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Date: April 14, 2006
Ref: ER2006-0321

Mr. David Gregory, Federal Project Director
Department of Energy, MS A316
Los Alamos Site Office
Los Alamos, NM 87545

SUBJECT: SUBMITTAL OF THE WORK PLAN FOR THE CHARACTERIZATION OF ABOVE-GRADE DELTA PRIME WEST STRUCTURES AT TECHNICAL AREA 21

Dear Mr. Gregory,

Enclosed please find two hard copies with electronic files of the revised "Work Plan for the Characterization of Above-Grade Delta Prime West Structures at Technical Area 21."

If you have questions, please contact Bill Atkin at (505) 665-9724 (batkin@lanl.gov) or Lance Woodworth at (505) 665-5820 (lwoodworth@doeal.gov).

Sincerely,

David McInroy, Deputy Program Manager
Environmental Remediation & Surveillance
Los Alamos National Laboratory

Enclosures: Two hard copies with electronic files – Work Plan for the Characterization of Above-Grade Delta Prime West Structures at Technical Area 21 (ER2006-0175)

DP/jk

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LA-UR-06-1565
April 2006
ER2006-0175

Work Plan for Characterization of Above-Grade Delta Prime West Structures at Technical Area 21

Los Alamos
NATIONAL LABORATORY
EST. 1943

CD included with this document

Disclaimer

This document contains data on radioactive materials, including source, special nuclear, and by-product material. The management of these materials is regulated under the Atomic Energy Act and is specifically excluded from regulation under the Resource Conservation and Recovery Act and the New Mexico Hazardous Waste Act. Information on radioactive materials and radionuclides, including the results of sampling and analysis of radioactive constituents, is voluntarily provided to the New Mexico Environment Department in accordance with U.S. Department of Energy policy.

Prepared by
Environmental Stewardship Division–
Environmental Remediation and Surveillance Program

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Tables

1.0 INTRODUCTION

The activities covered in this work plan relate to performing a limited, reconnaissance-level characterization (RLC) of the nature and extent of radionuclides and chemicals potentially present in aboveground structures and components of existing Delta Prime (DP) West structures at Technical Area (TA) 21 These structures include Buildings 21-02, 21-05, 21-116, 21-149, 21-150, and 21-210, and associated interconnecting corridor Buildings 21-312, 21-313, 21-314, and 21-315. The latter buildings are remnants of Buildings 21-03 and 21-04, portions of which were demolished in 1994.

The RLC will focus primarily on defining the physical, radiological, and chemical condition of the facilities, which could affect future decommissioning activities.

Data are required for all facilities, areas, and features including the following:

- Trenches and sumps
- Walls (interior and exterior)
- Ceilings, attics, and roofs
- Heating, ventilation, and air conditioning (HVAC) systems
- Lighting and electrical systems
- Piping systems and conduit
- Fixed equipment

The work will be managed by the Los Alamos National Laboratory (LANL or the Laboratory), Environmental Characterization and Remediation (ENV-ECR) Group, under the Environmental Stewardship–Environmental Remediation and Surveillance (ENV-ERS) Program. The quality program governing this investigation is consistent with the criteria for quality programs published in U.S. Department of Energy (DOE) Order 414.1 and the ENV-ECR quality management plan.

1.1 General Site Information

The Laboratory is a multidisciplinary research facility owned by the DOE and managed by the University of California (UC). The Laboratory is located in north-central New Mexico approximately 60 miles northeast of Albuquerque and 20 miles northwest of Santa Fe. The Laboratory covers 40 mi^2 of the Pajarito Plateau, which consists of a series of fingerlike mesas separated by deep canyons containing perennial and intermittent streams running from west to east. Mesa tops range in elevations between approximately 6200 and 7800 ft. The TA-21 area is shown on Figure 1.1-1. The DP West area is shown in Figure 1.1-2.

Buildings 21-02, 21-05, 21-116, 21-149, 21-150, and 21-210 housed nuclear research and processing activities. Buildings 21-312, 21-313, 21-314, and 21-315, located along a central corridor traversing the former DP West laboratory/process line, served as access and support facilities. Buildings 21-03 and 21-04, which were plutonium and uranium laboratories, have been removed with the exception of small sections adjacent to Buildings 21-313 and 21-314. These sections were left as part of the corridor between Buildings 21-02 and 21-05. The structures are depicted in Figure 1.1-3.

1.2 Investigation Rationale

Several solid waste management units (SWMUs) are adjacent or connected to existing and former DP West structures. The SWMUs were primarily components of subsurface waste systems at DP West. Investigation and schedule requirements specified in a March 1, 2005, Compliance Order on Consent (Consent Order) signed by the New Mexico Environment Department (NMED), DOE, and UC for the SWMUs assumed that aboveground DP West structures would be removed before field activities. Many of these structures currently remain in place, restricting ENV-ECR access to execute field investigations required by the Consent Order. The goals of this project are as follows:

- Determine the nature and extent of physical, radiological, and chemical hazards associated with the existing buildings and their components
- Provide surface and volumetric contaminant concentrations and waste types
- Verify past decontamination efforts
- Provide data to support health and safety/radiological protection
- Calculate nuclear safety hazard categorization for each building in accordance with DOE Order 5480.23, Nuclear Safety Analysis Reports

The Laboratory will use data obtained during this investigation to support decontamination and decommissioning (D&D) planning for the structures and to evaluate each building's status pursuant to DOE Order 5480.23.

1.3 Investigation Objectives

The overall objective of this investigation is to collect sufficient information to plan for D&D activities and assess nuclear safety hazard categorization for each DP West structure.

Specific objectives of the investigation include the following:

- Perform a limited characterization of the nature and extent of physical, radiological, and chemical hazards for Buildings 21-02, 21-05, 21-116, 21-150, 21-210, and associated corridor Buildings 21-312, 21-313, 21-314, 21-315, and 21-149 and their components.
- Determine waste types and volumes for DP West buildings listed above.
- Calculate nuclear hazard index ratings for each building or facility.

2.0 SITE BACKGROUND

TA-21 is located east of downtown Los Alamos, New Mexico, on a spur of "Townsite Mesa," known as DP Mesa. DP Mesa is bounded by the drainage channels in DP Canyon to the north and Los Alamos Canyon to the south. The eastern boundary is formed by the confluence of the two drainage channels. The western boundary is defined by the property boundary of TA-21. DP Mesa is divided into two separate areas. The western area, historically dedicated to plutonium operations, is known as DP West. The smaller, easternmost grouping of buildings is known as DP East. Building 21-257, Radioactive Liquid Waste Disposal Facility, is located between DP West and DP East.

The Laboratory transferred plutonium purification and recovery operations to the DP West facility in September 1945. DP West was used for production-scale uranium and plutonium processing. DP East

also started operating in September 1945. Work at DP East originally focused on polonium initiator research and continued with actinium and polonium processing operations.

Acids and caustics were used to isolate and concentrate uranium and plutonium at DP West. The buildings potentially contain chemical and radiological contamination.

2.1 Historic Features and Operational History

The original facilities at TA-21 were constructed in 1944 and 1945. Plutonium purification operations were relocated from the DP Building plutonium facility (TA-01) to DP West in September 1945. Uranium and plutonium purification started at TA-21 in September 1945. Several processing stages were required to separate the actinides from a nitrate solution feedstock received primarily from the Hanford Site. Other operations included fabricating uranium and plutonium metal, manufacturing space-heat sources, producing americium, separating isotopes, researching nuclear reactor fuel, and conducting various other research and development projects. Plutonium operations ended in 1978.

Buildings 21-02, 21-03, 21-04, and 21-05 have many common features, although the Laboratory has demolished most of Buildings 21-03 and 21-04. Each building was constructed in 1945 as part of the original operations of DP West. Each is currently inactive and most of the equipment has been removed. Each has concrete-filled trenches and troughs under former laboratory floors. These trenches crossed the laboratory rooms from east to west and were connected to floor drains to collect any waste or wash waters from the laboratory floors. Process piping within the trenches were routed to perimeter utility tunnels that contained the main service process pipes and, possibly, electrical wiring.

The Laboratory decontaminated these buildings from 1978 to 1981. Building surfaces were decontaminated to the extent practical and walls and ceiling were covered with orange paint to fix residual contamination. Residual floor contamination was covered with a new layer of concrete and/or linoleum. The buildings were subsequently used for other research purposes under restricted-use occupancy conditions (LANL, 1987 1982).

Before the 1978–1981 decommissioning, it was common practice to clean contaminated surfaces to the extent practical and cover the residual contamination with paint, concrete, or tile. Contaminated building materials, such as sections of roofs and walls, were sometimes removed. Paint chips and underlying materials are expected to be radioactively contaminated. The primary component of the contamination is assumed to be the various isotopes of plutonium. Americium-241 is the predominant contaminant in specific areas within Building 21-02. Table 2.1-1 provides a summary of reported historic spills and releases associated with the facilities.

The following sections give brief histories and construction details of the main buildings.

2.1.1 Building 21-02

The operations conducted in Building 21-02 included plutonium processing, americium-241 recovery and storage, plutonium wastes dissolution and recovery, nuclear stockpiling, and health and safety. The structure also contained a liquid waste loading area, solvent extraction columns, and a scrap incinerator. A criticality incident occurred in this building in 1958 (LANL 1999, 08744).

Building 21-02 is oriented north-northeast to south-southwest. The north section of Building 21-02 (referred to as TA-21-02 North Building) is a preengineered, warehouse-type building with corrugated metal exterior siding. The walls are structural steel with gypsum lathe and plaster. The south section of Building 21-02 (also referred to as TA-21-02 South Building) is a steel and plaster laboratory building with

structural steel walls, concrete stucco and metal siding on the exterior, and gypsum lathe and plaster on the inside (LANL 1999). The current, combined floor area of the north and south sections is approximately 13,500 ft^2 .

Both structures have a raised concrete floor that was placed in two layers. The original floor was 6-in. thick. A 4-in. layer of concrete was poured over the original floor to shield and contain radioactive contaminants. Both sections of the buildings reportedly have interior asbestos-containing material (ACM) transite panels. In addition, many floors have ACM linoleum or vinyl-asbestos tiles (LANL 1982,).

The building is a composite of various elevations and roof slopes, with a high, pitched bay in the center. The roofs support mechanical ducting. The roofing materials are suspected ACM. There is a partial mezzanine used primarily for storage and observation and basement areas housing electrical equipment. There is also an attic with numerous pipelines and potentially ACM insulation traversing the middle of the structure and extending into adjacent Buildings 21-312 and 21-313.

Building 21-02 most recently housed offices, storage rooms, and chemistry laboratories. Most of the equipment previously located in the structure has been removed.

2.1.2 Building 21-03

Building 21-03 housed plutonium-238/239 research and development, americium-241 and tritium separation research, inorganic and structural chemical research; and carbon, nitrogen, and oxygen isotope separation work.

Most of the building was razed in 1994. All that remain are the center corridor sections, portions of the foundation and utility tunnels, and walls shared with adjacent Buildings 21-312 and 21-313.

Building 21-03 was originally a preengineered, warehouse-type building similar to Building 21-02. The building contained the same types of trenches and troughs under the laboratory floors as in Building 21-02. Portions of the utility tunnels are visible where the building foundation was cut.

2.1.3 Building 21-04

Building 21-04 housed plutonium hot-cell research, much of the artificial heart research program, and Los Alamos Molten Plutonium Reactor Experiment research and development. Most of the building was demolished in 1994. All that remain are the center corridor sections, portions of the foundation, and walls shared with adjacent Buildings 21-313 and 21-314. Portions of the former building's utility tunnels are visible where the building foundation was cut. Building 21-04 was similar to Building 21-03 in its construction.

2.1.4 Building 21-05

Building 21-05 housed plutonium and metal alloy fabrication operations, plutonium parts fabrication and testing for nuclear devices, and uranium and plutonium limited research. Tritium recovery, fluoride reduction, metal casting and machining; and uranium operations were also conducted in this facility.

Building 21-05 is structurally similar to Building 21-02 and contains ACM. Modifications similar to those in Building 21-02 were made during decontamination, including a second 4-in.-thick concrete floor and painting contaminated surfaces.

The building has a metal pitched roof. The roof supports mechanical ducting. The roofing materials are suspected ACM. There is a partial mezzanine used primarily for storage and observation and a basement housing electrical equipment. There also is an attic with numerous pipelines and potential ACM insulation traversing the middle of the structure and extending into adjacent corridors (Buildings 21-149 and 21-315).

Building 21-05 was subjected to numerous renovations and additions, based on changes in the research and development. The renovations included adding a solvent shed and two hoists; modifying the furnace, exhaust, lighting, heating, wiring, and ventilation systems; and installing a balcony and stairs, an electro-refining lab, new dry boxes and exhaust stacks, equipment rooms, and an equipment room containing a dehumidifier and compressor (LANL 1999, 08744). The current footprint of the building is approximately 14,400 ft^2.

2.1.5 Building 21-116

Building 21-116 was originally built in 1951 for an airplane hangar but historically has been used as a material warehouse for DP West operations. There is a 22-in. concrete pipe from north to south beneath the concrete slab. It is a preengineered steel light rigid frame from east-west and braced with steel straps. The interior walls are constructed from insulated metal siding. Exterior walls and gable roof consist of corrugated metal siding. (LANL 2005, 091929).The current footprint of the building is 2448 ft^2.

2.1.6 Building 21-149

Building 21-149 was constructed in 1962. It is primarily a corridor that connects Buildings 21-150 and 21-05 and includes an equipment room, telephone cabinet, and a men's restroom on the first floor. The building served as a hub for the distribution of utilities, including alarms and public address systems, to Buildings 21-02, 21-03, 21-04, and 21-05.

The building has a partial second floor containing two fans and an equipment room. A recent walk-through of the building revealed that there is equipment in the building, including several hoods. The attic contains numerous pipelines and potentially ACM insulation traversing the middle of the structure and extending into the corridors of Buildings 21-150 and 21-05. The current footprint of the building is approximately 3762 ft^2. The base is a concrete slab with footings (LANL 1999, 08744).

Building 21-149 is a steel-framed post and beam structure with insulated metal siding panels and flat built-up roofing. The roofing materials are assumed to be ACM. The building has two HVAC condenser units, a high-efficiency particulate air (HEPA) filtration system, a bag house, and two 50-ft stacks on the exterior. The HEPA filters and exhaust system were upgraded in 1972. The HVAC system contains a condenser and blower equipment.

ACM transite panels, vinyl-asbestos floor tiles, and thermal system insulation are assumed to exist in Building 21-149, based on visual observations and the date of construction.

2.1.7 Building 21-150

Building 21-150 was built in 1961 and 1962 to house plutonium fuels development activities. The building contained a laser lab, wet lab, other laboratories, offices, a sampling shed, and a janitor's closet. Research performed in this building included work on plutonium fuels, fast reactor plutonium/ceramic fuels, an artificial heart, space heat sources, and cold fusion. Equipment observed in Building 21-150

includes several fume hoods. The footprint of the building covers 7041 ft^2. It rests on a reinforced concrete slab.

Building 21-150 is an industrial-style building with cast-in-place concrete beams and columns spanned by concrete masonry units. The built-up roof is assumed to contain ACM. Interior walls are covered with cement plaster. It has a full basement with electric switchgear and a mezzanine space containing three laboratories (LANL 1999, 08744). The roof has a visible external piping and conduit system as well as an exhaust stack and blower. ACM transite panels, vinyl-asbestos floor tiles, and thermal system insulation are assumed to exist in this building, based on visual observations and the date of construction.

2.1.8 Building 21-210

Building 21-210 served as a plutonium research support building and is currently occupied by the Ecology Group. The building consists of a frame assembly of cast-in-place concrete beams and columns with reinforced masonry infill pumice block walls. Walls consist of infill panels constructed of concrete blocks. The floors are cast-in-place concrete slabs. Low and high roofs are steel joists with bridging with poured gypsum decks. (LANL 2005, 091929) The gross area of the building is 21,254 ft^2.

2.1.9 Buildings 21-312, 21-313, 21-314, and 21-315

These buildings were designed to allow easy passage of personnel and equipment between the buildings. The rooms are primarily storage, janitorial supply, and restrooms. The corridor spans the entire length of the complex from Building 21-02 to 21-150, with an uneven grade and many double doors leading into and out of rooms of the main buildings. The buildings also serve as the primary utility corridor for DP West. The gross area of these structures is 21,254 ft^2.

3.0 SCOPE OF ACTIVITIES

The field activities in this investigation include taking a physical tour of each building, preparing the site (e.g., identifying and marking sample locations), conducting limited static surface contamination measurements (total and removable, alpha and beta/gamma) and conducting radiometric scans of building interior and exterior surfaces as well as building components, and collecting and analyzing surface smear samples from inaccessible surfaces which could be important for D&D activities (e.g., horizontal surfaces of ducts, piping, and equipment). Other field activities include x-ray fluorescence (XRF) spectroscopy screening for lead in paint and sample collection and analysis of surface media (e.g., paint, insulation, flooring and roofing materials, sediment), followed by volumetric sampling and analysis of bulk building media (e.g., concrete, plaster, gypsum board, and potential waste streams such assumps, tanks, piping, hoods). The sample locations will be specified after considering the results of the physical building inspection and radiological screening.

Field teams must adjust to heterogeneous material types, varying and potentially hazardous contamination levels, and known and potential surface and subsurface obstructions. The most salient health and safety concerns are active utility lines, acidic and highly radioactive building materials, and ACM.

Health and safety concerns associated with the planned activities are addressed specifically in two associated documents: an integrated work document and a site-specific health and safety plan (SSHASP).

3.1 Categories of Areas and Material Types

Table 3.1-1 describes categories of building areas and potential material types for each building within the scope of this investigation. Structure areas and surfaces subject to screening and sampling efforts are floors, ceilings, exterior and interior walls, and equipment. Samples of porous material are expected to consist mostly of concrete, plaster or drywall, insulation, filter material, and sludge. Liquid samples will be collected from existing piping and equipment if liquid is present. Volumetric sampling of nonporous materials such as sheet metal and corrugated metal siding and equipment surfaces will not be conducted.

3.2 Number and Types of Samples

Table 3.2-1 describes the number and types of samples to be collected. Approximately 160 volumetric samples will be collected in this investigation. Fifty-four percent of these samples will be collected from three buildings (21-02, 21-05, and 21-150). Sample locations will be selected based on process knowledge, historical document reviews, a prework walk-through, radiological surveys, and other field screening methods. Building equipment, piping, and HVAC systems represent 57% of the sample total.

