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CH2MHILL

CH2M HILL
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P.O. Box 3030
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SM-049/03
July 15, 2003

Mr. Richard B. Provencher, Director
Miamisburg Closure Project
U. S. Department of Energy
P. O. Box 66
Miamisburg, OH 45343-0066

ATTENTION: Paul Lucas

SUBJECT: Contract No. DE-AC24-03OH20152
BUILDINGS 23 and 125 ACTION MEMORANDUM, PUBLIC REVIEW DRAFT
Bldg 23-GFS/I: Planning Documents Complete- Activity ID: EBDEB0WDBK
Bldg 125-GFS/I: Planning Documents Complete - Activity ID: EBDEB0WDAL

REFERENCE: Statement of Work Requirement 055 - Regulator Reports

Dear Mr. Provencher:

Paul Lucas from your office has approved the release of the following document for public review:

- Buildings 23 and 125, Action Memorandum, Public Review Draft

The review period will be from 16 July 2003 until 15 August 2003, and the site contractor will respond to any comments received and incorporate the responses into the final document.

If you or members of your staff have any questions regarding the document, or if additional support is needed, please contact Bob Ransbottom at extension 4220.

Sincerely,

K. L. Kehler
SMPP/TFV Project Manager

KLK/VKD

Enclosures

cc: Dave Seely, USEPA, (1) w/attachments
Brian Nickel, OEPA, (4) w/attachments
Ruth Vandegrift, ODH, (1) w/attachments
Frank Schmaltz, DOE/MCP, (1) w/attachments
Lisa Rawls, DOE/MCP, w/o attachments
Randy Tormey, DOE/OH, (1) w/attachments
Dann Bird, MMCIC, (3) w/attachments
Jim Bonfiglio, MESH, (1) w/attachments
~~Public Reading Room, (4) w/attachments~~
John Fulton, CH2M Hill, w/o attachments
Bob Ransbottom, CH2M Hill, (1) w/attachments
Val Darnell, CH2M Hill, (1) w/attachments
Kurt Kehler, CH2M Hill, (1) w/attachments
DCC (1) w/attachments
ADMN. RECORD

ACTION MEMORANDUM

ENGINEERING EVALUATION/COST ANALYSIS

BUILDINGS 23 AND 125

REMOVAL ACTION

JULY 2003

PUBLIC REVIEW DRAFT

7/16 - 8/15/03

Department of Energy
Miamisburg Closure Project

CH2MHILL

Miamisburg Closure Project

MIAMISBURG CLOSURE PROJECT
ACTION MEMORANDUM
Notice of Public Review Period

The following document is available for public review in the CERCLA Public Reading Room, 305 E. Central Ave., Miamisburg, Ohio. Public comment on this document will be accepted July 16, 2003 through August 15, 2003.

AM Buildings 23 and 125:
Waste Material Storage Center and Alpha Treatment System

Questions can be referred to Paul Lucas at (937) 847-8350 extension 314

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ACRONYMS

ACM	asbestos-containing material
AM	Action Memorandum
ARARs	Applicable or Relevant and Appropriate Requirements
ATS	alpha treatment system
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
DOE	Department of Energy
DOT	Department of Transportation
dpm/100cm^2	disintegrations per minute per one hundred square centimeters
EE/CA	Engineering Evaluation/Cost Analysis
ER	Environmental Restoration
FFA	Federal Facilities Agreement
LSA	low-specific activity
MCP	Miamisburg Closure Project
MMCIC	Miamisburg Mound Community Improvement Corporation
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
OAC	Ohio Administrative Code
OEPA	Ohio Environmental Protection Agency
OSC	On-Scene Coordinator
OSHA	Occupational Safety and Health Administration
pCi/g	picoCuries per gram
PRS	Potential Release Site
RA	Removal Action
RBGV	Risk-Based Guideline Value
ROD	Record of Decision
RCRA	Resource Conservation and Recovery Act
RSE	Removal Site Evaluation

ACRONYMS
Continued

SARA	Superfund Amendments and Reauthorization Act
TRU	transuranic
UB	unbinned
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound

1.0 PURPOSE

The United States Department of Energy (DOE) is the designated lead agency under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Removal Actions (RAs) at the Miamisburg Closure Project (MCP) (previously called the Mound Environmental Management Project or MEMP) are implemented as non-Superfund, federal-lead actions. DOE provides the On-Scene Coordinator (OSC). Non-Superfund, federal-lead RAs are not subject to United States Environmental Protection Agency (USEPA) limitations on the OSC ($50,000 authority) and are not subject to National Oil and Hazardous Substances Pollution Contingency Plan (NCP) limitations on RAs (i.e., $2,000,000 in cost and 12 months in duration).

This Action Memorandum (AM) Engineering Evaluation/Cost Analysis (EE/CA) has been generated to document the general site conditions that would justify application of a RA consistent with CERCLA, to propose the RA described herein, and to allow public input (Reference 1).

2.0 SITE CONDITIONS AND BACKGROUND

2.1 Site Description

This section describes the physical site location, site characteristics, release of contaminants into the environment, and the site's National Priorities List (NPL) status.

2.1.1 Physical Location

The MCP Site is located on the southern border of the City of Miamisburg in Montgomery County, Ohio, approximately 10 miles south-southwest of Dayton and 45 miles north of Cincinnati.

This RA is proposed for the removal of the superstructures of Buildings 23 and 125. These buildings include the Potential Release Sites (PRSs) identified in Table 1. The locations of the buildings are shown on Figure 1, and photographs of the buildings are provided in Appendix C.

2.1.2 Site Characteristics

2.1.2.1 Building 23

Building 23 is a Resource Conservation and Recovery Act (RCRA)-permitted storage facility and a Category 3 nuclear facility, used for storing mixed and transuranic (TRU) mixed waste. Building 23 was originally used as a radioactive waste staging facility, preparing radiological waste for shipment offsite. Because the volume of mixed waste increased and disposal options became limited, the building became dedicated almost exclusively to mixed waste storage.

Figure 1, Appendix A, shows the building's location. To the west of the building is WD Building, and to the east is Building 125. To the north of Building 23 is a grassy area, small parking area, and the "WD hillside," and to the south is the building's loading dock and a roadway.

Built in 1965, Building 23 is a single-story, 3,444 square-foot (approximate dimensions of 117 feet by 30 feet) reinforced concrete block structure with a built-up membrane roof. Originally called the Waste Material Staging Center, the two-room building was used for packaging of radioactive waste into drums and staging of the drums prior to their shipment offsite. In 1989, a third room was formed by the construction of a block wall, creating a separate drum scanning facility. In 1994, the building underwent additional modifications to support its new capabilities as the RCRA Mixed Waste Storage Facility. Mixed wastes are hazardous wastes that are also radioactively contaminated. Building modifications included re-engineering of the containment, epoxy-sealant floor coatings, and installation of trenches and dikes. The building's floors are slightly sloped to the existing floor drain system, and the floor drains are connected to the floor sump (~320 gallon capacity), located along the south side of the building.

Building services include heating and air conditioning by central steam and chilled water and electrical service of 480 volts. Photographs of Building 23's exterior are provided in Appendix C.

Areas within Building 23 are believed to have minimal radioactive contamination, which will be remediated prior to demolition. A Removal Action was recommended for this building based on its history of storing hazardous and radioactively contaminated materials. This AM includes decontamination and demolition of the building superstructure, slab, and foundation/footers. The soil below and around Building 23 will be addressed in a separate AM (UGL Action Memorandum).

2.1.2.2 Building 125

Building 125 is the alpha treatment system (ATS) facility used for treating low-level alpha-contaminated (primarily plutonium-238) wastewater. Liquid wastes from the site were previously piped, and are currently transported, to Building 125 for processing and packaging for offsite disposal. The purpose of ATS was to reduce the number of drums with alpha contaminated sludge that were shipped offsite by concentrating the liquids prior to shipment.

Figure 1, Appendix A, shows the building's location. To the west are Building 23 and WD Building; to the east is a gravel area and roadway; to the north is a grassy area, driveway, and the "WD hillside;" and to the south is the building's loading dock and a roadway. Photographs of Building 125's exterior are provided in Appendix C.

Constructed in 1998, Building 125 is a single-story, two-room facility consisting of a steel beam frame covered by metal panels with all concrete floors (sealed and epoxy-painted). The building contains a multimedia filter and bag filter, a clariflocculator unit, alpha influent and effluent tanks, a sump pit, a filter press, and a drum packaging area. The nominal

dimensions are 40 feet by 50 feet, with approximately 2,000 square feet of floor space. The building is heated with electric space heaters. The control room is cooled by a central air handling system. Electrical service is 480 Volts.

It is believed that radioactive materials in Building 125 were confined to the interior of the process equipment; contamination levels of the process equipment and the building surfaces will be determined prior to demolition. This AM includes decontamination and disposal of the process equipment, and decontamination and demolition of the building superstructure, slab, and foundation/footers. The soil below and around Building 125 will be addressed in a separate AM (UGL Action Memorandum).

The location where Building 125 currently stands was previously the location of Building 79, a 1,650 square-foot modular wooden building used exclusively for offices. Building 79 occupied this location from 1983 through its removal in 1997. In October 1997, the Core Team identified Building 79 as one of several modular buildings to be sold at auction and removed from the site without requiring a Building Data Package. This decision was based on the building's past use (offices) and the review process established for auctioned items. The previous existence of Building 79 at this location is believed to have no impact to this AM.

2.1.3 Current Conditions

Operations in Building 23 ceased on 31 December 2002. Removal of RCRA-regulated wastes was completed 14 March 2003. A RCRA Clean Closure Report was submitted to the Ohio Environmental Protection Agency (OEPA) on 27 April 2003 for the 60-day regulator review period, which concludes 26 June 2003. The RCRA Clean Closure process concludes with approval of the Closure Report by OEPA. Thereafter, the building may be used for standard industrial purposes. Radiological surveys will be performed after the building is turned over from the Waste Management group to the SMPP/TFV group, which is expected in July 2003.

Operations in Building 125 are expected to cease in June 2003 and the building to be released to the SMPP/TFV group in July 2003. After Building 125 ceases operation, wastewater that would have been processed in the building will instead be processed by the facilities generating them. Building and process equipment contamination levels will be determined after the building is turned over to the SMPP/TFV group. Abandoned systems will be removed from the building only if they are contaminated or have been identified for future use. Remaining materials will be demolished with the building.

2.1.3.1 Radiological

Buildings 23 and 125 will undergo in depth radiological characterization after they are turned over to the SMPP/TFV group.

Buildings 23 and 125 are believed to have minimal radiological contamination on their walls and floors. Radiologically contaminated areas will be remediated prior to demolition, or will be removed and disposed of as low-specific activity (LSA) waste. Preliminary radiological survey data sheets (RSDSs) of building surfaces are provided in Appendix F.

Inner surfaces of the Building 125 process equipment are believed to be radiologically contaminated. Appendix F also provides the ATS inventory.

2.1.3.2 Chemical

Appendix G provides a list of chemicals known to have been stored in Building 23 and used in Building 125. All chemicals have been removed from Building 23 and the building is currently undergoing RCRA Clean Closure. All chemicals will be removed from Building 125 prior to demolition.

2.1.3.3 Asbestos

An inspection for asbestos-containing materials (ACMs) will be performed once the buildings have been released to the SMPP/TFV group. All ACM regulated by EPA under NESHAP will be removed and disposed of by a licensed asbestos abatement contractor prior to demolition of the building. It is believed that Building 23 will require asbestos abatement prior to demolition, and that Building 125 will not require asbestos abatement.

2.1.3.4 Lead

An inspection for lead will be performed once the buildings have been released to the SMPP/TFV group. If lead-containing items are present, they will be properly removed and disposed of.

If lead-based paint were present, it would not impact the demolition or disposal of the debris. Close worker disturbance of paint coatings will be avoided during demolition. If close disturbance is necessary, point of contact will be tested for lead and appropriate controls and personal protective equipment (PPE) will be used for disturbance as required.

2.1.4 Associated PRS Overview

As a result of the investigations and documentation accomplished to comply with the CERCLA cleanup process via the Federal Facilities Agreement (FFA)/DOE Environmental Restoration (ER) Program, DOE and the site contractor tabulated all the PRSs identified under the various regulatory programs in effect at the site. Of these 440 PRSs, four are in the vicinity of Buildings 23 and 125 (Table 1). Their locations are shown on Figure 2, and additional information is included in Appendix D.

PRS 160 (Table 1) is the mixed waste storage area in Building 23, and will be addressed in this AM/EE/CA and closed out via the OSC Report(s).

2.1.5 Release or Threatened Release into the Environment

The potential release of radionuclides and/or hazardous chemicals prompted this RA.

2.1.6 National Priorities List Status

The USEPA placed the Mound Site on the NPL by publication in the Federal Register on November 21, 1989.

2.2 Other Actions to Date

The site initiated a CERCLA program in 1989, now guided by the agreement among the DOE, OEPA, and USEPA. An FFA under CERCLA Section 120 was executed between DOE and USEPA Region V on October 12, 1990. It was revised on July 15, 1993 (EPA Administrative Docket No. OH 890-008984) to include OEPA as a signatory. The general purposes of the FFA are to:

- ensure that the environmental impacts associated with past and present activities at the site are thoroughly investigated and appropriate remedial actions taken as necessary to protect the public health, welfare, and the environment,
- establish a procedural framework and schedule for developing, implementing, maintaining, and monitoring appropriate RAs at the site in accordance with CERCLA, Superfund Amendments and Reauthorization Act (SARA), the NCP, Superfund guidance and policy, and RCRA guidance and policy, and
- facilitate cooperation, exchange of information, and participation of the parties in such actions.

2.2.1 Previous Removal Actions

No previous RAs have been performed at these buildings. Building 23 is currently undergoing RCRA Clean Closure.

2.2.2 Current Actions

Current actions pertinent to the removal of Buildings 23 and 125 include work planning, and review of pre-characterization data. Work planning consists of the up-front work required to execute building disposition activities in accordance with Environmental Safety & Health requirements, DOE Orders, and best management practices.

Prior to being released to the SMPP/TFV group for demolition, Building 23 will be decommissioned in accordance with the RCRA Clean Closure Plan, and will be downgraded from a Category 3 Nuclear Facility to a Standard Industrial Facility.

Once the buildings are turned over to the SMPP/TFV group, Safe Shutdown activities and building and system characterization activities will commence. Although not a part of this AM, the adjacent WD Building (under a separate AM) is in the process of shutdown and demolition. Safe Shutdown includes building surveillance, inventory of equipment, and disposition of surplus equipment. Characterization activities include radiological, asbestos, and lead surveys and/or inspections.

2.3 State and Local Authorities' Roles

2.3.1 State and Local Action to Date

In 1990, as a result of the site's placement onto the NPL, DOE and USEPA entered into an FFA that specified the manner in which the site CERCLA-based environmental restoration was to be implemented. In 1993, the FFA was amended to include the OEPA as a signatory. DOE remains the lead agency.

2.3.2 Potential for Continued State and Local Response

Eventual release of the site for industrial/commercial use is planned. Periodic environmental monitoring of the area may be required until a final Record of Decision (ROD) is implemented for the entire site. This monitoring would require coordination with local, state, and federal authorities. Current plant-wide environmental monitoring programs will continue until such time as remediation is completed. OEPA will continue its oversight role until all terms of the FFA have been completed.

3.0 THREAT TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT

3.1 Threats to Public Health or Welfare

The potential release of radionuclides and/ or hazardous chemicals may create a potential threat to the public health or welfare.

3.2 Threats to the Environment

The potential release of radionuclides and/or hazardous chemicals may create a potential threat to the environment.

3.3 Removal Site Evaluation

The Removal Site Evaluation (RSE) requirements, as outlined under USEPA's NCP regulations in the Code of Federal Regulations (CFR) 40 CFR 300.415, are presented throughout this AM/EE/CA. The source and nature of the potential release include fixed and removable radiological contamination on interior building surfaces (preliminary survey information provided in Table 2), and inside of the Building 125 process equipment. On the basis of this information, the Core Team recommends a RA for Buildings 23 and 125. Following building demolition and slab/foundation removal, the site will be graded and seeded for drainage and erosion protection. The contaminated soil underneath and around the buildings will be addressed via a separate Action Memorandum. PRS 160 (Table 1) will be closed out in the OSC Report. An evaluation by public health agencies has not been performed for this area, and, therefore, is not included in this AM/EE/CA.

The NCP identifies eight factors that must be considered in determining the appropriateness of a RA [40 CFR 300.415(b)(2)]. These criteria are evaluated in Table 3.

4.0 ENDANGERMENT DETERMINATION

As the location is currently configured and access controlled, actual or threatened releases of pollutants and contaminants from this site do not pose an endangerment to public health or welfare or to the environment. However, to eliminate the possibility of endangerment, as the site transfers from DOE ownership and control, DOE has determined that removal of the contaminants is appropriate.

5.0 PROPOSED ACTION AND ESTIMATED COSTS

5.1 Proposed Action

The proposed action is the decontamination and demolition of Buildings 23 and 125 (including remaining equipment, building superstructures, slabs, and footers/foundations). Since the proposed action is within the site boundaries, it is not expected to have a disproportionate impact on low income or minority populations.

5.1.1 Proposed Action Description

The proposed action is expected to result in multiple fieldwork efforts. Components of the proposed action include the following:

- **Project Planning**

  Due to the complexity of the work, multiple work plans may be generated for each phase of the project. Appropriate environmental controls will be considered, identified, and applied through the work planning effort. Work plan documents, covering activities for the breaching of the building envelopes and demolition of the building structures, will be submitted to DOE, USEPA, and OEPA for review and comment at least 30 days before field work is scheduled to begin.

- **Public Notification**

  A notice of the availability of this AM/EE/CA for 30-day public review will be published in a local newspaper.

- **Establish Work Zones**

  Work zones will be established around the outside of Buildings 23 and 125, establishing air monitoring for personnel and at the work zone perimeters (as appropriate), installing temporary facilities and utilities, construction hazard abatement, general housekeeping, and establishing dust control prior to decontamination and demolition activities.

