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D&D-21331
Revision 0

B Plant Construction Laydown Yard Removal Action Work Plan

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Fluor Hanford
P.O. Box 1000
Richland, Washington

Contractor for the U.S. Department of Energy
Richland Operations Office under Contract DE-AC06-96RL13200

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J. Chandal	6-24-2004	N/A
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D&D-21331
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For use with Technical Documents (when appropriate)	
EDC-	FMP-
EDT-	ECN-
Project No.:	Division: CP
Document Type:	Page Count: 39

For use with Speeches, Articles, or Presentations (when appropriate)							
Abstract		Summary		Full Paper		Visual Aid	
Conference Name:							
Conference Date:							
Conference Location:							
Conference Sponsor:							
Published In:							
Publication Date:							

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APPENDIX

A B LAYDOWN YARD SUMMARY SCHEDULE....APP A-i

TABLE

Table 1. Structure List....5

ACRONYMS

ACM	asbestos-containing material
ALARA	As Low As Reasonably Achievable
ALARACT	as low as reasonably achievable control technology
AM	*Action Memorandum for the Non-Time-Critical Removal Action for the 224-B Plutonium Concentration Facility*
AMP	air monitoring plan
ARAR	applicable or relevant and appropriate requirements
BARCT	best available radionuclide control technology
BHI	Bechtel Hanford, Inc.
CCRC	Centralized Consolidated Recycling Center
CERCLA	*Comprehensive Environmental Response, Compensation, and Liability Act of 1980*
CFR	Code of Federal Regulations
CVP	closure verification package
CWC	Central Waste Complex
D&D	decontamination and demolition
DOE	U.S. Department of Energy
DOE-RL	U.S. Department of Energy, Richland Operations Office
DOT	U.S. Department of Transportation
DQO	data quality objectives
EE/CA	engineering evaluation/cost analysis
EPA	U.S. Environmental Protection Agency
ERDF	Environmental Restoration Disposal Facility
ETF	200 Areas Effluent Treatment Facility
FH	Fluor Hanford
HEPA	high-efficiency particulate air
HNF	Hanford Nuclear Facility (document identifier)
ISMS	Integrated Safety Management System
kg	kilogram
km	kilometer
Laydown Yard	B Plant Construction Laydown Yard
lb	pound
LLW	low-level waste
mi	mile
mrem/yr	millirem per year
PCB	polychlorinated biphenyl
PPE	personal protective equipment

ACRONYMS (cont)

RAWP	removal action work plan
RBA	radiological buffer area
RCRA	*Resource Conservation and Recovery Act of 1976*
RCW	Revised Code of Washington
RWPs	radiological work permits
S&M	surveillance and maintenance
SAP	sampling and analysis plan
SSHASP	site-specific health and safety plan
TBC	to-be-considered
TSCA	*Toxic Substances Control Act of 1976*
WAC	Washington Administrative Code
WIDS	Waste Information Data System
WMP	waste management plan

B PLANT CONSTRUCTION LAYDOWN YARD REMOVAL ACTION WORK PLAN

1.0 INTRODUCTION

Facilities on the Hanford Site were used from 1943 until 1990 to produce nuclear materials for national defense. In July of 1989, the Hanford Site was listed on the National Priorities List under the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA) *of 1980*, as amended by the *Superfund Amendments and Reauthorization Act of 1986*. The Hanford Site was divided and is now listed as three National Priorities List sites: the 100 Areas, the 200 Areas, and the 300 Area. The B Plant Construction Laydown Yard (Laydown Yard), located in the 200 Areas, has been determined to present a potential threat to human health or the environment by the U.S. Department of Energy (DOE) and therefore, a non-time-critical removal action is warranted for the Laydown Yard. This removal action work plan (RAWP) contains the pertinent information to support the implementation of the non-time-critical removal action.

Alternatives for conducting a non-time-critical removal action were evaluated in the *Engineering Evaluation/Cost Analysis for the 224-B Plutonium Concentration Facility* (DOE/RL-2000-06). The engineering evaluation/cost analysis (EE/CA) public comments resulted in the recommendation to decontaminate and demolish the Laydown Yard, as part of the removal action for the 224-B Building. The recommendation for the 224-B Building, Alternative 3 - decontamination and demolition (D&D) of the facility, excluding the building foundation, was approved in the June 2004 Action Memorandum (AM) that provides direction to proceed with this non-time-critical removal action project (DOE/RL-2004-36). The AM also included the decontamination and demolition of structures in the Laydown Yard. The DOE is the lead agency for this removal action with the U.S. Environmental Protection Agency (EPA) as the lead regulatory agency.

1.1 PURPOSE

The purpose of this RAWP is to establish the methods and activities required to perform the following functions on the Laydown Yard only. An additional RAWP will be developed and approved to describe the activities for the 224-B Building, at a later time.

- Decontamination and/or removal of systems and building features that are known or suspected to contain significant chemical or radiological material inventory, including piping, exhaust ducts, and filtration systems.
- Sealing of subsurface piping and ducts in place.
- Decontamination and/or stabilization of all building surfaces, followed by removal of each structure by appropriate demolition/dismantlement operations.
- Separation of waste products generated into a variety of waste streams, each of which will be disposed or stored at appropriate storage facilities until eventual disposal.
- Stabilization of the any foundations and the affected surrounding terrain until future remedial actions are performed on the entire area.

- Generation of characterization information for the remaining foundations and affected terrain to document the status of conditions at the conclusion of this project. The Laydown Yard may be used during the D&D of the 224-B Building for staging of mobile office trailers and waste storage.

The intent of this RAWP is to identify the basis and to provide guidance for the preparation of work packages and subcontract task orders for the project tasks. Using the most recent information concerning Laydown Yard conditions, field-level work packages will be developed to direct work activities and instruct workers in the most applicable work methods. Existing contractor procedures and specifically developed instructions will be used to perform and control the removal and disposal actions.

The Laydown Yard removal action schedule, which encompasses the work scope through project completion, presents the logical progression of events and the estimated duration for each activity. The project schedule is presented by fiscal year and is included as Appendix A in this RAWP.

1.2 OBJECTIVES

The primary goal of CERCLA removal actions is to minimize or eliminate near-term threats to public health or the environment caused by the presence of hazardous substances. The EE/CA presented four alternative approaches for future facility management and the resulting levels of protection of public health and the environment that could be anticipated. Based on the evaluation, Alternative 3 - decontamination and demolition of the facility, excluding the building foundation, was recommended as the most responsive approach to ensure protection of human health and the environment. The selection and approval of this approach is documented in the *Action Memorandum for the Non-Time-Critical Removal Action for the 224-B Plutonium Concentration Facility*, DOE/RL-2004-36.

Complete or partial decontamination, demolition, stabilization, and disposal of the structures will reduce the potential hazards the Laydown Yard currently poses to public health and the environment. Waste products generated by the decontamination and demolition (D&D) activities will be segregated into a variety of waste streams, each of which will be disposed of at an appropriate disposal facility.

At the completion of the D&D activities, the site will be stabilized in a manner that allows for future remediation.

The project objectives include the following:

- Reduce or eliminate the potential for exposure to hazardous substances
- Reduce or eliminate the potential for future release of contaminants
- Protect workers from the hazards posed by the continuing deterioration and aging of the Laydown Yard structures
- Facilitate consistency with future remediation (e.g., soil sites and operable units) in the area where the Laydown Yard is located
- Minimize or eliminate long-term surveillance and maintenance (S&M) requirements and associated costs
- Prevent potentially adverse impacts to cultural/natural resources and threatened or endangered species
- Safely manage wastes generated by the removal action.

1.3 SCOPE

The scope of work addressed in this RAWP pertains only to the Laydown Yard portion of the removal action, which includes the major tasks of removing radioactive material, removing equipment and systems, decontaminating surfaces, dismantling structures, disposing of waste products, and stabilizing the area after each structure has been removed. A separate RAWP will be developed and approved by EPA for the 224-B Building portion of the removal action, at a later time.

1.4 FACILITY AND HAZARD DESCRIPTION

This section provides structural description information and discusses the hazards associated with the Laydown Yard.

The Laydown Yard is located south of the 221-B Building in the 200 East Area of the Hanford Site (Figure 1-1). The Laydown Yard contains potentially radiologically contaminated materials, equipment, mobile offices, and miscellaneous trailers.

The Laydown Yard has a history of contaminated biological components including rodents, tumbleweeds, and fruit flies. The source of contamination that lead to the 1998 fruit fly contamination event was the 241-ER-152 Diversion Box located in the Laydown Yard. Trailers and materials/equipment in the vicinity of this diversion box were placed within a Radiological Buffer Area (RBA) until surveys could be performed to verify the presence or absence of radiological contamination.

After the 1998 fruit fly contamination event, there were efforts to survey some of the trailers and materials/equipment within the Laydown Yard for reuse or excess. Specks of low-level fixed contamination were found on a small number of tools, equipment, and building surfaces. These specks were believed to be tumbleweed fragments, mouse feces, and/or fruit fly remnants.