Table 3.3-1 describes the type and number of radiation measurements to be conducted. Approximately 700 uniformly spaced static surface activity measurements will be performed on structure floors, roofs, and exterior and interior walls. Approximately 300 biased static surface activity measurements will be performed on structure floors, roofs, exterior and interior walls, and equipment. The biased measurement locations will be selected based on process knowledge, historical document reviews, and a prework walk-through. Total and removable alpha and beta/gamma radioactivity will be measured for the biased and uniformly spaced locations.

One square meter radiometric alpha and beta/gamma radiation scans will be performed centered around the uniformly spaced and biased locations, if practicable.

3.3 Analytical Suites

Table 3.2-1 describes the analytical suite for each type of sample. The analytical suites are based on investigation objectives, process knowledge, historical document reviews, and expected hazards. The analytical suite for a given sample may change based on information obtained from the prework walk-through and field-screening efforts.

3.4 Field Screening

Building and building component surfaces will be screened in the field to evaluate radionuclide, volatile organic compound (VOC), and lead contamination. This screening information, along with visual and historical evidence, will be used by field personnel to determine if surface or volumetric samples need to be collected. Alpha and beta/gamma radiation will be measured using handheld alpha and beta/gamma radiation detectors. XRF techniques will be used to screen for lead in building material surfaces. For building and equipment materials where VOCs are suspected, potential VOC emissions will be measured using a photoionization detector (PID).

Samples will be screened in the field to indirectly measure VOC and radionuclide contamination. Radioactivity emitted by the samples will be measured before the samples are transferred to containers. Alpha and beta/gamma radiation will be measured using handheld alpha and beta/gamma radiation detectors. VOCs emitted by the samples will be measured after the samples are transferred to containers. Headspace gases in sample containers will be measured using a PID.

Field screening will be conducted in accordance with ENV-ECR Standard Operating Procedure (SOP) –12.01, Field Logging, handline, and Documentation of Borehole Materials.

3.5 Sample Site Restoration and Repair

Sample locations where core samples are collected will be filled and sealed. Field personnel will verify that the volume of sealing and fill material equals or exceeds the volume to be filled and sealed. Waste generated from core sampling will be handled in accordance with ENV-ECR SOP-01.06, Management of ER Project Wells.

Concrete or plaster will be applied to restore the area to preinvestigation conditions. Work areas will be cleaned and solid and hazardous or low-level wastes will be sorted. Selection, packaging, and analysis of investigation-derived waste (IDW) will be considered in accordance with the procedures outlined in Appendix B of this work plan and detailed in ENV-ECR SOP 01.10, Waste Characterization. IDW expected during this investigation includes personal protective equipment, portions of cores not permanently archived, plastic sheeting used for containments, fluids generated during contamination control and decontamination activities, HEPA filters from respirator cartridges and vacuum, and other solid wastes. An estimated 2.7 yd^3 of IDW will be generated during this investigation: 2.1 yd^3 of solid low-level waste and 0.6 yd^3 of liquid, low-level waste.

3.6 Comparison of As-Built Drawings to Actual Conditions

As-built drawings for all structures will be compared with actual conditions by field personnel. Any deviations to the as-built drawings will be noted and the drawing with be annotated to reflect actual conditions. Building material types and volumes will be estimated using the annotated as-built drawings as well as historical documents.

3.7 Asbestos

A New Mexico accredited asbestos inspector(s) shall collect information from previous sampling plans, drawings for the facility, and any documents historically relative to the subject site for informational purposes.

The inspector(s) shall conduct a focused structure walk-through to identify new and previously determined asbestos-containing materials. The delineating factors for selecting the new suspect material will be recorded for each homogenous area of material. Material texture, color, date of application, or distinguishing characteristics shall be used to determine the homogeneity and to group similar materials for sampling purposes.

Previously and newly identified asbestos-containing materials will be documented by photograph and delineated on drawings of the facility as to their approximate location.

Construction materials not previously identified will be noted on drawings and categorized into four classifications of materials. These classifications are similar to the categories itemized in the U.S. Environmental Protection Agency (EPA) 40 Code of Federal Regulations (CFR) 763.88 and include

- Surfacing—Material that is sprayed on, trowled on, or otherwise applied to surfaces such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, or other purposes,

- Thermal system insulation (TSI)—Material applied to pipes, fittings, boilers, breeching, tanks, ducts, or other interior structural components to prevent heat loss or gain, or water condensation, or for other purposes,
- Miscellaneous friable—Interior building material on structural components, structural members or fixtures, such as floor and ceiling tiles that when dry may be crumbled, pulverized, or reduced to powder by hand pressure and does not include surfacing material or thermal system insulation material, and
- Nonfriable suspected asbestos-containing building material—Surfacing ACM, thermal system insulation ACM, or miscellaneous ACM that is found in or on interior structural members or other parts of a building that when dry may not be crumbled, pulverized, or reduced to powder by hand pressure.

3.7.1 Surfacing Materials

Surfacing materials not previously identified will be documented according to their locations and placed on a drawing. Samples of suspect surfacing materials will be collected according to the recommended minimum sampling rules outlined in 40 CFR 763.86. These rules are summarized as follows:

- Areas less than or equal to 1000 ft^2 shall have a minimum of three samples selected.
- Areas greater than1000 ft^2 but less than or equal to 5000 ft^2 shall have a minimum of five samples selected.
- Areas greater 5000 ft^2 shall have a minimum of seven samples selected.

3.7.2 Thermal System Insulation

Suspect materials not previously identified or undersampled according to historical data on mechanical systems shall be identified on the plans. The inspector(s) shall randomly sample three bulk samples of each suspect material type.

Insulation such as fiberglass and rubber will be inspected to ensure that insulation has not been applied over the existing asbestos-containing material.

Insulated fittings such as elbows, tees, and valves will be evaluated on a case-by-case basis as to the amount of sampling to be conducted to accurately represent the asbestos content of installed fittings. Finally, patches of insulation less than 6 linear or 6 ft^2 shall be sampled to adequately represent the content of asbestos within the material.

The inspector will identify and represent each homogenous area of thermal system insulation on a diagram.

3.7.3 Miscellaneous Friable Material

The inspector(s) shall visually identify each homogenous area of miscellaneous material and determine the friability of the material. These materials shall then be documented and randomly sampled at the discretion of the inspector to represent the asbestos content of the identified material.

3.7.4 Nonfriable Materials

The inspector(s) shall determine if other materials identified in the facility have not been previously identified or underrepresented by sampling. These materials shall then be documented on the diagram and randomly sampled to reflect the quantity of asbestos present in the building material. These materials may require sampling following the above-referenced sampling plans depending on the type of material identified.

4.0 INVESTIGATION METHODS

Scoping survey and intrusive investigation methods are described in the following sections. Methods are not described in detail if they are already addressed in ENV-ECR SOPs.

4.1 Applicable Standard Operating Procedures

The field team will perform the investigative activities in accordance with LANL and subcontractor procedures. The current revisions of the following ENV-ECR SOPs and Laboratory implementation requirements (LIRs) are directly applicable to the investigation methods proposed in this plan:

- ENV-ECR SOP-01.01, General Instructions for Field Investigations
- ENV-ECR SOP-01.02, Sample Containers and Preservation
- ENV-ECR SOP-01.03, Handling, Packaging, and Shipping of Samples
- ENV-ECR SOP-01.04, Sample Control and Field Documentation
- ENV-ECR SOP-01.05, Field Quality Control Samples
- ENV-ECR SOP-01.06, Management of Environmental Restoration Project Wastes
- ENV-ECR SOP-01.10, Waste Characterization
- ENV-ECR SOP-06.09, Spade and Scoop Method for Collection of Soil Samples
- ENV-ECR SOP-06.28, Chip Sampling of Porous Surfaces
- ENV-ECR SOP-06.33, Headspace Vapor Screening with a Photoionization Detector
- ENV-ECR SOP-09.13, X-ray Fluorescence Analysis
- ENV-ECR SOP-12.01, Field Logging, Handling, and Documentation of Borehole Materials
- LIR-300-00-01.4, Safe Work Practices
- LIR 300-00-05.4, Facility Hazard Categorization
- LIR 402-400-01.3, Lasers
- LIR 402-510-01.1, Chemical Management
- LIR 402-570-01.1, Asbestos
- LIR 402-600-01.3, Electrical Safety
- LIR 402-700-01.2, Occupational Radiation Protection Requirements
- LIR 402-820-01.1, Noise and Temperature Stresses
- LIR-402-830-01.0, Local Ventilation for Contaminant Control

- LIR 402-860-01.1, Lockout/Tagout for Personal Safety
- LIR 402-880-02.1, Penetrations
- LIR 402-910-01.6, LANL Fire Protection Program
- LIR 402-1000-01.1, Personal Protective Equipment
- LIR 402-1320-01.2, Vehicle and Pedestrian Safety
- LIR 404-00-02.3, General Waste Management Requirements
- LIR 404-00-03.1, Hazardous and Mixed Waste Requirements
- LIR 404-00-04.2, Managing Solid Waste
- LIR 404-00-05.3, Managing Radioactive Waste
- LIR 404-00-06.1, Managing Polychlorinated Biphenyls

The current revisions of the following subcontractor, Environmental Restoration Group, Inc. (ERG), SOPs address specific portions of the field activities not addressed in ENV-ECR SOPs:

- ERG SOP-1.00, Technical Quality Control
- ERG SOP-1.01 Beta Scintillation Detector Calibration and Checkout
- ERG SOP-1.02, GM “Pancake” Detector Calibration and Check-Out
- ERG SOP-1.03, Alpha Scintillation Detector Calibration and Check-Out
- ERG SOP-1.09, Alpha and Alpha/Beta Scintillation Tray Counter Calibration and Check-Out
- ERG SOP-2.02, General Equipment Decontamination
- ERG SOP-2.07, Function Check of Equipment
- ERG SOP-3.03, Total Surface Contamination Monitoring
- ERG SOP-3.04, Sampling for Removable Surface Contamination
- ERG SOP-3.01, Respiratory Protection Program
- ERG SOP-6.01, Setup and Operation of ERG Three-Dimensional Indoor Survey System

The current revisions of the following ENV-ECR quality procedures (QPs) are applicable to the investigation methods proposed in this plan:

- QP 2.2, Personnel Training Management
- QP 2.3, Personnel Entry and Exit Process
- QP 3.4, Corrective Action Process
- QP 4.4, Records Transmittal to the Records Processing Facility
- QP 5.3, Readiness Planning and Review
- QP 5.7, Notebook Documentation for Environmental Restoration Technical Activities
- QP 10.3, Stop Work and Restart

4.2 Radiological Surface Contamination Measurements

The 3-Dimensional Indoor Survey System (3-DISS) enables the collection of accurate and reproducible scanning data in an electronic format. The scanning system combines radiological instruments and a fan-laser positioning system to record detector count rates and associated x, y, and z coordinates for measuring radioactive emissions from surfaces such as walls and floors. The position sensor must have lines of site to at least two infrared lasers positioned around the work area. The position coordinates are accurate to within less than 1 cm.

One or more backpack and single detector units will be used to conduct surveys or to perform integrated radiation measurements at point locations. Outputs from each of the detectors, along with the x, y, and z coordinates, will be recorded automatically at user-set intervals. The number of static and scanning measurements is described in Table 3.3-1.

Removable surface contamination will be measured by taking a 100-cm^2 smear of point locations. The smear sample will be counted using an alpha and beta/gamma tray counter in a low-background area. This method is described in ERG SOP-1.09 and ERG SOP-3.04. For scan and sample locations at elevations greater than 6 ft above the floor, ladders or motorized elevated work platforms will be utilized to access the location.

Radiological instruments used for surface contamination scanning will be dual-channel rate meter/scalers coupled to scintillation detectors. The rate meter/scaler has adjustable threshold settings for both alpha and beta channels and an adjustable window for the beta channel. The detectors will be placed within 0.5 in. of a surface, which will be scanned at an approximate speed of 5 cm/s. Scanning may be conducted using the 3-DISS floor/wall scanner or the 3-DISS backpack units.

Data are logged on a handheld personal digital assistant (PDA) or laptop computer. The data will be managed and displayed using the software application, ArcView Geographic Information System. The data set will be subdivided in descending order by site name, building number, room number, wall, and floor. Each wall, floor, or ceiling data set will be labeled with a reference point (0, 0, 0) representing the start of the horizontal (x and y) and vertical (z) coordinate system for the wall or floor. Maps will present the raw radiological data collected in each room in terms of color ranges or collated data presented as isocontours, with the origin of the survey clearly marked, e.g., the northeast corner of a floor. The data will be transmitted to the ENV-ECR Records Processing Facility (RPF) in electronic form.

The methods for conducting scanning surveys are presented in ERG SOP 6.01.

4.3 Lead Screening Using XRF

Samples will be collected using methods consistent with the performance characteristic sheet described by the XRF manufacturer and on file with the Technical Center of Expertise for the Occupational Safety and Health Administration (OSHA). This method is compliant with OSHA 29 CFR 1926.62 Construction Industry Standards for Inorganic Lead.

During the physical inspection of the facility, the licensed Pb inspector(s) will create a map and possible list of suspected and distinct painting histories. The painting histories will be noted for each area on a building diagram.

All schematic diagrams generated from the inspection will be labeled using the convention of having the main address exterior wall labeled “A” with sequential lettering (B, C, and D) in a clockwise direction. The

schematic will clearly identify the direction for north and Wall A. The assessment form for recorded notes will have the specific information regarding each facility and the general description of the room.

The XRF measurements will be obtained from interior and exterior surfaces on a room-by-room basis. Surfaces to be sampled include walls, window and door components, ceilings, floors that are painted or coated, baseboards, etc. One measurement will be taken for each test combination. A test combination is determined by component type and substrate material. Wood, concrete, plaster, and metal with different painting histories shall be a test combination.

If the surface is visibly soiled or dusty, a piece of paper will be placed between the instrument face and the surface. A clean piece of paper that has previously been checked for possible interference will be used to ensure that the XRF window is not contaminated and that the sample results are from the paint and not surface-deposited material. Surfaces with round- or obscure-shaped surfaces will be measured using this paper technique.

The instrument reports results in milligrams per centimeter squared. Lead-based paint is defined when measurements are at or above 1.0 mg/cm^2 by XRF or 0.5% by weight. Results between 0.9 and 1.0 mg/cm^2 are considered inconclusive and will be declared as lead-based paint. Readings collected below 0.9 mg/cm^2 will be considered negative and may require additional laboratory confirmation for lead content.

Samples with detectable levels of lead may contain metallic lead, which could pose exposure risks during construction or demolition activities. Lead detected in samples and negative results by XRF analysis may still contain lead above waste characterization criteria as established by the Resource Conservation and Recovery Act.

4.4 Volumetric Sampling of Different Porous Materials

4.4.1 Wood, Plaster, Gypsum Board and Similar Materials

A 3-in.-diameter (or other size, as appropriate) braised diamond hole saw (or equivalent) will be used for sampling interior walls and ceilings containing wood, plaster, gypsum board. Deonized water will be applied at the point of cutting, to the extent practicable, to minimize the generation of dust. A containment and wet/dry HEPA vacuum will be used to minimize airborne contaminants. Electricity for the saw and wet/dry HEPA vacuum will be supplied by a portable generator. The generator will be staged outside buildings during the entire investigation to minimize noise and carbon monoxide levels inside buildings. For scan and sample locations at elevations greater than 6 ft above the floor, ladders or motorized elevated work platforms will be utilized to access the location.

Field personnel will record the thicknesses of the cores and other observations; for example, the intersection of the old and new materials, reinforcement, and underlying base materials in a field logbook and they will photograph the sample location. The cores will be cut by hand above the intersection of the old and new material using a hacksaw, hand-held angle grinder fitted with a diamond cutting blade, or equivalent. Deionized water will be applied at the point of cutting to minimize the generation of dust. The wastewater and slurry will be collected during the cutting using a wet/dry HEPA vacuum. The cutting tool will be decontaminated after each core is cut.

If old and new layers are visually apparent in a core, two concrete samples per core will be analyzed by the external laboratory. If discrete layers are not visually apparent, the entire core will be analyzed as one sample.

4.4.2 Soil, Sediment, Sludge, and Other Similar Materials

ENV-ECR SOPs for soil sampling will be used to sample soil, sediment, sludge, and other similar materials. For scan and sample locations at elevations greater than 6 ft above the floor, ladders or motorized elevated work platforms will be utilized to access the location. Field personnel will record the physical characteristics, location, and depth of the sample material and will photograph the sample location.

All volumetric samples will be field-screened for alpha and beta/gamma radiation and VOCs. Field measurements will be compared with threshold levels published in the current revision of ENV-ECR SOP- 12.01. The ENV-ECR Sample Management Office (SMO) will accept only those samples that exhibit PID and alpha and beta/gamma readings lower than their respective thresholds, as defined in Table 8.1-1 of ENV-ECR SOP 12.01. The SMO will catalog and ship acceptable samples to an external analytical laboratory for analysis.

4.5 Surface Sampling of Nonporous Material

Volumetric sampling of nonporous material such as piping and sheet metal will not be performed in this investigation. Surfaces of such materials will be characterized for surface contaminants by taking approximately 100 cm^2 swipe samples using absorbent material followed by appropriate analysis. Dust generated from this activity is expected to be minimal and no containment of sample area is expected.

4.6 Piping, HVAC, and Equipment Sampling

To enable sampling of liquids potentially contained in piping, we will open piping joints in areas where liquids would accumulate and the liquids, if present, will be collected. If liquids are not present, the pipe's interior surfaces will be sampled for surface contamination as described in Section 4.3. If accumulation of solids is visible within the pipe, volumetric sampling of solids will be conducted. If necessary, a containment and wet/dry HEPA vacuum will be used with the sampling to minimize migration of airborne or waterborne contaminants into the building.

Field personnel will record the location, diameter, approximate length and physical condition of the pipe in a field logbook and will photograph the location.

To enable sampling of liquids contained in equipment, liquid reservoirs will be opened and liquid samples will be collected using standard techniques such as gravity flow, pipetting, or peristaltic pumping of liquid into sample container. Secondary containment techniques will be utilized to minimize contamination of surrounding areas and surfaces due to the sampling event.

Interior surfaces of and materials (e.g., HEPA filters) within HVAC systems will be sampled for both volumetric and surface contamination. Access to internal surfaces and materials will be obtained via access ports, cutting, disassembly, or other available methods. For surface contamination sampling, it is not expected that containment of a sampling area will be required. If volumetric sampling is required as described in Section 4.4, the sampling activities will be conducted within containment, if necessary, to limit airborne and waterborne migration into the building.