- **Safe Shutdown**

  This activity includes performing routine radiological monitoring activities; performing physical inventory of all equipment, supplies, furniture, and systems in the buildings; performing characterization to determine a disposition plan for surplus items; removing miscellaneous equipment for reuse, auction, or disposal; identifying utilities, located in or around the building, which may be affected by the work; isolating or rerouting utilities, as needed; and establishing those controls necessary to ensure that only authorized workers are allowed access to perform decommissioning activities.

- **Characterization**

  This activity includes performing radiological surveys of building surfaces and equipment, and conducting asbestos and lead inspections.

- **Decontamination**

  Decontamination activities will be as specified in the Work Plans as summarized below.

  1. Isolate utilities; drain all systems of liquid.
  2. Remove contaminated equipment.
  3. Remove equipment designated for reuse.
  4. Decontaminate building interiors and exteriors based on the radiological characterization data.
  5. If ACM requiring remediation prior to building demolition is identified, asbestos abatement contractor will remove and dispose of all ACM regulated by EPA under NESHAP.

- **Demolition**

  Demolition activities will be as specified in the Work Plan as summarized below.

  1. Demolish building superstructures.
  2. Demolish building slabs and footers/foundations to three feet below grade.
  3. Remove inactive drain lines and underground piping, down to 3 feet below grade.
  4. Remove and dispose of debris.

- **Verification**

  This AM/EE/CA covers the demolition of the Building 23 and 125 superstructures, slabs, and footers/foundations. The soil under and around the buildings will be addressed in a separate Action Memorandum.

  Verification of building demolitions will be documented in an OSC Report via photographs.

- **Site Restoration**

  Equipment, materials, waste containers, and barricades will be removed. Disturbed areas will be backfilled (as needed), compacted to original contours and elevation unless otherwise specified, and seeded to prevent erosion.

- **Documentation of Completion**

  The completion of the RA will be documented in the OSC Report(s).

5.1.1.1 Rationale, Technical Feasibility, and Effectiveness

The RA chosen is necessary for the removal of potential radiologically contamination in Buildings 23 and 125 and to ensure that migration of the contamination does not occur.

5.1.1.2 Monitoring

Health and Safety monitoring will be performed throughout the RA according to standard MCP procedures, as specified in the Work Package(s), JSHA/HASP, and Radiological Work Permit(s).

5.1.1.3 Uncertainties

The major uncertainties are the concentration levels of the contaminants and the extent of contamination. The minor uncertainties include location of utilities that may exist in the areas of excavation.

5.1.1.4 Institutional Controls

DOE will remain in control of the locations addressed by this RA until transfer of ownership of the parcel(s) they are in. If necessary, enforceable deed restrictions will be in place at the time of transfer in order to ensure future protection of human health and the environment.

5.1.1.5 Post-Removal Site Control

Initially, post-removal site control will be provided by DOE/MCP. The property is to be sold to the Miamisburg Mound Community Improvement Corporation (MMCIC). The institutional and site controls needed at the time of the site transfer in order to ensure future protection of human health and the environment will be included in the ROD.

5.1.1.6 Cross-Media Relationships and Potential Adverse Impacts

The potential cross-media impact associated with the RA is the potential for unintended release of contaminated materials into the atmosphere or surface/groundwater. Careful monitoring and control will be implemented during the RA.

No potential adverse impacts of the RA have been identified.

5.1.2 Contribution to Future Remedial Actions

To facilitate Further Assessments and RAs in or near the site of this RA, OSC Report(s) will document the RA with photographs, and other information collected during the fieldwork.

The information obtained, as a result of these removals, will be used in determining the availability of the site for final disposition and will be subject to review in the subsequent residual risk evaluation.

5.1.3 Description of Alternative Technologies

Alternative technologies frequently evaluated for CERCLA remediation include institutional controls, containment, collection, treatment, and disposal. Based on the prevailing conditions, the following alternatives (in addition to the proposed alternative of dismantlement) were developed.

1. No Action
2. Institutional Controls

The performance capabilities of each alternative with respect to the specific criteria are discussed below.

5.1.3.1 No Action

The "No Action" option was eliminated from further consideration. The Core Team determined that a RA is warranted for Buildings 23 and 125.

5.1.3.2 Institutional Controls

Existing plant institutional controls effectively minimize the potential for contact of the subject contamination with the general public. However, after ownership is transferred, these same institutional controls will be difficult to monitor and enforce. Thus, institutional controls were eliminated from further consideration. A RA is warranted.

5.1.4 EE/CA

This document serves as the AM and EE/CA.

5.1.5 Applicable or Relevant and Appropriate Requirements (ARARs)

MCP ARARs for the ER Program have been identified (Reference 2). The following have been identified as applicable, or relevant and appropriate to this RA:

5.1.5.1 Air Quality

- 40 CFR Part 61 Subpart H: National Emissions Standards for Emissions of Radionuclides other than Radon from Department of Energy Facilities.
- Ohio Administrative Code (OAC) 3745-15-07(A): Air Pollution Nuisances Prohibited.
- OAC 3745-17-02 (A, B, C): Particulate Ambient Air Quality Standards
- OAC 3745-17-05: Particulate Non-Degradation Policy
- OAC 3745-17-08: (A1), (A2), (B), (D): Emission Restrictions for Fugitive Dust

5.1.5.2 To Be Considered

- EPA/230/02-89/042: Methods for Evaluating the Attainment of Cleanup Standards.
- DOE Order 5400.5: Radiation Protection of the Public and the Environment

5.1.5.3 Worker Safety

- 29 CFR Part 1910: Occupational Safety and Health Act (OSHA) - General Industry Standards
- 29 CFR Part 1926: OSHA - Safety and Health Standards
- 29 CFR Part 1904: OSHA - Record keeping, Reporting, and Related Regulations

5.1.5.4 Storm water Runoff

- National Pollutant Discharge Elimination System (NPDES) Permit No. 1IO00005*HD, June 1998.

5.1.6 Other Standards and Requirements

- 49 CFR 172, 173: Department of Transportation (DOT) hazardous material transportation and employee training requirements.

Other standards or requirements related to the actual implementation of the RA may be identified subsequently during the design phase and will be incorporated into the Work Plan for this RA.

5.1.7 Project Schedule

The schedule established for planning and implementing the RA is illustrated in Figure 3 and summarized in Table 4. Table 4 shows three fieldwork campaigns for this AM/EE/CA (FY03-Q4, FY04-Q2, and FY04-Q3). The actual number, duration, and timing of these campaigns may differ.

5.2 Estimated Costs

The cost estimate to perform the RA is shown in Table 5. Costs include the construction activities, all engineering and construction management, and site restoration.

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

There is the potential for the contaminants to migrate if action is delayed or not taken.

7.0 OUTSTANDING POLICY ISSUES

There are currently no outstanding policy issues affecting performance of this RA.

8.0 ENFORCEMENT

The Core Team consisting of DOE, USEPA, and OEPA has agreed on the need to perform the removal. The work described in this document does not create a waiver of any rights under the FFA, nor is it intended to create a waiver of any rights under the FFA. The DOE is the sole party responsible for implementing this cleanup. Therefore, DOE is undertaking the role of lead agency, per CERCLA and the NCP, for the performance of this RA. The funding for this RA will be through DOE budget authorization and no Superfund monies will be required.

9.0 RECOMMENDATION

This decision document represents the selected Removal Action for Buildings 23 and 125, developed in accordance with CERCLA as amended by SARA, and not inconsistent with the NCP. This decision is based on the administrative record for the site.

Conditions at the site meet the NCP Section 300.415 (b)(2) criteria for a removal and we recommend initiation of the removal action.

Approved:

DOE/MCP:	Paul Lucas Paul Lucas, Remedial Project Manager	6/18/03 Date
USEPA:	David P. Seely David P. Seely, Remedial Project Manager	7/9/03 Date
OEPA:	Brian K. Nickel Brian K. Nickel, Project Manager	6/23/03 Date

10.0 REFERENCES

1. Federal Facilities Agreement under CERCLA Section 120, USEPA, October 12, 1990.

2. List of Ohio Administrative Code and Ohio Revised Code ARARs, Letter from Nickel to Kleinrath, August 19, 1998.

Appendix A

Figures

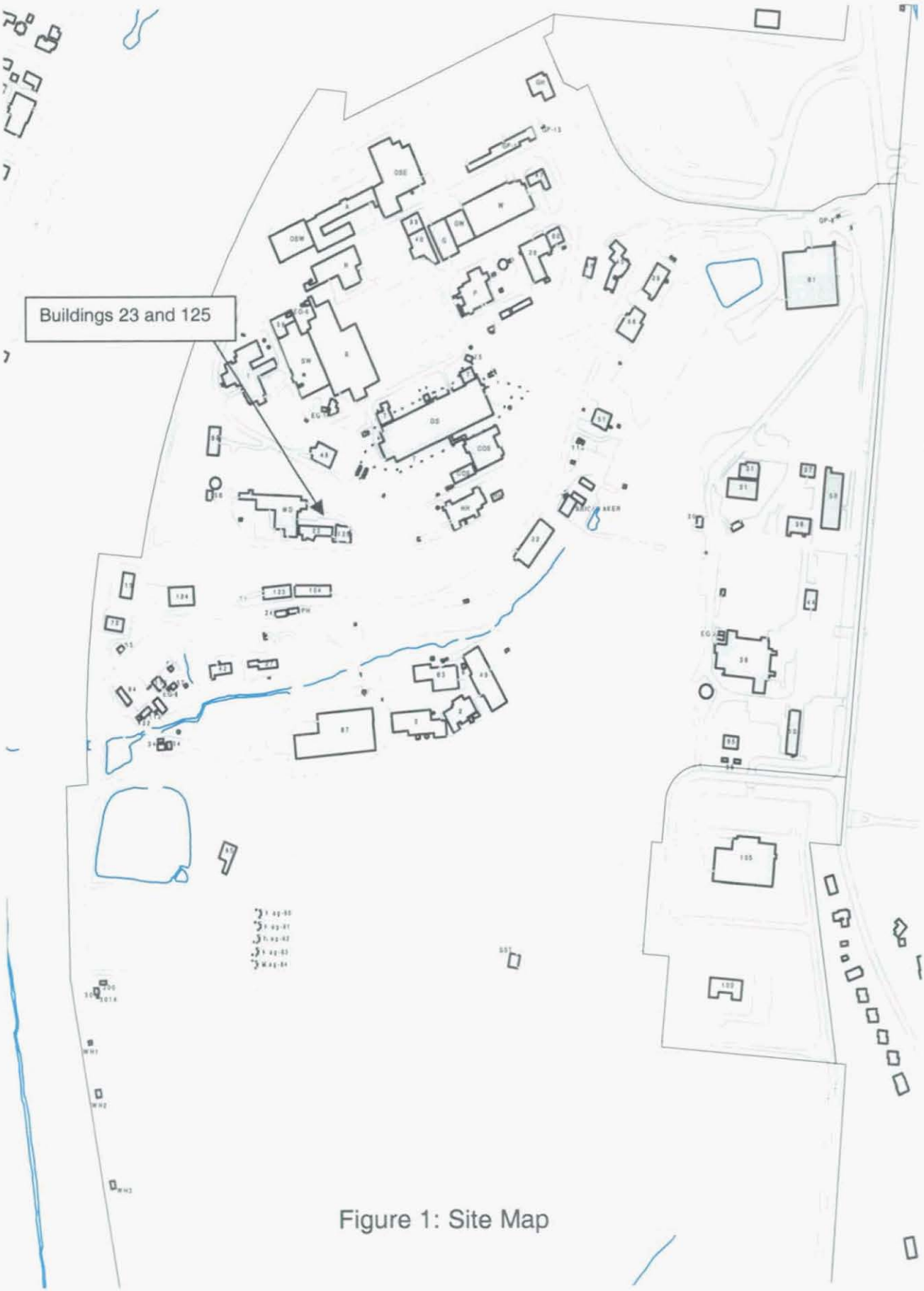
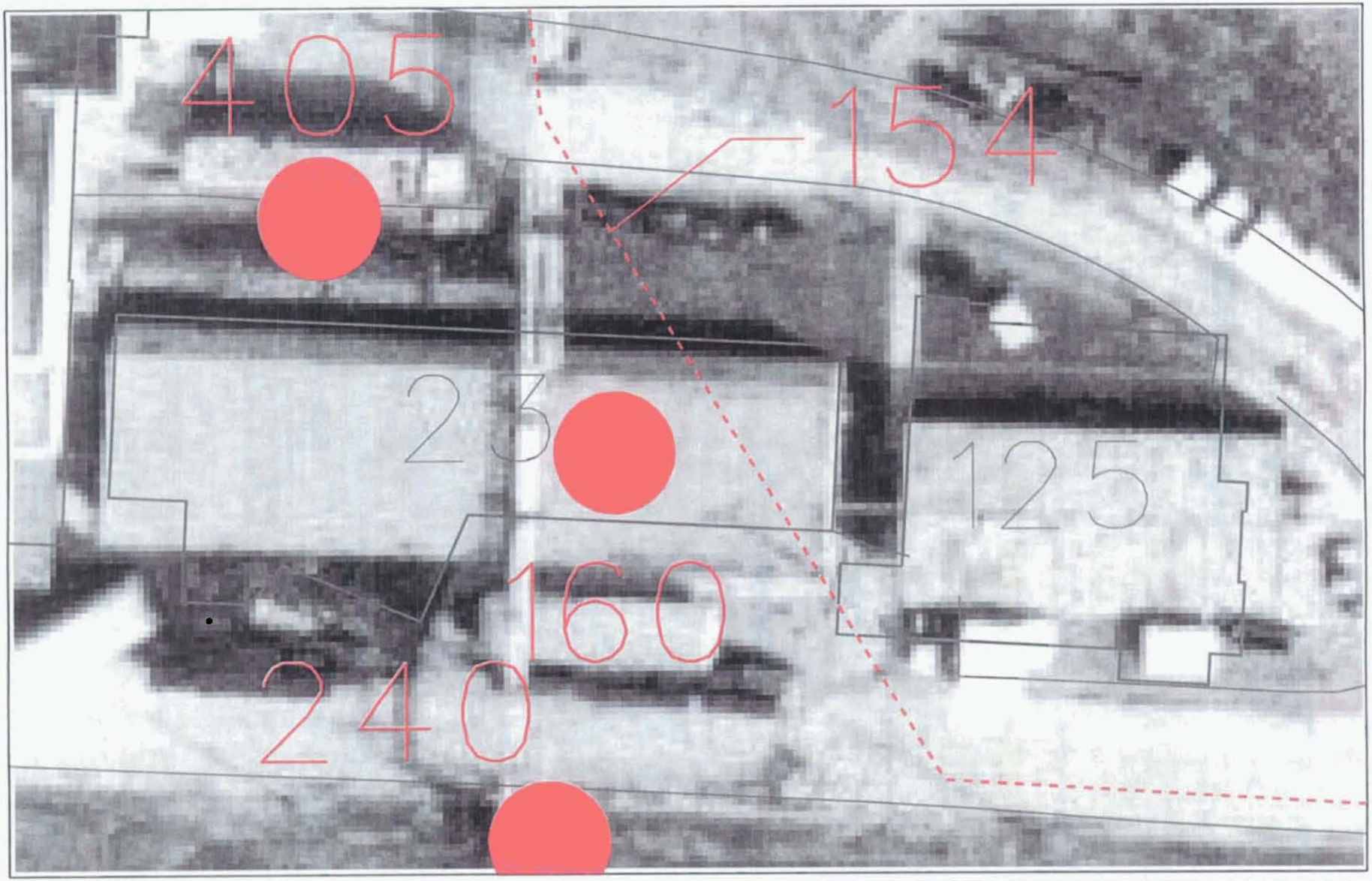


Figure 1: Site Map



PRS Point
PRS Area
PRS Line

20 10 0 20 40FT
GRAPHIC SCALE

ISS	DATE	REVISION	BY	CHKR	ENG	LPREC	APVD	B
	03/25/03		SSP					

MOUND
Environmental Restoration Geographic Information System

SHEET 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
ISSUE
SHEET 1 2 3 4 5 6
ISSUE
PART CLASSIFICATION

Figure 2:
Building 23 & 125
and Vicinity

DRAWING CLASSIFICATION: UNCLASSIFIED
SIZE
DRAWING NUMBER: vicinity.dgn
JOB NUMBER
DGN TYPE: STE
PROJ: ER-GIS
CADD
SCALE
SHEET 1 OF 1
STATUS: MD-REL-03/25/03
ORIGIN: MSTATION / J

Activity ID	WBS	Activity Description	Orig Dur	EV	% Comp	Early Start	Early Finish
125							
EBDEB0WDA2	10.40.E.B.C0WD.B	Bldg 125 - Demolition Preparation and Planning	119	F	0	22JUL03	25FEB04
EBDEB0WDA4	10.40.E.B.C0WD.F	Bldg 125 - Facility Prep/Rmvls	80	F	0	30SEP03	25FEB04
EBDEB0WDAJ	10.40.E.B.C0WD.B	Bldg 125-GFS/I: Submit Planning Docs	0		0		18DEC03
EBDEB0WDAK	10.40.E.B.C0WD.B	Bldg 125-GFS/I: Planning Docs Complete	0		0		26JAN04
EBDEB0WDA8	10.40.E.B.C0WD.B	Bldg 125 - Utility Services	15	F	0	02FEB04	25FEB04
EBDEB0WDAL	10.40.E.B.C0WD.B	Bldg 125-GFS/I: Planning Docs Approved	0		0		25FEB04
EBDEB0WDAB	10.40.E.B.C0WD.J	Bldg 125 - Physical Demolition	53	B	0	26FEB04	27MAY04
EBDEB0WDAD	10.40.E.B.C0WD.B	Bldg 125 - Prepare Completion Docs	65	F	0	01JUN04	23SEP04
EBDEB0WDAW	10.40.E.B.C0WD.B	Bldg 125-GFS/I: Submit Completion Docs	0		0		26JUL04
EBDEB0WDAX	10.40.E.B.C0WD.B	Bldg 125-GFS/I: Completion Docs Complete	0		0		23AUG04
EBDEB0WDAY	10.40.E.B.C0WD.B	Bldg 125-GFS/I: Completion Docs Approved	0		0		23SEP04
23							
EBDEB0WDB2	10.40.E.B.C0WD.B	Bldg 23 - Demolition Preparation and Planning	120	F	0	02JUL03	10FEB04
EBDEB0WDB4	10.40.E.B.C0WD.F	Bldg 23 - Facility Prep/Rmvls	80	F	0	15SEP03	10FEB04
EBDEB0WDBJ	10.40.E.B.C0WD.B	Bldg 23-GFS/I: Submit Planning Docs	0		0		03DEC03
EBDEB0WDBK	10.40.E.B.C0WD.B	Bldg 23-GFS/I: Planning Docs Complete	0		0		08JAN04
EBDEB0WDB8	10.40.E.B.C0WD.B	Bldg 23 - Utility Services	15	F	0	15JAN04	10FEB04
EBDEB0WDBL	10.40.E.B.C0WD.B	Bldg 23-GFS/I: Planning Docs Approved	0		0		10FEB04
EBDEB0WDBB	10.40.E.B.C0WD.J	Bldg 23 - Physical Demolition (Bldg PRS 160)	60	B	0	11FEB04	25MAY04
EBDEB0WDBD	10.40.E.B.C0WD.B	Bldg 23 - Prepare Completion Docs	65	F	0	26MAY04	21SEP04
EBDEB0WDBW	10.40.E.B.C0WD.B	Bldg 23-GFS/I: Submit Completion Docs	0		0		21JUL04
EBDEB0WDBX	10.40.E.B.C0WD.B	Bldg 23-GFS/I: Completion Docs Complete	0		0		18AUG04
EBDEB0WDBY	10.40.E.B.C0WD.B	Bldg 23-GFS/I: Completion Docs Approved	0		0		21SEP04

