

3005-9804220007



BW Technologies, Inc.

Babcock & Wilcox, a McDermott company

Babcock & Wilcox of Ohio, Inc.

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ESC-080/98
March 26, 1998

Mr. Tim Fischer
U.S. Environmental Protection Agency
Region 5
77 W. Jackson Blvd.
Chicago, IL 60604-3590

Mr. Brian Nickel
Ohio Environmental Protection Agency
Southwest District Office
401 E. Fifth Street
Dayton, Ohio 45402-2911

SUBJECT: Contract No. DE-AC24-97OH20044
**FINAL RELEASE BUILDING DATA PACKAGES: BUILDINGS C,
33, 43, 35/59**

REFERENCE: Statement of Work Requirement C 5.3.2 -- Stakeholder
Participation in Mound

Dear Mr. Fischer and Mr. Nickel:

During the Public Review of the Building Data Packages for Buildings C, 33, 43 and 35/59, DOE/MEMP received comments from MMCIC. The Core Team has responded to these comments. The attached change pages for the buildings C, 33, 43 and 35/59 Building Data Packages incorporate the comments, responses and necessary changes in the Building Data Packages.

In addition, for the Building 33 Building Data Package, please add the attached radiological survey information to Appendix 6.6.1 and replace the information in Appendix 6.9 with the attached revised Work Plan.

This information has been authorized for release to US EPA, OEPA and ODH by Sam Cheng of MEMP.

Page 2 FINAL RELEASE BUILDING DATA PACKAGES: BUILDINGS C, 33, 43, 35/59

If you require further information, please contact Dave Rakel at extension 4203.

Sincerely,



Linda R. Bauer, Ph.D.
Department Manager, Environmental Safeguards & Compliance

LRB/nmg

Enclosures as stated

cc: Kathy Lee Fox, OEPA, (1) w/attachments
Ray Beaumier, OEPA, (1) w/attachments
Jim Webb, ODH, (1) w/attachments
Dann Bird, MMCIC, (1) w/attachments
Administrative Record, (1) w/attachments
Public Reading Room, (5) w/attachments
DCC

BDP 33

REV	DESCRIPTION	DATE
0	Available for Reading Room and Administrative Record.	Jan. 06, 1998
1	U.S. EPA comments, dated 1/22/98, incorporated into document. MMCIC comments noted.	Mar. 25, 1998

MOUND



**Environmental
Restoration
Program**



**MOUND PLANT
BUILDING DATA PACKAGE**

Information Notice

Building 33 will soon be demolished. A Building Data Package describing Building 33 and its demolition is available in the CERCLA Public Reading Room, 305 E. Central Ave., Miamisburg, Ohio.

Questions can be referred to DOE Office of Public Affairs at (937) 865-3116



The Mound Core Team
P.O. Box 66
Miamisburg, Ohio 45343-0066

March 18, 1998

Mr. Dann Bird
Planning Manager
MMCIC
P.O. Box 232
Miamisburg, OH
45342-0232

Dear Mr. Bird:

Thank you for your comments on the Building Data Packages for Building C, 33, 43 and 35/59. The Core Team, consisting of the U.S. Department of Energy Miamisburg Environmental Management Project (DOE-MEMP), U.S. Environmental Protection Agency (USEPA), and the Ohio Environmental Protection Agency (OEPA), appreciates the input provided by the public stakeholders of the Mound facility. The public stakeholders have significantly contributed to the forward progress that has been made establishing the safety of the Mound property prior to its return to public use after remediation and residual risk evaluation.

The comments for Building C, 33, 43 and 35/59 all indicated the need for continued cooperation. We concur and were pleased to see your comments also addressed to members of the Partnership Council. This group will be particularly effective in achieving the level of cooperation your comments suggest.

Concerning your question about the timing of a radiation survey of Building 59, our plans are to perform a radiation survey before the building is demolished.

Should the responses to comments require additional detail, please contact Sam Cheng at (937) 865-4778 and we will gladly arrange a meeting or telephone conference.

Sincerely,

DOE/MEMP: *Sam Cheng* 3/17/98
Sam Cheng, DFR Team Leader

USEPA: *Timothy J. Fischer* 3/19/98
Timothy J. Fischer, Remedial Project Manager

OHIO EPA: *Brian K. Nickel* 3/19/98
Brian K. Nickel, Project Manager

BUILDING DATA PACKAGE (BDP)

BUILDING 33

DOE MOUND PLANT

MIAMISBURG, OHIO 45343

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1.0 Summary

This document has been prepared in response to an agreement between the Department of Energy (DOE), the U.S. Environmental Protection Agency, and the Ohio Environmental Protection Agency. It is a Building Data Package of Building 33 located at the DOE Mound Plant in Miamisburg, Ohio. This investigation was performed in cognizance of the procedures laid out in ASTM Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (Designation E1527-94). The subject structure is not scheduled for reuse.

The scope of the investigation included the building and a 15-foot wide perimeter border around the building. This perimeter includes roadways, sidewalks, pavement and grass-covered areas. The investigation of Building 33 included the following.

- 1) A building and perimeter inspection
- 2) An examination of historical aerial photographs and maps.
- 3) A review of federal and state regulatory agency records.
- 4) Personnel interviews.
- 5) A review of Mound Plant records for:
 - A) History of spills and releases
 - B) Past sampling data
 - Radiological survey
 - Chemical history
 - Lead paint
 - Asbestos
 - Radon

The building investigation was conducted by EG&G personnel on 11/25/97.

Mound Plant is located in the southern portion of the corporation limits of Miamisburg, Ohio. The entire Mound Plant facility is situated on 305 acres of land and contains approximately 130 buildings. The subject property consists of the Mound Plant Building 33 structure. It is 1344 square feet in size. All areas are *in gross* square feet (external wall to external wall).

Building 33 was constructed in 1965 as a maintenance support facility and the same utilization has continued with no architectural changes. Steam, condensate, and electrical were originally supplied from SM Building, however with the D&D effort associated with SM in the mid-1980s, these utilities were disconnected from SM and supplied from the west stanchion system beside the internal SM/PP roadway.

Structure related environmental concerns include asbestos, lead, HVAC, mercury, and radiological contamination.

2.0 Introduction

2.1 Purpose

The purpose of this Building Data Package is to identify, if possible, any recognized environmental conditions (defined below) that may affect the subject property.

2.2 Special Terms and Conditions

Key Site Manager – The Key Site Manager is the person identified by the owner of a property as having good knowledge of the uses and physical characteristics of the property. This individual is frequently, but not necessarily always, the Building Manager. Mr. Robert A. Ward has been designated as the Building Manager for Building 33.

Recognized Environmental Condition – The presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a likely release, a past release, or a material threat of a release of any hazardous substances or petroleum into structures or into the ground, ground water, or surface water near the building. The term is not intended to include *deminimis* conditions that generally do not present a material risk of harm to public health or the environment, and generally would not be the subject of an enforcement action brought to the attention of the appropriate governmental agencies.

2.3 Limitations and Exceptions of Assessment

This Data Package addresses the structure only. Soil contamination in the vicinity is noted in Appendix 6.8.

2.4 Limiting Conditions and Methodology Used

2.4.1 On-Site Methodology

Mound Plant personnel examined the site on November 23, 1997. This examination consisted of a detailed inspection of the site and a survey of the neighboring properties.