4.7 Asbestos Screening and Sampling

Once the visual inspection and walk-through has identified the areas required for sampling and a sampling plan has been developed, samples shall be collected.

Samples will be selected according to the plan in random, readily accessible areas first. Samples will be collected in a manner to minimize generation of dust and debris. Any material generated shall be collected and shipped within the sample container.

The inspector(s) shall identify the area to be sampled and install and secure containment around the sampling area. Any material generated will be placed in the sample container for shipment or vacuumed with a small, toolbox sized HEPA vacuum or equivalent.

After sample collection, all waste material including glovebags, glove boxes, drop cloths, and sampling tools will be cleaned and the waste will be segregated for contamination screening. Waste will be minimized to cleaning cloths and HEPA filters when the project is complete.

Sampled areas in walls, plaster and porous materials will be encapsulated with an asbestos encapsulant or equivalent containment.

4.8 Containments and Contamination Control

Planned activities that require containments include various material coring; and volumetric sampling of HVAC systems, sample screening, and handling. Containments will be used to minimize the risk of internal doses to field personnel and contamination of building interiors and exteriors.

Several types of containments will be used in this investigation: tents to house a portion of the sample preparation/decontamination and manual sampling and one glove box each in which to prepare samples. Containment will also be installed at the point where the coring apparatus meets the material to be sampled.

The tent and glove box containments will be designed and constructed on-site or by Lancs Industries, Inc., located in Kirkland, Washington. The borehole location containment will be fabricated on-site.

Contamination will be controlled in glove boxes and tents through careful handling of equipment and instrumentation and by using air handlers with HEPA vacuums and/or portable HEPA vacuums.

Glove boxes will be designed as open systems with continuous air exchange provided by either an air handler or portable HEPA vacuum. Lancs Industries tests its glove boxes by applying a positive pressure of 10 in. of water, monitoring an in-line pressure gauge, and inspecting the outside of the containment for leaks.

Tents will be designed as open systems. Air handlers will carry air from clean areas in the containments to areas where there is potential for contamination. The air handlers will be operated to maintain a differential pressure between outside and inside air of 0.02 in. of water. At least one magnahelic gauge per tent will be used to monitor differential pressures by way of ports installed on containment walls.

The tent containment will be equipped with one or more continuous air monitors (CAMs) with an audible alarm. The CAMs will be operated by LANL in the Health Physics Operations Group (HSR) radiation control technicians (RCTs), in accordance with instrument-specific SOPs.

Field installation, testing, and inspection of the containments and air handlers will be reviewed and/or performed by a qualified engineer and the site safety officer (SSO), in accordance with LIR 402-830-01.0 (Local Ventilation for Contaminant Control). HSR-1 RCTs will be inspecting the containments before use and on a daily basis when in frequent use.

Field personnel will inspect each containment system for leaks and surface contamination during and immediately after drilling and sampling a borehole (drilling containment) or daily (other tent containments). Containments and air handlers will be inspected weekly by the SSO for leaks and performance.

Air handlers and work areas immediately outside containments will be monitored for radioactivity. Noted failures in the containment system will result in either a change in engineering controls or a stop-work action.

Air leaks, if any, will be repaired. Irreparably damaged and/or grossly contaminated containments will be packaged and disposed of in accordance with ENV-ECR SOPs-01.06 and -01.10 and will be replaced with a new containment.

5.0 BOREHOLE ABANDONMENT

Bore holes in wall/ceiling material will be replaced with new concrete and plaster, respectively. Holes in HEPA filters will be covered with plastic and sealed with adhesive to prevent spread of contamination. Nonoperational pipes and HVAC systems opened as a result of this investigation will be closed either by reconnecting the system or by covering open ends with plastic and adhesive. Operational pipes and HVAC systems will be restored to operational conditions including replacement of HEPA filters if needed.

6.0 REPORTING

An RLC report (RLCR) summarizing the building characterization procedures and methods used to collect data, data quality objectives and the data validation process for each achieved characterization objective will be prepared. Data and conclusions will be presented separately for each building. All data collected to support the RCL goals and objectives described in Sections 1.2 and 1.3 of this report will be summarized with all procedures and raw data attached as appendices.

The RLCR will describe surface and volumetric contaminant concentrations, waste types (hazardous and radiological), and estimated quantities in bulk-building materials. Data will be collected during the characterization activities to determine the type and quantity of bulk wastes, which likely will be produced during the D&D activities. The RLCR will describe in detail the field survey data, analytical laboratory results, and other collected information used to determine waste stream type and concentrations. Data will be presented in a manner to readily be input to waste profile forms and waste characterization strategy forms used by LANL waste management personnel. Waste types shall be identified through existing categories used by LANL for planning and estimating purposes.

Radiological Summaries:

For each survey area, the number of measurements and the survey results shall be presented in tabular form. Graphical representation (e.g., posting plots, histograms, cumulative frequency distributions) may also be included with the tabular data, if such graphs are necessary to support data interpretation. For each type of surface contamination, measurements (total surface contamination, removable surface contamination, surface scans, and surface media sampling) will be reported in units of dpm/100 cm^2. Media and volumetric sampling data will be reported in units of dpm/100 cm^2 pCi/g.

Chemical Summaries:

The number of measurements and the applicable statistical distribution will be presented in tabular form, with additional graphical representation if applicable. The chemical data should be reported in the following manner:

- Toxicity characteristic leaching procedure measurements will be reported in milligrams per liter.
- Total measurements will be reported in mg/L (liquids) or milligram per kilogram) (solids).
- Polychlorinated biphenyl (PCB) measurements will be reported in parts per million or parts per million.
- Berylllium measurements will be reported in micrograms.
- Asbestos measurements will be reported as an asbestos percentage.

The RLCR will describe the average migration profile from contaminated surfaces into porous-building materials and remaining equipment (as appropriate). Subcontractor will provide average migration depth quantities into building materials for areas of similar process or history, or physical separation (rooms, trenches, etc.). Subcontractor shall identify layers of materials historically placed during DP West operations to restrict and cover gross contamination including, but not limited to, paint, drywall, plaster, concrete pours, sleeves, and other physical barriers. Subcontractor shall clearly delineate total, average, and removable beta-gamma and alpha contamination levels over exposed building surfaces (in units of dpm/100 cm^2).

The historical review cycle for the characterization effort will produce numerous documents, interviews, and survey records of past D&D efforts at TA-21 that could provide important health and safety information, waste information, procedures, and lessons learned. This information could provide future project cost savings and could also be utilized during the planning phases for future building D&D activities. Subcontractor will note any field verification of past decontamination areas and associated survey and sample results from current work associated with this SOW. Also a detailed bibliography should be developed identifying each document reviewed and where the documents can be found.

The RLCR will identify accumulations of residual hazardous chemicals and radioactive materials in remaining building systems including ventilation, industrial waste lines, process waste lines, utility piping systems, fume hoods, and other equipment systems. The RLCR will include a complete inventory of equipment and systems by building identified under this objective. This inventory will contain a description, a quantity, and a list of radiological and hazardous chemical contaminants identified, surface contamination levels for each contaminant, and, as appropriate, source terms or accumulated total quantities of contaminants in the system. This data should be documented in such a manner as to support the objectives of this work plan.

The RLCR will describe the presence of radiological, chemical, and physical hazards, which must be considered during detailed D&D planning. Any operational radiation protection or industrial hygiene-related measurements collected (other than those collected by HS-1 and HS-5 representatives) during characterization operations shall be summarized with backup details included in appendixes to the report. Measurements include, but are not limited to, air sample results, beta-gamma and neutron dose rates, and inadvertent transfer of contamination.

Determine radiological material quantities for each DP West building and calculate the nuclear safety hazard categorization for each building in accordance with DOE Order 5480.23, Nuclear Safety Analysis Reports, and DOE-STD-1027-92, Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports. The RLCR shall include the

radiological material quantities used to calculate the nuclear safety hazard categorization for each DP West building and shall detail and discuss the hazard categorization calculations for each building.

7.0 PROJECT ORGANIZATION

The activities defined in this work plan will be addressed by a team of laboratory personnel and subcontractors. A chart representing the field operations organization is depicted in Figure 1.4-1.

The Project Leader, Bill Atkin, is an employee of UC and is directly responsible for the management of this project. Duane Parsons is a UC representative and is the task leader for this project. The Project Manager, Michael Bradshaw, is responsible for day-to-day management of the project. The Corporate Quality Assurance (QA) Manager is Stan Waligora. Michael Bradshaw and Stan Waligora are LANL subcontractors employed with EDi Dimensions, Inc. The Corporate Health and Safety Officer (HSO) and SSO is Rick Haaker, a LANL subcontractor employed with AQ Safety, Inc. The Field Team Leaders, Charles Farr and Neil Wrubel, will oversee the radiological surveys and intrusive investigation, respectively. Mary Senn will serve as the project quality assurance manager for training, data collection, and readiness review. Charles Farr, Neil Wrubel, and Mary Senn are employed with a LANL subcontractor, ERG. Field staff will be supported by one or more LANL RCTs in the HSR-1. Project planning documents are being developed in conjunction with the LANL Industrial Hygiene and Safety (HSR-5) Group, who will also oversee industrial health and safety on the project.

8.0 SCHEDULE

Submittal of the integrated work document is scheduled for Feburary17, 2006. The end of readiness review is scheduled for March 15, 2006. The start of field activities is scheduled for March 17, 2006. Completion of the final report is scheduled for June 15, 2006.

The project schedule is presented as Figure 6.0-1.

9.0 REFERENCES

The following list includes all documents cited in this report. Parenthetical information following each reference provides the author(s), publication date, and ER ID number. This information is also included in text citations. ER ID numbers are assigned by the ENV-ERS RPF and are used to locate the document at the RPF and, where applicable, in the ENV-ERS Program master reference set.

Copies of the master reference set are maintained at the NMED Hazardous Waste Bureau; the U.S. Department of Energy–Los Alamos Site Office; the EPA, Region 6; and the ENV-ERS Program. The set was developed to ensure that the administrative authority has all material needed to review this document, and it is updated with every document submitted to the administrative authority. Documents previously submitted to the administrative authority are not included.

Blackwell, C., August 29, 1972. “Final Condition Report for Rooms 401-East, 401-A, -B, and –C 403, 404. 406, and 407 at DPW, TA-21,” Los Alamos Scientific Laboratory memorandum to A. Valentine from C. Blackwell, Los Alamos, New Mexico. (Blackwell 1979, 90520)

Blackwell, C. March., March 13, 1980. "Final Survey Report of Building 150 at TA-21." Los Alamos Scientific Laboratory memorandum to A. Valentine from C. Blackwell, Los Alamos, New Mexico. (Blackwell 1980, 90519)

Blackwell, C., March 18, 1980. "Final Condition Report of Building 150 at TA-21," Los Alamos Scientific Laboratory memorandum to A. Valentine from C. Blackwell, Los Alamos, New Mexico. (Blackwell 1980, 90516)

Blackwell, C., July 24, 1980. "Final Condition Report of Building 5 at TA-21." Los Alamos Scientific Laboratory memorandum to A. Valentine from C. Blackwell, Los Alamos, New Mexico. (Blackwell 1980, 90518)

Blackwell, C., July 24, 1980. "Final Survey Report of Building 5 at TA-21," Los Alamos Scientific Laboratory memorandum to A. Valentine from C. Blackwell, Los Alamos, New Mexico. (Blackwell 1980, 90517)

Blackwell, C., August 13, 1980. "Final Condition Report of Rooms 403, 404, 405, 406, and 407 in Building 4 at TA-21," Los Alamos Scientific Laboratory memorandum to A. Valentine from C. Blackwell, Los Alamos, New Mexico. (Blackwell 1980, 01912)

Blackwell, C., October 8, 1980. "Final Condition Report of Rooms 308, 312, 314, 320, 321, and 322 in Building 4 at TA-21," Los Alamos Scientific Laboratory memorandum to A. Valentine from C. Blackwell, Los Alamos, New Mexico. (Blackwell 1980, 01909)

LANL, September 1982. "Los Alamos DP West Plutonium Facility Decontamination Project 1978–1981," Los Alamos National report, LA-9513-MS, Los Alamos, New Mexico. (LANL 1982, 06399)

LANL (Los Alamos National Laboratory), December 23, 1999. "Historical Building Assessment for the Department of Energy Conveyance and Transfer Project," Los Alamos National Laboratory document LA-UR-00-1003, Los Alamos, New Mexico. (LANL 1999, 08744)

LANL (Los Alamos National Laboratory) November 7, 2005. "Engineering Study of the TA-21 Building/corridor Structures," Los Alamos Notional Laboratory document LA-UR-05-8639, Los Alamos, New Mexico. (LANL 2005, 091929)

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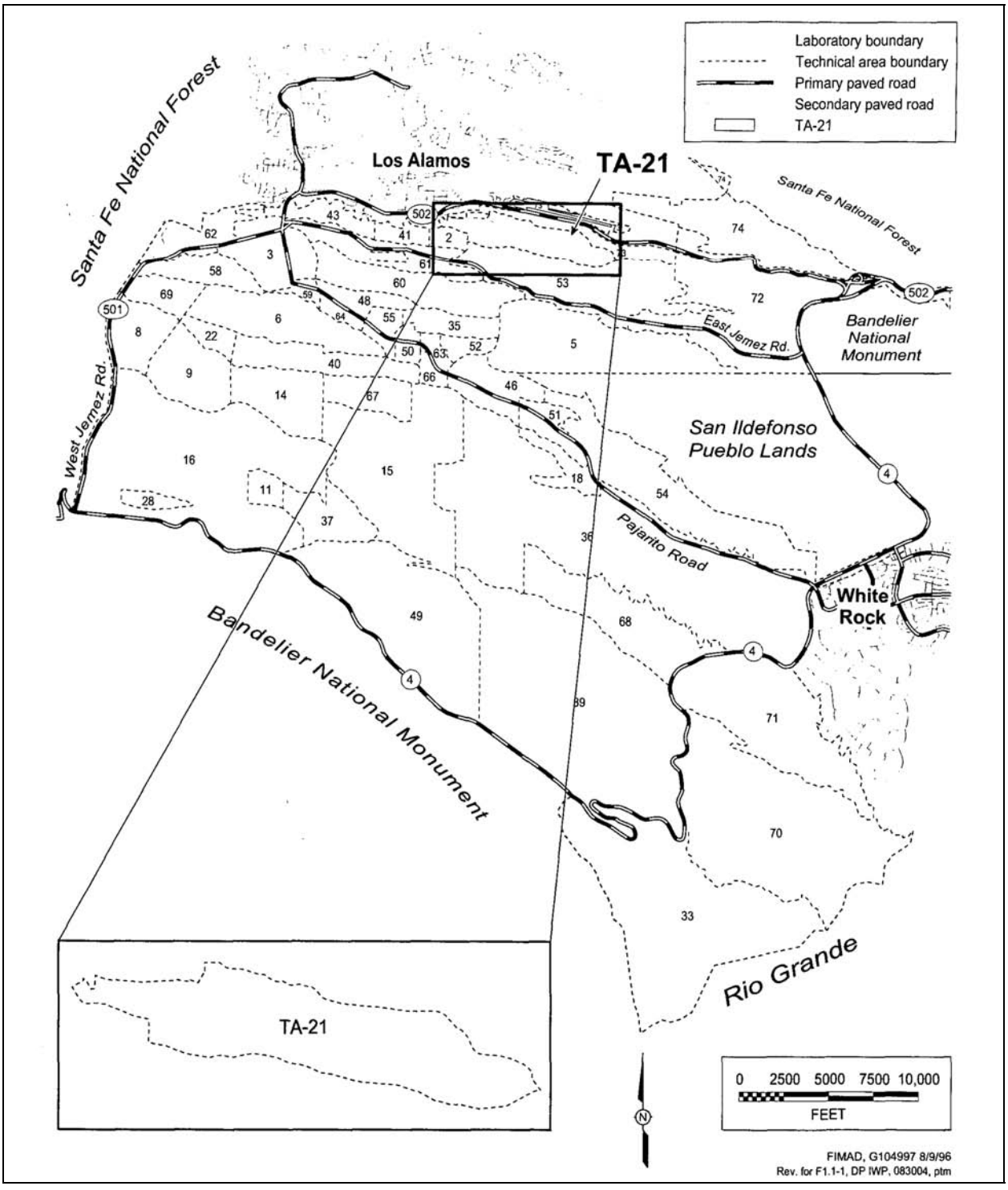