The structures included for dispositioning the Laydown Yard are included in the following list:

Structure number	Structure type	Structure number	Structure type
MO-958	Mobile trailer	272BC	Trailer skid
MO-964	Mobile trailer	2244B	Building
2201B	Building	2245B	Building
MO-967	Mobile trailer	2247B	Building
MO-959	Mobile trailer	2252E	2 conex boxes and 1 building
2238E	Skid mount shack	2200B	Building
2240E	Trailer skid	2255EA	Building
2251E	Trailer skid	2255E	Building
2254E	Building	2256E	Building
2253E	Trailer skid	2257E	Building
2241B	Building	MO-965	Mobile trailer
2239E	Trailer skid		

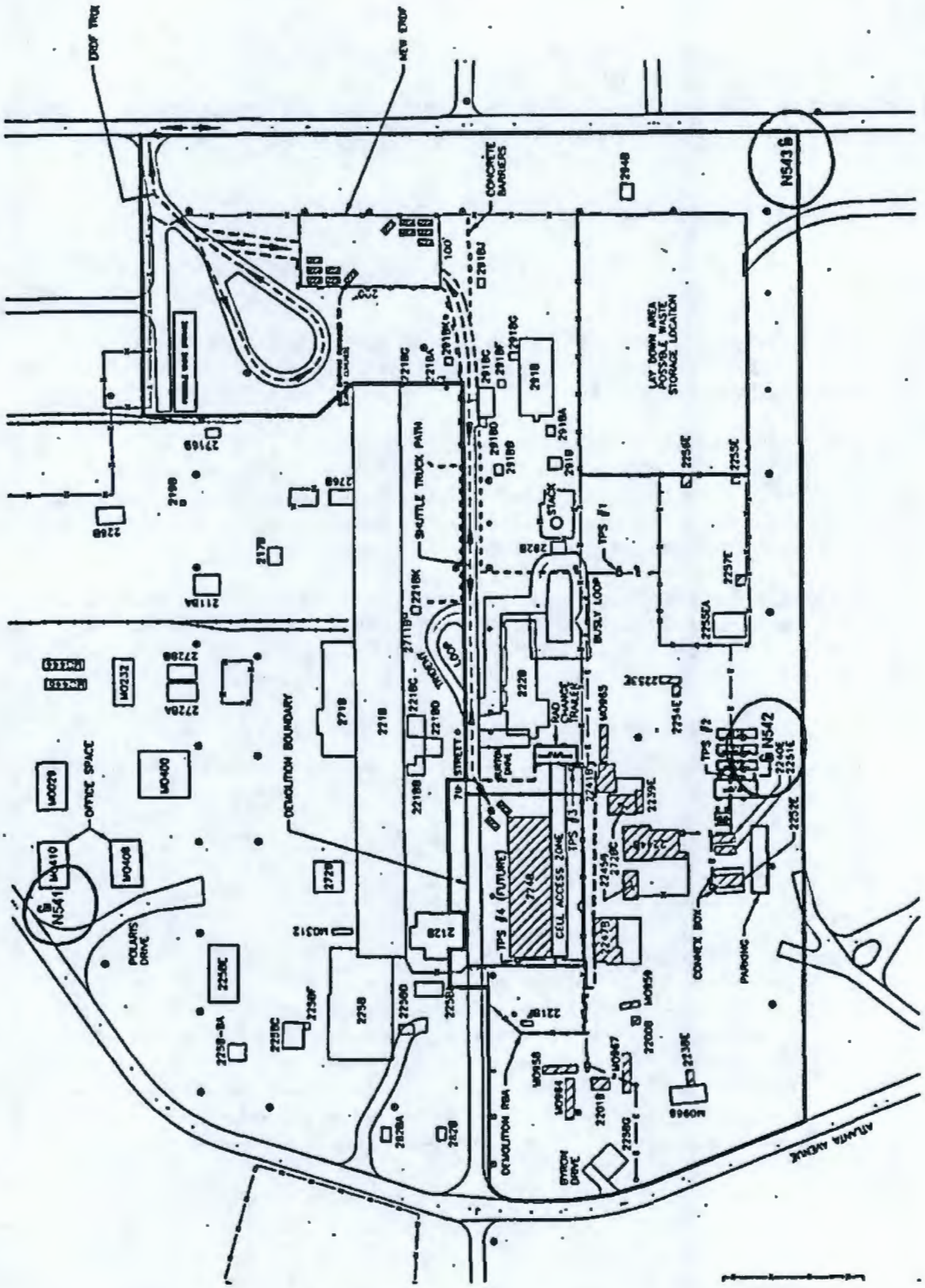

Figure 1-1. Location of the Laydown Yard.

1.4.1 Radiological Information

To help identify hazardous substances, several sources of information were used, including characterization data, historical operations, process knowledge, and knowledge of the construction materials. Key radionuclide contaminants are mixed fission products such as strontium-90 and cesium-137. Tritium also can be found within exit signs.

There is no nuclear criticality concern or significant radiation source hazards involved with this project. The mechanism that resulted in the radiological contamination is believed to be from fruit flies attracted to a sucrose-based contamination fixative applied to the inside of a contaminated concrete diversion pit located nearby to control smearable radiological contamination for work inside the pit. Apparently, on hatching, the contaminated fruit fly offspring spread contamination from the pit to the nearby Laydown Yard.

Additional characterization, which is addressed in the EPA approved *Sampling and Analysis Plan for the B Plant Construction Laydown Yard*, DOE/RL-2004-45, will be required to document the radiological conditions in the Laydown Yard.

1.4.2 Laydown Yard Description

The Laydown Yard is located south of the 221-B and the 224-B Buildings. The Laydown Yard is unused and unoccupied and consists of low-level radiologically contaminated mobile office trailers, scrap metal, obsolete machinery, wood, and miscellaneous structures that previously housed materials and equipment used by construction forces. The Laydown Yard may be used during the D&D of the 224-B Building for the staging of mobile office trailers, as well as for waste storage.

Table 1 lists the targeted structures and the associated radiological postings, as well as potential preliminary waste streams expected to be encountered during the demolition project. .

The majority of the utility and energized systems originally associated with the Laydown Yard have been isolated/de-energized and/or removed.

Table 1. Structure List.

Bldg. no.	Type / status	Radiological Posting	Potential waste streams[1]
M0-958	TRAILER / INDUSTRIAL	POTENTIALLY INTERNALLY CONTAMINATED-CONTACT RADIOLOGICAL CONTROL BEFORE DISTURBING FLOOR, WALL, CEILING, AND SKIRTING SURFACES	GENLRAL BUILDING MATERIALS, FREON, CLEANING CHEMICALS, ASBESTOS, FURNITURE, BALLAST, AND DOOR ACTUATORS.
MO-959	TRAILER / INDUSTRIAL	NO POSTINGS	TIOLET TRAILER, GENERAL BUILDING MATERIALS BALLAST, CLEANING CHEMICALS, AND DOOR ACTUATORS.
MO-964	TRAILER / INDUSTRIAL	POTENTIALLY INTERNALLY CONTAMINATED-CONTACT RADIOLOGICAL CONTROL BEFORE DISTURBING FLOOR, WALL, CEILING, AND SKIRTING SURFACES	GENERAL BUILDING MATERIALS, FREON, CLEANING CHEMICALS, ASBESTOS, FURNITURE, BALLAST, AND DOOR ACTUATORS.
MO-965	TRAILER / INDUSTRIAL	RADIOLOGICAL BUFFER AREA CONTAMINATION AREA UNDER SKIRTING	GENERAL BUILDING MATERIALS, RBA, BALLAST, MISCELLANEOUS DEBIS AND JUNK, TRANSFORMER, AND DOOR ACTUATORS.
MO-967	TRAILER / INDUSTRIAL	RBA - POTENTIALLY INTERNALLY CONTAMINATED-CONTACT RADIOLOGICAL CONTROL BEFORE DISTURBING FLOOR, WALL, CEILING, AND SKIRTING SURFACES	GENERAL BUILDING MATERIALS, FREON, ASBESTOS, FURNITURE, BALLAST, AND DOOR ACTUATORS.

Table 1. Structure List.