2.4.2 Use of Previous Assessments

This report used a variety of previous assessments completed by EG&G Mound and/or its subcontractors. The reports used were as follows.

- OU-9 Site Scoping Report, Volumes 1-12
- Mound Facility Physical Characterization, December 1992
- Active Underground Storage Plan, November 1994.
- MD-22153, Mound Site Radionuclides By Location, July 1995
- Asbestos Surveys
- Environmental Appraisal of the Mound Plant, March 1996 (Appendix 6.5)
- Appropriate PRS Documentation

2.4.3 Historical Information

A complete title search of the Mound Plant was completed on June 3, 1995 for the site to determine the previous owners of the site. A copy of the report is in Appendix 6.3.

2.4.4 Records Review

Environmental Data Resources (EDR), Inc., of Southport, Connecticut, a regulatory database search company, was contracted in 1995 to provide environmental regulatory information concerning the site and surrounding properties, consistent with the requirements of ASTM Standard E1527-94. This information was reviewed by Environmental Restoration personnel for indications of recognized environmental conditions. (See Appendix 6.4.)

3.0 Site Description

3.1 Location and Legal Description

Building 33 is located at the U.S. Department of Energy Facility known as Mound Plant. Mound is situated in the city of Miamisburg, Miami Township, Montgomery County, state of Ohio, and is being a track of land containing 305.116 acres, more or less, situated in part of Section 30 and fractional Sections 35 and 36, Town 2, Range MRS and being all of city lots numbered 2259, 2290, 4777, 4778, and 4779 and part of out lot #6 lying within the city of Miamisburg, Ohio; and being the same premises conveyed in Warranty Deeds recorded in Volume 1214, pages 10, 12, 15, and 17, Volume 1215, page 347, Volume 1214, page 2105, Volume 1246, page 45, Volume 1258, page 74, Volume 1258, Volume 1256, page 179, and microfiche no. 81-376A01 and microfiche #81-323. Deed records, maps, and site plans are in Appendix 6.2 and 6.3.

3.2 Site and Vicinity Characteristics

The subject site consists of the Mound Plant Building 33 structure. (See Appendix 6.2.)

The Mound facility is situated on 305 acres of land and contains approximately 130 buildings with a total of approximately 1.4 million square feet of floor space (the number of buildings is constantly diminishing as buildings are decommissioned and either sold or demolished). The original 182-acre site, purchased by the Manhattan Engineering District in 1946, consists of two hills and an intervening valley that runs approximately east and west. Building 33 is located on the SM/PP Hill. The 124-acre tract, acquired in 1981, is an undeveloped mixture of fields and woods that undulates and slopes downward to the west, away from the main site. This area was acquired to serve as a buffer and has been used as a staging area and parking area for contractors working on-site.

To the west lies a Conrail Railroad line and the north south trending Miami-Erie Canal. The northern boundaries of the site abuts the historic residential area of Miamisburg, Ohio. Mound Road marks the northern half of the eastern perimeter of the facility then veers east, away from the southern half of the eastern boundary. A public golf course (belonging to the City of Miamisburg), the Miamisburg Mound Memorial Park, old

agricultural fields, residential lots, and vacant wooded lots border against the facility along Mound Road. Benner Road forms the southern property line of the Mound Plant, with agricultural fields and farms occupying the lands beyond.

3.3 Description of Structures, Roads, Other Improvements on the Site

Building 33 was constructed in 1965. Structure related environmental concerns include asbestos, lead, HVAC, mercury, and radiological contamination. There were no other structures, roads or improvements that would impact the environmental conditions of the building.

3.4 Information Reported by User Regarding Environmental Liens or Specialized Knowledge or Experience

The title search completed on June 3, 1995 indicated one lien against the property. That resulted from an unpaid Montgomery County incinerator fee. After this was discovered, the fee was paid and the lien was removed from the title.

3.5 Current Uses of Building 33

Building 33 is currently inactive.

3.6 Past Uses of Building 33

Building 33 was used only as a maintenance support facility.

3.7 Current and Past Uses of Adjacent Buildings

Close Proximity to Building	Building Area (Sq. Ft.)	Current Use	Past Use	Direction from Building
SM	Demolished	N/A	Pu238 Production	East

These facilities have had no environmental impact on the Building 33 structure.

A metal storage shed south of Building 33 was used for the storage of supplies and miscellaneous tools associated with the D&D program in the area. The storage shed is approximately 8 feet wide and 15 feet long; the unit is similar to residential lawn storage sheds. The storage shed was not part of the official Mound building list and it did not have an assigned

number. The shed was emptied of its contents and the unit was radiologically "surveyed". See Appendices 6.6.1 and 6.8. The shed sits on the asphalt over the SM West Asphalt area, also known as Area 11 or PRS 285. A number of high Pu 238 sample results are available from this area.

4.0 Records Review

4.1 Standard Environmental Record Sources, Federal and State

Environmental Data Resources (EDR), Inc., of Southport, Connecticut provided information regarding sites in the vicinity of the subject site, which appear in regulatory agency summaries and databases. Sites under the jurisdiction of various regulatory offices or programs were included in the EDR search report, provided in Appendix 6.4.

There are fourteen sites within the appropriate radii for an ASTM Phase I Environmental Site Assessment search. The properties are designated in Table 1 as well as in the EDR report. (See EDR document, Appendix 6.4)

All of the identified sites listed in Table 1 are located north or west of the Mound Plant. These other sites are as much as 170 feet lower in elevation than the Mound Plant main hill; thus they are down gradient or down slope in terms of surface water, and probably ground water flow.

The Mound Plant site was identified as a contaminated site on the National Priority List under CERCLA (Superfund) in 1989. The Mound Plant site was originally listed as a consequence of historic disposal practices including use of a commercial/industrial landfill, various spills, and the use of underground storage tanks, resulting in the contamination of soils and drinking water. The original contaminants of concern were calcium cyanide, copper cyanide, plutonium and its isotopes and compounds, specifically plutonium-238, and uranium, its isotopes and compounds.

The clean up of the Mound Site was originally to be accomplished under the CERCLA mandated procedures for regulating Superfund Sites using the operable unit (OU) system to define and characterize clean up areas. As the clean up effort went forward, it became apparent that the Mound Site did not fit the profile for a clean up strategy based on the operable units. The Department of Energy (DOE), the United States Environmental Protection Agency (USEPA), and the Ohio Environmental Protection Agency (OEPA) designed a new decision making process for the clean up of Mound. The new process is known formally as a "removal site evaluation process" and informally as the "Mound 2000 process." The Mound 2000 process system divided Mound in 19 Release Blocks containing over 400 Potential Release Sites (PRSs) with approximately 200 concerned with potentially contaminated soils, and the balance with potential contamination in buildings.

In compliance with permit requirements under RCRA, the Clean Water Act (CWA), the Safe Drinking Water Act (SDWA), and the Clean Air Act

(CAA), Mound Plant has applied for or has received permits for its surface water discharges, air emissions, and hazardous waste program. Mound Plant is currently operating a hazardous waste treatment and storage facility under a new RCRA Part B permit dated October 18, 1996. Mound Plant also maintains a NPDES surface water discharge permit with Facility I.D. number OH 009857. Permits for the open burning of wastes involving explosives and other fuels have been issued by the Regional Air Pollution Control Agency (RAPCA). Other operations that produce particulate or vaporous emissions are registered with RAPCA and OEPA. Mound Plant also submits annual Emergency and Hazardous Chemical Inventory forms to the OEPA, pursuant to SARA, Title III, the Emergency Planning and Community Right-to-Know Act. The 1995 version of this report indicated that no chemicals are stored in Building 33.