Figure 1.1-1. Location map of Technical Area 21

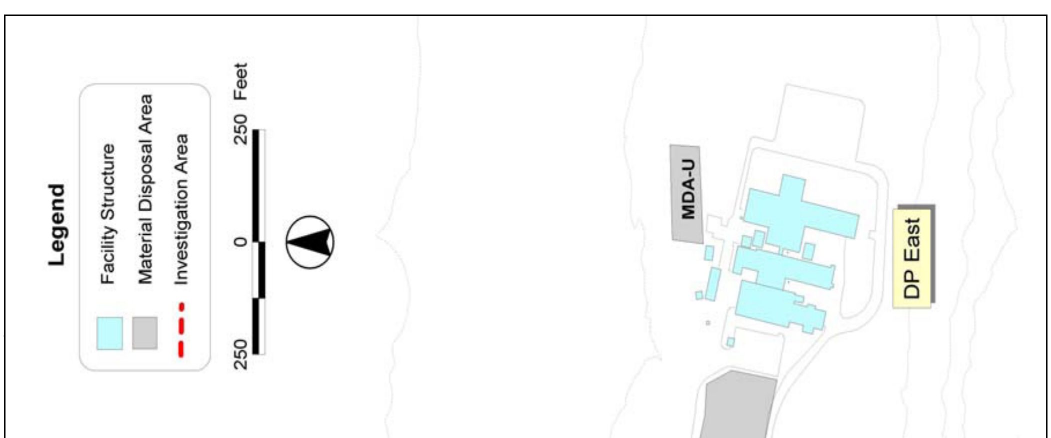

Figure 1.1-2. DP West, Technical Area 21

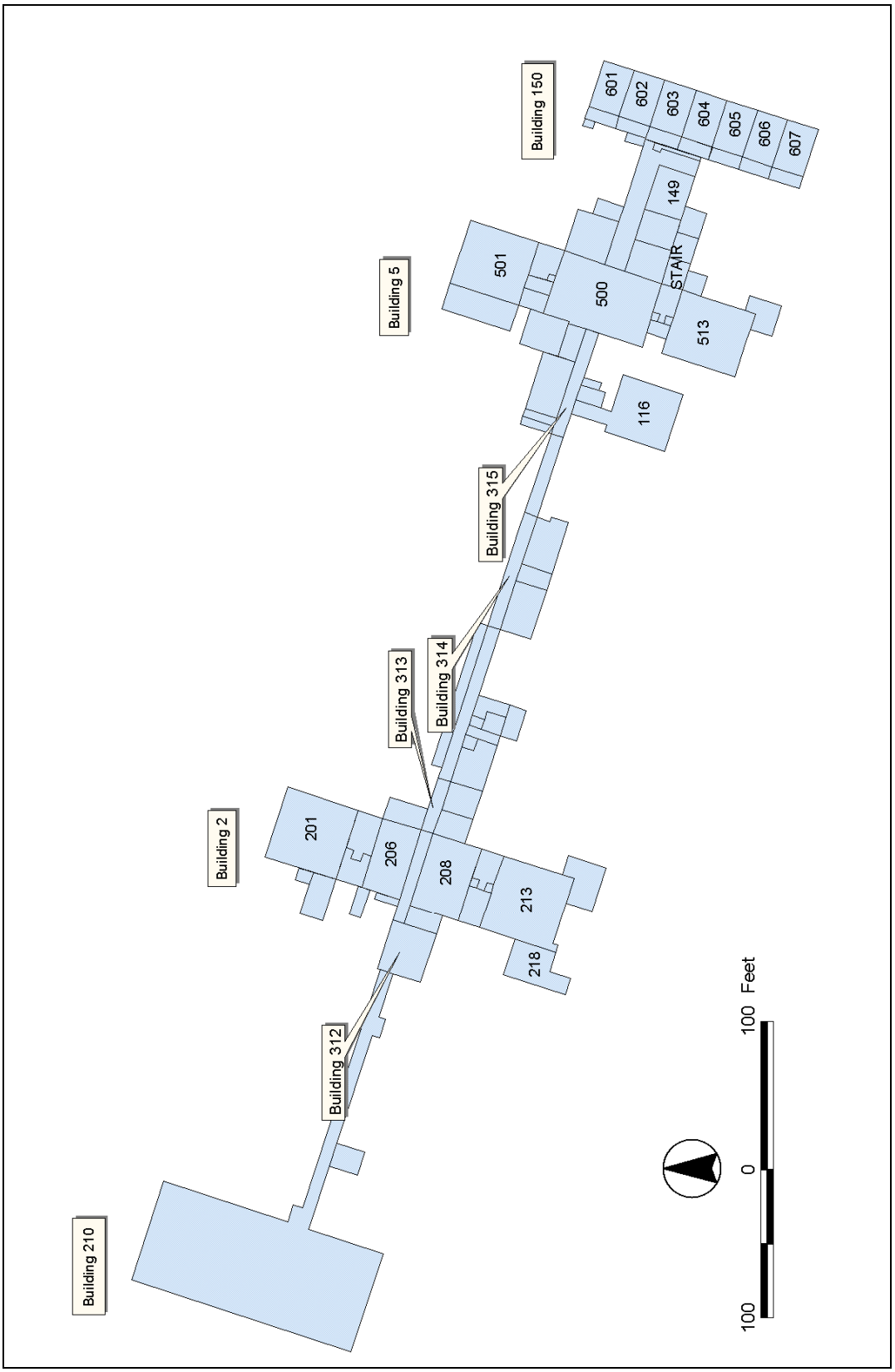

Figure 1.1-3. Structures of DP West, Technical Area 21

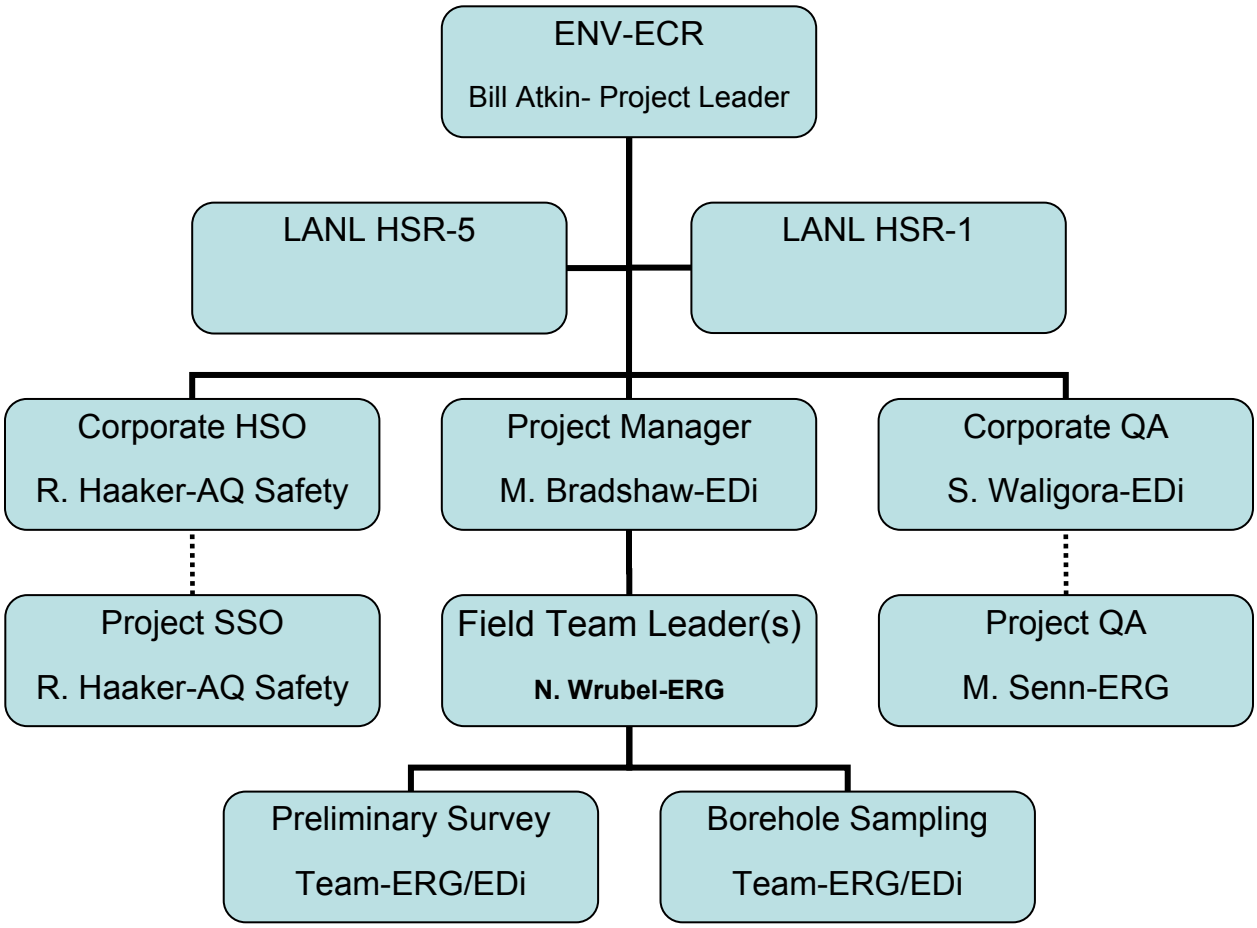

Figure 1.4-1. Field operations organizational chart

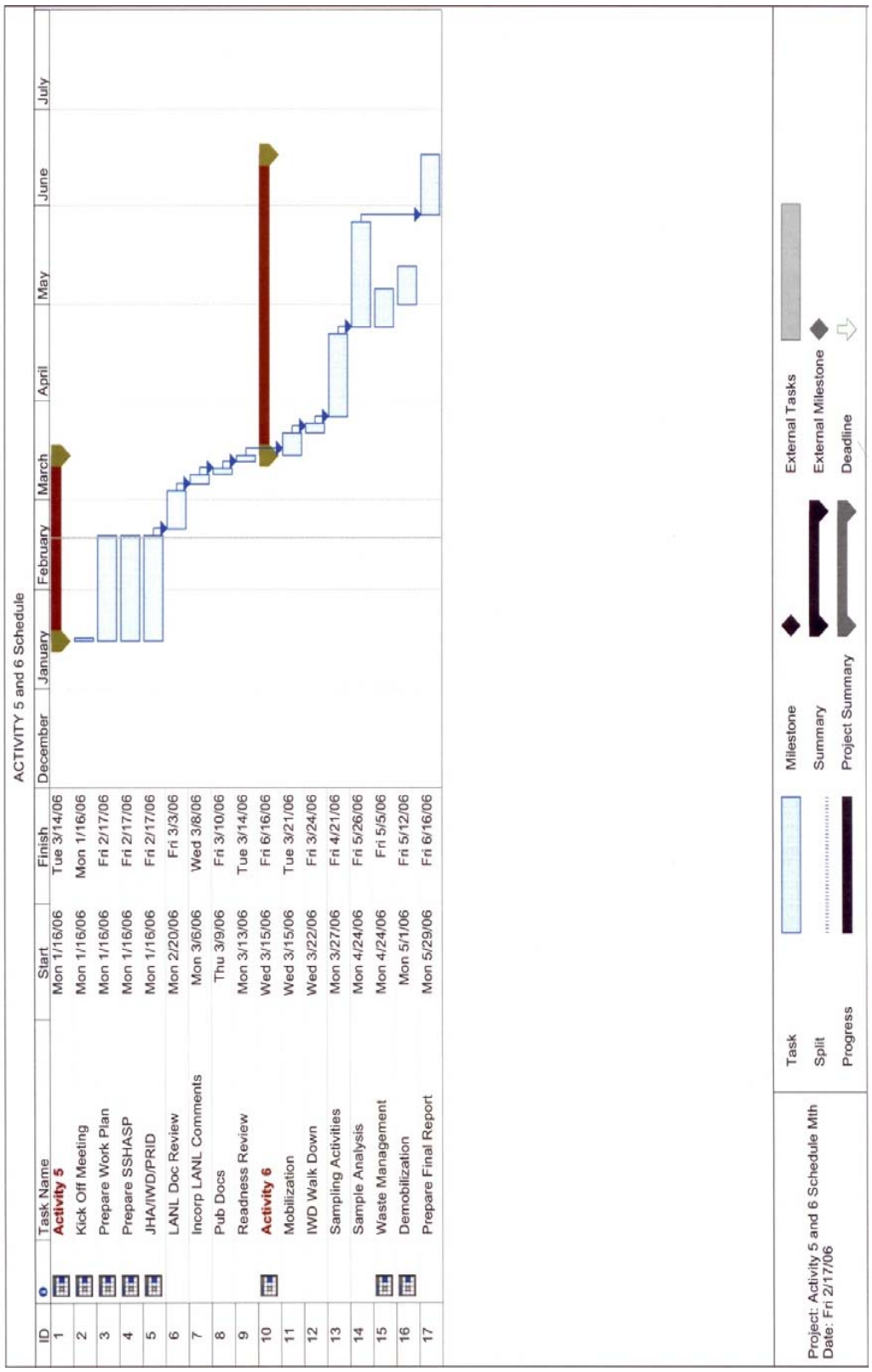

Figure 6.0-1 Project schedule

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Table 2.1-1
Documented Releases in DP West Buildings

Building	Area	Description of Release	Constituents of Concern
21-02	Room 201	Numerous leaks associated with a nitric acid tank located in the northeast corner. Many other releases reported but poorly documented.	Plutonium isotopes Nitrates
	Room 205	Numerous spills of unknown contaminants.	Various
	Room 208	Spill of molten uranium on floor 1950; numerous spills of plutonium solution.	Uranium isotopes Plutonium isotopes
	Room 209	Spill of liquid plutonium solution on floor.	Plutonium isotopes
	Room 212	Spill on floor five times during 1959.	Plutonium isotopes
	Room 213	Dissolver section of Room 213 was located near the west exit just north of Room 218. Numerous spills of americium-241; caustic solution spill.	Americium-241 Unknown associated with caustic solution
	Room 218	Numerous spills of americium-241 and plutonium; contaminated from spill in Room 213 which also spilled onto outside loading area; overflow of transport tank onto loading area; criticality incident in 1958.	Americium-241 Plutonium isotopes
21-03	Room 308	High number of plutonium solution spills.	Plutonium isotopes
	Room 320	Contamination tracked in from Room 308.	Plutonium isotopes
	Room 321	Contamination tracked in from Room 308.	Plutonium isotopes
	Room 322	Contamination tracked in from Room 308. Leak from five shipping containers.	Plutonium isotopes
21-04	Room 401E	Spills of uranium-235, plutonium-239, and fission products.	Uranium-235 Plutonium-239
	Room 406	Numerous spills of plutonium solution; spill of plutonium-238 in corridor en route to Building 21-05.	Plutonium isotopes Plutonium-238

Table 2.1-1 (continued)

Building	Area	Description of release	Constituents of Concern
21-05	Room 500	High release rate (explosions) of plutonium-239 solution.	Plutonium isotopes
	Room 500-A	Spills of plutonium solution.	Plutonium isotopes
	Room 501	Plutonium releases from glove box explosions, container leaks, and spills.	Plutonium isotopes
	Room 502	Spills of plutonium solution.	Plutonium isotopes
	Room 505	Spills of plutonium solution.	Plutonium isotopes
	Room 506	Plutonium releases from glove box spills.	Plutonium isotopes
	Room 512	Spills of plutonium solution. Leak of hydrogen fluoride.	Plutonium isotopes Fluoride
	Room 513	Spills of plutonium solution.	Plutonium isotopes
	Room 514	Spills of plutonium solution.	Plutonium isotopes
	Room 530 Basement	Spills of plutonium solution.	Plutonium isotopes
21-150	Room 607	Spill of plutonium solution also ran out onto east dock and nearby asphalt.	Plutonium isotopes
	Room 601 Basement	Caustic solution spilled down stairway into basement and into floor drains.	Unknown associated with caustic solution

Note: This:table was drawn from the following sources:

Blackwell, C., August 29, 1972. “Final condition Report for Rooms 401-East, 401-A, -B, and –C 403, 404. 406, and 407 at DPW, TA-21.” Los Alamos Scientific Laboratory memorandum to A. Valentine from C. Blackwell, Los Alamos, New Mexico. (Blackwell 1979, 90520)

Blackwell, C. March., March 13, 1980. “Final Survey Report of Building 150 at TA-21.” Los Alamos Scientific Laboratory memorandum to A. Valentine from C. Blackwell, Los Alamos, New Mexico. (Blackwell 1980, 90519)

Blackwell, C., March 18, 1980. “Final Condition Report of Building 150 at TA-21,” .” Los Alamos Scientific Laboratory memorandum to A. Valentine from C. Blackwell, Los Alamos, New Mexico. (Blackwell 1980, 90516)

Blackwell, C., July 24, 1980. “Final Condition Report of Building 5 at TA-21.” Los Alamos Scientific Laboratory memorandum to A. Valentine from C. Blackwell, Los Alamos, New Mexico. (Blackwell 1980, 90518)

Blackwell, C., July 24, 1980. “Final survey Report of Building 5 at TA-21.” Los Alamos Scientific Laboratory memorandum to A. Valentine from C. Blackwell, Los Alamos, New Mexico. (Blackwell 1980, 90517)

Blackwell, C., August 13, 1980. “Final condition Report of Rooms 403, 404, 405, 406, and 407 in Building 4 at TA-21.” Los Alamos Scientific Laboratory memorandum to A. Valentine from C. Blackwell, Los Alamos, New Mexico. (Blackwell 1980, 01912)

Blackwell, C., October 8, 1980. “Final Condition Report of Rooms 308, 312, 314, 320, 321, and 322 in Building 4 at TA-21.” Los Alamos Scientific Laboratory memorandum to A. Valentine from C. Blackwell, Los Alamos, New Mexico. (Blackwell 1980, 01909

Table 3.1-1
Material Types for Building Areas

Building ID	Interior Walls	Exterior Walls	Piping	Ducts	Roof
21-002	Plaster Metal lathe Gypsum board Fire Brick Insulation Paint	Transite steel sheets Aluminum siding Brick masonry Paint	Interior Liquids Interior Solids	Interior Solids Exterior Solids HEPA Filters	Transite steel sheets Tar and gravel 3-ply built-up roof
21-005	Plaster Metal lathe Gypsum board Fire Brick Insulation Paint	Transite steel sheets Aluminum siding Brick masonry Paint	Interior Liquids Interior Solids	Interior Solids Exterior Solids HEPA Filters	Transite steel sheets Tar and gravel 3-Ply built up roof
21-116	Metal siding Insulation Gypsum Board	Corrugated Metal Siding	Interior Liquids Interior Solids	Interior Solids Exterior Solids HEPA Filters	Corrugate Transite Metal Role roofing
21-149	Pumice aggregate	Insulated metal panels	Interior Liquids Interior Solids	Interior Solids Exterior Solids HEPA Filters	Built up tar and gravel Metal roof deck
21-150	Masonry	Reinforced Masonry	Interior Liquids Interior Solids	Interior Solids Exterior Solids HEPA Filters	Metal deck
21-210	Concrete	Masonry filled pumice block	Interior Liquids Interior Solids	Interior Solids Exterior Solids HEPA Filters	Poured gypsum decking
21-312	Reinforced Pumice	Reinforced Pumice	Interior Liquids Interior Solids	Interior Solids Exterior Solids HEPA Filters	Built up tar and gravel Metal roof deck
21-313	metal lathe and plaster	Insulated metal panels	Interior Liquids Interior Solids	Interior Solids Exterior Solids HEPA Filters	Built up tar and gravel Metal roof deck
21-314	Insulated metal panels	Insulated metal panels	Interior Liquids Interior Solids	Interior Solids Exterior Solids HEPA Filters	Built up tar and gravel Metal roof deck
21-315	Insulated metal panels	Insulated metal panels	Interior Liquids Interior Solids	Interior Solids Exterior Solids HEPA Filters	Built up tar and gravel Metal roof deck

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Table 3.2-1
Sample Number and Analysis Suite for DP West Buildings and Building Components