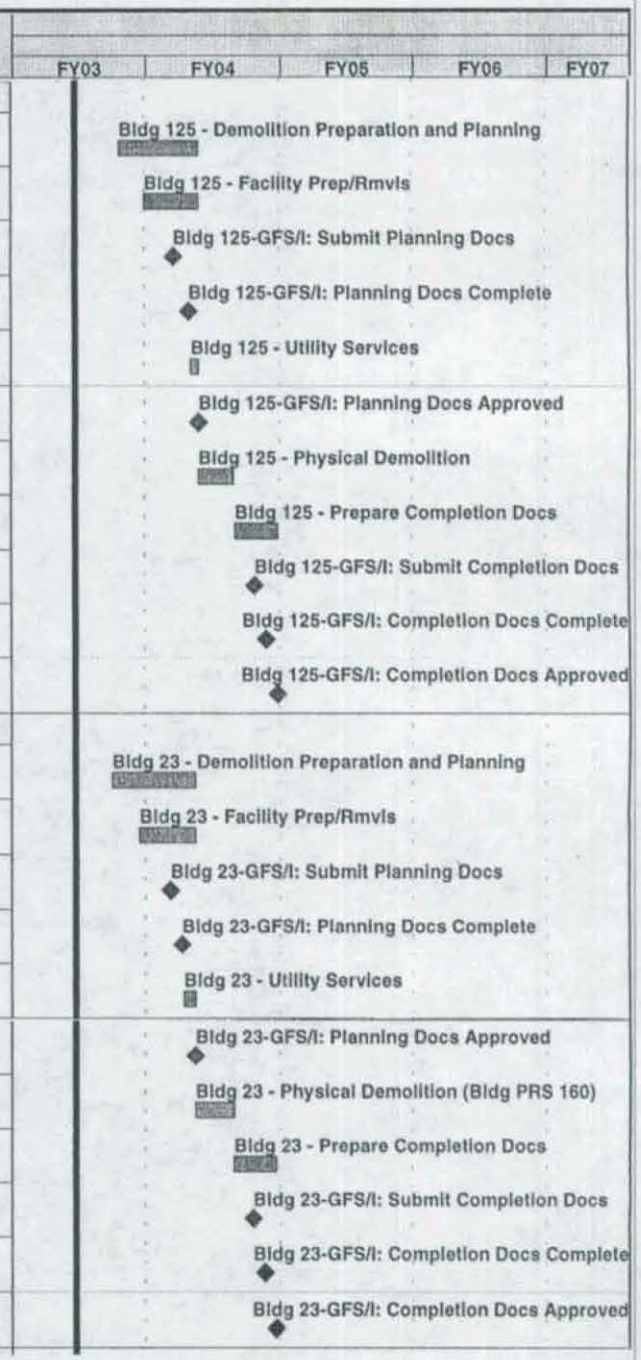


Figure 3 – Schedule Summary

Appendix B

Tables

Table 1: PRSs in Proximity to Buildings 23 and 125

PRS	CERCLA or Bldg. Related	Binning Status	Comments
154	CERCLA	RA	Area 23, thorium contaminated soil.
160	Building	unbinned	Mixed waste storage area (Building 23).
240	CERCLA	Further Assessment (FA)	Site survey project potential hot spot location S0472
405	CERCLA	RA	(North of Building 23) Oil and PCB potential in soil.

PRSs 154, 240, and 405 will be handled by the ER group and are not included in this Action Memorandum. PRS 160 will be closed out via the Buildings 23 and 125 Removal Action OSC Report.

Table 2: Preliminary Radiological Characterization Summary

Building 23

TYPE	RSDS (Radiological Survey Data Sheet)	LOCATION	SURVEY RESULTS (dpm/100 cm^2) (Note 1)	SURFACE CONTAMINATION GUIDELINES (dpm/100 cm^2) (Note 2)
Highest Alpha Smearable Activity	03-WM-0297	West side Floor	16.4	20
Highest Alpha Fixed Activity	03-WM-0273	West side Floor	16,360	100
Highest Beta Smearable Activity	02-WM-0752	Floor	5.97	1,000
Highest Beta Fixed Activity	03-WM-0273	West side Floor	9,424	5,000
Highest Tritium Smearable Activity	03-WM-0297	Trench Floor	2,667	10,000

Note 1: Radiological activity may be present and not be a concern (within applicable limits). This may result from or be a function of counting statistics, instrument variances, the randomness of decay, radon presence, and/or natural fluctuations in background levels.

Note 2: Guideline values per DOE Order 5400.5, Radiation Protection of the Public and the Environment

Building 125

TYPE	RSDS	LOCATION	SURVEY RESULTS (dpm/100 cm^2) (Note 1, 3)	SURFACE CONTAMINATION GUIDELINES (dpm/100 cm^2) (Note 2)
Highest Alpha Smearable Activity	01-WM-1224	Sump/Trench	41	20
Highest Alpha Fixed Activity	01-WM-1224	Sump/Trench	732	100
Highest Beta Smearable Activity	03-WM-0143	Floor	10.24	1,000
Highest Beta Fixed Activity	02-WM-1636	Floor	237	5,000
Highest Tritium Smearable Activity	03-WM-0274	Floor	656.32	10,000

Note 1: Radiological activity may be present and not be a concern (within applicable limits). This may result from or be a function of counting statistics, instrument variances, the randomness of decay, radon presence, and/or natural fluctuations in background levels.

Note 2: Guideline values per DOE Order 5400.5, Radiation Protection of the Public and the Environment

Note 3: These results apply only to accessible areas inside the building, but outside of systems/components.

Table 3: Evaluation of Removal Action Appropriateness Criteria

Criteria	Evaluation
"...potential exposure to nearby human populations, animals, or the food chain..."	There is potential exposure to nearby human populations, animals, or the food chain from radionuclides and/or hazardous chemicals if present institutional controls were relaxed.
"Actual or potential contamination of drinking water supplies..."	There is potential for contamination of onsite drinking water supplies by radionuclides and/or hazardous chemicals. The contaminants could migrate to the groundwater that is the source for the plant drinking water.
"Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release;"	Not applicable.
"High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;"	If the integrity of the buildings was breached causing leakage of material, there is the potential to encounter high levels of hazardous substances, pollutants, or contaminants in soil below the underground buildings.
"Weather conditions that may cause hazardous substances to migrate or be released;"	This site is exposed to weather conditions. Rain might cause the associated hazardous substances to migrate through soil migration or surface runoff.
"Threat of fire or explosion;"	Not applicable.
"The availability of other appropriate federal or state response mechanisms to respond to the release;" and	There are no other state or federal mechanisms required to respond. The FFA established a combined state and federal mechanism to respond under CERCLA. DOE is the designated lead agency at the site under CERCLA.
"Other situations or factors that may pose threats to public health or welfare or the environment."	Not applicable.

B 3 of 4

Table 4: Fiscal Year Campaigns

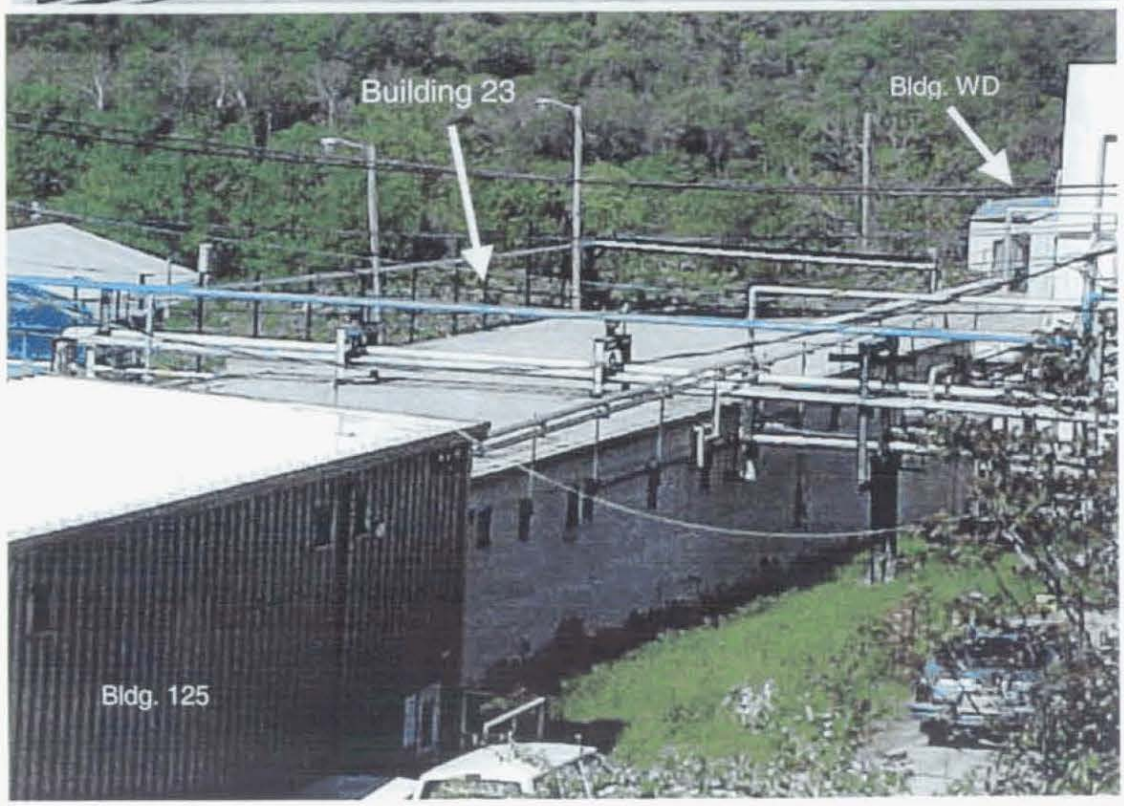
Fiscal Year Campaign	Actions
FY03-Q4	Facility Preparation
FY04-Q2	Physical Demolition
FY04-Q3	Submit Completion Documents

Table 5: Removal Action Cost Estimate

Building	Cost
Building 23	$163,240
Building 125	$169,078
TOTAL	$332,318

Appendix C

Photographs



Photographs of Building 23

Photographs of Building 125

Appendix D

PRS Information

The recommendation sheet for PRSs 405 is attached. The recommendation sheet for PRS 154 is not yet available, but the PRS has been binned as a Removal Action. Recommendation sheets are not prepared for Further Assessment or unbinned PRSs; accordingly, no recommendation sheets exist for PRSs 160 and 240.

PRSs 154, 240, and 405 will be addressed in a separate document.

PRS 160 is included in this removal action.

MOUND PLANT
PRS 405
Soil Contamination – Building 23

RECOMMENDATION:

Potential Release Site (PRS) 405 is a soil area located approximately 5 feet north of Building 23 (Waste Management Facility) at the east end of that building. PRS 405 was identified during construction activities in June 1994. The contaminant of concern was an oily substance presumed to be fuel oil.

The Core Team originally recommended Further Assessment for PRS 405. Subsequently, the cost of further investigation versus the cost of removing the potentially contaminated soils was evaluated. Cost estimates indicate that the cost of removal is not significantly greater than the cost of further assessment at PRS 405. Additionally Further Assessment findings may indicate the need for a Response (removal) Action, resulting in costs associated with both Further Assessment and Response Action. Therefore, the Core Team recommends a RESPONSE ACTION as a more cost-effective course of action for PRS 405.

CONCURRENCE:

DOE/MEMP: Arthur W Kleinrath 8/13/97
Arthur W. Kleinrath, Remedial Project Manager (date)

USEPA: Timothy J. Fischer 8/18/97
Timothy J. Fischer, Remedial Project Manager (date)

OEPA: Brian K. Nickel 8/13/97
Brian K. Nickel, Project Manager (date)

SUMMARY OF COMMENTS AND RESPONSES:

Comment period from 9/15/97 to 10/15/97

☐ No comments were received during the comment period.

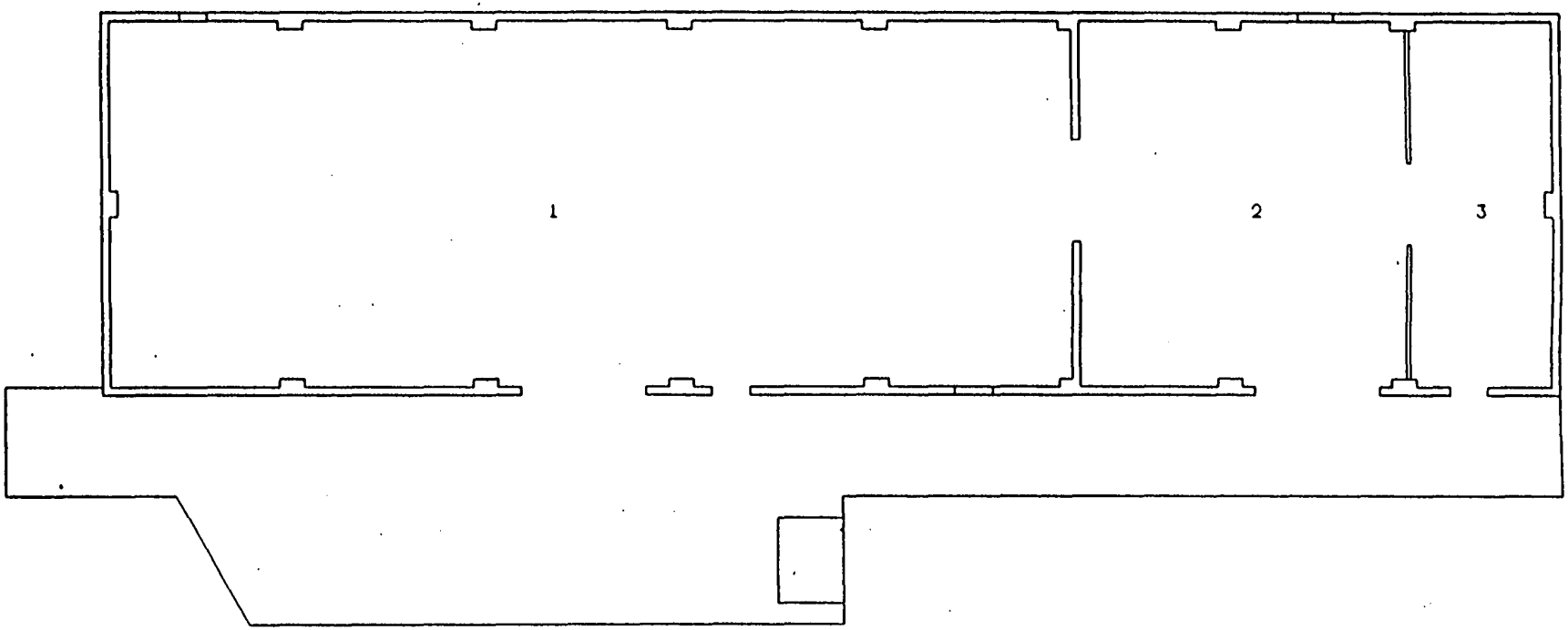
☒ Comment responses can be found on page 1, 2 of this package.