4.2 Physical Setting Sources

Building 33 is bounded by PRSs 285 and 288. These PRSs focus on elevated levels of Pu 238. See Appendices 6.6.1 and 6.8.

4.3 Historical Use Information

A history of the site was developed to identify past uses that may have an environmental impact. A title search was performed on June 3, 1995 to establish a history of ownership. The history of operations comes from other documents. In the summer of 1942, the United States Army organized the Manhattan Engineering District for the purpose of developing an atomic bomb. This undertaking became known as the "Manhattan Project." In 1943, the director of Monsanto Chemical Company (MCC, now Monsanto Corporation) Central Research department in Dayton, Ohio, accepted the responsibility for chemistry and the metallurgy of radioactive polonium-210, and the Dayton Project was launched. MCC operated five (5) units of the Dayton Project at various locations around the Dayton area. For Dayton Unit V (more formally known as the Dayton Engineer Works under the Dayton Engineer District), a 128-acre site on the outskirts of the town of Miamisburg, Montgomery County, Ohio, was selected in 1946 as the location for a permanent research facility in support of the Manhattan Project. In July 1946, the Monsanto Research Corporation (MRC), a subsidiary of MCC, engaged the firm of Giffels and Vallet of Detroit, Michigan, to design the plant. Construction of the new facility, consisting of fourteen (14) original buildings began in February 1947 by Maxon Construction Co., Dayton, Ohio. The plant was the first permanent facility of the Atomic Energy Commission, which succeeded the wartime Manhattan Engineering District. The Mound Plant was occupied by MRC personnel in May 1948 and operations involving radionuclides began in January 1949.

Table 1. Properties of ASTM Phase 1 Environmental Sites Assessment

Address and Property Name	Proximity	Status
U.S. DOE Mound Plant	Mound Road Miamisburg, OH (target property)	NPL, PADS, CERLIS, LUST, & TRIS
D.J. Ceramics	611 S. Main Street Miamisburg, OH (WNW)	LUST
CG&R	901 S. Main Street Miamisburg, OH (W)	LUST
GMC Delco Products Division	329 E. First Street Miamisburg, OH (NNW)	RCRIS-SQG, FINDS
Dayton Public Schools	348 W. First Street Miamisburg, OH (NNW)	RCRIS-SQG, FINDS
City of Miamisburg Pump Station	1021 S. Main Street Miamisburg, OH	UST
Richard Church, Sr. Estate	1009 S. Main Street Miamisburg, OH	LUST
Preston Adhesive Paper Co., Inc.	222 Mound Avenue Miamisburg, OH (N)	RCRIS-LQG, FINDS
Plocher Andrew Sons	4128 E. First Street Miamisburg, OH (N)	RCRIS-SQG, FINDS
Shell Oil Co.	1224 S. Main Street Miamisburg, OH	LUST
Point Store	155 S. Main Street Miamisburg, OH (N)	LUST
Miamisburg Water Treatment Plant	302 S. Riverview Miamisburg, OH (NW)	LUST
Miamisburg Well Field/Unknown Source	302 S. Riverview Miamisburg, OH (NW)	LUST
Technicote, Inc.	222 Mound Avenue Miamisburg, OH (N)	RCRIS-SQG, UST, LUST

Mound Plant is a Government Owned/Contractor Operated (GOCO)

facility, originally administered under the Oak Ridge Operations office of the AEC. The plant was assigned new production and development functions in 1955 when the administrative control was assumed by the AEC's Santa Fe operations office. The Santa Fe Operations Office was changed to the Albuquerque Operations office in April 1956. In January 1975, upon the dissolution of the AEC, the plant formally came under the Energy Research and Development Administration. In October 1977, the plant was incorporated into the DOE complex and the facility designation was changed from Mound Laboratory to Mound Plant. MRC was the sole operating contractor until October 1988 when EG&G Mound Applied Technologies took over. Babcock & Wilcox of Ohio succeeded EG&G on October 1, 1997.

4.4 Additional Record Sources

4.4.1 History of Past Spills and Releases

There is no history of a spill or release from Building 33.

4.4.2 Associated PRS Overview

Building 33 is bounded by PRSs 285 and 288. These PRSs focus on elevated levels of Pu 238. See Appendices 6.6.1 and 6.8.

4.4.3 Occurrence Reports

Occurrence Report OH-MB-EGGM-EGGMAT04-1997-0003, titled "Personnel/Boot Contamination, SM West Asphalt Area" is included as Appendix 6.7.

4.5 Reviews of Building Prints

Building prints were reviewed and included in Appendix 6.2.3.

4.6 Aerial Photographs

Aerial photographs from 1994, 1983, 1973, 1968, 1965, 1959, 1949, and 1938 were reviewed and copies are found in Appendix 6.2.5.

The 1938 photograph shows that the Mound Plant site was agricultural fields and undeveloped wooded lots. The historic Miamisburg Indian Mound is visible for a location reference.

The 1949 photograph shows the completed initial phase of construction on the Mound Plant Main Hill. Approximately fourteen (14) buildings are visible. Roadways on both the Main Hill and the eastern hill are present. The overall Mound Plant facilities, as depicted in the 1968, 1973, 1983, and 1994 photographs continue to show change and expansion.

Building 33 is visible in the 1968 aerial photograph.

4.7 Interviews

Discussions were conducted with the Building Manager during the walkthrough inspection of 11/25/97. Information gained is reflected in Paragraph 5.0.

5.0 Environmental Concern Evaluation (Matrix)

BUILDING #33 STRUCTURE: ENVIRONMENTAL CONCERN EVALUATION

DESCRIPTION	PROBLEM (YES, NO, N/A)	COMMENT	RESOLUTION
Asbestos	NO	On pipe fittings	Will be removed prior to demolition.
Lead	NO	Used at sanitary drain fitting & flashing	Will be segregated out after demolition.
Lead Paint	N/A		
HVAC	NO	Freon in A/C unit	Will be evacuated prior to demolition.
Mercury	NO	In thermostat & light	Will be removed prior to demolition.
Chemicals	NO	Oil used for maintenance equipment	Will be removed prior to demolition.
Radiological	NO	On small direct reading spot	Has been sealed.
Radon	N/A		
Fluorescent Lamps	NO	PCBs in ballasts	Will be removed prior to demolition.
Septic Systems	N/A		
Drains & Sumps	NO	Sanitary drain in building	Will be plugged after demolition.
Waste Water	NO	Storm water	All run-off water collected
Stains & Corrosion	NO	None observed	
Space	N/A		
Storage Tanks	N/A		
PCBs	NO	Fluorescent light ballasts	Will be removed prior to demolition.
Solid Waste Disposal	NO	Building debris	Will be monitored prior to demolition.
Migratory Hazards	NO	Run-off water	See waste water.
YES = Mitigation/Removal does not adequately address structure concerns. NO = Mitigation/Removal does adequately address structure concerns. N/A = Not structure related.			

5.1 Mitigation/Removal of Environmental Concerns

Mitigation/Removal of environmental concerns are addressed in the Structure Specific Work Plan, included as Appendix 6.9. As applicable, contaminant survey reports are noted in Appendix 6.6.