Building ID	Building component	# of Samples	Isotopic Pu	Isotopic U	Tritium	Gamma Spec	Total Metals	Total VOC/SVOC	pH	Perchlorate screen	PCBs	Asbestos	Beryllium
21-002	Floors[a]	6	6	6	2	3	3	—[b]	—	—	—	—	—
	Int. Walls[c]	5	5	5	—	5	1	—	—	—	—	—	5
	Exterior Walls[d]	3	3	3	—	3	—	—	—	—	—	—	—
	Piping (interior materials except ACM)[d]	4	4	4	4	4	4	2	4	4	—	4	—
	Ducts (includes HEPA filters, bag houses etc.)	5	2	2	—	2	2	—	—	—	—	5	5
	Equipment[f]	5	—	—	—	—	—	5	—	—	5	—	—
	Roof	2	2	2	—	2	—	0	0	0	0	2	—
	Attic	—	—	—	—	—	—	—	—	—	—	—	—
21-005	Floors[a]	6	6	6	2	3	1	—	—	—	—	—	—
	Int. Walls[c]	5	5	5	—	5	1	—	—	—	—	—	5
	Exterior Walls[d]	3	3	3	—	3	—	—	—	—	—	—	—
	Piping (interior materials except ACM)[e]	4	4	4	4	4	4	2	4	4	—	4	—
	Ducts (includes HEPA filters, bag houses etc.)	5	2	2	—	2	2	—	—	—	—	5	5
	Equipment[f]	5	—	—	—	—	—	5	—	—	5	—	—
	Roof	2	2	2	—	2	2	—	—	—	—	2	2
	Attic	—	—	—	—	—	—	—	—	—	—	—	—

Table 3.2-1 (continued)

Building ID	Building component	# of Samples	Isotopic Pu	Isotopic U	Tritium	Gamma Spec	Total Metals	Total VOC/SVOC	pH	Perchlorate screen	PCBs	Asbestos	Beryllium
21-116	Floors	0	—	—	—	—	—	—	—	—	—	—	—
	Int. Walls[g]	3	3	3	3	3	1	—	—	—	—	—	3
	Exterior Walls	0	—	—	—	—	—	—	—	—	—	—	—
	Piping (interior materials except ACM)[e]	2	2	2	2	2	2	—	2	2	—	—	2
	Ducts (includes HEPA filters, bag houses etc.)	5	—	—	—	—	—	—	—	—	—	—	5
	Equipment	—	—	—	—	—	—	—	—	—	—	—	—
	Roof	—	—	—	—	—	—	—	—	—	—	—	—
	Attic	—	—	—	—	—	—	—	—	—	—	—	—
21-149	Floors	2	2	2	2	2	—	—	—	—	—	—	2
	Int. Walls	3	3	3	3	3	—	—	—	—	—	—	3
	Exterior Walls	0	—	—	—	—	—	—	—	—	—	—	—
	Piping (interior materials except ACM)[e]	2	2	2	2	2	—	—	2	2	—	—	—
	Ducts (includes HEPA filters, bag houses etc.)[g]	5	2	2	—	2	—	—	—	—	—	—	5
	Equipment[h]	5	—	—	—	—	—	3	—	—	5	—	—
	Roof	2	2	2	2	2	—	—	2	—	—	—	2
	Attic	—	—	—	—	—	—	—	—	—	—	—	—
21-150	Floors[i]	3	3	3	—	3	3	—	—	—	—	—	3
	Int. Walls[j]	5	5	5	—	5	1	—	—	—	—	3	2
	Exterior Walls	2	2	2	—	2	—	—	—	—	—	2	—
	Piping (interior materials except ACM)[e]	5	5	5	5	5	5	—	5	—	—	—	—

Table 3.2-1 (continued)

Building ID	Building component	# of Samples	Isotopic Pu	Isotopic U	Tritium	Gamma Spec	Total Metals	Total VOC/SVOC	pH	Perchlorate screen	PCBs	Asbestos	Beryllium
21-150	Ducts (includes HEPA filters, bag houses, etc.)[g]	5	2	2	5	2	2	—	—	2	—	—	5
	Equipment	5	5	5	5	—	5	5	—	5	5	—	5
	Roof	2	2	2	2	2	2	—	—	—	—	—	2
21-210	Floors	2	2	2	2	2	—	—	—	—	—	2	2
	Walls	2	2	2	2	2	—	—	—	—	—	2	2
	Roof and Exterior Walls	2	2	2	2	2	—	—	—	—	—	2	2
	Equipment (fixed and loose)	5	—	—	—	—	—	—	—	—	—	—	5
21-312 to 21-315	Floors	3	3	3	3	3	3	—	—	—	—	—	—
	Int. Walls	3	3	3	3	3	3	—	—	—	—	—	3
	Exterior Walls	2	2	2	2	2	2	—	—	—	—	—	—
	Piping (interior materials except ACM)[e]	5	5	5	5	5	5	—	5	5	—	—	5
	Ducts (includes HEPA filters, bag houses, etc.)[d]	5	5	5	5	5	5	—	—	—	—	—	5
	Equipment [k]	3	3	3	3	3	3	—	3	3	—	—	3
	Roof	—	—	—	—	—	—	—	—	—	—	—	—
Total		**126**	**89**	**89**	**59**	**84**	**56**	**26**	**27**	**27**	**20**	**31**	**81**

[a] 3 core samples (2 samples per core).
[b] — Value not applicable and/or not obtained.
[c] 5 core samples (2 wall samples per core).
[d] No coring on exterior walls.
[e] Assumes line opening to sample potential contents (i.e. waste streams).
[f] Only mechanical room equipment sampled for PCB oils and VOC/SVOC.
[g] Based on minimum requirements.
[h] Includes 5 hoods.
[i] 3 core locations.
[j] 10 (5 per level) core locations, no split needed
[k] One hood in Building 315.

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Table 3.3-1
Number of Surface Activity Measurements and 1 Meter Scans for Building Areas

Building ID	Floors and Walls below 2 Meters[a]	Ceiling and Walls above 2 Meters[b]	Roof and Exterior Walls	Equipment Including Piping and Ducts
21-002	80	27	27	54
21-005	75	25	25	50
21-116	25	8	17	17
21-149	21	7	7	14
21-150	85	16	13	57
21-210	35	23	35	47
21-312	12	4	4	8
21-313	24	8	8	16
21-314	27	9	9	18
21-315	27	9	9	18

[a] Includes sumps, pits, etc., below 2 meters.
[b] Includes attics, crawlspaces, etc., above 2 meters.

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Appendix A

Acronyms

ACM	asbestos-containing material
CAM	continuous air monitor
Consent Order	Compliance Order on Consent
D&D	decontamination and decommissioning
3-DISS	Three-Dimensional Indoor Survey System
DOE	U.S. Department of Energy
DP	Delta Prime
ENV-ECR	Environmental Characterization and Remediation
ENV-ERS	Environmental Stewardship–Environmental Remediation and Surveillance
ER	Environmental Restoration
ERG	Environmental Restoration Group, Inc.
HEPA	high efficiency particulate air
HSR-1	Health Physics Operations
HSR-5	Industrial Hygiene and Safety
HVAC	heating, ventilation, and air conditioning
IDW	investigation-derived waste
LAMPRE	Los Alamos Molten Plutonium Reactor Experiment
LANL	Los Alamos National Laboratory
LIR	laboratory implementation requirement
MDA	material disposal area
NMED	New Mexico Environment Department
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyl
PDA	personal digital assistant
PID	photoionization detector
QA	quality assurance
QP	quality procedures
RCA	radiological control area
RCRA	Resource Conservation and Recovery Act
RCT	radiation control technician
RFI	RCRA facility investigation
RLC	Reconnaissance-level characterization
RPF	Records Processing Facility
SMO	sample management office

SOP	standard operating procedure
SSHASP	site-specific health and safety plan
SSO	site safety officer
SVOC	semivolatile organic compound
SWMU	solid waste management unit
TA	technical area
TSFF	Tritium Systems Fabrication Facility
UC	University of California
UTR	university technical representative
VOC	volatile organic compound
XRF	x-ray fluorescence

Appendix B

Investigation-Derived Waste Management Plan

This appendix describes how investigation-derived waste (IDW) generated during the reconnaissance-level investigation of Delta Prime (DP) West Technical Area (TA) 21 structures at Los Alamos National Laboratory (the Laboratory or LANL) will be managed.

IDW is waste generated by field investigation activities and may include, but is not limited to, concrete, plaster, dry wall, other building materials, contaminated personal protective equipment (PPE), containment materials, sampling supplies, fluids from the decontamination of PPE and sampling equipment, and all other wastes potentially contacting contaminants. IDW generated during the investigation will be managed to protect human health and the environment, to comply with applicable regulatory requirements, and to adhere to Los Alamos National Laboratory's (the Laboratory's or LANL's) waste minimization goals.

The Environmental Stewardship—Environmental Characterization Remediation (ENV-ECR) Group standard operating procedures (SOPs) that apply to the characterization and management of IDW are SOP-1.06, Revision 2, Management of Environmental Restoration Project Waste; and SOP-1.10, Revision 2, Waste Characterization.

These SOPs, among other SOPs applicable to the investigation at DP West TA-21, are available at the following URL: http://erproject.lanl.gov/documents/procedures/sops.html.

Investigation activities will be conducted to minimize waste generation by implementing the requirements of the ENV-ECR Waste Minimization Awareness Plan, which is updated annually as a requirement of Module VIII of the Laboratory's Hazardous Waste Facility Permit.

The waste streams that will be generated and managed during the work at DP West include PPE, plastic sheeting, air filters, and fluids generated during contamination control and decontamination. This IDW is not expected to be characteristically hazardous, hazardous or mixed. IDW volume estimates are included in Table B-1.

All wastes will be managed in accordance with applicable federal, state, U.S. Department of Energy, and Laboratory requirements. Waste streams, regulatory classification, amounts, and disposal pathways are shown in Table B-1.

Table B-1
Waste Streams from DP West TA-21 Investigation Work Plan

Waste Stream	Waste Type	Estimated Volume (yd^3)	Shipped To
PPE, plastic, and other IDWs	Solid, low-level waste	2	LANL, TA-54, Area G
Decontamination fluids	Liquid, low-level waste	0.6	LANL, TA-50, Radioactive Liquid Waste Treatment Facility

The total waste volume from coring activities and preliminary surveys is estimated at $2.6 yd^3$. The breakdown of waste types and volumes is speculative.

Before the start of field investigation activities, a waste characterization strategy form (WCSF) will be prepared and approved in accordance with the requirements of SOP-01.10. The WCSF will provide detailed information about IDW characterization, management, potential volume generation, and containerization. IDW characterization will be achieved through existing data and/or documentation, direct sampling of the IDW, or sampling of the media being investigated (i.e., concrete, drywall, plaster, other building materials). If direct waste sampling is necessary, it will be described in the WCSF.

The selection of waste containers will be based on appropriate U.S. Department of Transportation requirements and the type and amount of IDW planned to be generated. Immediately after containerization, each waste container will be individually labeled by waste classification, item identification number, radioactivity (if applicable), and date generated. Waste containers will be managed in clearly marked and appropriately constructed waste accumulation areas. Waste accumulation area postings, regulated storage duration, and inspection requirements will be based on the type of IDW and its classification. Container and storage requirements will be detailed in the WCSF and approved before waste generation.

If applicable, the WCSF preparer will complete a waste profile form to track the generated waste streams after ENV-ECR has approved the WCSF.

Signed copies of the WCSF, its attachments, and other forms used to track IDW will be transferred to the ENV-ECR Records Processing Facility when completed documents receive final approvals.

Appendix C

DP West Equipment Inventory List

Table C-1
DP West Structure Inventory – Building 2N

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
n/a[a]	—[b]	1/30/2006	2 in.-outside diameter (O.D.) copper potable water lines	—	Walls
n/a	—	1/30/2006	Steam condensate return piping, possible asbestos-containing material (ACM)	—	
n/a	—	1/30/2006	Galvanized electrical conduit, various sizes	—	Walls and ceiling
n/a	—	1/30/2006	Steam supply lines, possible ACM	—	Walls
n/a	—	1/30/2006	Chilled water supply lines, ¾ in. copper	—	
n/a	—	1/30/2006	Chilled water return lines, ¾ in. copper	—	
201	High ceiling (two stories), all components attached to walls or ceiling. Walls and ceiling painted orange. Floor covered with linoleum.	1/30/2006	12 in.- and 16 in.-diameter exposed round process exhaust ducts, total about 20 linear ft	4	NE corner
			Room air intake diffusers on ceiling	8	Ceiling
			2-in. grey plastic sanitary waste lines	—	Walls
			Water sprinklers on ceiling	—	Ceiling
			16-in.- diameter exposed round process exhaust duct about 1 ft remaining	—-	Wall
			4 in. O.D. copper fire protection lines	—	E Wall
			Electrical breaker panels/boxes	2	Walls

Table C-1 (continued)

Room	General Room Description	Date	Component/Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
201	High ceiling (two story), all components attached to walls or ceiling. Walls and ceiling painted orange. Floor covered with linoleum.	1/30/2006	Enclosed electrical raceways suspended from ceiling	—	Near S and E Walls
		1/31/2006	Fluorescent light bulbs	2	Ceiling
		1/30/2006	Compressed air line, ¾ in. copper	—	E and N walls
		1/30/2006	Spill, 50 ft^2 damage to plaster and paint from water?	—	East wall, low
		1/30/2006	Spill, 50 ft^2 damage to plaster and paint from water?	—	SE corner, low
		1/30/2006	Spill, 50 ft^2 damage to plaster and paint from water?	—	NE wall, low
		1/31/2006	Sprinkler system, 1 in. piping	—	Ceiling
215	One-story, all components attached to walls or ceiling. Walls and ceiling painted orange. Concrete floor painted grey.	1/31/2006	Steam supply and return (condensate) piping, possible ACM	—	Walls
		1/31/2006	Steam heater mounted on wall with electrical thermostat	—	Wall
		1/31/2006	Fluorescent light bulbs	3	Ceiling
		1/30/2006	Steam supply and return (condensate) piping, possible ACM	—	Walls
215A	One-story, all components attached to walls or ceiling. Orange walls and ceiling, grey painted concrete floor.	1/30/2006	Steam heater mounted on wall with electrical thermostat	—	Wall
		1/30/2006	Fluorescent light bulbs	14	Ceiling

Table C-1 (continued)

Room	General Room Description	Date	Component/Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
215A	One-story, all components attached to walls or ceiling. Orange walls and ceiling, grey painted concrete floor.	1/30/2006	Galvanized electrical conduit, various sizes	—	Walls and ceiling
			Compressed air line, ¾ in. copper	—	Wall
			2-½ in. PVC line, tub, and pump—unknown use	—	Floor
			Cold and hot water lines, ¾ in. copper	—	Wall
			Electrical outlet strips	—	Wall
			Electrical breaker panels/boxes	1	Wall
202	One-story low ceiling, all components attached to walls or ceiling. Light blue walls and ceiling, linoleum floor.	1/30/2006	Room air exhaust grate 10 in. × 24 in.	2	West wall
			Room air exhaust plenums buried in walls and ceiling	—	Walls and ceiling
			Copper fire protection lines, 2 in.	—	Ceiling
203	One-story low ceiling, all components attached to walls or ceiling. Light blue walls and ceiling, linoleum floor.	1/30/2006	Stubbed 2 in. line with plug	—	Wall
			Room air exhaust grate 4 in. × 12 in.	—	Wall
204	One-story low ceiling, all components attached to walls or ceiling. Light blue walls and ceiling, linoleum floor.	1/30/2006	Stubbed 2 in. line with plug	—	Wall
			Room air exhaust grate 4 in. × 12 in.	—	Wall

Table C-1 (continued)

Room	General Room Description	Date	Component/Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
2 N Mezzanine	Mezzanine over Room 202 and others, metal floor has visible piping beneath (space between first floor and mezzanine)	1/30/2006	12 in. flexible duct, about 10 linear ft	—	NE corner
			3–4 in. galvanized conduits	—	Walls
205	One-story low ceiling, all components attached to walls or ceiling. Light blue walls and ceiling, linoleum floor.	1/31/2006	Room air exhaust plenum on S wall and ceiling	—	Wall and ceiling
			Electrical outlet strips N and S walls	—	Walls
			Fire protection piping 2 in. and 1 in. lines	—	Ceiling
			¾ in. electrical conduits	—	Walls
			Large Trane refrigeration (R22) unit and ducts	—	Floor
			Gas cylinder lines and manifold	—	Walls
			Water sprinkler system, 1 in. and 2 in. lines	—	Ceiling
206A	One-story low ceiling, white paint walls and ceiling, linoleum floor	1/31/2006	Vac system piping manifold and traps	—	Walls
			Electrical panels and boxes	2	Walls
			6 in. air exhaust line, S side on ceiling	—	Ceiling
			Fluorescent bulbs	26	Ceiling
			Fluorescent bulbs	28	Ceiling
			Hood, 8 ft with exhaust duct hooked up and cabinets, another exhaust duct remaining from removed hood.	—	Floor

Table C-1 (continued)

Room	General Room Description	Date	Component/Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
206B	Split two- and one-story low ceiling (caused by mezzanine), White paint on low walls, yellow paint on high walls and ceiling, linoleum floor.	1/31/2006	Steam "abandoned" lines	—	Walls
			Fire protection piping 2 in. and 1 in. lines	—	Ceiling
			Electrical outlet strips S wall	—	Wall
			Vac lines, 4 in.	—	Wall
			Compressed air lines	—	Wall
			Room air intake diffusers on ceiling	2	Ceiling
			Room air intake diffusers on ceiling	2	Ceiling
			Electrical conduits	—	Walls
206 Mezzanine	One-story. Yellow paint on walls and ceiling, grey rubber floor over metal.	1/31/2006	Room air intake exhaust plenums	—	Walls
			Fluorescent light bulbs	8	Ceiling
			SS gas ¼ in. lines	—	Walls
			Electrical outlet strips	—	Walls
208	Open two-story. Orange paint on high walls and ceiling, light blue paint on lower walls, linoleum floor.	1/31/2006	Room air exhaust plenums (square) plastered into walls	—	Walls
			Stubbed steam lines and piping	—	Walls
			Room air intake diffusers on ceiling	1	Ceiling
			Electrical conduits	—	Walls
			Electrical outlet strips	—	Walls

Table C-1 (continued)

Room	General Room Description	Date	Component/Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
208	Open two stories. Orange paint on high walls and ceiling, light blue paint on lower walls, linoleum floor.	1/31/2006	Sanitary 2 in. plastic line length of E wall	—	Walls
			Potable water 2 in. copper line	—	Walls
			Overhead enclosed electrical raceways length of room	—	Ceiling
			Mercury switch thermostat	1	Walls
			Electric heaters with fluorescent bulbs	3	Walls
207 Vault	Low ceiling one story. Light blue paint on walls and ceiling, linoleum floor.	1/31/2006	No components	—	n/a
			Sprinkler fire protection piping	—	Ceiling
			Electrical conduits	—	Walls
			Electrical outlet strips	—	Walls
224	One-story. White paint on walls and ceiling, carpet floor.	1/31/2006	Fluorescent bulbs	27	Ceiling
			Steam lines	—	Walls
			Electrical box/panel	—	Wall
			PA speakers	—	Wall
Outside	n/a[b]	2/6/2006	Picture #62, E side of roof from NE corner exterior ductwork - probably room exhaust	—	Roof
Outside	n/a	2/6/2006	Picture #63, W side of roof from NW corner exterior ductwork - probably room exhaust	—	Roof

[a] n/a = Not applicable.