Bldg. no.	Type / status	Radiological Posting	Potential waste streams[1]
272BC	BUILDING / INDUSTRIAL	NO POSTINGS OBSERVED	GENERAL BUILDING MATERIALS, AND BALLAST.
2200B	BUILDING / INDUSTRIAL	NO POSTINGS OBSERVED	GENERAL BUILDING MATERIALS, BALLAST, ASBESTOS, AND DOOR ACTUATORS.
2201B	BUILDING / INDUSTRIAL	POTENTIALLY INTERNALLY CONTAMINATED-CONTACT RADIOLOGICAL CONTROL BEFORE DISTURBING FLOOR, WALL, CEILING, AND SKIRTING SURFACES	GENERAL BUILDING MATERIALS, BALLAST, WATER FILTER, HOT WATER HEATER, STAINLESS SINK AND SHELVING, FREON, THERMOSTAT, ASBESTOS, AND DOOR ACTUATORS.
2238E	SKID MOUNT SHACK / INDUSTRIAL	RBA CONTAMINATION AREA – GROUND SURFACE UNDER THIS IS CONTAMIANTED	GENLRAL BUILDING MATERIALS RBA, BALLAST, MISCELLANEOUS JUNK AND DEBRIS, ASBESTOS, AND DOOR ACTUATOR.
2239E	TRAILER SKID / INDUSTRIAL	NO POSTINGS OBSERVLD	GENLRAL BUILDING MATERIALS, BALLAST, BIOLOGICAL HAZARD, STOVE, ASBESTOS, MISCELLANEOUS CONSTRUCTION TOOLS, AND DOOR ACTUATORS.
2240E	TRAILER SKID / INDUSTRIAL	GROUND SURFACE CONTAMINATION AREA UNDER STRUCTURE	GENERAL BUILDING MATERIALS, BALLAST, THERMOSTAT, AND DOOR ACTUATORS, AND ASBESTOS.
2241B	BUILDING / INDUSTRIAL	NO POSTINGS OBSERVED	GENLRAL BUILDING MATERIALS, BALLAST, ASBESTOS, OFFICE FURNITURE, AND DOOR ACTUATORS.
2244B	BUILDING / INDUSTRIAL	NO POSTINGS OBSERVED	GENERAL BUILDING MATERIALS RBA, BALLAST, FUSES, TRANSFORMERS, ASBESTOS, WELD ROD, DUST COLLECTOR, BIOLOGICAL HAZARD, BATTERIES, AND DOOR ACTUATORS.
2245B	BUILDING / INDUSTRIAL	NO POSTINGS OBSERVED	GENERAL BUILDING MATERIALS BALLAST, FURNITURE, ASBESTOS, THERMOMETER, FREON, FUSES, AND DOOR ACTUATORS.
2247B	BUILDING / INDUSTRIAL	POTENTIALLY INTERNALLY CONTAMINATED-CONTACT RADIOLOGICAL CONTROL BEFORE DISTURBING FLOOR, WALL, CEILING, AND SKIRTING SURFACES RBA AROUND LAYDOWN YARD	GENERAL BUILDING MATERIALS RBA, BALLAST, FUSES, TRANSFORMERS, GREASE, STEAM CLEANER, MISCELLANEOUS JUNK AND CONSTRUCTION MATERIALS, SRAP IRON, DOOR ACTUATORS, AND MISCELLANEOUS OILS IN EQUIPMENT.
2251E	TRAILER SKID / RADIO-ACTI VE	POTENTIALLY INTERNALLY CONTAMINATED-CONTACT RADIOLOGICAL CONTROL BEFORE DISTURBING FLOOR, WALL, CEILING, SKIRTING SURFACES CONTAMINATION AREA – GROUND SURFACE UNDER THIS IS CONTAMIANTED	GENERAL BUILDING MATERIALS, BALLAST, MISCELLANEOUS JUNK, TRANSFORMER, ASBESTOS, FREON, AND DOOR ACTUATORS.
2252E	2 CONEXES 1 BUILDING / INDUSTRIAL	CONTAMINATION AREA - GROUND SURFACE CONTAMINATION AREA UNDER STRUCTURE	STEEL, TIN, CONEX BOXES WILL BE RELEASED AND RECYCLED, PAINT WASTE, BALLAST, BIOLOGICAL HAZARD, AND DOOR ACTUATORS.
2253E	TRAILER SKID/ INDUSTRIAL	CONTAMINATION AREA - GROUND SURFACE CONTAMINATION AREA UNDER STRUCTURE	GENERAL BUILDING MATERIALS, BALLAST, AND MISCELLANEOUS JUNK.
2254E	BUILDING / INDUSTRIAL	CONTAMINATION AREA - GROUND SURFACE CONTAMINATION AREA UNDER STRUCTURE	GENERAL BUILDING MATERIALS, BALLAST, AND ASBESTOS.
2255E	BUILDING / INDUSTRIAL	LOCATED WITHIN RBA	GENERAL BUILDING MATERIALS INSIDE FENCED AREA.

Table 1. Structure List.

Bldg. no.	Type / status	Radiological Posting	Potential waste streams[1]
2255EA	BUILDING / INDUSTRIAL	RADIOACTIVE MATERIAL AREA STORAGE AREA IN OPEN PORTION OF SRUCTURE	WASTE STORAGE AREA INSIDE FENCE, 2-4X4X8 BOXES 1-55 GALLON DRUM, FRUIT FLY WASTE, MISCELLANEOUS CONSTRUCTION DEBRIS, SCRAP IRON, AND BALLAST.
2256E	BUILDING / INDUSTRIAL	LOCATED WITHIN RBA	GENERAL BUILDING MATERIALS INSIDE FENCED AREA
2257E	SKID MOUNT BUILDING / INDUSTRIAL	LOCATED WITHIN RBA	GENERAL BUILDING MATERIALS INSIDE FENCED AREA

[1] To be confirmed via asbestos assessment, characterization sampling, and standard waste designation process.

1.4.3 Laydown Yard Hazards

The Laydown Yard is contaminated with hazardous substances, primarily radionuclides.

The risks to the public and the environment associated with routine S&M activities at the Laydown Yard have not been quantified. However, entry into and removal of structures require special precautions because of radiological and biological conditions.

The current Laydown Yard contaminant release threat is relatively low. In general, the threat of an accidental radiological release (e.g., from a structural failure resulting from fire or seismic event or even from simple structural deterioration) increases the longer the structures remain in the S&M Program awaiting disposition. The risk from the Laydown Yard increases with time because of the potential for inventory releases from structure degradation. The external radiation, inhalation, and ingestion risks associated with the contamination under a continued S&M scenario justify a non-time-critical removal action.

1.4.3.1 Hazardous Materials Inventory

The primary hazardous materials of concern are radioactive materials. All known quantities of concentrated hazardous chemicals have been removed from the Laydown Yard during deactivation and S&M operations. In addition, the Laydown Yard is anticipated to contain one or more of the following hazardous materials found in most Hanford Site facilities:

- Polychlorinated biphenyls (PCB) ballasts
- Lead paint
- Lead for shielding
- Mercury switches, gauges, thermometers
- Mercury or sodium vapor lights
- Used oil from motors and pumps
- Unspecified chemical containers
- Friable and nonfriable forms of asbestos.

Additional characterization will be conducted as part of the removal action activities in accordance with the EPA approved *Sampling and Analysis Plan for the B Plant Construction Laydown Yard*, DOE/RL-2004-45 (SAP).

The potential for release of asbestos and lead is minimal because all of the asbestos and lead will be removed in accordance with approved contractor procedures that ensure control over hazardous substances. The contractor's standards and procedures for asbestos and lead ensure that personnel removing, handling, and disposing waste will be performed in a manner that achieves the following objectives:

- Protect the safety of employees and the general public
- Minimize spills and releases to the environment
- Meet applicable DOE, Federal, state, and local regulatory requirements.

1.4.3.2 Radiological Material Inventory

Radionuclide inventory can be found on surfaces and equipment in the Laydown Yard. Past analytical data and inventory information can be found in HNF-3628, *Fall 1998 200 East Area Biological Vector Contamination Report*.

Key radionuclide contaminants are mixed fission products (e.g., strontium-90 and cesium-137).

1.4.4 Hazardous Substance Inventory, Management, and Protection

The Laydown Yard is contaminated with hazardous substances. To help identify the hazardous substances in each structure, several sources of information were used, including characterization data, historical operations, process knowledge, and knowledge of the construction materials.

1.4.4.1 Radiological Materials

The Laydown Yard is posted as a radiologically controlled area. The majority of the radioactive materials contained within the structures and equipment in the Laydown Yard are listed in Section 1.4.1, and include the following:

- Fission products (cesium-137 and strontium-90)
- Tritium sealed sources in exit signs.

As part of the Data Quality Objectives screening process, historical and past analytical information is reviewed to support future sampling and analysis needs. The Data Quality Objectives process is documented and has been incorporated into the EPA approved *Sampling and Analysis Plan for the B Plant Construction Laydown Yard*, DOE/RL-2004-45.

1.4.4.2 Lead

Lead could exist in surface coatings (i.e., lead-based paint) and plumbing inside the Laydown Yard structures. Personnel must exercise caution to avoid disturbing or contacting lead or suspect lead material. Workers performing job tasks that involve lead will follow the applicable requirements in the contractor's procedure and the associated work package.

1.4.4.3 Asbestos

Asbestos-containing material (ACM) is found in and around the Laydown Yard. Disturbance of vessel or piping insulation, loose floor tiles, transite wall coverings or panels, sheet-rock, electrical wire insulation, ducting, or other suspect ACM must be avoided. Personnel involved in asbestos cleanup will follow the applicable requirements of the contractor's procedure and the associated work package.

1.4.4.4 Biological Hazards

The site-specific safety and health plan (SSHASP), *224-B and T Health and Safety Plan*, CP-19640, for biological hazard, details the biological hazards within the Laydown Yard. Examples of biological hazards include rodent and bird feces and insects.

1.4.4.5 Chemicals

Bulk chemical inventories have been disposed or recycled during deactivation of the Laydown Yard; however, the potential exists for the discovery of old containers of residual chemical constituents (e.g., solvents, greases, hydraulic fluids and fuel oils, and aerosols). If such containers are found, the containers will be managed in accordance with the contractor's procedures for waste management and in accordance with the *B Plant Construction Laydown Yard Waste Management Plan*, HNF-21184.

1.4.4.6 PCBs

PCBs can be found on the painted surfaces in the Laydown Yard, in light ballasts, in stained soils, and in the waste oils generated during D&D. Material that is painted and for which the paint contains PCBs will be managed as 'PCB Bulk Product Waste'.

2.0 REMOVAL ACTION ELEMENTS

The following sections provide a general description of how work activities will be performed to remove the structures and equipment in the Laydown Yard.

2.1 REMOVAL ACTION WORK ACTIVITIES

The general scope of work involved to implement this removal action includes the following activities:

- Performing characterization sampling and analysis
- Removing hazardous substances (chemical, radiological, and biological)
- Removing equipment and miscellaneous piping
- Dismantling each structure
- Disposing of waste (including S&M activities before D&D)
- Performing verification sampling and analysis
- Preparing the closure verification package (CVP).

The scope of work will be accomplished by completing the activities described in the following sections.