D 1061

Appendix E

Floor Plans

ISS	DATE	REVISION	BY	CHKR	ENG	LPREC	APVD	R
0	12/12/91	ASBUILT ISSUE	DCW				DVD	



BLDG #23
FIRST FLOOR
BLDG CODE:3023

SHEET	1	2	3	4	5	6	TITLE (U) TITLE CLASSIFICATION
ISSUE	0						BLDG #23 FLOOR PLANS
PART CLASSIFICATION							
DRAWING CLASSIFICATION	UNCLASSIFIED						SIZE C · DRAWING NUMBER FSC911235 · JOB NUMBER 12335
DWG TYPE SFP	FROM BLDG #23						CASE 14065 · SCALE AS NOTED · SHEET 1 OF 1
STATUS MD-REL-12/12/91							ORIGIN MD-BA3-V3.J

APPROVALS: DATE:
SAFETY COMMITTEE REQUIRED:
___ NONE ___ TRUESDC ___ TESDC ___ ENSDC
TECH. REVP.
GR. MGR.
TRUESDC
TESDC
ENSDC

DESIGN ENG · PROJ MGR · SPONS · ENG SUPV · LP & EC · PEER REV · ENG MGR · APVD · DATE

E 1 of 4

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E206 4

FIGURE 3-1–General Arrangement of Process Equipment in the ATS

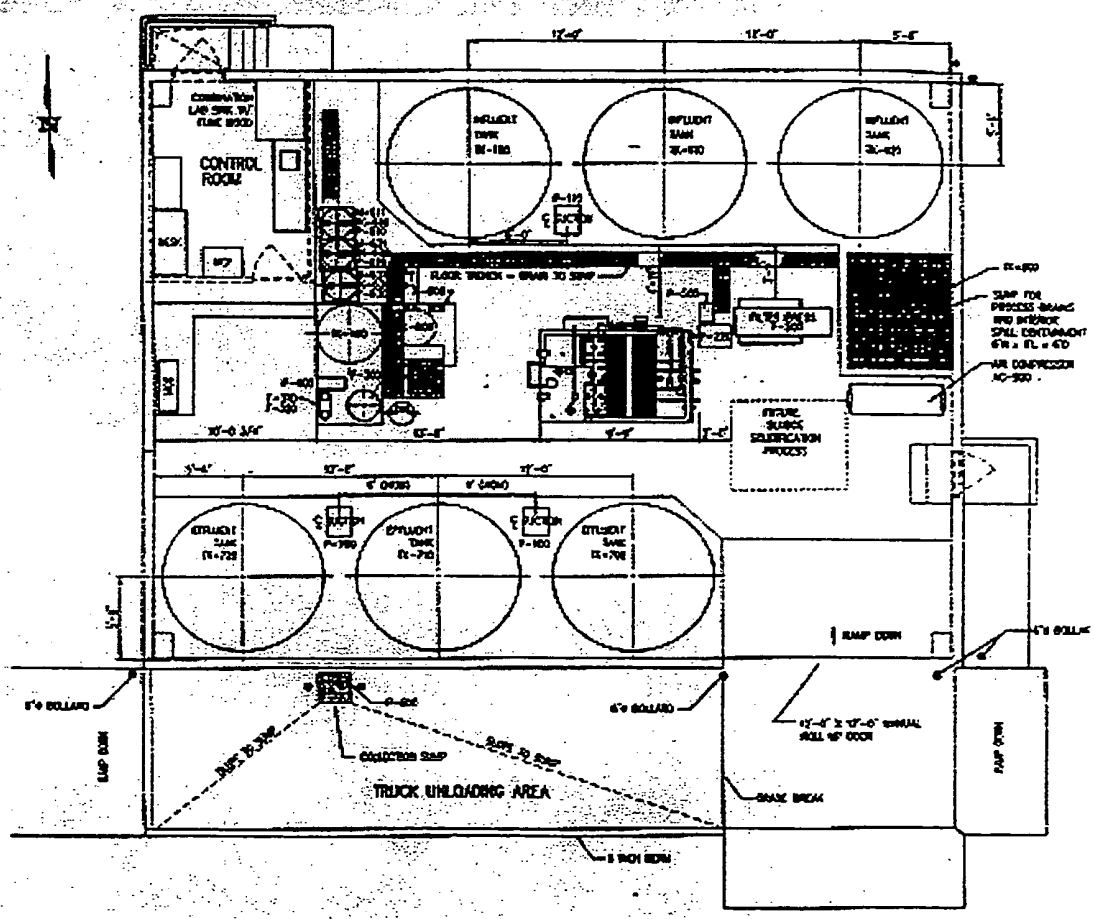
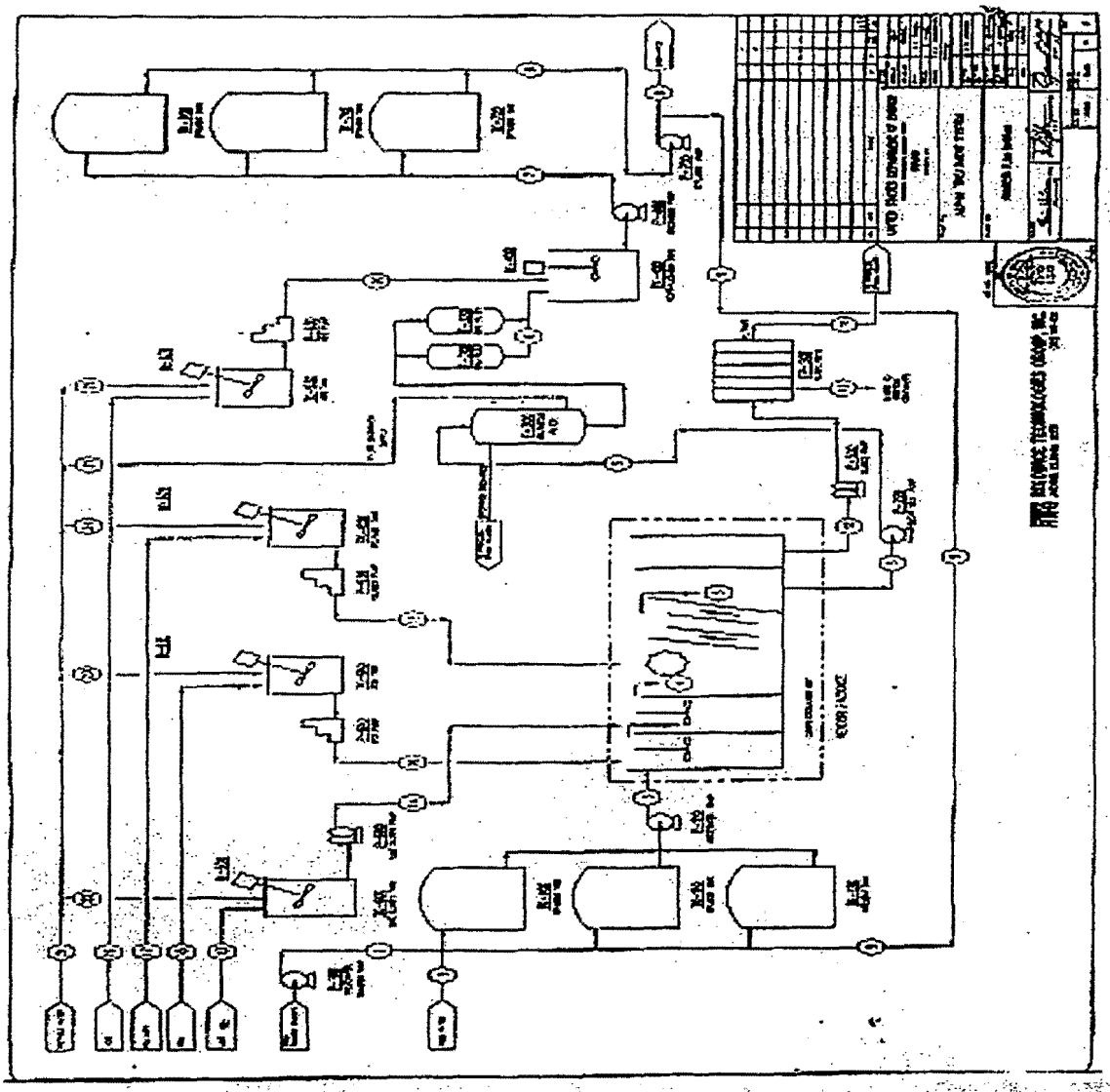


FIGURE 3-2 – Process Flow Diagram for the ATS Facility



Appendix F

Preliminary Radiological Surveys

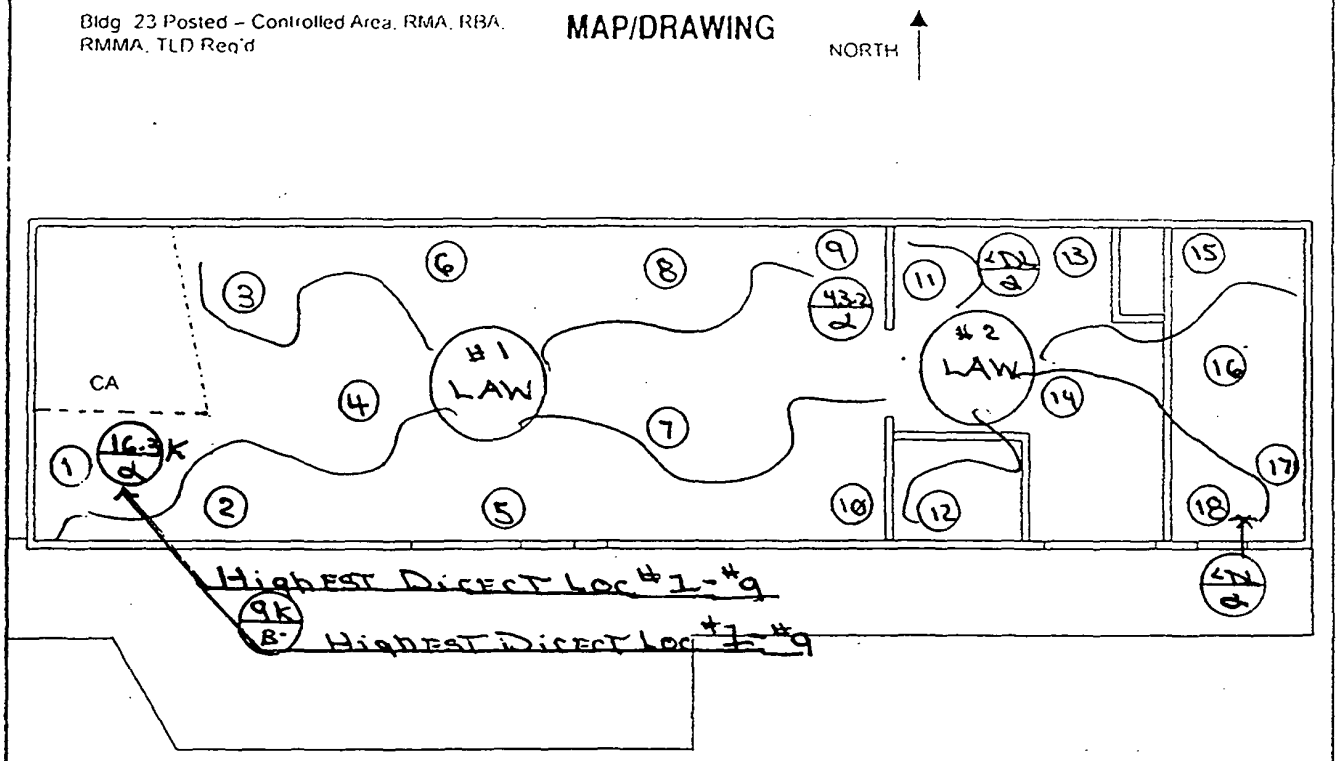
RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG /AREA/ROOM) Bldg. 23 / RBA / ALL	SURVEY NO 03WM-0273
PURPOSE: WEEKLY ROUTINE	RWP NO 01A
	DATE 3-3-03
	TIME 0900

Bldg 23 Posted – Controlled Area, RMA, RBA, RMMA, TLD Req'd

MAP/DRAWING

NORTH



COPY

LEGEND: # = mrem/hr (γ) whole body
E = mrem/hr (β+η+γ) extremity on contact
△# = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(#/α) or /β = direct cont. measurement in dpm/100cm².

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
Ludl-2360	5767/5798	8-20-03
Biccon	3946	11-20-03

Completed by: (Signature)	HP# [redacted]	Date: 3-10-03
Completed by: (Print Name) Mike Bird		
Counted by: (Signature) SEE	HP#	Date:
Counted by: (Print Name) Attached Sheets		
Reviewed/Approved by: (Signature) CKline	HP# [redacted]	Date: 3-11-03
Reviewed/Approved by: (Print Name) C. Kline		

ML-9620 (2-98)

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1	S	E	E	Floor
2	Attached			
3	Sheets			Table
4				Ceiling
5				Ram 2
6				Wall
7				Floor
8				Wall
9				Wall
10				Floor
11				
12				
13				Walkie
14				Floor
15				Cabinet
16				Floor
17				Table
18				Door

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments

COMMENTS:

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-9620 (2-98)

RADIOLOGICAL SURVEY DATA SHEET
MAP/DRAWING Continuation Page

Survey No
Ø3WM - Ø273

MAP/DRAWING
Stationary Integrated Measurement Data
Background - 6 cpm α, 2ØØ cpm β
DL - 3.4 cpm α, 3Ø cpm β
Correction Factor - 8 α, 4 β
Count Time - 2 min.

Location	Gross Counts		Gross cpm		Net cpm		Result dpm/100 cm²	
	Alpha	Beta	Alpha	Beta	Alpha	Beta	Alpha	Beta
1	41Ø2	5112	2Ø51	2556	2Ø45	2356	16.36Ø	9424
2	44Ø	574	220	287	214	281	1712	1124
3	2589	916	1294	458	1288	258	1Ø3Ø4	1Ø32
4	463	625	231.5	312.5	225.5	112.5	18Ø4	45Ø
5	222	531	111	265.5	1Ø5	65.5	84Ø	262
6	399	513	199.5	256.5	193.5	56.5	1548	226
7	661	585	33Ø.5	292.5	324.5	92.5	234Ø	37Ø
8	551	536	275	268	269	68	2152	272
9	971	628	485.5	314	479.5	114	3832	456
~~LAW #1~~	~~6Ø~~	~~21Ø~~	~~3Ø~~	~~24~~ 105	~~Void~~	~~MA 3-3-03~~		
~~LAW #2~~	~~45~~	~~598~~	~~299~~	~~299~~	~~Void~~	~~MA 3-3-03~~		
LAW #1	6Ø	31Ø	3Ø	~~105~~ 155 mR	24	<DL	192	<DL
LAW #2	45	598	22.5	299	16.5	99	132	396

LEGEND:
= mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct cont measurement in dpm/100cm²

ML-9620B (2-98)

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Red
Data file name: SMEAR034
Batch Ended: 3/3/03 16:01

Crosstalk correction performed.

Batch ID: BIRCH 03-WM-0283 (18) CYR

Recalibration Date: 6/7/04
Serial Number: 26966-2

Detector ID	Sample ID	Alpha Activity			Beta Activity		
		DPM	σ	flags	DPM	σ	flags
B1	1	0.0	2.0		0.0	1.5	
B2	2	1.6	2.0		0.0	1.6	
B3	3	0.0	1.9		0.0	1.7	
B4	4	0.0	1.9		1.6	2.1	
C1	5	0.0	2.0		0.0	1.3	
C2	6	0.0	2.1		3.7	2.6	
C3	7	0.0	1.9		0.0	1.2	
C4	8	0.0	1.9		2.2	2.1	
D1	9	0.0	2.3		0.0	1.4	
D2	10	0.0	2.1		0.0	1.5	
D3	11	3.7	2.8		0.0	1.3	
D4	12	1.8	2.0		0.0	1.9	
B1	13	0.0	2.0		0.0	2.3	
B2	14	1.6	2.0		0.0	2.0	
B3	15	0.0	1.9		0.0	1.3	
B4	16	0.0	1.9		0.0	1.3	
C1	17	0.0	2.0		0.6	1.8	
C2	18	1.8	2.0		1.0	1.9	

MD MD

Carol G. Robinson

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Pg 4 of 5

Protocol #: 3 Name:Pw H3 #401393 03-Mar-2003 18:45
Region A: LL-UL= 0.5-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL= 2.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=40.0-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 2.00 QIP = tSIE/AEC ES Terminator = Count
BIRCH 03-WM-0273 (B1-B18)/BKS
Conventional DPM
Nuclide 1 = 800
Luminescence Correction On
Data/Application Drive & Path = c:\data

SAMP	TIME	LUM	FLAG	CPMA	CPMB	CPMC	tSIE	DPM1	A:2S%
-1	10.00	12	B	11.19	10.58	5.90	627.		18.91
0	2.00	1		687.98	664.73	0.00	533.	1677.83	5.48
1	2.00	0		14.31	14.25	0.10	640.	31.05	52.05
2	2.00	3		9.83	9.75	0.10	647.	21.17	70.97
3	2.00	2		20.28	18.77	1.10	615.	45.09	41.12
4	2.00	2		15.28	14.38	0.00	664.	32.36	50.50
5	2.00	2		19.15	17.29	0.00	669.	40.37	42.84
6	2.00	0		13.81	13.55	0.00	658.	29.42	53.45
7	2.00	2		12.78	11.85	0.60	648.	27.50	57.79
8	2.00	6		16.72	16.92	0.00	627.	36.73	48.84
9	2.00	2		22.28	21.06	0.00	640.	48.31	38.49
10	2.00	4		15.25	16.23	0.00	614.	33.93	51.48
11	2.00	4		16.25	15.29	0.00	628.	35.67	49.09
12	2.00	6		13.87	14.08	0.10	625.	30.55	56.30
13	2.00	0		10.22	9.82	0.00	639.	22.18	67.31
14	2.00	0		13.31	12.73	0.00	585.	30.55	54.95
15	2.00	0		9.47	8.22	0.00	648.	20.39	71.46
16	2.00	0		18.81	17.99	0.00	626.	41.38	42.69
17	2.00	4		13.25	12.99	0.00	593.	30.16	57.30
18	2.00	3		6.28	6.71	0.00	602.	14.15	102.7