[b] — = Not attainable and/or does not apply.

Table C-2
DP West Structure Inventory – Building 2S

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
n/a[a]	—[b]	1/31/2006	Room air intake diffusers on ceiling	6	Ceiling Walls
n/a	—	1/31/2006	Room air exhaust plenums plastered into walls	—	
n/a	—	1/31/2006	Overhead enclosed electrical raceways length of room	—	Ceiling Wall
208	One-story at entry then two story rest of large room. Orange paint on walls and ceiling, linoleum on floor.	1/31/2006	¾ in. and 2 in. electrical conduit	—	
209	One-story low ceiling, Orange paint on walls and ceiling, linoleum on floor.	1/31/2006	Fire protection piping 2 in. and 1 in. lines	—	Ceiling
			Small hot water heater high on wall bracket, covered with plastic	—	Wall
			Electrical outlet strips	—	Wall
			Sprinkler water system	—	Ceiling
			Electrical breaker cabinet	—	Wall
			Room air exhaust screens 10 in.× 12 in. ear floor on wall and high on W wall	2	Walls
210	One-story low ceiling, Orange paint on walls and ceiling, linoleum on floor.	1/31/2006	Room air exhaust screens 12 in.× 12 in. near floor on wall and 4 in. × 10 in. high on wall	2	Walls
211	One-story low ceiling, Orange paint on walls and ceiling, linoleum on floor.	1/31/2006	Room air exhaust screen 12 in. × 12 near floor on wall	1	Wall
			Fire sprinkler system	—	Ceiling
212	One-story low ceiling, Light blue paint on walls and ceiling, linoleum on floor.	1/31/2006	Room air exhaust 18 in. × 24 in. plenum on N wall with 3 grates	—	Wall
			Electrical conduits	—	Walls
			Electrical outlet strip	—	Walls

Table C-2 (continued)

Room	General Room Description	Date	Component/Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
212	One-story low ceiling. Llight blue paint on walls and ceiling, linoleum on floor.	1/31/2006	Electrical conduits	—	Walls
			Suspended enclosed electrical raceways	—	Ceilings
			Air intake diffusers	5	Ceiling
			Exhaust grates in ceiling in NE portion of room	7	Ceiling
			Steam lines	—	Walls
			Metal 2 x 8 ft frame wall floor to ceiling running E to W in center of room	—	Wall
			Sprinkler system, 1 in. piping	—	Ceiling
213	Two story ceiling, Light blue paint on first story walls and orange paint on high walls and ceiling, linoleum on floor.	1/31/2006	process exhaust ducts cut 1 ft from wall and covered	6	Wall
			Spill, acid damage on NW corner wall; see picture #5	—	Wall
			Spill, acid damage on NE corner wall; see picture #6	—	Wall
			Spill, acid damage on S wall; see picture #8	—	Wall
			Several glove boxes stored in SE corner of room; see picture #7; also some large environmental chambers stored in SW corner/area of room	—	Wall
			Large nitric acid tank on concrete pad; see picture #1	—	Outside of E wall
			Room air intake diffusers on ceiling	4	Ceiling
			Electrical breaker box	—	Wall

Table C-2 (continued)

Room	General Room Description	Date	Component/Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
218	Two story ceiling, light blue paint on first story walls and orange paint on high walls and ceiling, linoleum on floor.	1/31/2006	Sprinkler system, 1 in. piping	—	Ceiling
			Steam lines and heater-electrical thermostat	—	Walls
			Electrical conduits	—	Walls
			Chain link fence running E to W length of room	—	Floor
			Spill, acid damage? on SW corner wall; see picture #9	—	Wall
			Steam lines	—	Wall
Unnumbered storage area attached to N side of Equipment room No. 2 on SE corner of 2 S	One story ceiling	1/31/2006	Transite siding—ACM	—	Outside walls
			Sprinkler system	—	Ceiling
			Room air exhaust openings in ceiling and W wall	2	Wall
			Steam pump (large) and associated steam lines; see picture #3	—	Floor
			Water piping	—	Walls
			Large 8 ft × 16 ft sump pit (6 ft deep) and sump pump in SW area of basement room; see picture #4	—	Floor
Equipment Room No. 2 on SE corner of 2 S	Two story ceiling, level. Sump pit at even lower level. Walls and ceiling painted orange, grey painted concrete floor at basement floor.	1/31/2006	Sprinkler system	—	Ceiling
			Electrical conduits	—	Walls and ceiling
			Air compressor pump #2	—	Floor
			Electrical breakers	—	Floor and walls
			Transite (ACM) exterior siding on bldg	—	Exterior walls
			Large steam tank on pad outside at grade on S wall; see picture #2	—	Floor
Equipment Room No. 2A on SW corner of 2 S	One story equipment room entry only from outside, radiological tape with radiological sign. Room lined with asbestos panels, floor grey paint on concrete.	2/2/2006	Asbestos panels covering entire room including ceiling.	—	Walls, ceiling

Table C-2 (continued)

Room	General Room Description	Date	Component/Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
Equipment Room No. 2A on SW corner of 2 S	One story equipment room entry only from outside, radiological tape with radiological sign. Room lined with asbestos panels, floor grey paint on concrete.	2/2/2006	Asbestos panels covering entire room including ceiling; see picture #19	—	Walls, ceiling
			Large pump and steam lines	—	Floor
			Radiant steam heater	—	Walls
			2 x 3 x 6 ft cabinet	—	Floor
			Electrical breakers	—	Walls
			Electrical conduit	—	Walls
			6 in. drain on floor	—	Walls
			Sprinkler system	—	Ceiling
			Air tank	—	Floor
Outside	—	2/6/2006	Picture #64, 2nd story (roof top) stack, fan house and high-efficient particulate air filters (HEPAs) from S side between bldg 2 and 3	—	Roof

[a] n/a = Not applicable.

[b] — = Not attainable and/or does not apply.

Table C-3
DP West Structure Inventory – Building 3

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
3121	Electrical Equipment Room. Concrete block walls, concrete floor.	2/1/2006	Transformer cabinet	1	Floor
			8 fuse box cabinets and 1 main breaker cabinet	9	Floor
			Equipment breaker boxes	—*	Walls
			3 small breaker boxes	—	Walls
			Sprinkler system	—	Ceiling
			Electrical conduit-many different sizes	—	Walls and ceiling
			Fluorescent light bulbs	18	Ceiling
			24 in. fan to exterior	—	Wall
			Room air exhaust ducts	—	Wall
			Transformer cabinet	1	Floor
			5 fuse/switch box cabinets (breaker panels)	—	Floor
			3 electrical box panels	—	Walls
			Steam lines and heater with mercury (Hg) thermostat	1	Walls
3133	Electrical Equipment Room. Tan painted walls, concrete floor.	2/1/2006	Sprinkler system	—	Ceiling
			Electrical conduit; many different sizes	—	Walls and ceiling
			Fluorescent light bulbs	26	Ceiling
			24 in. fan to exterior with Hg thermostat	1	Wall
			Room air exhaust ducts	—	Wall
			Electrical raceways along ceiling for conduits	—	Floor
			Hot water heater	—	Floor

Table C-3 (continued)

Room	General Room Description	Date	Component/Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
3122	White painted walls, grey painted concrete floor.	2/1/2006	Electrical conduits	—	Walls & ceiling
			Sprinkler system	—	Ceiling
			Room air exhaust plenum with grates 2 ft above floor	2	Walls
			2 sinks, 2 urinals, 2 toilets and associated plumbing	—	Floor
3131	Restroom. White painted walls and ceiling, grey painted concrete floor.	2/1/2006	Fluorescent bulbs	4	Ceiling
			Sprinkler system	—	Ceiling
			Electrical conduits	—	Walls
			Fluorescent bulbs	3	Ceiling
			Sprinkler system	—	Ceiling
3132	Janitor's Closet. White painted walls and ceiling, grey painted concrete floor.	2/1/2006	Janitor's sink and associated plumbing (3 in. drain, H and C water lines)	—	Floor
			Fire detector on ceiling	—	Ceiling
			Large steam lines-6 in. and 8 in. valves, tanks; see pictures #10, 11, 12	—	Floor and walls
			Fluorescent bulbs	14	Ceiling
3134	Orange painted walls and ceiling, grey painted concrete floor.	2/1/2006	3 ft diameter fan SE corner wall	—	Wall
			6 in. drain under tanks	—	Floor
			Electrical conduits	—	Walls
			Sprinkler system	—	Ceiling
			Breakers associated with tanks	—	Walls
			Phone switchboard and electrical panel	—	Walls
3135	Communication Cabinet-white painted walls, grey painted concrete floor.	2/1/2006	Fluorescent bulbs	6	Ceiling
			Electrical conduits and raceways	—	Walls and ceiling
			Steam lines in open ceiling	—	Ceiling
			Process air pump, tank, and 10 in. × 16 in. ducts; see picture #13	—	Floor
3136	Orange painted walls and	2/1/2006	Electrical conduits	—	Wall

Table C-3 (continued)

Room	General Room Description	Date	Component/Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
	ceiling, grey painted concrete floor.		Fluorescent bulbs	3	Ceiling
			Sprinkler system	—	Ceiling
			3 stubbed out drains in floor	—	Floor
			Transformer cabinet	1	Floor
			5 breaker cabinets	5	Floor
			3 switch panels on wall	3	Wall
			Fluorescent bulbs	32	Ceiling
3141	Electrical Equipment Room. Tan painted walls, concrete floor.	2/1/2006	2 Hg thermostats (fan and steam heater	2	Floor
			Steam lines	—	Wall
			13,200 volt raceways to cabinets	—	Ceiling
			Fire sprinklers	—	Ceiling
			Security system on doors to S wall	—	Doors
			Electrical conduits	—	Walls
			Electrical conduits	—	Walls
			Fluorescent bulbs	4	Ceiling
3141A	Small room built into 3141. Tan walls, concrete floor.	2/1/2006	Sprinkler system	—	Ceiling
			Electrical boxes	2	Walls
			Electrical conduits	—	Walls
			Electrical conduits	—	Walls
3142	Tan walls, concrete floor	2/1/2006	Fixed head air sampling outlets (vac system)	—	Walls
			Sprinkler system	—	Ceiling
			Electrical panels	2	Walls
			Fire detector on ceiling	—	Ceiling
3142 Mezzanine	Adjacent to 3142 office and on same level as 3142 office ceiling. Ceiling continuous with 3143 and has piping overhead.	2/1/2006	Piping above room 3142 continuous with 3143	—	Ceiling
3142 Office	3142 office built into room 3143, has cloth panels, tile	2/1/2006	Piping above room 3142 continuous with 3143	—	Ceiling

Table C-3 (continued)

Room	General Room Description	Date	Component/Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
	ceiling open to room 3143.		Steam lines and tanks; see pictures #14, #15, and #16	—	Ceiling
3143	Equipment Room.Tan walls, concrete floor. Has small "3142 office" built into room with cloth panels, tile ceiling and open to room 3143.	2/1/2006	Steam heater has Hg thermostat	1	Wall
			Steam lines and tanks; see pictures #14, #15, and #16	—	Ceiling
			½ in. and ¾ in. galvanized piping	5	Walls
			Steam lines and tanks; see pictures #14, #15, and #16	—	Ceiling
3143	Equipment Room.Tan walls, concrete floor. Has small “3142 office” built into room with cloth panels, tile ceiling and open to room 3143.	2/1/2006	Steam heater has Hg thermostat	1	Wall
			Steam lines and tanks; see pictures #14, #15, and #16	—	Ceiling
			½ in. and ¾ in. galvanized piping	5	Walls
			Steam lines and tanks; see pictures #14, #15, and #16	—	Ceiling
			6 in. drain lines from ceiling	—	Ceiling
			3N air washer	—	Floor
			3 ft fan with Hg Thermostat	1	Wall
			Room air exhaust plenum with 16×16 in. grate near floor	—	Wall
			Large electrical breaker near hallway door	—	Wall
			Fluorescent bulbs	14	Ceiling
			Fluorescent bulbs	8	Ceiling
			Two room air exhaust plenums with 2 ft × 2 ft grates	2	Wall
3143A	Orange walls and ceiling, grey painted concrete floor.	2/1/2006	Steam lines going into tunnel	—	Wall
			Sprinkler system	—	Ceiling
3143A	Orange walls and ceiling,	2/1/2006	Fire detector on ceiling	—	Ceiling

Table C-3 (continued)

Room	General Room Description	Date	Component/Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
	grey painted concrete floor.		Electrical conduits	—	Wall
3151	Electrical Equipment Room. Tan painted walls, concrete floor.	2/1/2006	Electrical conduits	—	Wall
			Acid waste collection tank and pump (from 3151A sink) for aqueous radiological waste, inorganic acids, and bases. 2 ft × 3 ft poly tank with pump and 2 in. plastic line; see picture #17	—	Floor
			Electrical switch boxes; 5 large ones and 3 smaller ones	8	Wall
			Transformer cabinet	1	Floor
			Breaker/switch cabinets	5	Wall
			15 KV raceways to cabinets	—	Ceiling
			Steam lines	—	Wall
			Sprinkler system with 6 in. main from pad	—	Ceiling
			Fluorescent bulbs	18	Wall
			Hg thermostat on fan	1	Wall
			Potable and deionized water lines	—	Wall
			10 ft long double hood/cabinets w/ 12 in. and 16 in. exhaust ducts to ceiling; “Acids. Carcinogens stored in cabinet and hood”	—	Floor
			½ in. copper tubing	—	Wall
3151A	Electrical Equipment Room. Tan painted walls, grey concrete floor.	2/1/2006	Potable water lines	—	Wall
			Hot water line	—	Wall
			Fluorescent bulbs	18	Ceiling
			Chilled water supply and return lines	—	Wall
			Electrical conduits	—	Wall
			Sprinkler system	—	Ceiling
3152	Communications Room.	2/1/2006	Phone switching/wiring	—	Wall

Table C-3 (continued)

Room	General Room Description	Date	Component/Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
	white painted walls, grey concrete floor.		Fluorescent bulbs	6	Ceiling
			Electrical panels	—	Wall
			Electrical conduits	—	Wall
			Fluorescent bulbs	12	Wall
			Massive steam lines, 2 tanks and pumps	—	Floor and walls
			Two large and two small air sampling vacuum pumps and lines	—	Floor
3153	Equipment Room. Tan painted walls, concrete floor.	2/1/2006	Hg thermostats on fan and steam heater	2	Wall
			Sprinkler system	—	Ceiling
			4-in. drain line from ceiling down into pad	—	Wall
			Electrical breakers on air pumps	4	Wall
			Electrical panels	—	Wall

*— = Not attainable and/or does not apply.

Table C-4
DP West Structure Inventory – Building 3S

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
n/a	South side contaminated area—exposed walls and rubble.	2/6/2006	See picture #69; exposed walls and rubble	—[a]	n/a[b]

[a] — = Not attainable and/or does not apply.

[b] n/a = Not applicable.

Table C-5
DP West Structure Inventory – Building 116

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
n/a[a]	Conference Room. Has low ceiling 20 ft-long entry, then 2 story large bare room. Light blue walls half way up, orange ceiling and upper walls, carpet on floor.	2/1/2006	Fluorescent bulbs	35	Ceiling
			Electrical conduit	—[b]	Walls
			Sprinkler system	—	Ceiling
			Outlet strips	—	Walls
			Breaker boxes and electrical panel	—	Walls
			Two steam heaters with electric thermostats	—	Walls
			Air blower with 4ft line on SW corner	—	Walls

[a] n/a = Not applicable.
[b] — = Not attainable and/or does not apply.

Table C-6
DP West Structure Inventory – Building 5

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number Of Components	Location of Component/ spill within Room
176	Shower with low ceiling, white walls and ceiling, linoleum floor.	2/1/2006	Fluorescent lights	6	Walls
			Shower stall and drain and piping	—*	Floor
			Sprinkler system	—	Ceiling
			Breaker boxes and electrical panel	—	Walls
			6 in. polyvinyl chloride (PVC acid waste line ceiling to floor	—	Walls
			Hot and cold water lines	—	Walls
			Electrical conduit	—	Walls
			Steam lines with radiant heater	—	Walls
			Sink, urinal, toilet and associated piping	—	Walls
			Hot and cold water lines	—	Walls
178	Restroom with low ceiling, white painted walls and ceiling, linoleum floors.	2/1/2006	Electrical conduit	—	Walls
			Sprinkler system	—	Walls
			Steam radiant heater and lines	—	Walls
Basement below room 178	Access to basement on stairwell S side of room 178. Entry door locked, able to see some equipment thru window.	2/1/2006	Electrical conduit, tanks, steam lines, steam heater, and sprinkler system visible.	—	Walls, ceiling, and floor
			Halogen lamps	4	Ceiling
500	Large 2 story room straddles central hallway, 8 in.- chain link fence each side of Hallway area. Orange painted walls and ceiling with linoleum floor.	2/2/2006	Fluorescent bulbs	9	Ceiling
			Electrical conduit	4	Walls and ceiling
			Hot water heater on shelf with hot and cold water lines on west wall of mezzanine.	—	Wall

Table C-6 (continued)

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number Of Components	Location of Component/ spill within Room
500	Large two-story room straddles central hallway, 8 in.-chainlink fence each side of Hallway area. Orange painted walls and ceiling with linoleum floor.	2/2/2006	Large metal enclosure (piping corridor above hallway) 5 ft × 8 ft 30 ft traversing center of 500 on ceiling going E to parallel to hallway	—	Ceiling
			Sprinkler system	—	Ceiling
			6 diffusers on N side, 4 on S side of hallway	10	Ceiling

* — Not attainable and/or does not apply.