2.1.1 Surveillance and Maintenance

The goal of the long-term S&M is to sustain a contaminated yard or area in a safe condition until final disposition. The S&M measures include routine radiological and hazard monitoring of each structure, safety inspections, and maintenance activities necessary to keep the Laydown Yard in a safe condition. The S&M activities are tailored to the specific conditions of the Laydown Yard.

2.1.2 Site Mobilization and Preparation Work

On initiation of D&D activities, personnel will be mobilized and consumables and required equipment will be procured. The first activities to be performed will include mobilizing personnel and trailers to

support project activities. Field Support personnel also will terminate and/or verify termination of the Laydown Yard services and utilities as appropriate. Electrical systems used throughout the D&D activities are discussed in detail in Section 3.4.

Concurrent with these activities, waste storage areas will be set up within the Laydown Yard to facilitate transportation of the material for recycling or disposal in accordance with Sections 4.2.6 and 4.2.7. Supervisor trailers, lunch trailers, change trailers, office trailers, mobile shower trailers, and restroom facilities also will be mobilized as required at the Laydown Yard to prepare for D&D activities. Electricity will be connected from an outside line or generator, and temporary power and lighting will be installed as needed. Occupational Safety and Health Administration concerns (e.g., fall protection, guarding, and electrical) will be addressed during field work package development and during pre-job field walk-downs. Concerns arising during field activities will be addressed as they are identified.

2.1.3 Data Quality Objectives Process and Characterization

The EPA-developed data quality objectives (DQO) process has been used to develop the data collection, sampling, analysis rationale, strategy, and requirements for these characterization efforts. The results of the DQO process are documented in the EPA approved *Sampling and Analysis Plan for the B Plant Construction Laydown Yard*, DOE/RL-2004-45.

2.1.3.1 Initial Characterization

Initial characterization (also called waste characterization) will be conducted before and during D&D activities for a given structure. The DQO process has been used to develop which waste streams are expected to be generated, the initial characterization data needs, rationale, strategy, and requirements for the data collection and analysis. Data collection could include survey and sample data. The initial characterization data will be used as follows:

- Characterize waste for treatment and/or disposal
- Identify radiological and hazardous conditions encountered during D&D
- Specify health and safety requirements.

Additional requirements related to the initial waste characterization and the applicable or relevant and appropriate requirements (ARARs) are discussed in Section 4.2.1. Documentation on the results of the DQO process is included in the EPA approved *Sampling and Analysis Plan for the B Plant Construction Laydown Yard*, DOE/RL-2004-45 (SAP).

2.1.3.2 Final Characterization

Final characterization (also called verification) will be conducted at the completion of D&D activities for the Laydown Yard. The final characterization data collection, sampling, and analysis will be used to document the condition of the remaining area at the completion of the D&D activities. This includes verifying and documenting the remaining contamination (e.g., contaminants of concern and concentrations).

The DQO process has been used to develop the final characterization data needs, rationale, strategy, and requirements for the data collection, sampling, and analysis. The scope of the final characterization DQO/SAP process includes and addresses the following:

- Evaluating historical and existing data (including the initial characterization data if available) for the Laydown Yard

- Documenting where the structures and area require data collection at the completion of the D&D activities.

The scope of the data for the final characterization DQO/SAP process includes and addresses the following:.

- Radiological contamination data for soil and structure
- Chemical contamination data for soil and structure
- Site location data at the completion of D&D activities
- Location data for pipelines that enter the site; data are expected to be limited to pipelines that are large, highly contaminated, or in pipe tunnels/trenches
- The structure, soil (down to 1 meter), and pipelines from which these radiological, chemical, and location data are collected
- How, when, and where these radiological, chemical, and location data are collected.

Additional requirements related to final characterization and the ARARs are discussed in Section 4.4.1. Documentation on the results of the DQO process is included in the EPA approved *Sampling and Analysis Plan for the B Plant Construction Laydown Yard*, DOE/RL-2004-45.

In areas of the Laydown Yard where soil deeper than 1 meter is found to be contaminated, and/or where surveys indicate a need for stabilization, the information will be documented in the Waste Information Data System.

2.1.4 Decontamination and Demolition Activities

The D&D activities will be conducted within the footprint of each structure within the Laydown Yard. The footprint of each structure is defined as the area covered by the structure as seen from a plan view, plus an additional 1 meter (3 feet) out from the perimeter of the walls to account for any foundation and/or slab. In general, work activities will begin in radiological controlled areas and progressively move toward contaminated areas. After an area (i.e., some part of a structure) has been surveyed and the radiological conditions established, biological cleanup and general housekeeping will commence as necessary. Biological cleanup and general housekeeping will involve removing loose biological feces and rubble, other easily removable debris, and loose radiological contamination. Section 4.2 discusses the management of waste.

All friable and most nonfriable ACMs and presumed ACMs will be removed before demolition of the area. ACM typically consists of insulation for piping, floor tiles, cement asbestos board, etc. Insulation on piping will be removed as Class I asbestos work, and nearly all other ACM will be removed as Class II (e.g., floor tiles and cement asbestos board). Asbestos work, air monitoring, and worker safety requirements will be performed in accordance with contractor's procedures for ACM removal and will meet all applicable state and federal regulations.

If alternate removal methods for friable asbestos are developed, or if nonfriable asbestos is to be left in place during demolition, a certified industrial hygienist or licensed professional engineer qualified as a certified *Asbestos Hazard Emergency Response Act of 1986* [40 *Code of Federal Regulations* (CFR) 763] project designer will evaluate the work area, projected work practices, and engineering controls and

certify in writing that the planned control method is adequate and that it is in compliance with all applicable state and federal regulations.

Unattached, not-in-use, and accessible lead bricks and sheeting, PCBs (motor oils, and light ballasts), mercury (primarily in lighting components and switches), and other hazardous materials will be removed and disposed as hazardous or mixed waste or will be recycled consistent with guidelines found in Section 4.2.

Most of the loose, accessible radiological contamination either will be removed or fixed in place, depending on the levels, accessibility, complex shapes (e.g., grating), and type of contamination found. Some of the equipment/piping will be removed, and loose contamination will be wiped or vacuumed with a high-efficiency particulate air (HEPA) filter-equipped vacuum. If loose contamination remains after the initial decontamination effort (unless the area will be inaccessible after completion of the removal project, or if the building configuration or conditions make removal of loose contamination impractical), the contamination could be fixed in place as required. Removal of fixed contamination (radiological or chemical) will be performed using nonaggressive means (e.g., wiping or using decontamination solutions). Aggressive means of decontamination (e.g., scabbling, grinding, or other abrasive/mechanical means) are planned to be used only as necessary to maintain levels as low as reasonably achievable (ALARA).

The Laydown Yard structures will be demolished using standard demolition techniques (e.g., excavator with a hoe-ram, a hydraulic shear with steel shear jaws, concrete pulverizer jaws or breaker jaws, and/or a crane with wrecking ball). Steel will be segregated for salvage if economically feasible, and if meeting DOE criteria for free release from radiological controls. The abovegrade structures of the Laydown Yard will be demolished and disposed.

In the event that large volumes of contaminated soil are encountered, other soil contamination sites are adversely affected by D&D activities, or removal of contaminated soil inhibits D&D activities, the removal of contaminated soils could be deferred to future remedial action with EPA concurrence. The sites will be stabilized in a manner that will not hinder future remediation (Section 2.1.6). Future cleanup efforts of the Laydown Yard or transfer of the removal action scope to later remedial action will be coordinated with and approved by the EPA. In areas of the Laydown Yard where soil deeper than 1 meter is found to be contaminated, and/or where surveys indicate a need for stabilization, the information will be documented in the Waste Information Data System.

Decontamination necessary to allow removal of demolition equipment from contamination areas will be accomplished using standard industry practices and best management practices. Gross equipment decontamination methods will be employed to remove loose contamination within the contamination area. Best management practices for gross cleaning and/or decontamination of heavy equipment and vehicles will consist of using wipes and nonhazardous materials, as available, to remove loose contamination. Wet grit blasting or grinding could be used if other methods are not effective. One or more decontamination areas will be established within the Laydown Yard and additional or final decontamination performed in the established area(s). The amount of water used to clean equipment in the decontamination area will be minimized, and the water used will be raw or potable water only. Soaps, detergents, or other cleaning agents will not be added to the washwater, unless necessary. Pressure washing (if required) normally will be performed using cold water (however, hot water could be used to avoid icing or as needed). Steam cleaning will be used only after other decontamination methods prove to be ineffective.

Spent decontamination water and associated contamination from the decontamination of D&D equipment (e.g., trackhoe excavators, front-end loaders) may be discharged to the ground within the decontamination area. Verification sampling of the area will be performed in accordance with the approved SAP before closure of the project. Personnel responsible for equipment decontamination will be knowledgeable of

the requirements of Section 2.0 of this RAWP. The Laydown Yard will be stabilized to prevent the further spread of contamination and posted with the correct radiological warnings and specific site identification signs in support of the Waste Information Data System.

2.1.5 Waste Disposal

All waste management activities will be performed in accordance with waste management ARARs identified in the AM and as discussed in Section 4.2 of this RAWP. Certain materials are eligible for salvage and recycling, which is encouraged if the appropriate regulatory and project requirements are met and it is economically feasible for the project to do so. The CERCLA waste from the removal action will either be disposed of at the Environmental Restoration Disposal Facility (ERDF), or temporarily stored offsite at the Central Waste Complex (CWC) prior to treatment and disposal, or disposed of offsite at the 200 Areas Effluent Treatment Facility (ETF) (Section 4.2.3 for additional information). The movement and treatment, storage, and/or disposal of waste at the CWC or the ETF require an offsite determination approval by the EPA. The CERCLA waste also could be disposed of at another offsite facility that has been approved by the EPA in accordance with 40 CFR 300.400. Treatment of waste could be necessary before disposal at ERDF, and containerized waste could be stored at ERDF with EPA concurrence while the waste is awaiting treatment. Liquid waste sent to the ETF will be treated separately from other non-CERCLA sources, and any treatment residues that meet ERDF waste acceptance criteria (BHI 2002b) could be disposed of at ERDF. Section 4.2 discusses waste management in further detail.