6.0 Appendices

Appendix 6.1 Acronyms

AEA	Atomic Energy Act of 1954
AEC	Atomic Energy Commission
ACM	Asbestos Containing Materials
AL	Action Level
ASTM	American Society for Testing and Materials
BUSTR	Bureau of Underground Storage Tank Regulations
CAA	Clean Air Act
CEG	Conditionally Exempt Generator
CERCLA	Comprehensive Environmental Response, Compensation & Liability Act
COD	Chemical Oxygen Demand
CWA	Clean Water Act
COD	Chemical Oxygen Demand
CWA	Clean Water Act
D&D	Decontamination and Decommissioning
DOE	U.S. Department of Energy
DPM/100 cm ²	Disintegration Per Minute per one hundred square
EMF	Electromagnetic Field
EPA	U.S. Environmental Protection Agency
ER	Environmental Restoration (Program)
ERDA	Energy Research and Development Administration
ERNS	Emergency Response Notification System
FFA	Federal Facility Agreement
FINDS	Facility Index System
FS	Feasibility Study
GSA	General Services Administration
HEPA	High Efficiency Particulate Air
LQG	Large Quantity Generator
LUST	Leaking Underground Storage Tank
M&O	Maintenance and Operations
MAT	Mound Applied Technologies
MCC	Monsanto Chemical Company
MEMP	Mound Environmental Management Project
MMCIC	Miamisburg Mound Community Improvement Corporation
MRC	Monsanto Research Corporation
NPDES	National Pollutant Discharge Elimination System

NUREG	Nuclear Regulatory Guide
OEPA	Ohio Environmental Protection Agency
ORPS	Occurrence Reporting and Processing System
PADS	PCB Activity Database
PCB	Polychlorinated Biphenyls
PRS	Potential Release Site
P/WRE	Property/Waste Release Evaluation
RAPCA	Regional Air Pollution Control Agency
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
RI	Remedial Investigation
RSDS	Radiological Survey Data Sheet
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
SHWS	State Hazardous Waste Site
SQG	Small Quantity Generator
SWMU	Solid Waste Management Unit
TRIS	Toxic Chemical Release Inventory System
TSD	Treatment, Storage, & Disposal Facility
UST	Underground Storage Tank
VOC	Volatile Organic Compound

Appendix 6.2 Maps, Figures, and Photographs, and PRS Supplemental Information

Appendix 6.2.1 Map of Montgomery County

Appendix 6.2.2 Site Plan and PRS Release Blocks

Appendix 6.2.3 Building Drawings

Appendix 6.2.4 PRS Supplemental Information
(None)

Appendix 6.2.5 Aerial Photographs

Appendix 6.3 Ownership/Historical Documentation: "Title Search"

Appendix 6.4 Regulatory Documentation: "EDR Document"

Appendix 6.5 Environmental Appraisal Report of the Mound Plant (Extract)

Appendix 6.6 Radiological and Other Survey Reports

Appendix 6.6.1 Radiological

Appendix 6.6.2 Asbestos

ACM in buildings can be found in five (5) forms: sprayed or troweled on ceilings and walls (surfacing materials); insulation around pipes, ducts, boilers and tanks (pipe and boiler insulation); transite (in ground piping); and in roofing materials (shingles and roofing felts); other products such as ceiling and floor tiles and wall boards (miscellaneous materials).

Appendix 6.6.3 Lead

Lead Paint

Prior to the 1970s, lead-based paints were nearly exclusively used in U.S. industry. Because of Congressional action, paints used since 1979 are not supposed to contain lead. Therefore, it is said that surfaces painted prior to 1979 "probably contain lead" and those painted after 1979 "may contain lead."

If a building is to be demolished, the paint film is a minuscule portion of the weight of the debris and all may be discarded in a land fill. If a building is to be refurbished, the costly lead survey may be requested to be completed to the degree required by the end use.

Appendix 6.6.4 Chemical History

Appendix 6.7 Occurrence Report

Appendix 6.8 Noted Soil Contamination, Vicinity

Appendix 6.9 Structure Specific Work Plan For Building 33

**General Work Plan
for Building 33
Decontamination and
Demolition at the Mound
Site, Miamisburg, Ohio**

JANUARY 1998

REVISION 1/21/98

Table of Contents

1. General Scope of Work
2. Structure Characterization
3. Safe Shutdown
4. Isolate Utilities
5. Establish Site Access Control
6. Interior Decontamination and Demolition Activities
7. Structure Demolition

The following SM/PP Hill Project team members have reviewed and approved this Building 33 Work Plan with the listed revision for use in the field:

Gerald Maul/Project Engineer	<u>Gerald Maul</u>	<u>1-21-98</u>
Dan Stokes/IS&H	<u>Dan Stokes</u>	<u>1-21-98</u>
Amy Snyder/Radiation Protection	<u>Amy M Snyder</u>	<u>1-21-98</u>
Bill Naumann/Waste Mgmt. Coordinator	<u>Bill Naumann</u>	<u>1/21/98</u>
Billy Farmer/Environmental Compliance	<u>Billy Farmer</u>	<u>1/21/98</u>
Lynn Null/Project Superintendent	<u>Lynn Null</u>	<u>1/21/98</u>
Felix Spittler/Project Manager	<u>Felix Spittler</u>	<u>1/21/98</u>

Revision to work plan are shown as bold print

Section 2.4.2.1 Personnel Monitoring

Section 2.4.2.2 Perimeter Air Monitoring

1.0 PROJECT SCOPE

This project will remove the superstructure of Building 33 and a small segment (less than 1 sq. ft.) of floor slab currently in a storage area. The remaining slab and foundation of the building will be left in place until a later date. With the highly contaminated (radiological) soil area adjacent to the south side of the building, the below grade removal of the slab and foundation will occur in the future. This entire below grade area will be remediated as a unit after Building 38 has been dismantled and additional sub-surface characterization has been completed.

2.0 PROJECT EXECUTION

This section will address the work activities which will be executed

- 1) Perform Structure Characterization
- 2) Perform Safe Shutdown
- 3) Isolate Utilities
- 4) Establish Site Access Control
- 5) Perform Interior Decontamination and Demolition Activities
- 6) Perform Structure Demolition

2.1 STRUCTURE CHARACTERIZATION

A thorough characterization was completed on the structure to provide the following information:

Physical Characterization

A complete set of building construction drawings and construction specifications were obtained and reviewed for accuracy. The building was constructed in 1965 as a maintenance support facility and the same utilization has continued with no architectural changes. Steam, condensate, and electrical were originally supplied from SM Building, however with the D&D effort associated with SM in the mid-1980's, these utilities were disconnected from SM and supplied from the west stanchion system beside the internal SM/PP roadway.

On November 25, 1997 an engineering survey was performed on Building 33 - Old SM Area Maintenance Shop. The Structure (1344 sq. ft.) was found to be well maintained and is in good condition.