Table C-7
DP West Structure Inventory— Building 5N

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
501	Two-story, orange painted walls and ceiling, linoleum floor, has full attic above with access outside on N end.	2/2/2006	Spill damage to W and NE walls	—*	Walls
			Room air intake diffusers	8	Ceiling
			Air intake plenums 16 in. × 2 ft × 8 ft long on ceiling	2	Ceiling
			Halogen lights	2	Ceiling
			Electrical conduit	—	Walls and ceiling
			Sprinkler system	—	Ceiling
			6 in. and 3 in. drain lines in NE corner	—	Walls
			Recessed light ducts in ceiling.	17	Ceiling
			1 ft long 18 in. diameter duct remnant with grate- west wall, also two 1 ft × 2 ft^2 duct intakes going to room 506A.	3	Walls
			Electrical conduit	—	Walls
			Outlet strips	—	Walls
			Fluorescent bulbs	32	Ceiling
			Breaker box	—	Walls

Table C-7 (continued)

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number of Components	Location of Component/Spill within Room
506A	One story, light blue painted walls and ceiling, carpet floor.	2/2/2006	Sprinkler system	—	Ceiling
			Vent grate 12 in. × 2 in.	2	Walls
			Air/vac ball valve	—	Wall
			8 in. × 8 in. vent in ceiling	—	Ceiling
508 Vault	Orange painted walls and ceiling, linoleum floor.	2/2/2006	8 in. × 8 in. vent in ceiling	—	Ceiling
514 Vault	Orange painted walls and ceiling, linoleum floor.	2/2/2006	Recessed light duct in ceiling	—	Ceiling
			Sprinkler system	—	Ceiling
Mezzanine	Mezzanine above 502 and 505, has access to attic. Mezzanine orange painted walls and ceiling, grey painted metal floor. Access by ladder in 504	2/2/2006	Attic contamination contained by layer of sprayed on asphalt, all surfaces.	—	Ceiling/walls/floor
Attic above mezzanine	Attic is completely sprayed with asphalt.	2/2/2006	Fluorescent bulbs	2	Ceiling
			Electrical conduit	—	Walls
502	Low ceiling room, Orange painted walls and ceiling with linoleum floor.	2/2/2006	Sprinkler system	—	Ceiling
			12 in. ducts covered flush on ceiling	2	Ceiling
			8 in × 12 in. air grates on W wall	—	Wall
502A	Janitor's closet, low ceiling room. Orange painted walls and ceiling with linoleum floor.	2/2/2006	Recessed light duct in ceiling	—	Ceiling

Table C-7 (continued)

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
502A	Janitor's closet, low ceiling room. Orange painted walls and ceiling with linoleum floor.	2/2/2006	Electrical conduit	—	Wall
			Sprinkler system	—	Wall
504	Two-story room with ladder to mezzanine room, orange painted walls and ceiling with linoleum floor.	2/2/2006	Sprinkler system	—	Wall
			Fluorescent bulbs	2	Ceiling
			Electrical conduit	—	Wall
			Hot water tank and associated water lines on shelf.	—	Wall
			12 in. duct covered with grate on W wall	—	Wall
			12 in. duct recessed in ceiling- lights	—	Ceiling
			Alpha and gamma contaminated area on lower left area of ladder.	—	Ladder
505	One-story low ceiling room, orange painted walls and ceiling with linoleum floor.	2/2/2006	Electrical conduit	—	Walls
			Sprinkler system	—	Ceiling
			Fluorescent bulbs	4	Ceiling
			4 in. × 12 in. vent on W wall	—	Walls
			Recessed lights	6	Ceiling
			8 in × 2 ft grates on south wall	2	Walls
T102	Restroom off hallway, white painted walls, grey painted concrete floor, acoustical board ceiling.	2/2/2006	hot water heater	—	Floor

Table C-7 (continued)

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
T102	Restroom off hallway, white painted walls, grey painted concrete floor, acoustical board ceiling.	2/2/2006	Sinks, urinals, toilet, and associated piping.	—	Floor
			Steam heated fan	—	Ceiling
			Steam lines (ACM)	—	Floor
			Exhaust fan to outside	—	Wall
			2 in. vent piping	—	Wall
			Fluorescent bulbs	6	Ceiling
			Electrical conduit	—	Walls
500A	Chem Lab, not been stripped of equipment, white walls and ceiling, some wall areas painted orange, linoleum floor.	2/2/2006	Complete chemical hoods with utilities	3	Floor
			Chem lab benches	2	Floor
			Large glass hood; see picture #30	—	Floor
			Tank, pump, and pipes for aqueous radiological (radiological) waste, inorganic acids and bases	—	Floor
			Complete chemistry hoods with utilities	—	Floor
			Process exhaust ducts attached to hoods	5	Ceiling
			Electrical conduit	—	Walls
			Fluorescent bulbs	6	Ceiling
			Steam heaters and steam lines	—	Walls

Table C-7 (continued)

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
500A	Chem Lab- not been stripped of equipment, white walls and ceiling, some wall areas painted orange, linoleum floor.	2/2/2006	¾ in. black pipe propane lines	—	Walls
			Chilled water supply and return lines	—	Walls
			Sprinkler system	—	Ceiling
			Nitrogen lines	—	Walls and ceiling
			Electric panel	—	Wall
			Electric breakers	—	Wall
			Oxygen, argon, and nitrogen ¾ in. lines	—	Wall
5N2 Equipment Room	5N2 Equipment Room has pink wills and ceiling, linoleum floor. Partial partition across center of room.	2/2/2006	Two steam heaters with Hg thermostats	2	Wall
			Electrical conduits	—	Wall
			Breaker box	—	Wall
			Sprinkler system	—	Wall
			Steam lines	—	Wall

*— Not attainable and/or does not apply.

Table C-8
DP West Structure Inventory – Building 5S

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
n/a[a]	—[b]	2/2/2006	8 in × 2 ft grates on W wall	2	Walls
n/a	—	2/2/2006	Sprinkler system	—	Walls
509	One-story low ceiling room, Orange painted walls and ceiling with linoleum floor.	2/2/2006	Electrical conduits	—	Walls
			Room air exhaust plenum and 12 in. × 12 in. grate	—	Walls
			Fluorescent bulbs	2	Ceiling
			Recessed light ducts (1 ft diameter)	2	Ceiling
510	One-story low ceiling room, Orange painted walls and ceiling with linoleum floor.	2/2/2006	Sprinkler system	—	Ceiling
			Electrical conduit	—	Walls
511	One-story low ceiling room, Orange painted walls and ceiling with linoleum floor.	2/2/2006	Sprinkler system	—	Ceiling
		2/2/2006	Electrical conduit	—	Walls
Open mezzanine A and stairs in 5 S	Stairs and open mezzanine A with railing open to ceiling 500.	2/2/2006	Fluorescent bulbs	4	Ceiling
Locked enclosed mezzanine B in 5 S	Access to mezzanine B room thru locked door in mezzanine A.	2/2/2006	Need access	—	n/a
Enclosed mezzanine C above rooms 509 and 512	Ladder from 500 up to enclosed mezzanine C, has access to attic above. Orange painted walls and ceiling, grey painted metal floor.	2/2/2006	Sprinkler system	—	Ceiling
			Area sprayed with asphalt to control contamination.	—	Walls, floors, ceiling
			Electrical conduit	—	Walls
Attic above mezzanine C	Access to attic above mezzanine C.	2/2/2006	Fluorescent bulbs	4	Walls
			12 in. × 24 in. vents on north wall	3	Walls
512	Low ceiling, orange painted walls and ceiling, linoleum floor.	2/2/2006	Sprinkler system	—	Walls

Table C-8 (continued)

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
512 (cont.)	Low ceiling, orange painted walls and ceiling, linoleum floor.	2/2/2006	Room exhaust 16 ft × 24 in. grate in SE corner	—	Walls
513	Two-story ceiling, orange painted walls and ceiling, linoleum floor. Has mezzanine (open ceiling to 513) about one half of room on S end and partially enclosed room on ground floor in SE corner.	2/2/2006	Fluorescent bulbs entire 513 ceiling and enclosure in SE corner.	24	Ceiling
			Air intake diffusers	10	Ceiling
			Recessed lights	9	Ceiling
			16 in. process exhaust ducts on E and W walls.	4	Walls
			Sprinkler system	24	Walls
			Electrical conduits	24	Walls
			See spill/damage wall areas. Pictures #22-25	4	Walls
513 mezzanine	Open mezzanine, orange painted walls and ceiling of 513.	2/2/2006	See 513	—	Walls, ceiling
513 attic	Access to 513 attic is outside on S side.	2/2/2006	Need access	—	n/a
NC5 Equipment Room (mezzanine)	NC5 Equipment Room access from open mezzanine- enclosed mezzanine above the SE corner of 513. Orange walls and ceiling, grey painted floor.	2/2/2006	Sprinkler system	—	Ceiling
			18 in. -diameter duct from floor to ceiling; goes to diffuser in room below	—	Floor
			12 in. × 24 in. vent	—	Wall
			Fluorescent bulbs	4	Ceiling
Equip. Room No. 5	Equip. Room No. 5 Access is from outside stairwell, subsurface basement level, orange painted walls, and ceiling concrete floor.	2/2/2006	Hoffman pump (vac?)	—	Floor
			Steam radiant heater and lines	—	Wall
			Electrical conduit	—	Walls
			Sprinkler system	—	Floor
			Fluorescent bulbs	6	Ceiling
			Electric radiant heater on wall.	—	Wall
			Large roll of some type of fabric on floor.	—	Floor

Table C-8 (continued)

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
Storage Room attached to N side of Equip. Room No. 5	Outside entrance only, orange painted walls and ceiling, grey painted concrete floor.	2/2/2006	Fluorescent bulbs	3	Ceiling
			Electric conduit	—	Walls
5S12-basement Equipment Room	Large basement two-story ceiling room under 530, 531, 532, 533, and 534. Entry on south side down stairwell. Painted in SW area (20 ft x 20 ft) orange with linoleum floor, rest of basement natural.	2/2/2006	Electric conduit-large and small with raceways	—	Walls and ceiling
			Fluorescent bulbs	72	Walls and ceiling
			Transformer cabinets	4	Floor
			Electric breaker cabinets (25 ft bank of cabinets)	—	Floor
			Holding tank and 2 in. PVC piping, probably going into acid waste line	—	Floor and walls
			Large 6 in. drain lines running thru floor and ceiling.	—	Walls and ceiling
530	One-story painted white ceiling and walls, linoleum floor.	2/2/2006	Overhead bracing with conduits and piping.	—	Hung from ceiling walls
			Nitrogen gas piping, Cu tubing.	—	Hung from ceiling walls

Table C-8 (continued)

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
530	One-story painted white ceiling and walls, linoleum floor.	2/2/2006	Vac lines	—	Hung from ceiling walls
			Chilled water supply and return and potable water lines	—	Hung from ceiling walls
			Outlet strips	—	Walls
			Sediment trap in chilled water supply; NW corner.	—	Walls
			Electrical breakers	5	Walls
			Switch box/panel	—	Walls
			Compressed air lines	—	Walls
			Vac lines	—	Walls
			Ethernet lines	—	Walls
532	One-story painted white ceiling and walls, linoleum floor.	2/2/2006	Room exhaust plenum with 2 ft × 2 ft grate	—	Walls
			Fluorescent bulbs	17	Walls
			Chilled water supply and return	—	Walls
			Electrical conduit	—	Walls
			Outlet strips	—	Walls
			16 in. × 16 ft diffuser on ceiling	—	Ceiling
531	One-ceiling and walls, linoleum floor.	2/2/2006	Fluorescent bulbs	50	Ceiling
			Cooling water lines and valves	—	Walls
			Vent lines	—	Walls
			Electrical conduit	—	Walls
			Sprinkler system	—	Ceiling
			Electrical panels	2	Walls

Table C-8 (continued)

	General Room Description	Date	Component/ Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
531	One-story painted light blue ceiling and walls, linoleum floor.	2/2/2006	Outlet strips	—	Walls
			Phone wiring	—	Walls
			Diffusers	2	Ceiling
			Lower wall room air exhaust vents	2	Walls
			Emergency shower and potable water piping	—	Floor
			Electrical conduits	—	Walls
			Chilled water supply and return piping	—	Walls
			Capped off process exhaust duct 16 in× 12 ft about 4 ft long on S wall	—	Wall
533	One-story painted light blue ceiling and walls, linoleum floor.	2/2/2006	¼ in. nitrogen lines	—	Wall
			Sprinkler system	—	Wall
			Central room air intake diffuser	—	Ceiling
			Outlet strips	—	Wall
534	One-story painted light blue ceiling and walls, linoleum floor.	2/2/2006	1- ½ in. PVC stubbed off pipe; see picture #27	—	Wall
			Cooling water lines and valves	—	Wall
			Vent piping	—	Wall
			Fluorescent bulbs	17	Wall
			Sprinkler system	—	Ceiling
			Electrical conduit- big and small	—	Wall
			Breaker boxes	3	Wall
534	One-story painted light blue ceiling and walls, linoleum floor.	2/2/2006	Room air exhaust grate near floor	—	Wall
		2/2/2006	Diffuser in center of room	—	Wall

[a] n/a = Not applicable.

[b] — = Not attainable and/or does not apply.

Table C-9
DP West Structure Inventory – Building 150

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
534	One-story painted light blue ceiling and walls, linoleum floor.	2/2/2006	Phone wires/lines/switches	—*	Wall
			Electrical conduit	—	Wall
1492	Communication Closet. Tan painted walls, grey painted concrete floor, open ceiling.	2/2/2006	Fluorescent bulbs	3	Ceiling
			Electric raceways	—	Ceiling
			Gandalf Unit	—	Floor
			East wall and floor; small metal tank with 2 in. Polyvinyl chloride (PVC) line up across ceiling, acid waste? See picture #32	—	Floor
			High-pressure steam lines and tanks; see picture #33	—	Floor
1491	Equipment Room. Tan painted walls, concrete floor, natural ceiling.	2/2/2006	2 dryers and tanks, sediment traps. Pall Trinity Micro Corp 1964. See Picture #34	—	Floor
			3-½ in. drains	—	Floor
			Fluorescent bulbs	36	Ceiling
			Steam heater Hg thermostat	1	Wall
			3 ft exhaust fan	—	Wall
			Sprinkler system	—	Floor
			Electrical raceways	—	Ceiling
			Electrical conduits	—	Walls and ceiling
			Electrical panels	—	Wall
1491 Attic	Above Equipment Room on NW corner ladder to attic door with asbestos warning sign.	2/2/2006	Access to attic	—	Wall
			Access to attic	—	Wall
			Sprinkler system	—	Ceiling

Table C-9 (continued)

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
Stairwell entry area East of Room 1491	Another access to attic above the stairwell and hallway has metal landing and access door with asbestos warning sign. White walls and ceiling, grey painted floor/stairs.	2/2/2006	Chilled water supply and return lines	—	Wall
			Industrial water lines	—	Wall
			Propane line	—	Wall
			Electrical conduit	—	Wall
			Steam lines (ACM)	—	Wall
B2	Basement room, white painted walls and ceiling, linoleum at entry and rest grey painted concrete.	2/2/2006	Sediment trap on chilled water supply and return; see Picture #35	—	Wall
			Industrial water lines; lots in ceiling	—	Ceiling
			Room intake and exhaust plenums about 100 linear ft of plenums on ceiling	—	Ceiling
			Electrical conduit	—	Wall
			Picture #36 radiological waste pump area and drains to ceiling; 4 in. drain	—	Floor and wall
			Process exhaust duct 20 ft long, 10 in. diameter	—	Wall
			Room air intake plenums in ceiling with radiological contamination labels	—	Ceiling
			Emergency shower and potable water piping	—	Floor and wall
			Fluorescent bulbs	20	Wall
			Compressed air lines	—	Wall
			Electrical conduit	—	Wall
			Breaker boxes	4	Wall
			Industrial water supply and return	—	Wall
			Sprinkler system	—	Wall
			Steam lines	—	Wall

Table C-9 (continued)

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
B3	Basement room, white painted wall and natural concrete block wall, unpainted ceiling, grey painted concrete floor ceiling, linoleum at entry and rest grey painted concrete.	2/2/2006	Room exhaust plenum running length of ceiling 3 ft × 2 ft × –30 ft long	—	Wall
			Drain lines in ceiling	—	Ceiling
			Helium lines	—	Wall
B1	Basement room, white painted wall and ceiling, grey painted concrete floor	2/2/2006	Picture #37 radiological labeled sediment bowl on line in EW wall.	—	Wall
			Sprinkler system	—	Wall
			Overhead hanging from ceiling vacuum lines, nitrogen gas lines, cold and hot water, industrial water, chilled water lines, and potable water	—	Ceiling
			Steam lines	—	Wall
			Air intake diffusers	4	Ceiling
			Plenums running above suspended ceiling	—	Ceiling
			Electrical conduit	—	Wall
			Outlet strips	—	Wall
			Industrial water sediment traps	7	Wall
			Electrical panels	3	Wall
			Helium and argon lines	—	Wall
Janitor's Closet on North side of hallway as enter 603	Janitor’s closet, orange walls and ceiling, grey painted floor	2/2/2006	Picture #38 janitor’s closet sink	—	Floor

Table C-9 (continued)

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
Janitor's Closet on North side of hallway as enter 603	Janitor's closet, orange walls and ceiling, grey painted floor	2/2/2006	Chilled water supply and return	—	Wall
			Steam lines	—	Wall
			PVC 6 in. acid waste drain line	—	Wall
			Electrical conduit	—	Wall
			4 ft × 4 ft × 8 ft insulated plenum floor to ceiling	—	Floor
			Electrical breaker box	—	Wall
601A	White paint walls and ceiling, linoleum floor	2/2/2006	Fluorescent bulbs	32	Ceiling
			Electrical conduit	—	Walls
			Electrical boxes	2	Walls
			Sprinkler system	—	Ceiling
			Radiological safety equipment; anti-Cs, booties, etc.	—	Floor
			Outlet strips	—	Walls
			Air intake grate on ceiling 12 in. × 12 in.	—	Ceiling
601	White paint walls and ceiling, linoleum floor	2/2/2006	Electrical conduit	—	Walls
			Nitrogen lines	—	Walls
			CCWS and CCWR lines	—	Walls
			Fluorescent bulbs	34	Ceiling
			Sprinkler system	—	Walls
			Two steam heaters overhead in large plenum	—	Ceiling
			3 ft × 3 ft vents to room 602	—	Walls
			Outlet strips	—	Walls
602A	White paint walls and ceiling, linoleum floor	2/2/2006	Outlet strips	—	Walls

Table C-9 (continued)