2.1.6 Site Stabilization

Following completion of D&D activities, verification samples will be collected and analyzed as determined by the DQO process as outlined in the EPA approved *Sampling and Analysis Plan for the B Plant Construction Laydown Yard*, DOE/RL-2004-45 (Sections 2.1.3 and 4.4).

Removal of the Laydown Yard structures will be completed when each structure has been removed with the slab and/or foundation left intact (slab-on-grade). The characterization effort will verify the remaining conditions at the conclusion of the removal action. The final status characterization report will be submitted to EPA in accordance with the approved SAP.

The site will be stabilized in a manner that will not hinder future remediation by capping the slabs and covering the contaminated area with gravel. Site stabilization will be coordinated with future remedial actions. Characterization information for this area will be generated to document the status of conditions at the conclusion of this project. Determination of whether to proceed with removal of the foundations or slabs and/or transfer of scope of work to later remedial action will be approved by EPA.

2.1.7 Demobilization

After verification sampling and site stabilization has been completed, the trailers, equipment, and personnel will be demobilized from the area. Project closure requirements are discussed in Section 5.5.

2.2 WASTE SITE STATUS

A CVP will be generated for the Laydown Yard. The package will summarize demolition activities and describe the final disposition of the area. The CVP will provide information to identify the location, the composition, and the concentration of contamination remaining at the completion of this project. The Waste Information Data System (WIDS) will be updated to reflect the status and conditions of affected waste sites as appropriate.

3.0 SAFETY AND HEALTH MANAGEMENT AND CONTROLS

All emergency planning and preparedness activities for these projects will be consistent with planning and preparedness actions taken by other Hanford Site contractors and similar projects. Activities will be in a manner that ensures the health and safety of workers and the public and the protection of the environment in the event of an abnormal incident during D&D of the Laydown Yard.

3.1 EMERGENCY MANAGEMENT

The contractor's Emergency Management Program (including preparedness, planning, and response) contains the administrative responsibilities for compliance with the *Hanford Emergency Response Plan* (DOE/RL-94-02) and all applicable DOE Orders. The Emergency Management Program establishes a coordinated emergency response organization capable of planning for, responding to, and recovering from industrial, security, and hazardous material incidents. Emergency action plans for contractor-managed hazardous facilities identify the capabilities necessary to respond to emergency conditions, provide guidance and instruction for initiating emergency response actions, and serve as a basis for training personnel in emergency actions for each facility. The emergency response actions within the emergency action plan are provided for recognizing incidents and/or abnormal conditions, initiating initial protective actions, and making the proper notifications. The emergency action plans are consistent with Hanford Site emergency procedures and meet the requirements of the *Hanford Emergency Response Plan* (DOE/RL-94-02), applicable DOE Orders, and state and federal regulations [i.e., 29 CFR 1910.38, *Washington Administrative Code* (WAC) 173-303-340, WAC 173-303-350, and WAC 173-303-360].

3.2 SAFEGUARDS AND SECURITY

Access to the Hanford Site is controlled via manned guard stations. Access to the Laydown Yard is controlled by the contractor. Access requirements for employees, nonemployees, and/or visitors are defined in CP-19640, *224-B and T Health and Safety Plan*.

3.3 STRUCTURES, SYSTEMS, AND COMPONENTS TO PROTECT FACILITY WORKERS

Controls employed during the Laydown Yard removal project will include temporary containment enclosures, glovebag containments, and personal protective equipment (PPE), as directed by the SSHASP. To control emissions, vacuums will be equipped with HEPA-type and/or charcoal filters, and the exhausters will be equipped with HEPA-type filters. Radiological work permits (RWPs) and an asbestos abatement work plan for asbestos removal also will be in place as needed. Personnel monitoring and area monitoring will be used as required to determine and document worker exposures and work conditions.

Temporary containment enclosures will be constructed as required to provide proper airflow conditions and will be fabricated of noncombustible and fire-retardant materials. A standard type of temporary containment is a glovebag enclosure, which essentially will be a one-time-use protective measure used to prevent contamination release during specific operations (e.g., pipe cutting and sample collection). Radiological containments will be evaluated and constructed in accordance with contractor's procedure(s).

3.4 ELECTRICAL SYSTEMS

Removal of electrical systems is typically the last isolation activity performed because power will be needed to support the D&D and remediation activities. However, if the existing electrical systems pose a threat to workers (e.g., underground conduit interfering with an excavation or demolition), the electrical

system could be deactivated first and alternative power supplies used (e.g., generators and/or temporary overhead lines).

3.5 HEALTH AND SAFETY PROGRAM

The contractor's Hazardous Waste Operations Safety and Health Program was developed for employees involved in hazardous waste site activities. The program was developed to comply with the requirements of 29 CFR 1910.120 and 10 CFR 835 to ensure the safety and health of workers during hazardous waste operations.

3.5.1 Worker Safety Program

The Integrated Safety Management System (ISMS) will be incorporated into all work activities. The program includes the following elements:

- Organizational structure specifying the official chain of command and the overall responsibilities of supervisors and employees
- Comprehensive work plan developed before work begins at a site to identify operations and objectives and to address the logistics and resources required to accomplish project goals
- SSHASP developed when workers could be exposed to hazardous substances
- Worker training commensurate with individual job duties and work assignments
- Medical surveillance program administered to comply with the Occupational Safety and Health Administration requirements (29 CFR 1910.120)
- Contractor's procedure and project/task-specific implementing plans and procedures
- Voluntary protection plan.

3.5.2 Site-Specific Health and Safety Plan and Activity Hazards Analysis

A SSHASP (CP-19640) has been prepared that defines the chemical, radiological, and physical hazards and specifies the controls and requirements for work activities. Access and work activities are controlled in accordance with approved work packages, as required by established contractor procedures. The SSHASP addresses the health and safety hazards of each phase of site operation and includes the requirements for hazardous waste operations and/or construction activities, as specified in 29 CFR 1910.120. Depending on the specific hazards present, one or more SSHASP could be written for D&D of the Laydown Yard. As part of work package development, a job or activity hazards analysis will be written to identify the hazards associated with specific tasks already not covered under a SSHASP. The elements included in the SSHASP are as follows:

- General overview of the hazards associated with the facility or facilities
- List of employee training assignments
- List of PPE to be used at the work site
- Medical surveillance requirements
- Work site control measures
- Emergency response
- Confined space entry procedures

- Spill containment program.

In addition to the SSHASP, a RWP will be prepared, as needed, for work in areas with potential radiological hazards. The RWP extends the Radiological Protection Program (discussed in Section 3.5.3) to the specific work site or operation. All personnel assigned to the project and all work site visitors strictly must adhere to the provisions identified in the SSHASP and RWP.

Before work and before each activity begins, a pre-job briefing will be held with the involved workers. This briefing will include reviews of the hazards that could be encountered and the associated requirements. Throughout an activity, daily briefings also could be held, as well as special briefings before major evolutions.

3.5.3 Radiological Controls and Protection

The Radiological Controls and Protection Program is defined in DOE-approved programs and contractor-approved procedures. The Radiological Controls and Protection Program implements the contractor's policy to reduce risks to safety or health to levels that are ALARA and to ensure the adequate protection of workers. The contractor's Radiological Protection Program meets the requirements of 10 CFR 835. Appropriate dosimetry, RWPs, personal protective equipment, ALARA planning, periodic surveys, and radiological control technical support also will be provided.

The standard contractor's controls for work in radiological areas are assessed as adequate to control project activities. These controls will provide for radiological controls planning to identify the specific conditions, and the controls also will govern the specific requirements for an activity, periodic radiation and contamination surveys of the work area, and periodic or continuous observation of the work by the Radiological Controls organization. The ALARA planning process will be used to identify shielding requirements, contamination control requirements (including local ventilation controls), radiation monitoring requirements, and other radiation control requirements for the individual tasks conducted during the projects.

Measures also will be taken to minimize the possibility of releases to the environment. HNF-21188, *B Plant Construction Laydown Yard Air Monitoring Plan* (AMP) quantitatively addresses the radionuclide inventory and activities that could cause potential release of this inventory, but not to the exclusion of 10 CFR 835 requirements. Therefore, monitoring must be completed as described in the AMP and radiological worker exposure must also be monitored using approved occupational radiological protection methods.

4.0 ENVIRONMENTAL MANAGEMENT AND CONTROLS

The ARARs for this removal action were identified in the AM for the Laydown Yard. A discussion of how the removal action will comply with these ARARs is provided in the following sections.

4.1 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

A removal action must, to the extent practicable, meet ARARs. ARARs are either applicable or relevant and appropriate requirements.

> Applicable requirements are cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under Federal or State

law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location or other circumstance at a CERCLA site.

Relevant and appropriate requirements, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site.

ARARs do not include administrative requirements. The ARARs must be met for CERCLA removal actions [CERCLA, Section 121(d)(2)]. Removal actions are exempt from obtaining Federal, state, and local permits [CERCLA, Section 121(e)(1)] for activities performed onsite.

