action Plan (PRAP). Public comment period began April 1, 1999 and ended on April 30, 1999. Information sessions and a public meeting were held during the public comment period.

DOE's responses to public comments and concerns were included in the OU I ROD Responsiveness Summary.

As the WLA is now included in the HFBR scope of work it will be addressed in the HFBR Feasibility Study and PRAP. Information sessions and a public meeting will be held during the public comment period.

VIII. OUTSTANDING POLICY ISSUES

There are no outstanding policy issues identified for this removal action.

IX. ENFORCEMENT

The DOE owns BNL and the DOE will fund this removal action. The removal action will be conducted in accordance with the *Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)* and National Contingency Plan requirements, the Interagency Agreement, and applicable New York State regulations.

X. RECOMMENDATION

This document recommends a non-time-critical removal action for the WLA. This decision document was developed in accordance with CERCLA as amended, and is consistent with the National Contingency Plan.

XI. REFERENCES

BNL, 1999, *Record of Decision, Operable Unit I and Radiologically Contaminated Soils*, August 1999.

BNL, 2003, *Remedial Action Work Plan, Operable Unit I, Area of Concern I, Former Hazardous Waste Management Facility*, March 2003.

BNL, 2004, *Remedial Design Implementation Plan, Operable Unit I, Area of Concern 1, Former Hazardous Waste Management Facility Remedial Action Work Plan*, March 2004.

BNL, 2005, *Closeout Report, Former Hazardous Waste Management Facility Soil Remediation*, September 2005.

Letter, R. V. Rimando, Jr., DOE to J. Lister, NYSDEC and D. Pocze, EPA,
Subject: Brookhaven National Laboratory Interagency Agreement, Remedial Design Implementation Plan (RDIP), Operable Unit I, Area of Concern (AOC)

1, *Former Hazardous waste Management Facility (HWMF)*, September 30, 2005.

URS, 2000, *Remedial Design and General Supplemental Specifications for Remedial Action, Operable Unit I Contaminated Soil and Debris*, October 2000.