Radiological Characterization

Building 33 was surveyed during July of 1997 as part of the site characterization efforts. Direct and loose contamination surveys were conducted and dose rates were taken. Smears were counted for alpha, beta and tritium. All results were less than the applicable limits identified in MD-10019, Mound Radiological Control Manual, Table 2-2, Summary of Contamination Values (MD-10019, Table 2-2 is based on values in DOE Order 5400.5 and 10 CFR 835), except for an

area identified in the "annex". The area in the "annex" (approximately 100 sq. cm.) was determined to be a Fixed Contamination Area; i.e., direct readings greater than the limits but no loose contamination. The Fixed Contamination Area was reading 1833 dpm/100 sq. cm. direct alpha.

The highest "loose" alpha reading was 18.64 dpm/100 sq. cm. in the main area of the building; a confirmation survey was conducted and resulted in a zero reading. The highest beta reading was 6.25 dpm/100 sq. cm. in the main area of the building. The highest tritium result was 14.95 dpm/100 sq. cm. in the locker room area. All direct readings, except for the one Fixed Contamination Area, were less than 100 dpm/100 sq. cm alpha and less than 5000 dpm/100sq. cm. beta. The dose rates were less than 5 mrem/hour.

Two tritium containing exit lights are present.

Asbestos Characterization

Existing Asbestos Surveys were used as a basis from which to start the asbestos characterization. Additional Characterization was added as necessary based on structure walk through and the information gathered during the physical characterization. Listed below are the locations where Asbestos has been identified:

- Steam piping and water supply piping consists of fiberglass wrap and mudded joints: Drawing 352901-06014 identifies the location of ACM to be removed. The ACM will be removed using wrap and cut method after the utility services have been disconnected.
- Floor tile is assumed to contain asbestos. The floor tile is in good condition and will be removed as demolition debris.
- Built-up roof contains some asbestos fabric used as flashing and set in flashing cement. The roof insulation is Owens-Corning rigid fiberglass roof insulation. The roof is in good condition and will be removed as demolition debris.

Chemical Characterization

Chemical information was collected on the structure. This information was collected during the physical characterization and based on the walkthrough. The following items have been identified for removal as regulated materials:

- CFC's - An air conditioning unit is located on the mezzanine level of building 33. This system is charged with Freon. The Freon will be evacuated prior to demolition.
- MERCURY - Mercury containing limit switches are in the building thermostats and mercury vapor light fixtures are attached to the building. These units will be removed prior to demolition.

- LEAD - Sanitary vent stack through the roof utilized lead flashing and the cast iron soil pipe joints inside the building are packed with oakum and lead. This will be segregated after demolition.

Any other lead materials encountered during demolition will be segregated from construction debris for separate disposal.

2.2 SAFE SHUTDOWN

Safe Shutdown will be performed on the structure as required. Safe shutdown will consist of the following: Safety walkdown, inventory, securing the area, flushing of equipment and piping, and waste removal.

2.2.1 Safety Walkdown

Safety walkdown was performed on 11/25/97 by the project team. In addition, the fire protection engineer will perform a Fire Hazard Analysis (FHA) of the building prior to the sprinkler system being deactivated.

2.2.2 Inventory

Members from the project team walked down the building to identify and inventory equipment and supplies contained within the structure. The items to be salvaged will be taken to building 61 or utilized by other groups at the plant. These items include PPE, Wire Rope Slings, miscellaneous equipment, hand tools and materials. Three property items associated with the building could not be located.

2.3 Isolate Utilities

The isolation of utilities associated with Building 33 will be accomplished as Maintenance activities and the normal Job Safety & Hazard Analysis (JSHA) used in maintaining and modifying utility lines on site will be utilized. These utilities include:

- Domestic water- the domestic water take-off for Building 33 is between two sectional valves on the plant water loop. These valves will be closed to allow removal of the structure. In the spring (warmer temperatures), the branch line will be unearthed at the main line and the branch will be capped. The sectional valves will then be opened.
- Compressed air and argon- there are no valves from the main supply lines on the West Stanchion system, the shutoff valves are located inside the building. A shutdown of the compressed air line and argon line feeding the SM/PP complex must be arranged.
- Steam and condensate- the valves for the building are located on a stanchion bridge which crosses the internal SM/PP roadway. The valves will be closed and the lines disconnected

to allow for the structure removal and pipe bridge removal over the road. During the Spring shutdown of the steam system to the SM/PP complex, these lines will be capped at the main lines. The last branch stanchion on the west side of the road will then be removed.

- Fire water- the fire protection engineer will perform a Fire Hazard Analysis (FHA) of the building and the sprinkler system will be deactivated. The Post Indicating Valve (PIV) north of the building will be closed.
NOTE: The domestic and fire water would be shut off and drained prior to the isolation of the steam and condensate system.
- Fire alarm line- the line will be disconnected upon completion of the FHA by the fire protection engineer.
- Telephone lines - phone lines to be disconnected immediately.
- Molan lines- the molan system utilizes Building 33 for the line amplifiers. The molan line continues to Building 95 and is used for "carrying" the chiller system controls signals. This will be changed to a different system (most likely is telephone dial-up and modem). Molan branch associated with Building 33 would then be deactivated.
- Air conditioning (residential type) - the Freon will be evacuated and recovered from the system.
- Electrical power- the electrical power is from an overhead 480v/3phase line from a motor control center located in Building 36. A short outage will be required which will affect Buildings 31, 31a and 30. This will be the last isolation activity prior to structural demolition.

2.4 Establish Site Access Control

The following control zones and air monitoring controls will be established around Building 33:

2.4.1 Project Control Zones

2.4.1.1 Support Zone (SZ)

The SZ will be established around the building using orange construction fencing or barricade tape as appropriate. The zone will typically be established a distance of 75 feet from the building so that it will also delineate the demolition limits. On the west side of the building it will not be feasible to establish the 75 foot zone, due to the close proximity of the road. During interior activities, the zone on this side will be limited by the road. However when demolition of the structure begins, this road will be barricaded to ensure that the 75 foot zone is established. The

SZ boundaries will delineate the construction/demolition boundary of the project.

2.4.1.2 Contamination Reduction Zone (CRZ)

Within the limits of the SZ, a CRZ will be established primarily for the Asbestos abatement portion of the work. The CRZ will be constructed to provide an area for workers to don and doff PPE required for the EZ. This zone will be established inside the east door of the building.

2.4.1.3 Exclusion Zone (EZ)

Within the SZ, EZ's will be established for areas containing regulated materials such as radiological contaminants, asbestos, PCB's, mercury etc. EZ's will only be established in areas where removal of such regulated materials requires the worker to wear additional PPE and/or have additional training as specified in the HASP. The EZ boundaries will be determined by the project team and shall be posted with the appropriate signage to alert the workers to the hazards. All personnel entering or exiting the EZ will do so through the established Contamination Reduction Zone (CRZ).

2.4.2 Air Monitoring

Four types of air monitoring will be used as required during the D&D activities. They are:

- 1) Personnel Monitoring
- 2) Exclusion Zone perimeter monitoring
- 3) Support Zone perimeter monitoring
- 4) Site perimeter Air monitoring

2.4.2.1 Personnel Monitoring

Personnel monitoring will be performed as required by the Health and Safety Plan. The workers will be monitored to ensure that engineering controls are maintaining airborne concentrations of contaminants is below action levels for the PPE being worn. Should Breathing Zone (BZ) monitoring show elevated concentrations above action levels, the work will be stopped. Engineering controls and work practice controls will be re-evaluated, and corrective actions taken to reduce airborne levels below the action levels stated in the HASP. This will be used for Asbestos removal (**friable inside building and nonfriable during building demolition**) and for removal of fixed contamination as specified on the RWP.