In addition, to-be-considered (TBC) information is nonpromulgated advisories or guidance issued by federal or state governments, not legally binding and do not have the status of ARARs. As appropriate, however, TBCs should be referenced with ARARs in determining the removal action necessary for protection of human health and the environment. Because the Laydown Yard activities will result primarily in waste generation and have the potential for air emissions, the key ARARs include waste management standards; standards controlling emissions to the environment; and environment, safety, and health standards.

4.2 WASTE MANAGEMENT

Waste management activities performed in this RAWP will be in accordance with the AM (DOE/RL-2004-36). The following is a discussion of the waste management ARARs.

A variety of waste streams will be generated under the Laydown Yard removal action. It is anticipated that most of the waste will be designated as low-level waste (LLW). However, quantities of dangerous or mixed waste, PCB-contaminated waste, and asbestos and ACM also could be generated. The great majority of the waste will be in a solid form. However, some aqueous solutions might be generated.

Radioactive waste is governed under the authority of the *Atomic Energy Act of 1954*.

The identification, storage, treatment, and disposal of hazardous waste and the hazardous component of mixed waste are governed by *Resource Conservation and Recovery Act* (RCRA) *of 1976*. Authority to implement most of the RCRA was delegated to Washington State, which implements RCRA requirements under WAC 173-303. The dangerous waste standards for generation and storage will apply to the management of any dangerous or mixed waste generated at the Laydown Yard. Treatment standards for dangerous or mixed waste subject to RCRA land disposal restrictions are specified in WAC 173-303-140, which incorporates 40 CFR 268 by reference.

The management and disposal of PCB waste are governed by the *Toxic Substances Control Act* (TSCA) *of 1976*, which is implemented by 40 CFR 761. The TSCA regulations contain specific provisions for PCB waste, including PCB waste that contains a radioactive component. PCBs also are considered underlying hazardous constituents under RCRA and thus could be subject to WAC 173-303 and 40 CFR 268 requirements.

Removal and disposal of asbestos and ACM are regulated under the *Clean Air Act of 1977* (40 CFR 61, Subpart M), Occupational Safety and Health Administration regulations (29 CFR 1910.1101) and WAC 296-62. These regulations provide for special precautions to prevent environmental releases or exposure to personnel of airborne emissions of asbestos fibers during removal actions. 40 CFR 61.52 identifies packaging requirements.

Waste designated as LLW that meets the acceptance criteria will be disposed at ERDF, which is engineered to meet appropriate performance standards under 10 CFR 61.

Waste designated as dangerous or mixed waste will be treated as appropriate to meet land disposal restrictions and ERDF acceptance criteria, and disposed at ERDF. ERDF is engineered to meet landfill design standards under WAC 173-303-665. All applicable packaging and pre-transportation requirements for dangerous or mixed waste generated at the Laydown Yard will be identified and implemented before movement of any waste.

Some of the aqueous waste designated as LLW, dangerous, or mixed waste will be transported to ETF for treatment and disposal with an EPA approved offsite determination. ETF is a RCRA-permitted facility authorized to treat aqueous waste streams generated on the Hanford Site and dispose these streams at a designated state-approved land disposal facility in accordance with all applicable requirements.

Waste designated as PCB remediation waste likely will be disposed at ERDF. All waste suspected to contain PCBs will be evaluated to determine whether the waste meets ERDF waste acceptance criteria. Any PCB waste that does not meet ERDF waste acceptance criteria will be retained at a PCB storage area meeting the requirements for TSCA storage with an approved offsite determination by the EPA, and will be transported for future disposal at an appropriate disposal facility.

Asbestos and ACM will be removed, packaged as appropriate, and disposed at ERDF.

CERCLA Section 104(d)(4) states that where two of more noncontiguous facilities reasonably are related on the basis of geography, or threat or potential threat, the facilities can be treated as one for purposes of CERCLA response actions. Consistent with this, ERDF will be considered to be onsite for purposes of this removal action, and waste will be transferred between the Laydown Yard and ERDF without requiring a permit.

All waste streams will be evaluated, designated, and managed in compliance with the appropriate requirements. Before disposal, waste will be managed in a protective manner to prevent releases to the environment or unnecessary exposure to personnel. HNF-21184, *B Plant Construction Laydown Yard Waste Management Plan* (WMP), describes the detailed waste streams and waste management activities in support of the Laydown Yard removal action.

4.2.1 Waste Characterization and Designation

The waste characterization requirements will be developed as part of a DQO process (Section 2.1.3). Waste generated will be characterized in accordance with the contractor's procedures, the requirements of the receiving facility, and an approved SAP, specifically DOE/RL-2004-45, *Sampling and Analysis Plan for the B Plant Construction Laydown Yard*. Characterization will be conducted through process knowledge, sampling/analysis, and radiological surveys.

Before performing removal actions in any particular area or on any specific system, sampling and analyses events will be performed to identify contaminants. This information, in addition to process knowledge and historical analytical data, will be used to profile each waste form and to designate the waste form as one of the waste stream categories identified in the Laydown Yard's WMP. Additional information obtained by waste package assaying and the implementation of mathematical estimation will assist in verifying waste stream identification. Waste characterization and designation will be performed in accordance with 40 CFR 261 and WAC-173-303 and 304.

4.2.2 Waste Minimization and Recycling

By using waste separation and segregation, waste generation will be kept to a minimum. Waste will be segregated at the Laydown Yard as generated, which will minimize the volume of regulated waste. Waste will be separated into the following categories: LLW, mixed, dangerous, and nonregulated/nondangerous.

Waste minimization practices will be followed to the extent technically and economically feasible during all phases of waste management. Waste materials will be recycled, reused, or reclaimed when feasible. Introduction of clean materials into a contamination area and contamination of clean materials will be minimized to the extent practicable. During all phases of waste management, emphasis will be placed on source reduction to eliminate or minimize the volume of waste generated.

All materials released offsite for disposal/recycle must be certified free of contamination in accordance with the contractor's material release procedures. Waste materials with no or *de minimis* levels of CERCLA hazardous substances are not considered CERCLA waste and therefore are not subject to the 40 CFR 300.440 offsite acceptability determination.

4.2.3 Waste Handling, Storage, and Packaging

The CERCLA onsite waste staging and storage area(s) is described in the Laydown Yard WMP. Waste handling procedures, including containerizing and inspecting, will meet the requirements of WAC 173-303 and 40 CFR 261. Packaging and labeling of waste will meet the requirements of U.S. Department of Transportation (DOT) regulations (49 CFR 171-179) or the waste acceptance criteria of the onsite disposal facility as appropriate.

4.2.4 Waste Treatment

Treatment of waste streams could be necessary to provide for safe transport or effective disposal. The waste treatment(s) will be completed as described in the Laydown Yard WMP.

4.2.5 Waste Transportation and Shipping

All shipments will be made in accordance with DOT regulations, 49 CFR 171-179, or a DOE approved transportation document, applicable sections of WAC 173-303, and contractor's waste transportation procedures. Transfers to onsite facilities will follow an equivalent method of transport and documentation.

The removal action is expected to require offsite transportation of waste and potentially contaminated samples. The offsite handling and shipping of waste and potentially contaminated samples will be in accordance with the *Hazardous Materials Transportation Act of 1974*, as implemented through 49 CFR 100 through 179 and in compliance with 40 CFR 300.440.

The transportation services for waste generated during the Laydown Yard D&D could be provided by a subcontractor who will be responsible for using and maintaining appropriate transport motor vehicles and providing qualified commercial drivers. Trucks will be placarded and shipments will be in proper condition for transportation in accordance with DOT and EPA regulations and 49 CFR 171-179.

Waste transferred offsite must be approved by the EPA.

4.2.6 Disposal

All waste resulting from this action will be evaluated to determine if the waste meets the ERDF waste acceptance criteria for disposal. Waste stored or disposed at any treatment, storage, or disposal facility other than ERDF requires EPA approval in accordance with 40 CFR 300.440. Any PCB waste that does not meet the ERDF waste acceptance criteria could be transported for disposal to a TSCA offsite disposal facility approved by the EPA.

Solid waste could be sent for offsite disposal at a municipal/industrial landfill. Demolition debris could be disposed at an inert demolition debris landfill. Disposal of materials containing no or *de minimis* levels of CERCLA hazardous substances will not require an offsite acceptability determination per 40 CFR 300.440.

The *Hanford Site Solid Waste Acceptance Criteria* (HNF-EP-0063) identifies criteria for acceptance of waste at the CWC and the *Environmental Restoration Disposal Facility Waste Acceptance Criteria* (BHI-00139) provides the waste acceptance criteria for ERDF.

4.2.7 Recycling

Some of the waste from the D&D of the Laydown Yard could contain materials that beneficially would be recycled. As applicable, these materials will be managed/recycled in accordance with the contractor excess procedures or the Centralized Consolidated Recycling Center (CCRC) management plan. Recycling of materials from D&D activities that contain CERCLA hazardous substances will require an offsite acceptability determination from the EPA in accordance with 40 CFR 300.440.

Recycling of materials (e.g., noncontaminated wood, steel, masonry brick) containing no or *de minimus* levels of CERCLA hazardous substances will not require an offsite acceptability determination per 40 CFR 300.440. Recycling of items generated as a result of routine operational or maintenance activities (e.g., replacement of burned-out light bulbs or discharged batteries from functioning equipment) also will not require an offsite acceptability determination, as long as the items are not radiologically contaminated.