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
602A	White paint walls and ceiling, linoleum floor	2/2/2006	Fluorescent bulbs	16	Walls
			Sprinkler system	—	Ceiling
			Electrical conduit	—	Walls
			Small oven (500° C) on floor with bowl white crystals inside	—	Walls
			Outlet strips	—	Walls
602	White paint walls and ceiling, linoleum floor	2/2/2006	Fluorescent bulbs	41	Ceiling
			Electrical conduit	—	Walls
			Stubbed off water lines	—	Floor
			3 ft × 4 ft puddle of water on floor	—	Floor
			Diffuser	1	Ceiling
			Sprinkler system	—	Ceiling
603	White paint walls and ceiling, linoleum floor	2/2/2006	Hood, ducts, and plenum, sign says "radiological retired TA-21150 room 603	—	Floor
			Lab bench w/bulbs	—	Floor
			Stubbed out radiological waste drain and copper lines	—	Floor
			Smoke damage to paint; S wall and ceiling	—	Wall and ceiling
			2 full boxes of new fluorescent bulbs	38	Lab bench
			Fluorescent bulbs	48	Ceiling
			Fire alarm junction boxes	2	Walls
			Electrical conduit	—	Walls
			Sprinkler system	—	Ceiling
			Electrical panel	—	Wall
603A	White paint walls and ceiling, linoleum floor	2/2/2006	Electrical conduit	—	Wall
			Fluorescent bulbs	16	Ceiling
			Outlet strips	—	Wall
			4 in. drain line	—	Wall
			12 in. × 12 in. room air intake vent	—	Wall
			Drain lines with trap, cut off	—	Floor

Table C-9 (continued)

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
603A	White paint walls and ceiling, linoleum floor	2/2/2006	Outlet strips	—	Wall
			Fluorescent bulbs	27	Ceiling
			Electrical conduit	—	Wall
			Air intake vent	—	Wall
604A	White paint walls and ceiling, linoleum floor	2/2/2006	Electrical panel	—	Wall
			Water lines?	—	Wall
			Boreholes in west floor to basement showing conduit and rebar in pad. Picture #42.	—	Floor
			Double hood and ducts. Picture #43.	—	Floor
604	White paint walls and ceiling, linoleum floor	2/2/2006	Plenum has 2 in × 24 in. × 24 in. filter. Picture #44.	—	Floor
			Fluorescent bulbs	36	Ceiling
			Electrical conduit	—	Walls
			Deionized water line	—	Walls
			Sprinkler system	—	Ceiling
			Breaker box	—	Walls
			Fluorescent bulbs	27	Ceiling
605A	White paint walls and ceiling, linoleum floor	2/2/2006	Outlet strips	—	Wall
			Plugged lines in floor	—	Floor
			Sprinkler system	—	Ceiling
			2 large glass front hoods and ducts.	—	Wall and ceiling
			Hood and ducts	—	Wall and ceiling
605	White paint walls and ceiling, linoleum floor	2/2/2006	Hood and ducts. Picture #47.	—	Wall and ceiling
			Radiological waste drain stubbed off	—	Floor
			Fluorescent bulbs	20	Ceiling
			Outlet strips	—	Wall
			Sprinkler system	—	Ceiling
			Electrical conduit	—	Walls
			Air intake 1 ft × 4 in.	—	Ceiling
			Air exhaust 12 in.×12 in.	—	Ceiling
606A	White paint walls and ceiling, linoleum floor	2/2/2006	Sprinkler system	—	Ceiling
			Electrical conduit	—	Walls
			Fluorescent bulbs	14	Ceiling

Table C-9 (continued)

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
606	White paint walls and ceiling, linoleum floor	2/2/2006	Hood, ducts, plenum, picture #48	—	Floor
			Process exhaust plenum from glass hood in 605, picture #49	—	Floor
			Fluorescent bulbs	48	Ceiling
			Electrical conduit	—	Walls
			Outlet strips	—	Walls
			Sprinkler system	—	Ceiling
606B	Restroom, white paint walls and ceiling, linoleum floor	2/2/2006	Sprinkler system	—	Ceiling
			Sink and toilet	—	Floor
			Exhaust fan	—	Ceiling
			Electrical conduit	—	Wall
			Fluorescent bulbs	12	Ceiling
			Electrical panel	—	Wall
607A	White paint walls and ceiling, linoleum floor	2/2/2006	Outlet strips	—	Wall
			Two tins of “S-mite-silent nonexplosive demolition agent”	—	Spill pallet
			Drums, spill kit and sheet of transite 2 ft × 10 ft × ¼ in. (ACM)	—	Floor
			Electrical conduit	—	Wall
			Breaker box	—	Wall
			Fluorescent bulbs	36	Ceiling
			Sprinkler system	—	Ceiling
607	White paint walls and ceiling, linoleum floor	2/2/2006	Hood, ducts, and plenum, picture #52	—	Floor
			Fluorescent bulbs	48	Ceiling
			Electrical panel	—	Wall
			Electrical conduit	—	Wall

Table C-9 (continued)

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
607	White paint walls and ceiling, linoleum floor	2/2/2006	Outlet strips	—	Wall
			Natural gas line	—	Wall
			Stubbed off lines in floor; 2 sets includes radiological waste drains	—	Floor
		2/3/2006	Exhaust plenum; see picture #53	—	Floor
			Pumps and 55 gal drum.	—	Floor
			Steam lines; see picture #55	—	Floor
			Steam heater and blowers; see picture #56	—	Floor
			6 in. PVC lines with tanks and nitrogen tank- see picture #57	—	Floor
			Steam lines; see picture #58	—	Floor
			Unknown line to Canyon; see picture #59	—	Floor
E1	North basement under 601, 602, 603, no paint	2/3/2006	Acid waste tank, pump, 2 in. PVC pipe pumped into acid waste line; see picture #60	—	Floor
			Door to roughing filters (Trane Cabinet fan), picture #61	—	Floor
			Pass-through to rooms upstairs; have stubbed-off utilities.	—	Ceiling
			Industrial and potable water lines	—	Ceiling
			Electrical conduit	—	Walls and ceiling
			Fluorescent bulbs	20	Ceiling
			5-in. line acid waste line	—	Ceiling
			Sullair tank and piping	—	Floor
			Steam lines	—	Walls and ceiling
			Room air exhaust plenum on east wall 2 ft × 4 ft × 60 ft long; has radiological labels	—	Wall

Table C-9 (continued)

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
E1	North basement under 601, 602, 603, no paint	2/3/2006	Sprinkler system	—	Ceiling
			Air sampling lines and vacuum pump station	—	Floor
			Pumps on floor	4	Floor
			Phone communication panel	—	Wall
			Electrical cabinets and transformer (20 ft long)	—	Floor
Outside N of 150	Stack and filter houses	2/6/2006	See picture #4 stack and filter houses	—	—

*— Not attainable and/or does not apply.

Table C-10
DP West Structure Inventory – Corridor

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number Of Components	Location of Component/ spill within Room
Corridor 149	Hallway between 150 and 500, white painted walls and ceiling, grey painted floor	2/6/2006	Electrical conduit	—*	Wall and ceiling
			Low pressure steam lines	—	Ceiling
			Steam condensate return lines	—	Ceiling
			Potable water and drain	—	Ceiling
			Compressed air line	—	Ceiling
			Sprinkler system	—	Ceiling
			Steam radiant heater and lines	—	Ceiling
			Electrical box with 2 in. conduit	—	Floor/wall
			Chilled water supply and return lines	—	Ceiling
Attic (piping corridor) above personnel Corridor 149	n/a	2/6/2006	Piping	—	—
			Fluorescent bulbs	17	Ceiling
Corridor 3155	Hallway between 500 and 400 areas, piping corridor above(attic), white painted walls and ceiling, grey painted floor	2/6/2006	Sprinkler system, 4 in. feed lines	—	Ceiling
			Electrical conduit	—	Wall and ceiling
			Low pressure and condensate return steam lines	—	Ceiling
Corridor 422	Hallway 400 areas, piping corridor above(attic), white painted walls and ceiling, grey painted floor	2/6/2006	Fluorescent bulbs	9	Ceiling
			Sprinkler system	—	Ceiling

Table C-10 (continued)

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number Of Components	Location of Component/ spill within Room
Corridor 422	Hallway 400 areas, piping corridor above(attic), white painted walls and ceiling, grey painted floor	2/6/2006	Steam or chilled water lines; unmarked	—	Ceiling
			Electrical boxes on wall with 2 in. conduit	3	Walls
			10 ft of 8 in. duct; 8 in. × 12 in. blocked off vent	—	Ceiling
			4–5 ft drain lines	—	Wall
Corridor 3144	Hallway between 300 and 400 areas, piping corridor above(attic), white painted walls and ceiling, grey painted floor	2/6/2006	2 ACM covered lines 2 ft long- unmarked	—	Wall
			Sprinkler lines	—	Ceiling
			Fluorescent bulbs	15	Ceiling
			Electrical conduit	—	Walls and ceiling
			Baseboard electrical heating unit	—	Wall
			Stubbed water lines	—	Floor
			2 in. galvanized pipe floor to ceiling line	—	Floor
			2 ft. of 8 in. duct and covered vent	—	Wall
Corridor 367	Hallway between 300 area, piping corridor above(attic), white painted walls and ceiling, grey painted floor	2/6/2006	Sprinkler system	—	Ceiling
			Electrical conduits	—	Ceiling
			Electrical box and conduits	—	Wall
			Fluorescent bulbs	13	Ceiling
Corridor 3137	Hallway between 300 and 200 area, piping corridor above(attic), white painted walls and ceiling, grey painted floor	2/6/2006	Fluorescent bulbs	15	Ceiling
			Electrical conduit	—	Walls and ceiling
			Electrical baseboard heater	—	Wall
			Sprinkler system	—	Ceiling
Corridor 225	Hallway 200 area, piping corridor above(attic), white painted walls and ceiling, grey painted floor	2/6/2006	Sprinkler system	—	Ceiling
			Electrical conduit	—	Ceiling
			Electrical boxes and conduit	—	Wall
			Fluorescent bulbs	—	Ceiling
			Fluorescent bulbs	15	Ceiling

Table C-10 (continued)

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number Of Components	Location of Component/ spill within Room
Corridor 225	Hallway 200 area, piping corridor above(attic), white painted walls and ceiling, grey painted floor	2/6/2006	Sprinkler system	—	Ceiling
		2/6/2006	Electrical conduit	—	Walls and ceiling
Corridor 3124	Hallway between 200 and old 100 area, piping corridor above(attic), white painted walls and ceiling, grey painted floor	2/6/2006	Enclosed 4 ft x 4 ft electrical raceway	—	Ceiling
		2/6/2006	Steam heater fan in ceiling and steam lines	—	Ceiling
		2/6/2006	Electrical box on floor with 2 in. conduit	—	Floor
		2/6/2006	Steam lines entire length of corridor	—	Ceiling

*— Not attainable and/or does not apply.

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Table C-11
DP West Structure Inventory – Building 500

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
Outside	n/a[a]	2/6/2006	Picture #65, SE side of 500 roof (2nd story) from bldg 2 S-stack and fan houses, and HEPAs	—[b]	Roof

[a] n/a = Not applicable.

[b] — = Not attainable and/or does not apply.

Table C-12
DP West Structure Inventory – Philemon Housing and Miscellaneous

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
PH313A	Fan House on roof above corridor 313, tan painted walls, natural ceiling and concrete floor	2/6/2006	Large Trane centrifugal fan; see picture #66	—*	Floor
			Large filter plenum with roughing filters	—	Floor
			Steam lines	—	Ceiling and walls
			Steam heater unit	—	Floor
PH313A	Fan House on roof above corridor 313, tan painted walls, natural ceiling and concrete floor	2/6/2006	Fluorescent bulbs	14	Ceiling
			Electrical conduit	—	Walls and ceiling
			J-box	—	Wall
			Temperature monitoring panel	—	Wall
PH313B		2/6/2006	Temperature monitoring panel	—	Wall
			Electrical conduit	—	Walls and ceiling
			J-box	—	Wall
			Large Trane centrifugal fan	—	Floor
			Large filter plenum with roughing filters	—	Floor
			Steam lines	—	Ceiling and walls
			Steam heater unit	—	Floor
			Fluorescent bulbs	14	Ceiling
HEPA Plenum Enclosure	HEPA filter house on roof across from fan houses above corridor 313- confined space entry.	2/6/2006	See picture #68 HEPA filter house	—	—
PH314A	Fan House on roof above corridor 314, tan painted walls, natural ceiling and concrete floor.	2/6/2006	Temperature monitoring panel	—	Wall

Table C-12 (continued)

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
PH314A	Fan House on roof above corridor 314, tan painted walls, natural ceiling and concrete floor.	2/6/2006	Electrical conduit	—	Walls and ceiling
			J-box	—	Wall
			Large Trane centrifugal fan	—	Floor
			Large filter plenum with roughing filters	—	Floor
			Steam lines	—	Ceiling and walls
			Steam heater unit	—	Floor
			Fluorescent bulbs	10	Ceiling
PH314B	Fan House on roof above corridor 314, tan painted walls, natural ceiling and concrete floor	2/6/2006	Temperature monitoring panel	—	Wall
			Electrical conduit	—	Walls and ceiling
			J-box	—	Wall
			Large Trane centrifugal fan	—	Floor
			Large filter plenum with roughing filters	—	Floor
			Steam lines	—	Ceiling and walls
			Steam heater unit	—	Floor
			Fluorescent bulbs	14	Ceiling
			Cooling water drain lines (8 in.)	—	Floor
HEPA Plenum Enclosure	HEPA filter house on roof across from fan houses above corridor 314- confined space entry	2/6/2006	HEPA filter house	—	—
3rd story stack roof (up stairs from 314 fan houses)	3rd story stack roof (up stairs from fan houses)	2/6/2006	See picture #70, stack removed, have fan and filter house intact	—	—
PH315A	Fan House on roof above corridor 315, tan painted walls, natural ceiling and concrete floor	2/6/2006	Temperature monitoring panel	—	Wall
PH315A	Fan House on roof above corridor 315, tan painted walls, natural ceiling and concrete floor	2/6/2006	Electrical conduit	—	Walls and ceiling

Table C-12 (continued)

Room	General Room Description	Date	Component/ Equipment or Spill Description	Number of Components	Location of Component/ Spill within Room
PH315A	Fan House on roof above corridor 315, tan painted walls, natural ceiling and concrete floor	2/6/2006	J-box	—	Wall
			Large Trane centrifugal fan; see picture #71	—	Floor
			Large filter plenum with roughing filters	—	Floor
			Steam lines	—	Ceiling and walls
			Steam heater unit	—	Floor
			Fluorescent bulbs	10	Ceiling
			Temperature monitoring panel	—	Wall
			Electrical conduit	—	Walls and ceiling
			J-box	—	Wall
PH315B	Fan House on roof above corridor 315, tan painted walls, natural ceiling and concrete floor	2/6/2006	Large Trane centrifugal fan	—	Floor
			Large filter plenum with roughing filters	—	Floor
			Steam lines	—	Ceiling and walls
			Steam heater unit	—	Floor
			Fluorescent bulbs	14	Ceiling
			Cooling water drain lines (8 in.)	—	Floor
HEPA Plenum Enclosure	HEPA filter house on roof across from fan houses above corridor 315- confined space entry	2/6/2006	HEPA filter house	—	—
outside 21315 on N side	"Caution- Toxic Gas" cabinet- has two empty kerosene cans in it	2/6/2006	Cabinet; see picture #72	—	—
Fan Houses above 149 Corridor	Same equip as other fan houses (three room instead of 2)	2/6/2006	Same equip as other fan houses (three room instead of 2)	—	—
3rd story stack roof (up stairs from 149 fan houses)	3rd story stack roof (up stairs from fan houses)	2/6/2006	See picture #73 file-stack removed, have fan and filter house intact	—	—

*— Not attainable and/or does not apply.

Appendix D

DP West Pictures

Table D-1
DP West Pictures

Picture Number	Date	Description	Bldg	Room Number	Location in Room	Photo
1	01/31/2006	Nitric acid tank	2 S	n/a*	Outside E wall of room 213	
2	01/31/2006	Steam tank	2 S	n/a	Outside SW all of steam room on SW side of room 213	
3	01/31/2006	Steam room pump	2 S	n/a	Steam room interior	
4	01/31/2006	Sump in steam room	2 S	n/a	Inside steam room SW corner	
5	01/31/2006	Acid wall damage	2 S	213	NW corner wall	
6	01/31/2006	Acid wall damage	2 S	213	NE corner wall	
7	01/31/2006	Stored glove box equipment	2 S	213	SE corner area	
8	01/31/2006	Acid wall damage	2 S	213	S wall	

Table D-1 (continued)

Picture Number	Date	Description	Bldg	Room Number	Location in Room	Photo
9	1/31/2006	Acid wall damage	2S	218	SW corner wall	
10	2/1/2006	steam lines and valves	2	3134	view from door	
11	2/1/2006	lower tank	2	3134	view from inside	
12	2/1/2006	upper tank	2	3134	view from inside	
13	2/1/2006	process air pump, tank, ducts, 3 ft × 8 ft enclosure	2	3136	view from door	
14	2/1/2006	Upper steam lines	2	3143	view from inside	
15	2/1/2006	steam lines	2	3143	view from inside	

Table D-1 (continued)

Picture Number	Date	Description	Bldg	Room Number	Location in Room	Photo
16	2/1/2006	steam tanks	2	3143	view from inside	
17	2/1/2006	waste collection tank and pump	2	3151	view from inside	
18	2/1/2006	Double hood in Room 3151A	2	3151A	view from inside	
19	2/2/2006	Equipment room lined with asbestos panels	2	Equip Room No. 2A	view from outside	
20	2/2/2006	water damage to wall ?	5 N	501	W wall	
21	2/2/2006	water damage to wall ?	5 N	501	NE wall	
22	2/2/2006	water damage to wall ?	5 S	513	NW wall a	

Table D-1 (continued)

Picture Number	Date	Description	Bldg	Room Number	Location in Room	Photo
23	2/2/2006	water damage to wall ?	5 S	513	NW wall b	
24	2/2/2006	water damage to wall ?	5 S	513	NW wall c	
25	2/2/2006	water damage to wall ?	5 S	513	S Wall towards enclosure in SE corner	
26	2/2/2006	holding tank, pump, and piping	5 S	5S12	view of tank and piping	
27	2/2/2006	stubbed off PVC line	5 S	533	view of pipe	
28	2/2/2006	three hoods and utilities	5 N	500A	view from hallway door	
29	2/2/2006	lab benches	5 N	500A	view from hallway door	

* n/a = Not applicable.