2.4.2.2 Perimeter Air Monitoring

At the perimeter of the EZ, air monitoring will be performed at various locations within the building. Specific monitoring locations for these zones will be identified prior to the start of work by the project team. Action levels for this zone will be monitored at the boundary. Should the limit be exceeded, the project engineering controls will be re-evaluated and corrected. The

corrections may be in the form of adding additional controls, re-evaluation of the removal technique and equipment being used or, prewetting prior to removal. This will be used during the Asbestos removal (**friable inside building and nonfriable during building demolition**) and for removal of fixed contamination as specified on the RWP.

2.4.2.3 Support Zone Air Monitoring

At the perimeter of the SZ, air monitoring will also performed. These locations, will be analyzed should the action level at the EZ be exceeded. Should the limit be exceeded, the project engineering controls will be re-evaluated and corrected. The corrections may be in the form of adding additional dust control, re-evaluation of the removal technique and equipment being used or, prewetting prior to removal.

2.4.2.4 Site Perimeter Air Monitoring

Site perimeter air monitoring will continue at the locations currently being sampled. Additional locations may be added as determined by the project team during various project activities. Should the limit be exceeded, work will be stopped and the project engineering controls will be re-evaluated and corrected.

2.5 Perform Interior Decontamination And Demolition Activities

Upon completion of the characterization and safe shutdown activities the following will be completed:

2.5.1 Temporary Facilities and Utilities

No temporary facilities will be required for this project. Utilities will be provided to the facility by bringing in electric, water and/or gas or by using portable generators, water tanks etc.

2.5.2 Structure Utility Isolation

Prior to performing structure decontamination and/or demolition non-essential utilities will be disconnected. Where possible the lines will be disconnected at the main feed outside the structure. Utilities which are cut within the structure will be isolated using Lock Out Tag Out procedures. Workers will be informed which lines are still energized. Prior to structure demolition all utilities will be isolated by disconnecting outside of the structure at the main feed. This shall be verified prior to demolition by the superintendent.

2.5.3 Construction Hazard Abatement

SUPERSTRUCTURES: Prior to start of interior work a safety walk through will be conducted to abate the unsafe structural conditions which may be present as a result of Safe Shutdown /salvage operations. During the course of the walkdown all hazards associated with unsound

structures, platforms, stairways, and ladders, as well as unprotected openings in walls, floors, and platforms will be field identified. The Safety walkdown will be performed by the Project Engineer, Superintendent, Industrial Safety and Health representative or one of their designees. This walkdown was performed and no unsafe structural conditions were observed in Building 33.

2.5.4 General Housekeeping

Debris or equipment will be cleared from the perimeter of the building as required to provide safe access to the structure or active work areas. The cleared debris will be taken and disposed of in accordance with the Waste Management Plan.

Floor areas and walkways, within building superstructures, which are required for access to areas where other interior work activities will take place will be inspected for trip and slip hazards. All loose debris in these areas will be removed. Other trip hazards such as concrete curbs, floor projections, concrete pedestals etc. shall be identified and sprayed with florescent orange spray paint.

All excess material and equipment shall be removed from the building.

2.5.5 Regulated Waste Handling

Regulated wastes requiring special handling per the Waste Management Plan will be removed from the structure where feasible and handled in accordance with the Waste Management Plan. Areas where this waste removal is taking place will be properly posted with the appropriate hazard communication signage. As required, EZ's will be established as described above and the appropriate air monitoring will be implemented as required in the Health and Safety Plan.

2.5.6 Pre-Structure Removal Activities

1. Disconnect weather monitor and wind speed unit from roof. Deliver to project engineer.
2. Remove two tritium exit signs and store for Waste Management representative.
3. Remove florescent light tubes, ballasts, sodium vapor lights and mercury vapor lights and store for Waste Management representative.
4. Remove mercury containing thermostats from the HVAC system and store for Waste Management representative.
5. Water lines, steam and condensate lines are insulated with a combination of fiberglass

and "mudded" asbestos joints. A section of fiberglass is to be removed on each side of the "mudded" asbestos joints. The "mudded" joint areas are to be sealed in plastic back to the exposed pipe within the fiberglass area. The plastic is to be sealed to the exposed pipe. The pipes are to be cut at the sealed areas with a saw or pipecutter and the exposed ends are to be taped. NOTE: torch cutting will not be permitted with the fire sprinkler system deactivated. The sealed ACM joint is to be placed in a bag or drum marked for asbestos waste. See MD-10391, Asbestos Program Manual.

NOTE: Notification to Regional Air Pollution Control Agency is required 20 working days prior to removal.

2.6 Perform Structural Demolition

2.6.1 Dust Control

Water and/or amended water shall be used for dust control during all activities which have the potential for generating dust. Haul roads shall be watered to minimize dust on active haul routes.

2.6.2 Structure Demolition

1. Establish Support/Demolition Zone with orange construction fence, 75 feet from building perimeter. This will require temporary closure of the roadway to the west side of the building while demolition work with heavy duty equipment is in progress.
2. Establish air monitoring and setup water hoses for dust control.
3. Demolition will require excavators with bucket, shear and grapple. Front loaders may also be used for loading construction debris.
4. Demolition of the building will start on the east side of the building (metal storage attachment) and continue toward the west side of the building. Upon removing the metal storage unit on the east side, a small segment of concrete (12" x 12") must be removed due to contamination. The contaminated area is coated with paint and marked.
5. An RWP must be written.
6. The painted area will be saw cut and broken out. Cuts to be made outside the painted area (non-contaminated area). The concrete will be disposed as LSA waste.
7. The remaining block and steel structure will be removed using the heavy equipment.
8. Lead from sanitary drain fittings and the roof flashing for drain vent lines needs to be segregated and set aside for Waste Disposal representative.

9. The overhead lines and stanchions which fed the building are to be removed back to the 1st branch stanchion on the west side of the road (all lines disconnected or valves closed earlier).

10. The metal storage building south of Building 33 is also to be removed. The metal walls need to be cut above the asphalt. The asphalt beneath the storage building must not be disturbed since highly contaminated soil is present beneath the asphalt.

11. Plumber's plugs are to be placed in the exposed sanitary and storm sewer lines.

NOTE: Any unusual or unexpected materials encountered during demolition will be set aside for examination and evaluation by the project engineer and the waste coordinator.

2.6.3 Foundation Removal

No slab or foundation removal will occur at this time except for the small quantity listed in item 6 under structure removal.