4.3 STANDARDS CONTROLLING RELEASES TO THE ENVIRONMENT

The proposed removal action will have the potential to generate radioactive and nonradioactive airborne emissions. Releases to the environment will be managed in accordance with the Laydown Yard ARARs as described as follows:

The federal *Clean Air Act* and the "Washington Clean Air Act" [*Revised Code of Washington* (RCW) Chapters 70.94 and 43.21] regulate both toxic and radioactive airborne emissions. Under implementing regulations found in 40 CFR 61, Subpart H, and WAC 246-247, radionuclide airborne emissions from all combined operations on the Hanford Site can not exceed 10 mrem/yr effective dose equivalent to the hypothetical offsite maximally exposed individual. WAC 246-247 also requires verification of compliance, typically through periodic confirmatory air sampling. Any potential for a nonzero radioactive emission requires use of best available radionuclide control technology (BARCT) or as low as reasonably achievable control technology (ALARACT). The potential to emit has been calculated for the removal action, and a monitoring plan has been developed and will be implemented as appropriate. HNF-21188, *B Plant Construction Laydown Yard Air Monitoring Plan* (AMP) will be used for the Laydown Yard removal action.

WAC 173-400 and 173-460 establish requirements for emissions of nonradionuclide air pollutants. The primary source of nonradionuclide emissions will be fugitive dust, which is regulated under

WAC 173-400-040(3). Fugitive emissions will be controlled through standard industrial practices such as application of water spray and fixatives and temporary containment enclosures/glovebag containments.

4.3.1 Radiological Air Emissions

The radionuclide emission standards (40 CFR 61, Subpart H, and WAC 246-247) will apply if any fugitive air emissions of radionuclides are generated during D&D activities.

The AMP estimates the amount of potential radioactive emissions and identifies and implements the BARCT and air monitoring. The AMP also identifies the location(s) of the air monitors needed to document compliance with the ARARs. Before conducting removal actions, the AMP will be approved by the EPA and will be implemented as written and approved. Additionally, if any other activities are deemed to require an air monitoring plan, a plan will be prepared before commencing work.

4.3.2 Nonradionuclide Air Emissions

WAC 173-400 and 173-460 establish requirements for emissions of nonradionuclide air pollutants. D&D activities will generate fugitive dust that will be controlled through standard industry practices such as the application of water sprays and fixatives, temporary confinement enclosures/glovebag containments that could be HEPA-type filtered, and HEPA-type-filtered and/or charcoal-filtered vacuums. These techniques are considered to be reasonable precautions to control fugitive emissions as required by the regulatory standards and are the same techniques applied to control radionuclide air emissions. In addition, equipment containing hazardous materials such as mercury (lighting components and switches), PCBs (light ballasts and motor oils), asbestos (e.g., loose floor tiles, transite wall coverings or panels), and lead shielding (lead shot, brick, sheet and cast-lead forms) will be removed to the extent practical before demolition activities. These activities will be managed in accordance with the contractor's procedures addressing removing, handling, and disposing of these materials in a manner that protects that safety of employees and the general public, minimizes spills and releases to the environment, and meets all regulatory requirements.

4.3.3 Reporting Requirements for Nonroutine Releases

The following reporting requirements apply for hazardous substances and PCBs that could be released during D&D activities.

4.3.3.1 Federal Hazardous Substance

40 CFR 302 requires immediate notification to the National Response Center on discovery of a release of a hazardous substance into the environment in excess of a reportable quantity.

40 CFR 355 requires immediate notification to the community emergency coordinator for the local emergency planning committee and to the State Emergency Response Commission for a release of a reportable quantity of an extremely hazardous substance, a comprehensive release of a reportable quantity of an extremely hazardous substance, or a CERCLA hazardous substance.

4.3.3.2 Dangerous Waste/State Hazardous Substances

WAC 173-303-145 requires immediate notification for any release of a dangerous waste or a state hazardous substance such that human health or the environment is threatened, regardless of the quantity. Notifications must be made to the EPA and to local authorities, as appropriate, in accordance with the local emergency plan.

WAC 173-303-360 requires immediate notification to the EPA in the event of a release, fire, or explosion at a dangerous waste treatment, storage, and/or disposal facility or from a less-than-90-day accumulation area if the event represents an emergency that could threaten human health or the environment. In addition, immediate notification to local authorities is required if the facility emergency coordinator determines that evacuation of local areas might be advisable. A written report on any incident that requires implementation of the facility contingency plan must be submitted to the EPA within 15 days in accordance with WAC 173-303-360(2)(k).

4.3.3.3 Polychlorinated Biphenyl Spills

40 CFR 761.125 requires notification in the shortest time possible after discovery (but no later than 24 hours) to the Pesticides and Toxics Substances Branch of the EPA regional office for PCB spills in excess of 4.5 kilograms (10 pounds). Notification will also be made to the EPA.

4.4 FINAL CHARACTERIZATION AND RELEASE OF PROPERTY

The final characterization requirements will be developed as part of a DQO process (Section 2.1.3). The remaining structure and soil will be characterized in accordance with the contractor's field sampling procedures and the approved SAP (DOE/RL-2004-45).

4.4.1 Final Characterization

Characterization will be conducted through collection of radiological surveys (as appropriate), collection of location data, and sampling and analysis to identify the site location and site radiological and chemical constituents that might remain after completion of D&D activities. Analytical data generated in these efforts will be used to develop the following information.

- Belowgrade structures that might remain in place at project completion and could require further remediation in the future.

The location data will be used to develop the following information:

- Location of the sample point(s) within the Laydown Yard area
- Location of the area relative to WIDS waste sites and unplanned release sites
- Location of pipelines/pipe tunnels/pipe trenches (as appropriate) that intersect the Laydown Yard as an aid to future remediation.

4.4.2 Release of Property

All property released for offsite disposal and/or reuse and recycle is nonreal property. The release of nonreal property will follow DOE guidance. If the property meets the surface contamination limits based on radiological surveys and/or characterization information, and the person or entity receiving the property is aware of the measured radioactivity on the property, the property could be dispositioned with low-levels of residual radioactivity. Property released via this process will be viewed as containing no or *de minimis* levels of CERCLA hazardous substances, and therefore will not be subject to CERCLA.

4.5 CULTURAL, HISTORICAL, AND ECOLOGICAL RESOURCE PROTECTION STANDARDS

Cultural and ecological resource reviews will be performed before demolition of the structures to identify any potential impacts. The cultural and ecological resource reviews will be conducted in accordance with the contractor's procedures. If potential impacts are discovered by these reviews, an appropriate mitigation plan will be developed and implemented.

5.0 PROJECT MANAGEMENT AND ORGANIZATION

The Laydown Yard removal action will be scheduled and estimated using the contractor's hierarchy of schedules, which include activity logic and restraints.

5.1 PROJECT SCHEDULE AND COST ESTIMATE

Activities will be resource loaded for personnel. Equipment needs will be identified and other materials estimated and included in the budgeted cost of work scheduled.

Estimates of project costs will be prepared at the activity level by the project team and subsequently will be reviewed and approved by the contractor and the DOE. Cost collection will occur at the code of account level.

The schedule, which encompasses the work scope of the Laydown Yard removal action (beginning in fiscal year 2004 through project completion), is included in Appendix A. The schedule included in this document also will be subject to change to be compliant with the funding of continued work at the Laydown Yard.

Schedule status will be reviewed periodically in review meetings. Monthly cost and schedule performances will be reviewed by the contractor. DOE and EPA will be invited to participate in these reviews.

5.1.1 Project Cost and Schedule Tracking

Performance measurement and analysis will be performed by the contractor. Project cost and schedule will be controlled and updated using the contractor's project management.

An earned-value system will track the cost, schedule, and performance as the project progresses towards completion. Cost/schedule performance reports will provide budgeted cost of work-scheduled comparisons and budgeted costs of work performed against the actual cost of work performed. These reports will provide variances to the baseline schedule and cost as budgeted. Variances above threshold values will be documented, as well as the rationale for the variance(s) and any recovery plan required.

Trends and baseline change proposals readily will be identified through the contractor's formal trend and change control program. All changes that affect the baseline will be documented. The contractor's trend register, which will be reviewed monthly by contractor senior management, categorizes trends from conception to final resolution. Trends will be identified as either performance trends or scope trends and will be defined further as resolved or unresolved.

Fiscal year project staffing, as budgeted, will be reconciled monthly during project review meetings to the actual number of full-time-equivalent personnel used during the month. Likewise, the corresponding number of hours actually worked will be presented and compared to the budgeted current work plan. Actual overtime will be monitored monthly (by department) and will be reconciled to the current budgeted overtime.

Cost and schedule variances to the current budget will be tracked monthly and on a to-date basis and will be reconciled back to the cause of the variance. Project impacts because of the cost and/or schedule variance will be described and corrective actions identified and tracked to the point of final resolution.

5.2 CHANGE MANAGEMENT/CONFIGURATION CONTROL

If a change arises that results in a fundamental change to the selected response action not within the scope of work, another EE/CA or proposed plan and supporting documentation will be prepared to allow the EPA to select a revised response action.

Established configuration/change control processes will ensure that proposed changes are reviewed in relation to the specified commitments. If a breach of these commitments is discovered, work will cease so stabilization and/or recovery actions can be identified and implemented as appropriate. Change management will comply with the appropriate contractor's procedure. The management of change process for facilities that have a final hazard classification of less than nuclear is defined by the contractor's procedure. The management of change process will be used for the following purposes:

- Evaluate the impact of proposed changes that could affect authorization basis documents
- Determine whether proposed changes require DOE approval
- Evaluate the impact of discovered conditions
- Evaluate the effect of deviations from activities or commitments described in authorization basis documents.