MJ
Carol Y. Robinson

Pg. 505

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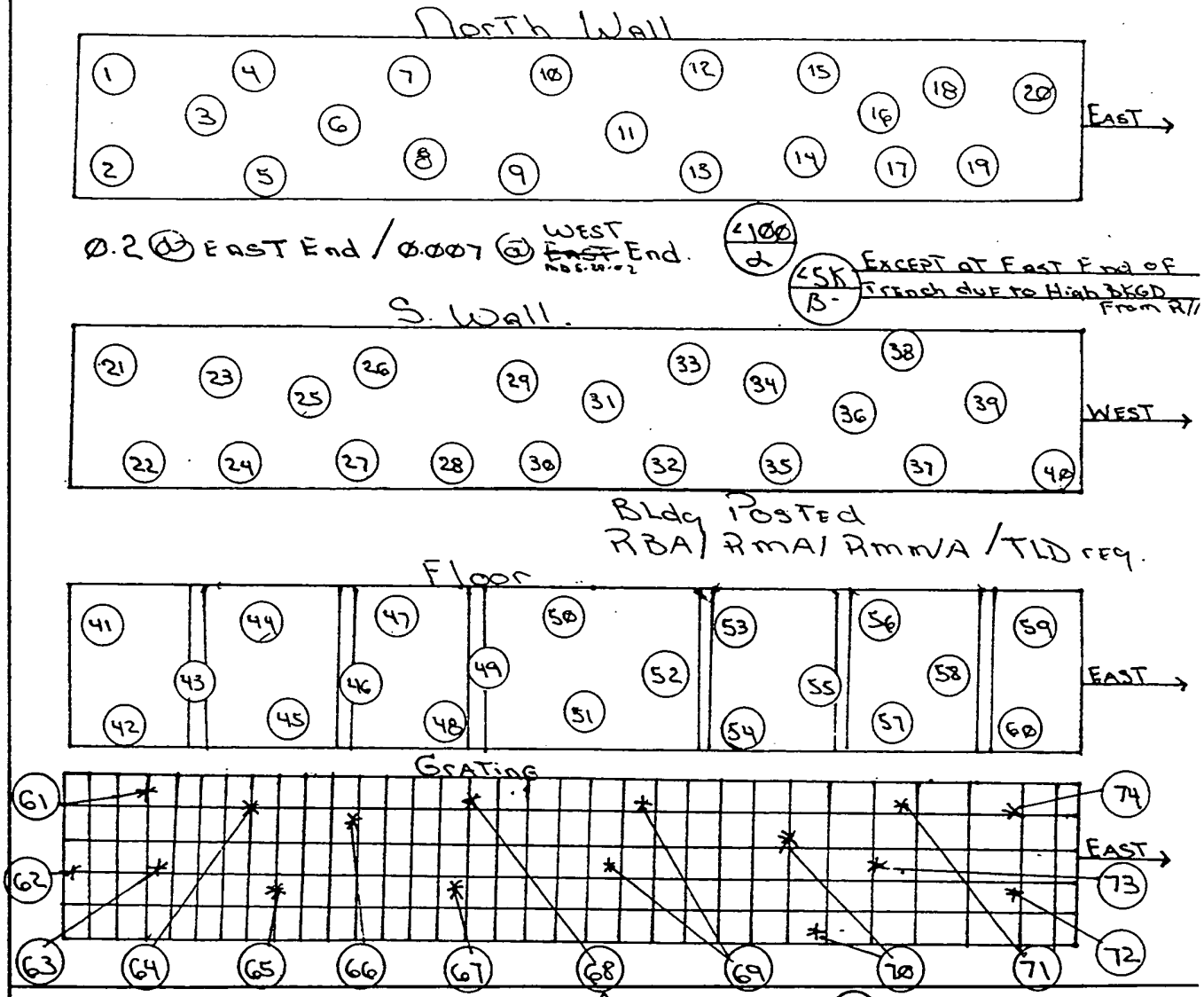
RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG. / ROOM / AREA) 231 / Trench	SURVEY NO. 02 – WM - 0752
PURPOSE: Characterization	RWP NO. 1104
	DATE: 5-22-02
	TIME: 0900



LEGEND:
- # = mrem/hr (γ) whole body
- #E = mrem/hr (β+η+γ) extremity on contact
- K = factor of 1000
- -X-X- = radiological boundary
- △# = mrem/hr neutron
- □# = air sample number
- (#) = swipe number
- (#/α) or /β = direct contamination measurement in dpm/100 cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
NE-Electra	5270/5290	4-16-03
Bicron	3946	12-13-02

Completed by: (Signature)	HP# [redacted]	Date: 5-28-02
Completed by: (Print Name) Mike Birch		
Counted by: (Signature) See	HP#	Date:
Counted by: (Print Name) Attached Sheet (s)		
Reviewed/Approved by: (Signature) CKline	HP# [redacted]	Date: 5-28-02
Reviewed/Approved by: (Print Name) C Kline		

ML-9620 (2-98) Computer Generated

COPY

Survey No. Ø2-Wm-Ø752

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1	S	E	E	North Wall
2	Att	ach	Ed	
3	Sh	E E	T (S)	
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				South Wall
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comment
36	S	E	E	South W
37	Att	ach	Ed	
38	Sh	E E	T (S)	
39				
40				
41				Floor
42				
43				
44				
45				
46				
47				
48				
49				
50				
51				
52				
53				
54				
55				
56				
57				
58				
59				
60				
61				Grat
62				
63				
64				
65				
66				
67				
68				
69				
70				
71-74				

COMMENTS: N/A

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If needed, mark N/A.

ML-9620A (4-98)

Alpha/Beta Analysis

Batch ID: 02-WM-0752 BIRCH(74) BSB

Batch File: Smear Unit 3 - 200205221448

Group: D

Device: Unit 3

Geometry: Swipe/Smear

Serial Number: 59123

Acquisition Date: 5/22/2002

Count Time (min): 1.5

Recalibration Date: 5/24/2003

mple ID	Carrier	Alpha (dpm)	2σ	Beta (dpm)	2σ
1	148	1.19	3.89	2.08	6.08
2	26	1.19	3.89	0.78	5.50
3	73	1.19	3.89	3.37	6.61
4	133	0.00	0.90	2.09	6.08
5	36	3.08	5.43	2.06	6.08
6	104	0.00	0.90	0.00	3.18
7	4	3.08	5.43	0.77	5.50
8	110	3.08	5.43	0.00	4.85
9	38	1.19	3.89	0.78	5.50
10	25	0.00	0.90	2.09	6.08
11	125	0.00	0.90	0.00	4.85
12	15	0.00	0.90	0.79	5.50
13	50	1.19	3.89	3.37	6.61
14	70	1.19	3.89	0.00	4.10
15	65	0.00	0.90	0.00	4.85
16	65	0.00	0.90	0.00	4.10
17	15	0.00	0.90	0.00	4.85
18	144	0.00	0.90	0.00	4.85
19	37	0.00	0.90	0.00	4.10
20	88	0.00	0.90	0.00	4.85

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Alpha/Beta Analysis

nple ID	Carrier	Alpha (dpm)	2σ	Beta (dpm)	2σ
21	12	0.00	0.90	0.00	3.18
22	136	0.00	0.90	0.00	4.10
23	42	0.00	0.90	0.00	4.10
24	35	0.00	0.90	0.79	5.50
25	21	1.19	3.89	2.08	6.08
26	65	0.00	0.90	2.09	6.08
27	39	0.00	0.90	0.00	4.85
28	40	1.19	3.89	0.78	5.50
29	86	0.00	0.90	0.79	5.50
30	89	0.00	0.90	4.68	7.09
31	112	0.00	0.90	0.79	5.50
32	129	0.00	0.90	2.09	6.08
33	82	0.00	0.90	0.00	4.10
34	12	1.19	3.89	3.37	6.61
35	114	0.00	0.90	0.79	5.50
36	99	0.00	0.90	0.00	3.18
37	108	1.19	3.89	0.78	5.50
38	94	0.00	0.90	0.79	5.50
39	109	0.00	0.90	2.09	6.08
40	5	0.00	0.90	3.38	6.60
41	35	1.19	3.89	0.78	5.50
42	133	1.19	3.89	0.00	3.18
43	57	0.00	0.90	0.00	4.85
44	1	0.00	0.90	5.97	7.55
45	66	0.00	0.90	0.00	4.10
46	36	0.00	0.90	0.00	4.85
47	13	4.98	6.63	2.05	6.08

Flock 27

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Alpha/Beta Analysis

mple ID	Carrier	Alpha (dpm)	2σ	Beta (dpm)	2σ
48	22	1.19	3.89	3.37	6.61
49	71	3.08	5.43	4.65	7.10
50	26	0.00	0.90	0.00	4.85
51	3	0.00	0.90	0.79	5.50
52	4	0.00	0.90	0.79	5.50
53	19	3.08	5.43	0.00	4.85
54	95	3.08	5.43	0.00	4.85
55	89	0.00	0.90	2.09	6.08
56	86	1.19	3.89	0.00	4.85
57	100	1.19	3.89	4.66	7.09
58	4	0.00	0.90	3.38	6.60
59	72	0.00	0.90	2.09	6.08
60	86	0.00	0.90	0.00	4.10
61	23	0.00	0.90	0.00	4.85
62	89	1.19	3.89	0.78	5.50
63	30	1.19	3.89	0.00	4.10
64	50	3.08	5.43	3.36	6.61
65	142	0.00	0.90	4.68	7.09
66	125	0.00	0.90	0.00	4.10
67	22	0.00	0.90	0.00	4.10
68	11	0.00	0.90	3.38	6.60
69	139	0.00	0.90	0.00	4.10
70	12	0.00	0.90	0.79	5.50
71	42	0.00	0.90	0.00	4.85
72	17	1.19	3.89	0.78	5.50
73	136	1.19	3.89	0.00	4.85
74	42	3.08	5.43	2.06	6.08

MD MD

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Protocol #: 5 PW H3 403727 User

Time: 2.00
Data Mode: DPM Nuclide: H3 QUENCH Quench Set: H3QUEN
Background Subtract: 1st Vial

	LL	UL	LCR	2S%	BKG
Region A:	0.5 -	18.6	0	0.0	5.69
Region B:	2.0 -	18.6	0	0.0	5.53
Region C:	40.0 -	2000	0	0.0	10.27

Quench Indicator: tSIE/AEC
Ext Std Terminator: Count
02-WM-0752 BIRCH(74) BSB
Luminescence Correction On
Coincidence Time(ns): 18
Delay Before Burst(ns): Normal
Protocol Data Filename: C:\DATA\PROT5.dat
Count Data Filename: C:\DATA\SDATA5.DAT

S#	TIME	CPMA	CPMB	CPMC	tSIE	LUM	FLAG	DPM1	2SIGMA
-1	10.00	5.69	5.53	10.27	664.17	2	B		0.00
0	2.00	510.15	496.79	0.23	535.41	0		1036.66	100.14
1	2.00	11.31	10.97	2.23	648.67	0		20.93	11.25
2	2.00	6.31	6.47	0.00	637.44	0		11.78	9.61
3	2.00	16.92	16.01	3.73	644.59	0		31.40	12.99
4	2.00	11.84	11.26	0.00	580.68	0		23.15	12.06
5	2.00	9.81	7.72	0.00	655.64	0		18.06	10.70
6	2.00	12.13	11.03	1.73	657.28	0		22.29	11.43
7	2.00	12.13	11.64	0.00	627.78	0		22.82	11.70
8	2.00	9.31	7.79	0.23	636.92	0		17.39	10.69
9	2.00	8.58	7.78	0.00	624.45	0		16.17	10.53
10	2.00	15.14	14.04	1.23	657.76	0		27.81	12.34
11	2.00	11.81	10.50	2.23	577.13	0		23.17	12.09
12	2.00	10.31	10.47	0.00	632.69	0		19.32	11.06
13	2.00	10.40	9.66	0.00	614.09	0		19.78	11.26
14	2.00	9.96	10.11	1.73	676.58	0		18.02	10.57
15	2.00	13.81	13.01	0.73	625.37	0		26.04	12.26
16	2.00	9.50	8.79	0.73	649.58	0		17.56	10.64
17	2.00	10.64	10.04	0.00	657.79	0		19.54	10.95
18	2.00	11.81	11.08	0.00	611.64	0		22.51	11.75
19	2.00	12.31	11.74	0.00	651.08	0		22.74	11.54
20	2.00	7.81	7.24	3.23	650.77	0		14.43	10.05
21	2.00	1.81	1.97	0.00	619.72	0		3.43	7.87
22	2.00	8.81	8.62	0.00	639.87	0		16.42	10.49
23	2.00	10.14	9.42	1.23	657.79	0		18.62	10.79
24	2.00	12.81	12.53	0.23	690.05	0		23.04	11.40
25	2.00	5.36	5.52	0.00	684.32	0		9.67	8.93
26	2.00	5.70	5.42	0.00	691.18	0		10.25	9.03
27	2.00	8.56	7.27	0.00	623.70	0		16.16	10.54
28	2.00	7.31	6.23	0.99	675.84	0		13.25	9.68
29	2.00	4.23	4.39	4.23	665.63	0		7.72	8.60
30	2.00	9.81	9.61	2.23	647.07	0		18.18	10.77
31	2.00	8.51	7.93	2.73	650.04	0		15.72	10.30
32	2.00	8.81	8.64	0.00	630.54	0		16.54	10.57
33	2.00	10.31	8.36	0.00	670.49	0		18.76	10.74
34	2.00	9.10	8.03	0.00	650.17	0		16.82	10.50
35	2.00	13.81	13.58	0.94	663.39	0		25.26	11.89

MD

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22 May 2002 19:50 ALPHA/BETA - 1.09 ~~Page #~~
Protocol #: 5 PW H3 403727 User :

S#	TIME	CPMA	CPMB	CPMC	tSIE	LUM	FLAG	DPM1	2SIGMA
36	2.00	10.31	9.00	0.00	719.05	0		18.32	10.49
37	2.00	4.31	4.47	4.23	612.48	0		8.21	9.01
38	2.00	5.31	5.07	1.73	671.06	0		9.66	8.98
39	2.00	7.31	6.32	0.00	660.42	0		13.41	9.80
40	2.00	13.89	11.44	4.73	670.31	0		25.26	11.85
41	2.00	6.31	6.05	3.73	679.35	0		11.40	9.30
42	2.00	10.66	9.45	0.00	599.91	0		20.51	11.48
43	2.00	5.81	5.35	0.23	620.35	0		11.00	9.55
44	2.00	8.31	7.93	0.00	547.39	0		16.72	11.13
45	2.00	8.81	8.32	0.00	627.95	0		16.58	10.59
46	2.00	3.56	2.98	0.73	653.24	0		6.57	8.42
47	2.00	7.31	7.47	0.00	685.05	0		13.18	9.63
48	2.00	3.31	2.31	0.00	631.65	0		6.21	8.46
49	2.00	5.31	4.97	0.00	697.09	0		9.53	8.86
50	2.00	1.81	1.82	0.00	532.72	0		3.69	8.47
51	2.00	5.31	5.47	0.00	650.05	0		9.82	9.13
52	2.00	6.81	6.76	0.00	563.79	0		13.51	10.40
53	2.00	3.31	3.26	0.00	565.20	0		6.56	8.93
54	2.00	8.31	7.71	1.13	658.18	0		15.27	10.17
55	2.00	6.43	6.58	3.23	645.17	0		11.92	9.59
56	2.00	6.16	5.59	1.73	510.23	0		12.79	10.63
57	2.00	4.31	3.24	0.00	650.48	0		7.97	8.74
58	2.00	7.81	7.47	0.00	557.15	0		15.58	10.85
59	2.00	1.81	1.47	0.00	519.74	0		3.74	8.57
60	2.00	6.33	6.19	0.23	609.80	0		12.08	9.83
61	2.00	2.81	1.80	2.23	633.24	0		5.27	8.23
62	2.00	10.08	9.39	0.73	684.08	0		18.18	10.57
63	2.00	5.81	5.17	0.00	667.75	0		10.60	9.20
64	2.00	12.17	11.89	0.73	689.27	0		21.90	11.20
65	2.00	6.81	6.73	0.00	579.61	0		13.33	10.27
66	2.00	7.31	6.97	0.00	598.47	0		14.09	10.30
67	2.00	15.02	15.18	0.00	621.48	0		28.41	12.67
68	2.00	7.31	6.97	0.00	612.80	0		13.92	10.18
69	2.00	8.31	6.35	0.00	643.49	0		15.44	10.28
70	2.00	7.31	5.98	0.00	613.20	0		13.92	10.17
71	2.00	9.40	7.16	1.23	614.30	0		17.88	10.91
72	2.00	7.81	7.67	1.73	614.66	0		14.85	10.34
73	2.00	6.81	4.87	0.00	600.88	0		13.10	10.09
74	2.00	6.81	6.21	0.00	588.29	0		13.24	10.19

MB

Pg. 7 of 7

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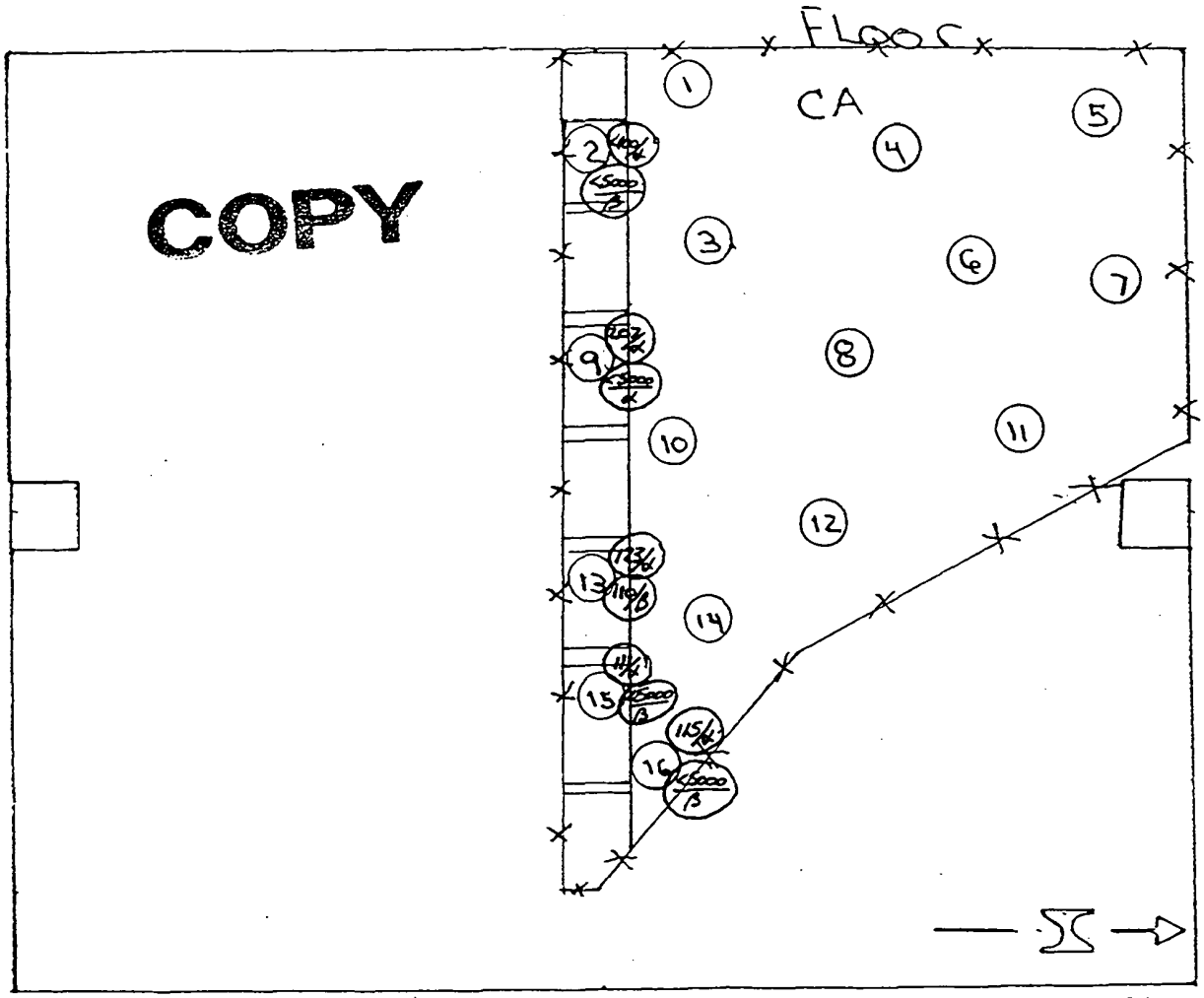
RADIOLOGICAL SURVEY DATA SHEET