2.6.4 Debris Sizing, Loading, Hauling and Disposal

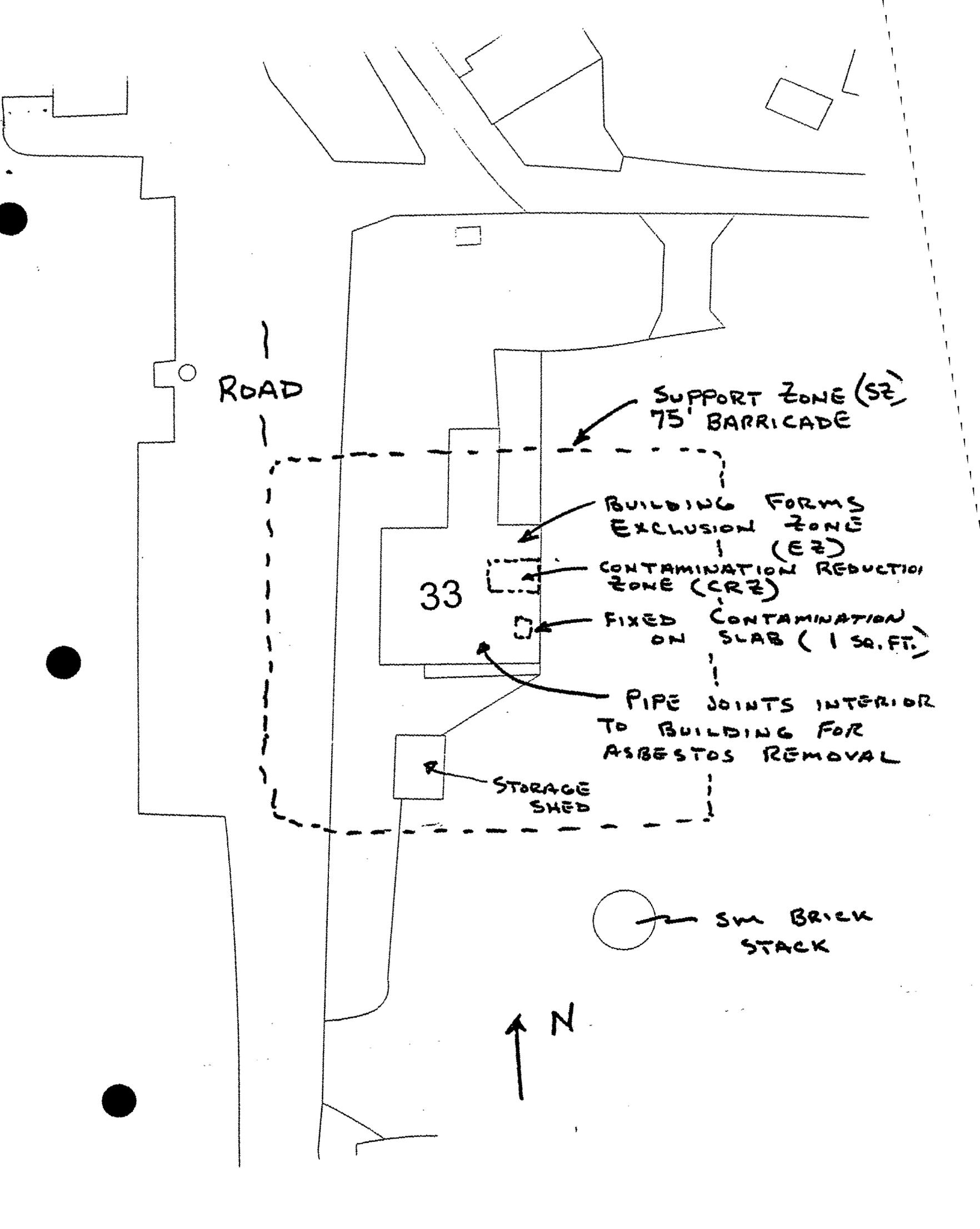
As the structure is demolished, and debris from various work areas is encountered, the debris will be segregated into the following categories:

Radioactively contaminated materials will be segregated and handled in accordance with the Waste Management Plan.

Steel for Recycle - Structural steel which has been identified as non-radioactively contaminated such as support columns, girders, crane rail, and beams will be segregated for recycle unless otherwise noted in this plan. This material will only be sized to facilitate hauling.

All other debris which is not radioactively contaminated will be sized for loading into roll-off containers for sanitary landfill in accordance with the Waste Management Plan.

Cement, concrete and other masonry debris which is not radioactively contaminated and free of large "non-masonry" type material will be separated and transported via haulers to the spoils area in accordance with the Waste Management Plan.

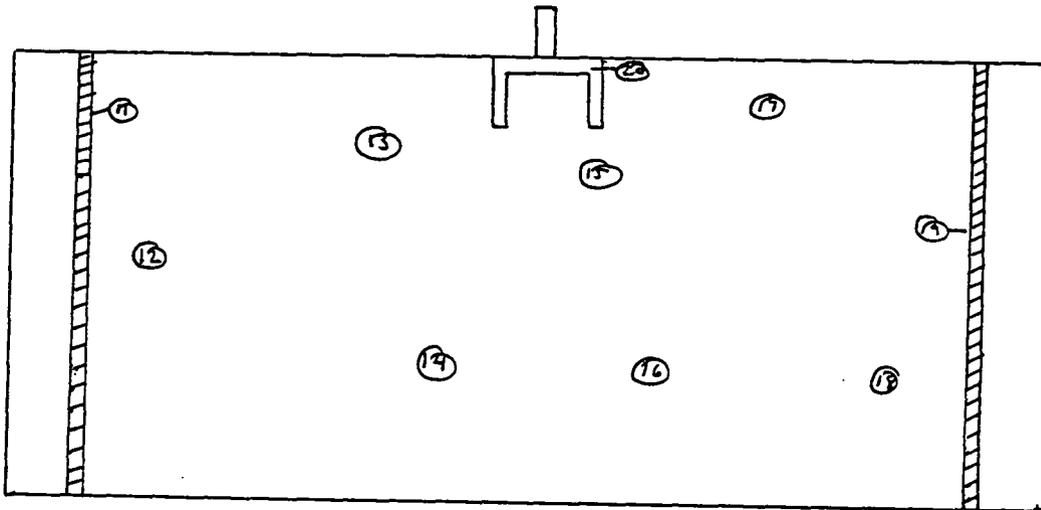
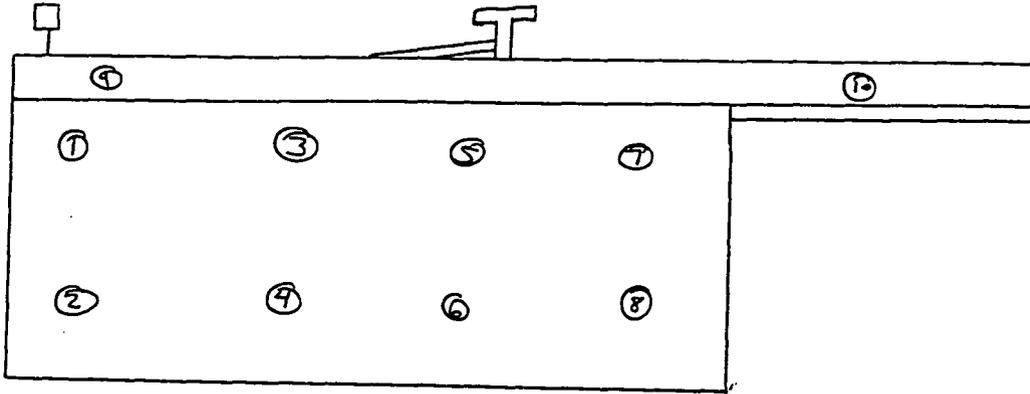


RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM)	Bldg 33 Exterior	SURVEY NO.	98-5m-035
PURPOSE:	Contamination Survey	RWP NO.	N/A
		DATE:	1-27-98
		TIME:	1315