5.3 PERSONNEL TRAINING AND QUALIFICATIONS

During the performance of project activities, the experience and capabilities of the operating staff will be extremely important in maintaining worker and environmental safety. Day-to-day knowledge of ongoing operations, month-to-month understanding of conditions encountered, and lessons learned will be imperative to continued safe operations.

Training requirements will ensure that personnel have been instructed in the technologies to work safely in and around radiological areas, and to maintain their individual radiation exposure and the radiation exposures of others ALARA. Standardized core courses and training material will be presented, and site-specific information and technologies will be added to adequately train workers.

Health physics workers will be required to have completed and be current in radiological control technician qualification training. These training courses require the successful completion of examinations to demonstrate understanding of theoretical and classroom material.

Specialized training will be provided as needed to instruct workers in the use of nonstandard equipment, in the performance of abnormal operations, and in the hazards of specific activities.

Specialized training could be provided by on-the-job training activities, classroom instruction and testing, or pre-job briefings. The depth of training in any discipline will be commensurate with the degree of the hazard(s) involved and the knowledge required for task performance.

Some activities will require the acquisition of expert services as opposed to project staff training. Assaying of waste packages and dismantling the facility by specialized methods (e.g., diamond wire sawing) are examples of activities requiring expert assistance.

The contractor Training Program will provide workers with the knowledge and skills necessary to safely execute assigned duties. A graded approach will be used to ensure that workers receive a level of training commensurate with their responsibility that complies with applicable requirements. Specialized employee training will include pre-job safety briefings, plan-of-the-day meetings, and facility/work site orientations. The following training and qualifications could be applicable as required by job assignment for work activities:

- Training in accordance with 29 CFR 1910.120
  - 40-Hour Hazardous Waste Worker/8-Hour Refresher
  - 24-Hour Experience Component
  - 8-Hour Supervisor Training (for selected individuals)
  - SSHASP and RWP
  - Respirator Training
  - First Aid (two qualified persons per shift/crew)
  - Certified Asbestos Worker and/or Asbestos Awareness, as appropriate
  - Lead Worker as appropriate
  - Radiation Worker II.
- Training in accordance with 49 CFR 172, Subpart H, "Training"
- Hazardous material training
- Medical surveillance requirements
  - Hazardous waste worker physical
  - Mask fit
  - Lead worker baseline
  - Asbestos worker
- Dosimetry and bioassay requirements
  - Thermoluminescent dosimeter (as directed in the RWP)
  - Whole body count.

The SSHASP, RWP, and activity hazards analysis will include specific requirements for project activities being conducted, which will include PPE and required training for project personnel. This is discussed in detail in Section 3.5.

5.4 QUALITY ASSURANCE REQUIREMENTS

Overall quality assurance for the RAWP will be planned and implemented in accordance with 10 CFR 830.120, *EPA Requirements for Quality Assurance Project Plans* (EPA QA/R-5), and *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (EPA/SW-846). The quality assurance activities will use a graded approach based on the potential impact on the environment, safety, health, reliability, and continuity of operations. The *Sampling and Analysis Plan for the B Plant Construction Laydown Yard* (DOE/RL-2004-45) also contains a quality assurance project plan, which will be used to support the sampling and characterization activities. Other specific activities will include quality assurance implementation, responsibilities and authority, document control, quality assurance records, and audits. These activities are discussed in the following sections.

5.4.1 Quality Assurance Implementation

All project-related activities will establish and implement appropriate quality assurance requirements. Conditions adverse to quality will be identified in nonconformance reports, audit reports, surveillance reports, and corrective action requests. Investigation and corrective actions in response to these adverse conditions will be completed in a timely manner.

5.4.2 Responsibilities and Authority

The contractor must perform quality engineering, design reviews, surveillance, and audits (as necessary) to achieve quality assurance objectives. The contractor also must ensure that the various contractors and design agencies establish programs to control design and quality assurance in accordance with applicable requirements. The D&D contractor(s) must establish, implement, and document an inspection plan in accordance with approved specifications and drawings.

5.4.3 Document Control

All technical documents (e.g., specifications and drawings) will be controlled in accordance with approved configuration management procedures. The responsible design agency will maintain control of the design documents through acceptance of the documents. A project records checklist will be initiated to identify those records required for the final project file.

5.4.4 Quality Assurance Records

Each organization that maintains quality assurance records will be required to control the records in accordance with applicable contractor quality assurance requirements.

5.4.5 Audits/Assessments

Internal and external audits will be performed by the contractor's assessments, regulatory, and quality program organizations to ensure project compliance with the quality assurance program requirements.

5.4.6 Self-Assessments

Self-assessments will be conducted by project personnel to determine compliance in accordance with the requirements of the contractor's procedure.

5.5 PROJECT CLOSEOUT

After completion of all Laydown Yard removal action activities, a CVP will be prepared documenting the completion of a portion of the AM. The CVP will include a general summary of the following: applicable waste sites affected, reclassification form, and summarization of the final characterization (i.e., verification) data. The report will be submitted to the EPA for review and approval. After approval, the CVP will be forwarded to the record retention center for inclusion in the Administrative Record for the Laydown Yard. A final CVP will be developed and completed once the D&D of the 224-B Building is completed.

6.0 REFERENCES

BHI-00139, *Environmental Restoration Disposal Facility Waste Acceptance Criteria*, Bechtel Hanford, Inc., Richland, Washington.

CP-19640, *224-B and T Health and Safety Plan*, Fluor Hanford, Inc., Richland, Washington.

DOE/RL-94-02, *Hanford Emergency Response Plan*, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL-2000-06, *Engineering Evaluation/Cost Analysis for the 224-B Plutonium Concentration Facility*, Rev. 2, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL-2004-36, *Action Memorandum for the Non-Time-Critical Removal Action for the 224-B Plutonium Concentration Facility*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL-2004-45, *Sampling and Analysis Plan for the B Plant Construction Laydown Yard*, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

HNF-3628, *Fall 1998 200 East Area Biological Vector Contamination Report*, Rev. 0, Fluor Hanford, Inc., Richland, Washington.

HNF-21184, *B Plant Construction Laydown Yard Waste Management Plan*, Fluor Hanford, Inc., Richland, Washington.

HNF-21188, *B Plant Construction Laydown Yard Air Monitoring Plan*, Fluor Hanford, Inc., Richland, Washington.

HNF-EP-0063, *Hanford Site Solid Waste Acceptance Criteria*, Fluor Hanford, Inc., Richland, Washington.

Approvals

HNF-D&D-21331, *B Plant Construction Laydown Yard Removal Action Work Plan*, Revision 0.

for

Matt McCormick
Assistant Manager of Central Plateau
U.S. Department of Energy

6-23-04
Date

Craig Cameron
B Plant Construction Laydown Yard Project Manager
U.S. Environmental Protection Agency, Region 10

6/24/04
Date

APPENDIX A

B LAYDOWN YARD SUMMARY SCHEDULE

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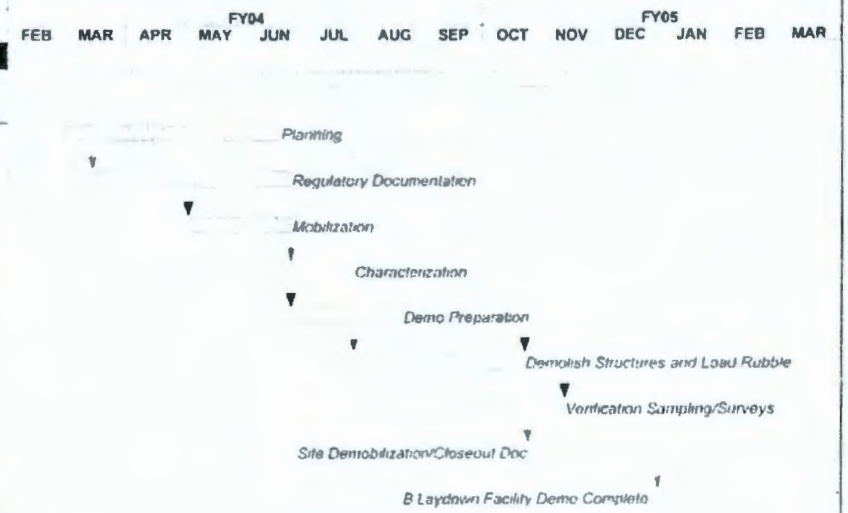
Activity ID	Activity Description	Orig Dur	Early Start	Early Finish
B Laydown Yard D&D				
Subtotal		212	01MAR04	30DEC04
W0010	Planning	79	01MAR04*	18JUN04
W0020	Regulatory Documentation	73	15MAR04*	24JUN04
W0030	Mobilization	38	03MAY04*	24JUN04
W0040	Characterization	21	25JUN04	26JUL04
W0050	Demo Preparation	40	25JUN04	20AUG04
W0060	Demolish Structures and Load Rubble	63	27JUL04	22OCT04
W0070	Verification Sampling/Surveys	30	04OCT04	12NOV04
W0080	Site Demobilization/Closeout Doc	45	25OCT04	30DEC04
W0099	B Laydown Facility Demo Complete	0		30DEC04



Start Date 01OCT02
Finish Date 30DEC04
Data Date 01OCT02
Run Date 08JUN04 13:08

Target Bar
Progress Bar

DREG

Sheet 1 of 1

Date Revision Checked Approved

B Laydown Yard
Summary Schedule

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