LOCATION (BLDG / ROOM / AREA) Bldg 23 / Bay 1 / CA	SURVEY NO. 03-WM-0297
PURPOSE: RELEASE FROM CA,	RWP NO. 1320
	DATE: 3-6-03
	TIME: 1620



DIRECT READINGS TAKEN ONLY IN VICINITY OF SAMPLE LOCATIONS SHOWN ON PAGE 9

LEGEND:
= mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
-X-X- = radiological boundary
△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal Due Date
2360	5767/5798	8-20-03
		A
N		

Completed by: (Signature)	HPz [redacted]	Date: 3-10-03
Completed by: (Print Name) John Bako		
Counted by: (Signature) SEE	HPz	Date
Counted by: (Print Name) ATTACHED		
Reviewed/Approved by: (Signature)	HPz [redacted]	Date: 3-11-0
Reviewed/Approved by: (Print Name) C. Kline		

ML-0620 (2-98) Computer Generated

Survey No. 03 WM 0297

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1				FLOOR
2				GRATE
3				FLOOR
4				
5				
6				
7				
8				
9				GRATE
10				FLOOR
11				
12				
13				GRATE
14				FLOOR
15				GRATE
16				FLOOR
17				WALL
18	SEE			
19	ATTACHED			
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
36				WALL
37				
38				
39				
40				
41				
42				TRENCH
43				
44				
45	SEE			
46	ATTACHED			
47				
48				
49				
50				
51				
52				
53				
54				
55				
56				
57				
58				
N				

COMMENTS:

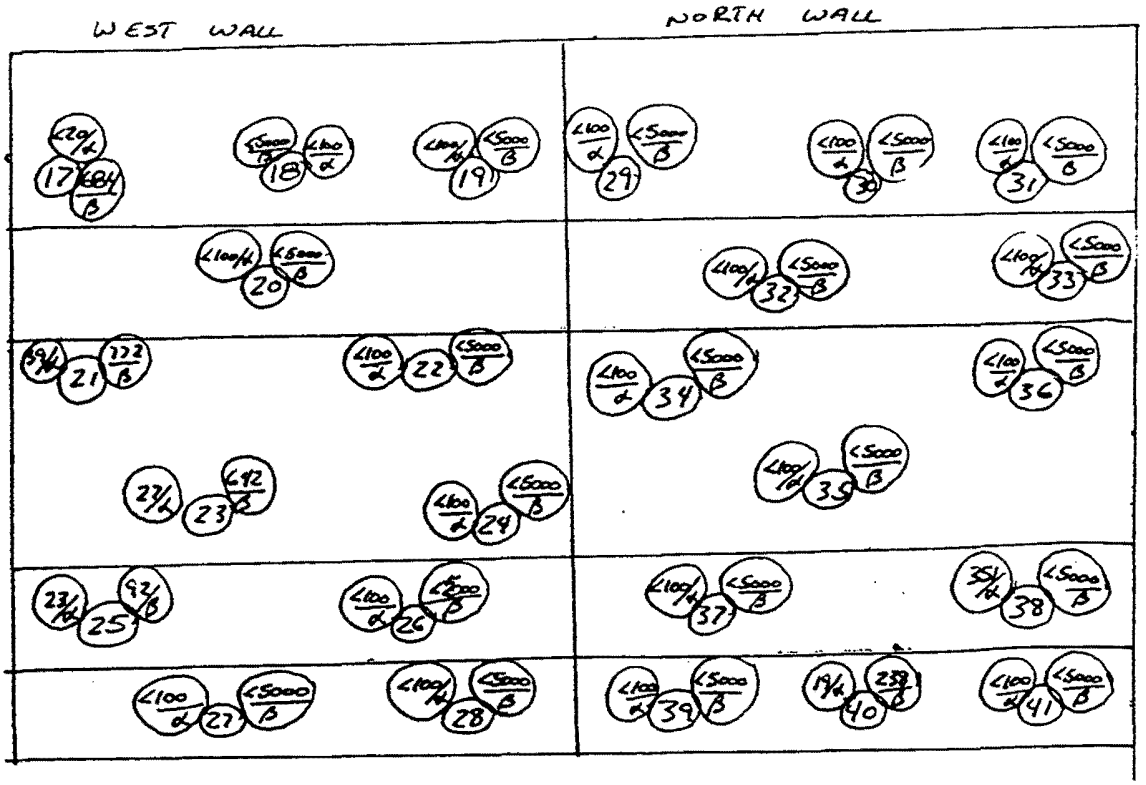
NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If needed, mark N/A.

ML-9620A (4-98)

RADIOLOGICAL SURVEY DATA SHEET
MAP/DRAWING Continuation Page

Survey No.
03 WM 0297

MAP/DRAWING



LEGEND:
= mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
= mrem/hr neutron
= air sample number
= swipe number
#/α or /β = direct cont. measurement in dpm/100cm²

ML-9620B (2-98)

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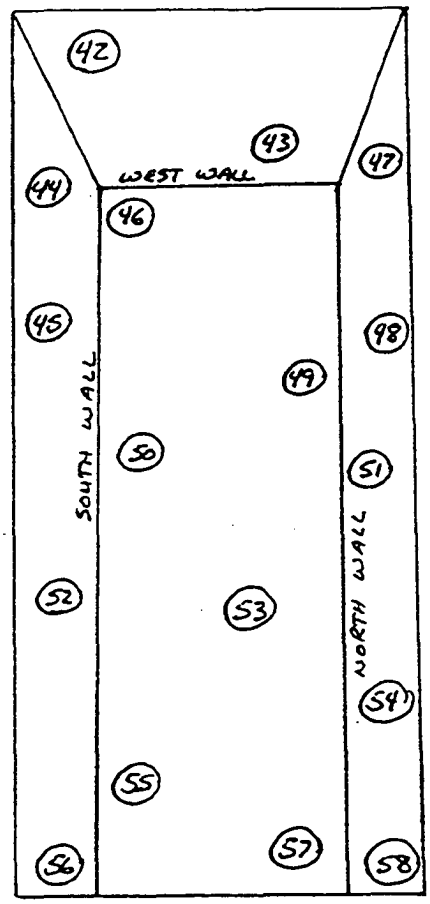
RADIOLOGICAL SURVEY DATA SHEET
MAP/DRAWING Continuation Page

Survey No.
03 WM 0297

MAP/DRAWING



NO DIRECT READINGS TAKEN INSIDE TRENCH

LEGEND:
= mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
= mrem/hr neutron
= air sample number
= swipe number
#/α or /β = direct cont. measurement in dpm/100cm²

ML-9620B (2-98)

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Red
Data file name: SMEAR029
Batch Ended: 3/7/03 7:50

Crosstalk correction performed.

Batch ID: BAKO 03-WM-0297 (58) CYR Pg 5 of 9

Recalibration Date: 6/7/04
Serial Number: 26966-2

Detector ID	Sample ID	Alpha Activity			Beta Activity		
		DPM	σ	flags	DPM	σ	flags
A1	1	0.0	2.1		0.0	1.4	
A2	2	8.3	4.3		1.3	2.4	
A3	3	0.0	2.0		0.0	1.4	
A4	4	0.0	2.0		0.2	1.8	
B1	5	1.5	2.0		0.0	2.3	
B2	6	0.0	2.0		0.0	1.6	
B3	7	0.0	1.9		1.0	2.1	
B4	8	0.0	1.9		0.0	1.3	
C1	9	1.8	2.0		0.0	1.3	
C2	10	5.8	3.5		1.9	2.2	
C3	11	1.7	1.9		0.0	1.2	
C4	12	0.0	1.9		1.1	1.7	
D1	13	0.0	2.3		0.0	1.4	
D2	14	0.0	2.1		0.0	2.0	
D3	15	0.0	2.0		0.0	1.3	
D4	16	0.0	2.1		2.6	2.5	
A1	17	0.0	2.1		0.8	2.0	
A2	18	1.9	2.2		0.5	2.0	
A3	19	3.7	2.8		0.0	1.4	
A4	20	0.0	1.9		0.0	1.4	
B1	21	0.0	2.0		0.0	2.0	
B2	22	0.0	2.0		0.0	1.6	
B3	23	1.5	1.9		0.8	2.1	
B4	24	3.5	2.7		1.3	2.1	
C1	25	0.0	2.0		0.6	1.8	
C2	26	0.0	2.0		0.0	1.4	
C3	27	0.0	1.9		0.0	1.2	
C4	28	0.0	1.9		1.1	1.7	
D1	29	2.1	2.3		4.4	2.9	
D2	30	16.4	6.0		2.6	3.0	
D3	31	0.0	2.0		0.0	1.3	

Fig 27

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Red
Data file name: SMEAR029
Batch Ended: 3/7/03 7:50

Crosstalk correction performed.

Batch ID: BAKO 03-WM-0297 (58) CYR

Pg 6 of 9

Recalibration Date: 6/7/04
Serial Number: 26966-2

Detector ID	Sample ID	Alpha Activity DPM	Alpha Activity σ	Alpha Activity flags	Beta Activity DPM	Beta Activity σ	Beta Activity flags
D4	32	0.0	2.0		0.0	1.4	
A1	33	3.8	3.0		0.6	2.0	
A2	34	1.9	2.2		0.0	1.5	
A3	35	0.0	2.0		0.0	1.4	
A4	36	0.0	1.9		0.0	1.4	
B1	37	0.0	2.0		0.0	1.5	
B2	38	0.0	2.0		0.1	2.0	
B3	39	1.5	1.9		0.8	2.1	
B4	40	0.0	1.9		0.4	1.8	
C1	41	0.0	2.0		0.6	1.8	
C2	42	0.0	2.0		1.1	1.9	
C3	43	1.7	1.9		0.0	1.2	
C4	44	1.6	1.9		0.0	1.2	
D1	45	0.0	2.3		0.0	1.4	
D2	46	3.8	3.0		0.0	1.5	
D3	47	0.0	2.0		0.7	1.8	
D4	48	0.0	2.0		0.0	1.4	
A1	49	5.9	3.6		0.4	2.0	
A2	50	4.0	3.0		0.0	1.5	
A3	51	3.7	2.8		0.0	1.4	
A4	52	3.6	2.7		0.0	1.4	
B1	53	0.0	2.0		0.0	1.5	
B2	54	0.0	2.1		5.2	3.3	
B3	55	1.5	1.5		0.8	2.1	
B4	56	0.0	1.5		2.8	2.4	
C1	57	0.0	2.0		0.0	1.3	
C2	58	0.0	2.0		0.0	1.4	

Albert Hibaan

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Protocol #: 1 Name:Pw H3 #401393 07-Mar-2003 08:43
Region A: LL-UL= 0.5-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL= 2.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=40.0-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 2.00 QIP = tSIE/AEC ES Terminator = Count
03-WM-0292 BAKO (R1-R58) AG 03-WM-0297
Conventional DPM
Pg 7 of 9
Nuclide 1 = 800
Luminescence Correction On
Data/Application Drive & Path = c:\data

SAMP	TIME	LUM	FLAG	CPMA	CPMB	CPMC	tSIE	DPM1	A:2S%
-1	10.00	1	B	8.49	8.09	5.30	643.		21.71
0	2.00	1		657.27	632.82	0.00	527.	1614.24	5.60
1	2.00	12		3.16	3.32	1.70	568.	7.39	182.0
2	2.00	4		4.98	4.03	0.00	572.	11.60	114.4
3	2.00	0		0.51	0.91	1.20	612.	1.14	905.2
4	2.00	12		0.00	0.00	0.00	606.	0.00	0.00
5	2.00	5		2.34	1.47	2.20	608.	5.24	222.8
6	2.00	7		0.00	0.00	0.00	616.	0.00	0.00
7	2.00	0		1.01	0.00	2.20	643.	2.19	468.1
8	2.00	3		8.98	8.64	0.00	612.	20.03	70.83
9	2.00	1		27.48	23.17	0.70	572.	64.03	32.03
10	2.00	0		14.01	11.01	0.00	648.	30.14	49.65
11	2.00	0		0.51	0.00	0.00	675.	1.07	905.2
12	2.00	20		0.00	0.00	0.00	680.	0.00	0.00
13	2.00	2		15.24	14.63	1.70	536.	37.04	47.76
14	2.00	7		0.00	0.00	0.00	658.	0.00	0.00
15	2.00	1		82.09	76.44	0.20	540.	198.57	16.74
16	2.00	9		2.45	3.00	0.20	578.	5.66	222.0
17	2.00	0		0.00	0.00	2.20	565.	0.00	0.00
18	2.00	0		4.01	3.73	6.47	523.	9.91	132.9
19	2.00	4		5.98	6.14	2.20	487.	15.49	98.19
20	2.00	4		4.98	4.28	2.70	578.	11.52	114.4
21	2.00	0		0.00	0.00	0.70	594.	0.00	0.00
22	2.00	0		0.00	0.00	0.00	651.	0.00	0.00
23	2.00	0		1.01	1.26	0.00	535.	2.46	468.1
24	2.00	5		1.98	1.50	4.70	533.	4.83	259.9
25	2.00	0		31.79	29.14	3.20	571.	74.17	28.82
26	2.00	0		0.51	0.66	0.00	516.	1.27	905.2
27	2.00	0		0.00	0.00	2.20	545.	0.00	0.00
28	2.00	0		0.00	0.00	0.00	574.	0.00	0.00
29	2.00	10		6.91	7.41	3.70	467.	18.44	92.18
30	2.00	0		0.00	0.00	12.20	500.	0.00	0.00
31	2.00	0		2.01	1.79	0.29	513.	5.03	245.6
32	2.00	0		3.01	2.38	0.00	566.	7.06	170.6
33	2.00	0		0.00	0.00	2.20	539.	0.00	0.00
34	2.00	0		5.44	5.54	5.70	499.	13.85	102.8
35	2.00	0		2.51	0.96	0.70	578.	5.81	200.7
36	2.00	5		1.37	1.96	0.00	443.	3.78	367.8
37	2.00	7		0.00	0.00	2.70	538.	0.00	0.00
38	2.00	5		1.48	1.46	0.00	570.	3.45	341.1
39	2.00	0		0.00	0.00	0.00	529.	0.00	0.00
40	2.00	14		0.00	0.00	0.00	505.	0.00	0.00
41	2.00	14		1.92	2.78	1.70	572.	4.46	288.6
42	2.00	0		0.00	0.00	1.70	630.	0.00	0.00
43	2.00	8		0.00	0.00	0.00	639.	0.00	0.00

SAMP	TIME	LUM	FLAG	CPMA	CPMB	CPMC	tSIE	DPM1	A:2S%
44	2.00	0		5.01	3.94	1.70	633.	10.94	110.0
45	2.00	0		18.78	17.39	0.00	603.	42.30	40.52
46	2.00	1		639.12	607.32	5.70	348.	2144.44	5.68
47	2.00	0		2.01	0.99	1.70	624.	4.43	245.6
48	2.00	10		0.95	1.09	0.86	632.	2.08	542.4
49	2.00	0		54.94	51.84	0.00	516.	136.92	20.77
50	2.00	0		282.26	271.93	0.69	391.	860.20	8.60
51	2.00	0		11.01	11.12	1.20	615.	24.48	59.13
52	2.00	0		15.01	13.46	1.70	579.	34.70	47.29
53	2.00	0		1177.95	1080.81	0.00	598.	2666.94	4.16
54	2.00	0		0.00	0.00	0.20	616.	0.00	0.00
55	2.00	2		19.67	18.59	3.20	531.	48.09	39.98
56	2.00	4		5.48	5.74	0.20	576.	12.71	105.6
57	2.00	13		0.00	0.00	0.70	520.	0.00	0.00
58	2.00	3		6.98	6.38	0.00	572.	16.25	86.51

Albert Miboor
3/19/03

RADIOLOGICAL SURVEY DATA SHEET
MAP/DRAWING Continuation Page

Survey No. 03WM 0297

MAP/DRAWING

Stationary Integrated Measurement Data

Background - 2.6 cpm α, 232.6 cpm β
DL - 2.2 cpm α, 20 cpm β
Correction Factor - 8 α, 4 β
Count Time - 2 min.

Location	Gross Counts		Gross cpm		Net cpm		Result dpm/100 cm²	
	Alpha	Beta	Alpha	Beta	Alpha	Beta	Alpha	Beta
2	<DL	<DL	N/A				<100	<5000
9	57	482	28.5	241	25.9	<DL	207.2	<DL
13	36	520	18	260	15.4	27.4	123.2	109.6
15	33	487	16.5	243.5	13.9	<DL	111.2	<DL
16	34	448	17	224	14.4	<DL	115.2	<DL
17	7	807	3.5	403.5	0.9	170.9	<DL	683.6
18	<DL	<DL	N				<100	<5000
19	<DL	<DL					<100	<5000
20	<DL	<DL				A	<100	<5000
21	15	851	7.5	425.5	4.9	192.9	39.2	771.6
22	<DL	<DL	N/A				<100	<5000
23	12	786	6	393	3.4	160.4	27.2	641.6
24	<DL	<DL	N/A				<100	<5000
25	11	511	5.5	255.5	2.9	22.9	23.2	91.6
26	<DL	<DL	N				<100	<5000
27							<100	<5000
28							<100	<5000
29							<100	<5000
30							<100	<5000
31							<100	<5000
32							<100	<5000
33							<100	<5000
34							<100	<5000
35							<100	<5000
36							<100	<5000
37						A	<100	<5000
38	93	405	46.5	202.5	43.9	<DL	351.2	<DL
39	<DL	<DL	N/A				<100	<5000
40	10	584	5	292	2.4	59.4	19.2	237.6
41	<DL	<DL	N/A				<100	<5000

NOTE: RESULTS AS IN 2 ABOVE INDICATE THAT SCANNING IN THE VICINITY OF THAT SAMPLE DID NOT REQUIRE A STATIONARY INTEGRATED MEASUREMENT BE TAKEN, NOT ALL SURFACES WERE SCANNED, THOSE THAT WERE ARE DOCUMENTED HERE.

LEGEND:
= mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct cont. measurement in dpm/100cm²

ML-9620B (2-98)

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ATS INVENTORY

DATE	INFLUENT RECEIVE DATE	INFLUENT TANK GROSS ALPHA	INFLUENT TANK H3 (Beta)	PROCESSED TO - DATE	EFFLUENT TANK-VOL DISCH	ISOTOPES Pu238	Pu239	U233/234	H3 (Beta)	GROSS ALPHA	DATE DISCHARGED	COMMENTS
11/9/98	TK-100, 5200 Gal	1.12 dpm/ml	0.0 uCi/l	TK-700, 11/11/98	TK-700, 3746 Gal	0.112 dpm/ml	0.0005 dpm/ml	0.0001 dpm/ml	0.015 uCi/l	0.0 dpm/ml	11/17/98	
11/10/98	TK-120, 5000 Gal	1.36 dpm/ml	0.0 uCi/l	TK-720, 11/18/98	TK-720, Recycled	1.70 dpm/ml	0.0 dpm/ml	0.002 dpm/ml	0.024 uCi/l	1.010 dpm/ml	Recycled	Sent to TK-120, 11/30/98
11/10/98	TK-110, 5000 Gal	1.36 dpm/ml	0.0 uCi/l	TK-710, 11/11/98	TK-710, 5597 Gal	0.125 dpm/ml	0.0005 dpm/ml	0.00005 dpm/ml	0.025 uCi/l	0.0 dpm/ml	11/17/98	
11/17/98	TK-100, 5000 Gal	24.06 dpm/ml	0.0 uCi/l	TK-700, 11/18/98	TK-700, 4598 Gal	0.042 dpm/ml	0.0 dpm/ml	0.0001 dpm/ml	0.020 uCi/l	<0.80dpm/mlLD	11/30/98	
11/17/98	TK-110, 5000 Gal	11.14 dpm/ml	0.0 uCi/l	TK-710, 11/24/98	TK-710, 4575 Gal	0.036 dpm/ml	0.0001 dpm/ml	0.0001 dpm/ml	0.020 uCi/l	<0.80dpm/mlLD	12/7/98	
11/30/98	TK-120, 5000 Gal	1.702 dpm/ml	0.024 uCi/l	TK-720, 12/16/98	TK-720, 4271 Gal	0.064 dpm/ml	0.005 dpm/ml	0.0003 dpm/ml	0.02 uCi/l	0.22dpm/mlLDL	1/18/99	
12/16/98	TK-100, 4800 Gal	67.38 dpm/ml	0.03 uCi/l	TK-700, 1/12/99	TK-700, 3569 Gal	0.134 dpm/ml	0.003 dpm/ml	0.0001 dpm/ml	0.027 uCi/l	0.22dpm/mlLDL	1/20/99	
1/13/99	TK-110, 4500 Gal	5.32 dpm/ml	0.029 uCi/l	TK-710, 1/14/99	TK-710, Recycled	0.210 dpm/ml	0.001 dpm/ml	0.001 dpm/ml	0.028 uCi/l	0.17 dpm/ml	Recycled	Sent to TK-110, 1/26/99
1/18/99	TK-120, 5000 Gal	18.97 dpm/ml	0.026 uCi/l	TK-720, 1/19/99	TK-720, 3046 Gal	0.065 dpm/ml	0.0002 dpm/ml	0.0001 dpm/ml	0.028 uCi/l	0.25dpm/mlLDL	1/25/99	
1/21/99	TK-110, 5000 Gal	3.18 dpm/ml	0.031 uCi/l	TK-700, 1/26/99	TK-700, 3600 Gal	0.040 dpm/ml	0.0004 dpm/ml	0.00002 dpm/ml	0.030 uCi/l	0.0 dpm/ml	2/1/99	INF TK-110 to EFF TK-700
1/25/99	TK-120, 4500 Gal	0.71 dpm/ml	0.037 uCi/l	TK-720, 2/3/99	TK-720, 4309 Gal	0.017 dpm/ml	0.0001 dpm/ml	0.0001 dpm/ml	0.032 uCi/l	0.0 dpm/ml	2/8/99	
1/26/99	TK-110, 5000 Gal	0.212 dpm/ml	0.030 uCi/l	TK-710, 1/28/99	TK-710, 4104 Gal	0.040 dpm/ml	0.0004 dpm/ml	0.00004 dpm/ml	0.029 uCi/l	0.06 dpm/ml	2/2/99	
2/3/99	TK-100, 4500 Gal	4.93 dpm/ml	0.035 uCi/l	TK-700, 2/4/99	TK-700, 4531 Gal	0.021 dpm/ml	0.0001 dpm/ml	0.0008 dpm/ml	0.035 uCi/l	0.36dpm/mlLDL	2/10/99	
2/8/99	TK-110, 4500 Gal	3.98 dpm/ml	0.025 uCi/l	TK-710, 2/9/99	TK-710, 4654 Gal	0.015 dpm/ml	0.0001 dpm/ml	0.001 dpm/ml	0.025 uCi/l	0.0 dpm/ml	2/16/99	
2/9/99	TK-120, 4500 Gal	18.32 dpm/ml	0.023 uCi/l	TK-720, 2/11/99	TK-720, 4698 Gal	0.060 dpm/ml	0.0002 dpm/ml	0.0002 dpm/ml	0.023 uCi/l	0.110 dpm/ml	2/22/99	
2/11/99	TK-100, 5000 Gal	1.10 dpm/ml	0.0 uCi/l	TK-700, 2/17/99	TK-700, 4742 Gal	0.009 dpm/ml	0.00003dpm/ml	0.001 dpm/ml	0.052 uCi/l	0.0 dpm/ml	2/23/99	
2/23/99	TK-110, 5000 Gal	643.5 dpm/ml	0.044 uCi/l	TK-710, 2/25/99	TK-710, 4159 Gal	0.003 dpm/ml	0.0 dpm/ml	0.0004 dpm/ml	0.053 uCi/l	0.0 dpm/ml	3/2/99	
3/8/99	TK-100, 5000 Gal	2.57 dpm/ml	0.025 uCi/l	TK-700, 3/10/99	TK-700, 4325 Gal	0.019 dpm/ml	0.0004 dpm/ml	0.0002 dpm/ml	0.032 uCi/l	0.0 dpm/ml	3/16/99	
3/8/99	TK-110, 5000 Gal	2.26 dpm/ml	0.008 uCi/l	TK-710, 3/11/99	TK-710, 4535 Gal	0.024 dpm/ml	0.0007 dpm/ml	0.0002 dpm/ml	0.091 uCi/l	0.0 dpm/ml	3/22/99	
4/14/99	TK-120, 4800 Gal	31.35 dpm/ml	0.013 uCi/l	TK-120, 4/15/99	TK-120, 4135 Gal	0.120 dpm/ml	0.0004 dpm/ml	0.0003 dpm/ml	0.014 uCi/l	<0.21 dpm/ml	4/22/99	
5/10/99	TK-100, 5000 Gal	10.41 dpm/ml	0.033 uCi/l	TK-700, 5/12/99	TK-700, 4393 Gal	0.087 dpm/ml	0.0003 dpm/ml	0.005 dpm/ml	0.020 uCi/l	0.49dpm/mlLDL	5/17/99	
5/10/99	TK-110, 5000 Gal	4.17 dpm/ml	0.024 uCi/l	TK-710, 5/12/99	TK-710, 4688 Gal	0.023 dpm/ml	0.0002 dpm/ml	0.003 dpm/ml	0.028 uCi/l	0.21dpm/mlLDL	5/19/99	
5/12/99	TK-120, 5000 Gal	2.27 dpm/ml	0.035 uCi/l	TK-720, 5/13/99	TK-720, 4579 Gal	0.016 dpm/ml	0.00003 dpm/ml	0.0009 dpm/ml	0.031 uCi/l	0.0 dpm/ml	5/19/99	
5/13/99	TK-100, 5000 Gal	0.00 dpm/ml	0.030 uCi/l	TK-700, 5/19/99	TK-700, 4660 Gal	0.008 dpm/ml	0.0001 dpm/ml	0.0006 dpm/ml	0.032 uCi/l	0.0 dpm/ml	5/26/99	
5/17/99	TK-110, 5000 Gal	0.0 dpm/ml	0.034 uCi/l	TK-710, 5/24/99	TK-710, 4423 Gal	0.003 dpm/ml	0.00001 dpm/ml	0.0004 dpm/ml	0.034 uCi/l	0.03 dpm/ml	6/1/99	
5/20/99	TK-120, 5000 Gal	10.64 dpm/ml	0.030 uCi/l	TK-720, 5/26/99	TK-720, 4574 Gal	0.008 dpm/ml	0.00003dpm/ml	0.0004 dpm/ml	0.032 uCi/l	0.0 dpm/ml	6/2/99	
5/26/99	TK-100, 5000 Gal	1.94 dpm/ml	0.032 uCi/l	TK-700, 5/27/99	TK-700, 4719 Gal	0.002 dpm/ml	0.000 dpm/ml	0.0003 dpm/ml	0.033 uCi/l	0.0 dpm/ml	6/7/99	
5/27/99	TK-120, 5000 Gal	2.00 dpm/ml	0.029 uCi/l	TK-720, 6/2/99	TK-720, 4572 Gal	0.008 dpm/ml	0.00004dpm/ml	0.0001 dpm/ml	0.028 uCi/l	0.0 dpm/ml	6/8/99	
6/2/99	TK-110, 5000 Gal	2.13 dpm/ml	0.028 uCi/l	TK-710, 6/3/99	TK-710, 4460 Gal	0.013 dpm/ml	0.0002 dpm/ml	0.0006 dpm/ml	0.028 uCi/l	0.0 dpm/ml	6/9/99	
6/2/99	TK-100, 5000 Gal	0.98 dpm/ml	0.027 uCi/l	TK-700, 6/7/99	TK-700, 4244 Gal	0.004 dpm/ml	0.000 dpm/ml	0.0002 dpm/ml	0.025 uCi/l	0.0 dpm/ml	6/10/99	
6/7/99	TK-120, 5000 Gal	2.39 dpm/ml	0.034 uCi/l	TK-720, 6/9/99	TK-720, 3915 Gal	0.003 dpm/ml	0.0001 dpm/ml	0.002 dpm/ml	0.024 uCi/l	0.0 dpm/ml	6/15/99	
6/9/99	TK-110, 5000 Gal	0.44 dpm/ml	0.021 uCi/l	TK-710, 6/14/99	TK-710, 4580 Gal	0.003 dpm/ml	0.0001 dpm/ml	0.0003 dpm/ml	0.025 uCi/l	0.0 dpm/ml	6/17/99	
6/9/99	TK-100, 5000 Gal	0.35 dpm/ml	0.021 uCi/l	TK-700, 6/15/99	TK-700, 4224 Gal	0.002 dpm/ml	0.000 dpm/ml	0.0003 dpm/ml	0.025 uCi/l	0.00 dpm/ml	6/23/99	
6/21/99	TK-120, 5000 Gal	14.21 dpm/ml	0.036 uCi/l	TK-720, 6/24/99	TK-720, 4628 Gal	0.013 dpm/ml	0.0001 dpm/ml	0.0008 dpm/ml	0.026 uCi/l	0.72dpm/mlLDL	7/8/99	
6/21/99	TK-110, 5000 Gal	1.69 dpm/ml	0.027 uCi/l	TK-710, 6/23/99	TK-710, 4440 Gal	0.010 dpm/ml	0.00004dpm/ml	0.001 dpm/ml	0.025 uCi/l	0.00 dpm/ml	6/30/99	
6/24/99	TK-100, 5000 Gal	23.66 dpm/ml	0.031 uCi/l	TK-700, 6/28/99	TK-700, 4323 Gal	0.003 dpm/ml	0.000 dpm/ml	0.001 dpm/ml	0.028 uCi/l	2.67dpm/mlLDL	7/8/99	
6/24/99	TK-110, 5000 Gal	0.21 dpm/ml	0.025 uCi/l	TK-710, 7/8/99	TK-710, 4193 Gal	0.034 dpm/ml	0.0005 dpm/ml	0.013 dpm/ml	0.025 uCi/l	0.28dpm/mlLDL	7/14/99	
7/29/99	TK-120, 4800 Gal	42.84 dpm/ml	0.016 uCi/l	TK-720, 8/19/99	TK-720, 4500 Gal	1.56 dpm/ml	0.005 dpm/ml	0.004 dpm/ml	0.015 uCi/l	1.89 dpm/ml	Recycled	Sent to TK-120, 8/26/99
8/26/99	TK-120, 4500 Gal	1.89 dpm/ml	0.015 uCi/l	TK-720, 9/8/99	TK-720, 4500 Gal	0.557 dpm/ml	0.0003 dpm/ml	0.002 dpm/ml	0.018uCi/l	0.75 dpm/ml	Recycled	Sent to TK-120, 9/8/99
9/8/99	TK-120, 4500 Gal	0.75 dpm/ml	0.018 uCi/l	TK-720, 9/15/99	TK-720, 4157 Gal	0.16 dpm/ml	0.0004 dpm/ml	0.001 dpm/ml	0.017 uCi/l	0.16 dpm/ml	9/28/99	
9/27/99	TK-110, 5000 Gal	7.33 dpm/ml	0.008 uCi/l	TK-710, 9/27/99	TK-710, 4632 Gal	0.0371 dpm/ml	0.005 dpm/ml	0.003 dpm/ml	0.011 uCi/l	<0.2 dpm/ml	9/29/99	
9/28/99	TK-100, 5000 Gal	10.01 dpm/ml	0.008 uCi/l	TK-700, 9/28/999	TK-700, 4656 Gal	0.0349 dpm/ml	0.005 dpm/ml	0.010 dpm/ml	0.005 uCi/l	<0.2 dpm/ml	9/29/99	
9/29/99	TK-120, 2500 Gal	2.06 dpm/ml	0.011 uCi/l	TK-720,9/29/99	TK-720, 2422 Gal	0.039 dpm/ml	0.006 dpm/ml	0.015 dpm/ml	0.004 uCi/l	<0.2 dpm/ml	9/29/99	
9/29/99	TK-110, 4800 Gal	2.06 dpm/ml	0.011 uCi/l	TK-710, 9/30/99	TK-710, 4685 Gal	0.12 dpm/ml	0.001 dpm/ml	0.003 dpm/ml	0.009 uCi/l	<0.2 dpm/ml	10/5/99	

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DATE	INFLUENT RECEIVE DATE	INFLUENT TANK GROSS ALPHA	INFLUENT TANK H3 (Beta)	PROCESSED TO - DATE	EFFLUENT TANK-VOL DISCH	ISOTOPES Pu238	Pu239	U233/234	H3 (Beta)	GROSS ALPHA	DATE DISCHARGED	COMMENTS
9/29/99	TK-100, 5000 Gal	6.27 dpm/ml	0.013 uCi/l	TK-700, 9/30/99	TK-700, 4817 Gal	0.07 dpm/ml	0.001 dpm/ml	0.008 dpm/ml	0.004 uCi/l	0.76 dpm/ml	10/26/99	Release Limit For Gross
9/30/99	TK-120, 4800 Gal	<0.70 dpm/ml	0.016 uCi/l	TK-720, 10/7/99	TK-720, 4214 Gal	-----	-----	-----	0.014 uCi/l	1.81 dpm/ml	10/27/99	Alpha Has Been Changed
9/30/99	TK-110, 4000 Gal	0.81 dpm/ml	0.015 uCi/l	TK-110, 10/14/99	TK-110, 3817 Gal	-----	-----	-----	0.015 uCi/l	0.0 dpm/ml	10/26/99	To 2.0 dpm/ml 10/21/99
10/4/99	TK-100, 4800 Gal	1.27 dpm/ml	0.0098 uCi/l	TK-700, 10/28/99	TK-700, 4165 Gal	-----	-----	-----	0.012 uCi/l	0.0 dpm/ml	11/8/99	
12/13/99	TK-120, 4800 Gal	85.8 dpm/ml	0.0087 uCi/l	TK-720, 12/17/99	TK-720, 4800 Gal	-----	-----	-----	0.009 uCi/l	<0.13 dpm/ml	12/21/99	
12/17/99	TK-110, 4800 Gal	4.48 dpm/ml	0.002 uCi/l	TK-710, 12/20/99	TK-710, 4605 Gal	-----	-----	-----	0.009 uCi/l	<0.1 dpm/ml	12/21/99	
12/17/99	TK-100, 4500 Gal	4.48 dpm/ml	0.002 uCi/l	TK-720, 12/21/99	TK-720, 4088 Gal	-----	-----	-----	0.004 uCi/l	0.39 dpm/ml	1/5/00	
2/22/00	TK-100, 4500 Gal	29.29 dpm/ml	0.0068 uCi/l	TK-710, 2/23/00	TK-710, 4159 Gal	-----	-----	-----	0.005 uCi/l	<0.13 dpm/ml	3/7/00	
4/6/00	TK-120, 4800 Gal	19.90 dpm/ml	0.006 uCi/l	TK-720, 4/6/00	TK-720, 4060 Gal	-----	-----	-----	0.005 uCi/l	0.16 dpm/ml	4/12/00	
4/24/00	TK-100, 4800 Gal	<1.84 dpm/ml	0.005 uCi/l	TK-700, 4/24/00	TK-700, 4712 Gal	-----	-----	-----	0.004 uCi/l	<1.84 dpm/ml	5/3/00	
5/25/00	TK-110, 4800 Gal	8.01 dpm/ml	0.004 uCi/l	TK-710, 5/25/00	TK-710, 4706 Gal	-----	-----	-----	0.004 uCi/l	0.21 dpm/ml	6/14/00	
7/10/00	TK-110, 4800 Gal	15.6 dpm/ml	0.002 uCi/l	TK-710, 7/10/00	TK-710, 4747 Gal	-----	-----	-----	0.004 uCi/l	0.52 dpm/ml	7/20/00	
7/11/00	TK-720, 4800 Gal	1.02 dpm/ml	0.005 uCi/l	TK-720, 7/11/00	TK-720, 4651 Gal	-----	-----	-----	0.004 uCi/l	<0.13 dpm/ml	7/20/00	
8/24/00	TK-100, 4800 Gal	Not Sampled	Not Sampled	TK-700, 9/11/00	TK-700, 4756 Gal	-----	-----	-----	0.007 uCi/l	<0.19 dpm/ml	10/3/00	
9/22/00	TK-110, 4800 Gal	Not Sampled	Not Sampled	TK-710, 9/25/00	TK-710, 4715 Gal	-----	-----	-----	0.004 uCi/l	<0.19 dpm/ml	10/4/00	
9/24/00	TK-120, 4800 Gal	Not Sampled	Not Sampled	TK-720, 9/28/00	TK-720, 4854 Gal	-----	-----	-----	0.002 uCi/l	<0.19 dpm/ml	10/5/00	
12/18/00	TK-110, 4800 Gal	11.46 dpm/ml	0.02 uCi/l	TK-710, 12/18/00	TK-710, 4697 Gal	-----	-----	-----	0.002 uCi/l	0.77 dpm/ml	1/2/01	
12/18/00	TK-100, 3500 Gal	3.96 dpm/ml	<LDL	TK-700, 12/19/00	TK-700, 2963 Gal	-----	-----	-----	0.018 uCi/l	0.30 dpm/ml	1/3/01	
1/16/01	TK-100, 4800 Gal	<1.3 dpm/ml	0.013uCi/l	TK-700, 1/17/01	TK-700, 4696 Gal	-----	-----	-----	0.002 uCi/l	<1.3 dpm/ml	1/25/01	
1/16/01	TK-110, 4800 Gal	<1.3 dpm/ml	0.013uCi/l	TK-710,1/18/01	TK-710, 4703 Gal	-----	-----	-----	0.001 uCi/l	<1.29 dpm/ml	1/29/01	
2/13/01	TK-120, 4800 Gal	<1.3 dpm/ml	0.013 uCi/l	TK-720,2/15/01	TK-720, 4576 Gal	-----	-----	-----	0.029 uCi/l	<0.60 dpm/ml	2/28/01	
5/7/01	TK-110, 4800 Gal	5.2 dpm/ml	0.0004 uCi/l	TK-710, 5/9/01	TK-710, 4443 Gal	-----	-----	-----	0.0003 uCi/l	<1.3 dpm/ml	6/5/01	
5/14/01	TK-100, 4800 Gal	<1.34 dpm/ml	0.009 uCi/l	TK-700, 5/15/01	TK-700, 4563 Gal	-----	-----	-----	0.13 uCi/l	<1.34 dpm/ml	6/4/01	
5/29/01	TK-110, 4800 Gal	19.3 dpm/ml	0.102 uCi/l	TK-720, 5/30/01	TK-720, Recycled	-----	-----	-----	0.02 uCi/l	2.12 dpm/ml	Recycled	Rec'd carbon water from WD
6/4/01	TK-120, 4800 Gal	2.12 dpm/ml	0.02 uCi/l	TK-720, 6/5/01	TK-720, 4534 Gal	-----	-----	-----	0.08 uCi/l	<0.60 dpm/ml	6/12/01	
7/9/01	TK-100, 4800 Gal	1.11 dpm/ml	0.0127 uCi/l	TK-700, 7/10/01	TK-700, 4596 Gal	-----	-----	-----	0.026 uCi/l	<0.60 dpm/ml	7/23/01	
8/29/01	TK-110, 4800 Gal	<0.60 dpm/ml	0.017 uCi/l	TK-710, 8/30/01	TK-710, 4713 Gal	-----	-----	-----	0.038 uCi/l	<0.60 dpm/ml	9/13/01	
9/25/01	TK-120, 4800 Gal	0.98 dpm/ml	0.007 uCi/l	TK-720, 9/26/01	TK-720, 4705 Gal	-----	-----	-----	0.017 uCi/l	<0.60 dpm/ml	10/3/01	
9/26/01	TK-100, 4800 Gal	2.25 dpm/ml	0.007 uCi/l	TK-700, 9/27/01	TK-700, 4715 Gal	-----	-----	-----	0.013 uCi/l	<0.60 dpm/ml	10/3/01	
10/31/01	TK-110, 4800 Gal	<0.60 dpm/ml	0.006 uCi/l	TK-710, 11/5/01	TK-710, 4618 Gal	-----	-----	-----	0.011 uCi/l	<0.60 dpm/ml	11/15/01	
12/17/01	TK-100, 4800 Gal	2.77 dpm/ml	0.003 uCi/l	TK-700, 12/18/01	TK-700, 4651 Gal	-----	-----	-----	0.005 uCi/l	<0.60 dpm/ml	12/20/01	
2/7/02	TK-110, 4800 Gal	<0.60 dpm/ml	0.005 uCi/l	TK-710, 2/7/02	TK-710, 4735 Gal	-----	-----	-----	0.004 uCi/l	<0.60 dpm/ml	2/28/02	
2/20/02	TK-100, 4800 Gal	12.04 dpm/ml	0.001 uCi/l	TK-700, 2/21/02	TK-700, 4726 Gal	-----	-----	-----	0.003 uCi/l	<0.60 dpm/ml	3/6/02	
2/25/02	TK-120, 4800 Gal	43.95 dpm/ml	0.004 uCi/l	TK-720, 2/28/02	TK-720, 4714 Gal	-----	-----	-----	0.003 uCi/l	<0.60 dpm/ml	3/14/02	
3/5/02	TK-110, 4800 Gal	8.60 dpm/ml	0.002 uCi/l	TK-710, 3/7/02	TK-710, 4733 Gal	-----	-----	-----	0.002 uCi/l	<0.60 dpm/ml	3/21/02	
4/3/02	TK-100, 4800 Gal	29.60 dpm/ml	0.005 uCi/l	TK-700, 4/8/02	TK-700, 4718 Gal	-----	-----	-----	0.003 uCi/l	0.61 dpm/ml	4/25/02	
4/17/02	TK-110, 4800 Gal	24.0 dpm/ml	0.003 uCi/l	TK-710, 4/22/02	TK-710, 4748 Gal	-----	-----	-----	0.003 uCi/l	0.60 dpm/ml	4/25/02	
5/1/02	TK-120, 4800 Gal	49.02 dpm/ml	0.006 uCi/l	TK-720, 5/13/02	TK-720, 4740 Gal	-----	-----	-----	0.003 uCi/l	0.64 dpm/ml	5/29/02	
5/16/02	TK-100, 4800 Gal	14.44 dpm/ml	0.004 uCi/l	TK-700, 5/16/02	TK-700, 4686 Gal	-----	-----	-----	0.004 uCi/l	<0.60 dpm/ml	5/29/02	
5/22/02	TK-110, 4800 Gal	4.21 dpm/ml	0.004 uCi/l	TK-710, 5/23/02	TK-710, 4634 Gal	-----	-----	-----	0.004 uCi/l	0.39 dpm/ml	5/29/02	
5/28/02	TK-120, 4800 Gal	2.09 dpm/ml	0.002 uCi/l	TK-720, 6/3/02	TK-720, 4710 Gal	-----	-----	-----	0.002 uCi/l	<0.60 dpm/ml	6/24/02	
6/10/02	TK-100, 4800 Gal	1.35 dpm/ml	0.003 uCi/l	TK-700, 6/212/02	TK-700, 4696 Gal	-----	-----	-----	0.003 uCi/l	<0.60 dpm/ml	6/24/02	
6/19/02	TK-110, 4800 Gal	1.58 dpm/ml	0.002 uCi/l	TK-710, 6/24/02	TK-710, 4552 Gal	-----	-----	-----	0.002 uCi/l	0.81 dpm/ml	6/29/02	
8/5/02	TK-120, 4800 Gal	30.12 dpm/ml	0.006 uCi/l	TK-720, 8/7/02	TK-720, 4640 Gal	-----	-----	-----	0.005 uCi/l	1.53 dpm/ml	8/22/02	
8/8/02	TK-100, 4800 Gal	1.24 dpm/ml	0.005 uCi/l	TK-700, 8/12/02	TK-700, 4409 Gal	-----	-----	-----	0.005 uCi/l	<0.60 dpm/ml	8/28/02	
8/19/02	TK-110, 4800 Gal	2.00 dpm/ml	0.005 uCi/l	TK-710, 8/20/02	TK-710, 4730 Gal	-----	-----	-----	0.006 uCi/l	<0.60 dpm/ml	8/29/02	
8/20/02	TK-120, 4800 Gal	2.60 dpm/ml	0.008 uCi/l	TK-720, 9/4/02	TK-720, 4451 Gal	-----	-----	-----	0.005 uCi/l	<0.60 dpm/ml	9/19/02	
9/4/02	TK-100, 4800 Gal	4.98 dpm/ml	0.006 uCi/l	TK-700, 9/9/02	TK-700, 4551 Gal	-----	-----	-----	0.007 uCi/l	<0.60 dpm/ml	9/19/02	

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DATE	INFLUENT RECEIVE DATE	INFLUENT TANK GROSS ALPHA	INFLUENT TANK H3 (Beta)	PROCESSED TO - DATE	EFFLUENT TANK-VOL DISCH	ISOTOPES Pu238	Pu239	U233/234	H3 (Beta)	GROSS ALPHA	DATE DISCHARGED	COMMENTS
9/23/02	TK-110, 4800 Gal	5.04 dpm/ml	0.002 uCi/l	TK-710, 10/1/02	TK-710, 4690 Gal	-----	-----	-----	0.004 uCi/l	<0.60 dpm/ml	10/28/02	
10/1/02	TK-120, 4800 Gal	7.47 dpm/ml	0.002 uCi/l	TK-120, 10/3/02	TK-720, 4689 Gal	-----	-----	-----	0.003 uCi/l	0.73 dpm/ml	10/28/02	
10/2/02	TK-100, 4800 Gal	25.66 dpm/ml	0.003 uCi/l	TK-700, 10/16/02	TK-700, 4724 Gal	-----	-----	-----	0.002 uCi/l	<0.60 dpm/ml	10/28/02	
11/6/02	TK-110, 4800 Gal	19.4 dpm/ml	0.005 uCi/l	TK-710, 11/11/02	TK-710, 4679 Gal	-----	-----	-----	0.004 uCi/l	.65 dpm/ml	11/13/02	
11/11/02	TK-120, 4800 Gal	14.84 dpm/ml	0.002 uCi/l	TK-720, 11/12/02	TK-720, 4696 Gal	-----	-----	-----	0.003 uCi/l	<0.60 dpm/ml	11/14/02	
11/12/02	TK-100, 4800 Gal	6.34 dpm/ml	0.002 uCi/l	TK-700, 11/14/02	TK-700, 4644 Gal	-----	-----	-----	0.002 uCi/l	<0.60 dpm/ml	11/21/02	
11/13/02	TK-110, 4800 Gal	48.32 dpm/ml	0.004 uCi/l	TK-710, 11/18/02	TK-710, 4723 Gal	-----	-----	-----	0.002 uCi/l	<0.60 dpm/ml	11/21/02	
11/14/02	TK-120, 4800 Gal	3.27 dpm/ml	0.003 uCi/l	TK-720, 11/25/02	TK-720, 4702 Gal				0.003 uCi/l	<0.60 dpm/ml	13/30/02	
11/26/02	TK-100, 4800 Gal	13.67 dpm/ml	0.002 uCi/l	TK-700, 12/11/02	TK-700, 4766 Gal				0.003 uCi/l	<0.60 dpm/ml	12/31/02	
12/17/02	TK-110, 4800 Gal	1.36 dpm/ml	0.002 uCi/l	TK-710, 12/23/02	TK-710, 4102 Gal				0.003 uCi/l	<0.60 dpm/ml	12/31/02	
12/30/02	TK-120, 4800 Gal	18.51 dpm/ml	0.005 uCi/l	TK-720, 12/31/02	TK-720, 4696 Gal				0.004 uCi/l	0.63 dpm/ml	1/9/03	
12/31/02	TK-100, 4800 Gal	2.26 dpm/ml	0.002 uCi/l	TK-700, 1/2/03	TK-700, 4779 Gal				0.003 uCi/l	<0.60 dpm/ml	1/9/03	
12/31/02	TK-110, 4800 Gal	<0.60 dpm/ml	0.002 uCi/l	TK-710, 1/7/03	TK-710, 4759 Gal				0.003 uCi/l	<0.60 dpm/ml	1/14/03	
1/7/03	TK-120, 4800 Gal	54.54 dpm/ml	0.001 uCi/l	TK-720, 1/9/03	TK-720, 4757 Gal				0.002 uCi/l	<0.60 dpm/ml	1/30/03	
1/13/03	TK-100, 4800 Gal	12.62 dpm/ml	0.006 uCi/l	TK-700, 1/15/03	TK-700, 4810 Gal				0.004 uCi/l	<0.60 dpm/ml	1/30/03	
2/6/03	TK-110, 4800 Gal	<0.60 dpm/ml	0.006 uCi/l	TK-710, 2/6/03	TK-710, 4747 Gal				0.004 uCi/l	<0.60 dpm/ml	2/12/03	
2/10/03	TK-120, 4800 Gal	1.44 dpm/ml	0.003 uCi/l	TK-720, 2/11/03	TK-720, 4712 Gal				0.005 uCi/l	<0.60 dpm/ml	2/18/03	
2/12/03	TK-100, 4800 Gal	1.63 dpm/ml	0.002 uCi/l	TK-700, 2/12/03	TK-700, 4571 Gal				0.003 uCi/l	<0.60 dpm/ml	2/20/03	
2/12/03	TK-110, 4800 Gal	1.16 dpm/ml	0.001 uCi/l	TK-710, 2/18/03	TK-710,4751 Gal				0.003 uCi/l	<0.60 dpm/ml	2/26/03	
2/12/03	TK-120, 4800 Gal	2.95dpm/ml	0.005 uCi/l	TK-720, 2/20/03	TK-720,4945 Gal				0.003 uCi/l	<0.60 dpm/ml	2/27/03	
2/19/03	TK-100, 4800 Gal	29.98 dpm/ml	0.001 uCi/l	TK-700, 2/27/03	TK-700, 4730 Gal				0.002 uCi/l	<0.60 dpm/ml	3/6/03	
2/24/03	TK-110, 4800 Gal	9.09dpm/ml	0.005 uCi/l	TK-710, 3/3/03	TK-710, 3727 Gal				0.004 uCi/l	<0.60 dpm/ml	3/10/03	
2/25/03	TK-120, 4800 Gal	65.83 dpm/ml	0.007 uCi/l	TK-720, 3/6/03	TK-720, 4769 Gal				0.004 uCi/l	<0.60 dpm/ml	3/13/03	
3/6/03	TK-100, 4800 Gal	17.86 dpm/ml	0.002 uCi/l	TK-700, 3/11/03	TK-700,4754 Gal				0.003 uCi/l	<0.60 dpm/ml	3/17/03	
3/10/03	TK-110, 4800 Gal	3.83 dpm/ml	0.002 uCi/l	TK-710, 3/12/03	TK-710, 4784 Gal				0.003 uCi/l	<0.60 dpm/ml	3/24/03	
3/12/03	TK-120, 4800 Gal	4.78 dpm/ml	0.003 uCi/l	TK-720, 3/18/03	TK-720, 4778 Gal				0.003 uCi/l	<0.60 dpm/ml	3/24/03	
3/17/03	TK-100,4800 Gal	4.72 dpm/ml	0.002 uCi/l	TK-700, 3/24/03	TK-700, 4761 Gal				0.002 uCi/l	<0.60 dpm/ml	3/27/03	
3/24/03	TK-110, 4800 Gal	1.47 dpm/ml	0.002 uCi/l	TK-710, 3/27/03	TK-710				0.002 uCi/l	<0.60 dpm/ml		

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Appendix G

Chemicals

Chemicals known to have been stored in Building 23 include (but are not limited to):

AB gamma polishing alumina # 3 (xylene) liquid
Acetic acid solution
Anisole liquid
Antimony - 12S solid
Barium nitrate solid
Beryllium metal solid
Calcium nitrate solid
Cerous nitrate solid
Cyclohexane liquid
Ethylene dichloride — tritium
Freon T.F. liquid
Gold cyanide — unknown isotopes
Hypophosphorous acid solution
Lead — cobalt
Lead — plutonium
Lead — tritium
Lead — unknown isotopes
Lead — uranium
Mercury — tritium
Metal polish (chromium)
Naval jelly (phosphoric acid) liquid
Octane (absorbed)
Octene liquid
Paint thinner liquid (turpentine)
PCB/kerosene (hydraulic press rinse) liquid
Presto Black Rust Retarder (selenous acid) liquid
Scintillation vials — plutonium
Scintillation vials — plutonium and tritium
Scintillation vials — tritium
Scintillation vials — unknown isotopes
Scintillation vials — xylene, pseudocumene, 1,4-dioxane, toluene
Silver - 110M
Sodium peroxide solid
Solder flux (zinc chloride) liquid
Sulfuric acid solution
Thallium - 204 solid
Thorin (1-(0-arseno phenylazo)-2-naphthde-3,6-disulfunic acid
Thorium nitrate solid
Thorium perchlorate solid
Uranyl nitrate solid
Various corrosives — unknown isotopes
Various flammables/solvents — unknown isotopes
Waste - absorbed corrosive TRU (nitric acid)
Waste - lead metal solids LLW & TRU
Waste - mercury metal liquid
Waste oils

Chemicals known to have been use during Building 125 processes include (but are not limited to):

Ferric sulfate
Lime
Lime slurry
Sulfuric acid