COPY

MAP/DRAWING



LEGEND: # = mrem/hr (γ) whole body
 # E = mrem/hr ($\beta + \eta + \gamma$) extremity on contact
 Δ # = mrem/hr neutron
 \square # = air sample number
 # = swipe number
 #/ or β = direct cont. measurement in dpm/100cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
GM	5394/5414	6.9.98

	8258	Date: 1-27-98
	5681	Date: 1-28-98
HP#)	6096	Date: 1-29-98

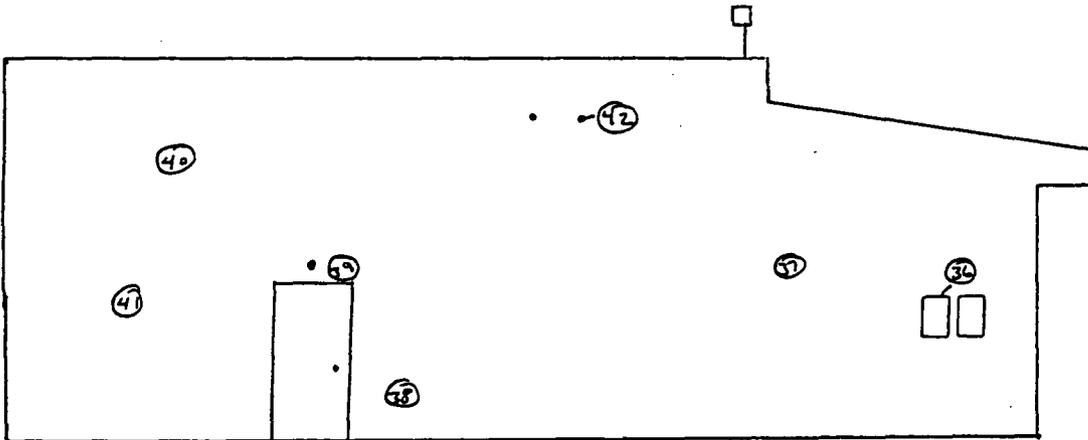
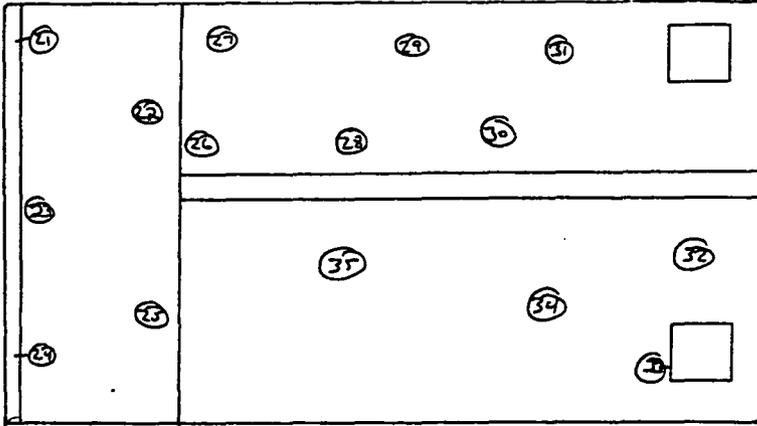
RADIOLOGICAL SURVEY DATA SHEET

30-7 E1/E50

PI
Page 3 of 10

LOCATION: (BLDG./AREA/ROOM)	Bldg 33 Exterior	SURVEY NO.	98-Sm-035
PURPOSE:	Contamination Survey	RWP NO.	N/A
<h1>COPY</h1>		DATE:	1-27-98
		TIME:	1315

MAP/DRAWING



LEGEND: # = mrem/hr (γ) whole body
E = mrem/hr ($\beta + \eta + \gamma$) extremity on contact

\triangle # = mrem/hr neutron
 \square # = air sample number

= swipe number
#/ α or #/ β = direct cont. measurement in dpm/100cm²

INSTRUMENTS USED

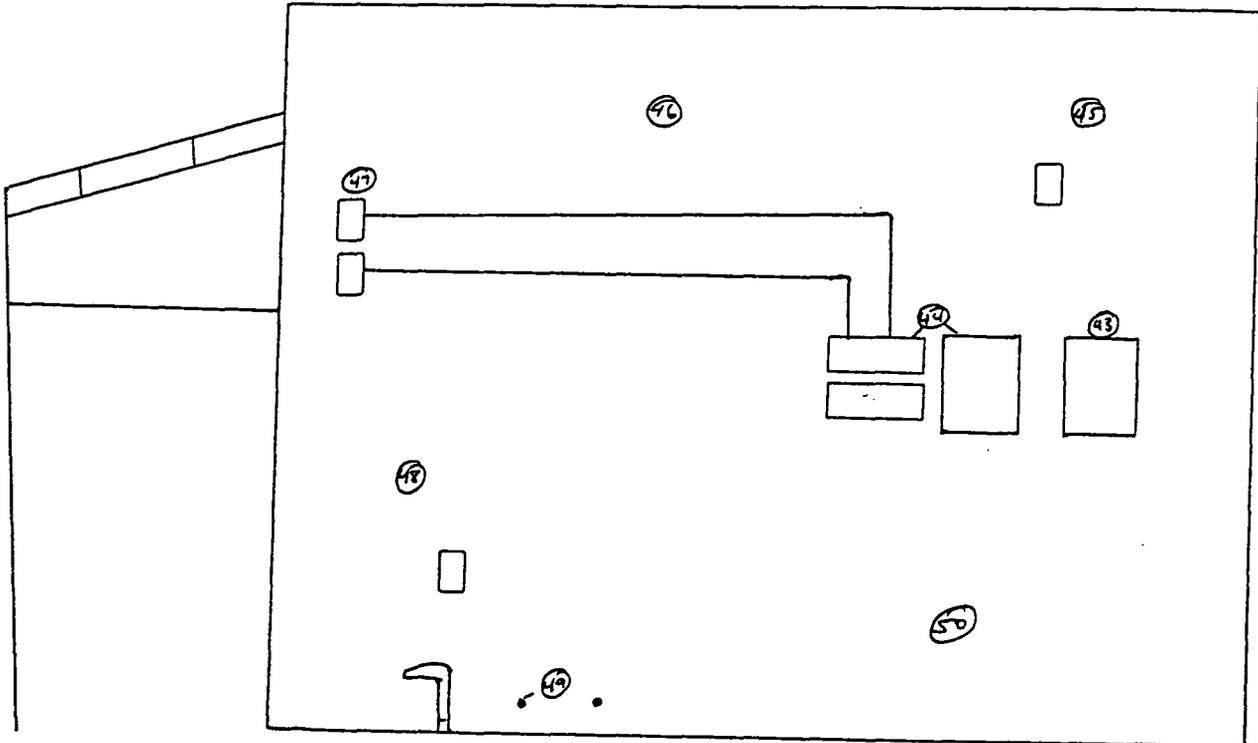
Instrument	Serial Number	Cal. Due Date
Electra	5394/5414	6.9.98

	8258	Date: 1-27-98
	5681	Date: 1-27-98
		Date:

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM)	Bldg 33 Exterior	SURVEY NO.	98-Sm-035
PURPOSE:	Contamination Survey	RWP NO.	N/A
COPY		DATE:	1-27-98
		TIME:	1315

MAP/DRAWING



LEGEND: # = mrem/hr (γ) whole body
 # E = mrem/hr ($\beta + \eta + \gamma$) extremity on contact
 \triangle # = mrem/hr neutron
 \square # = air sample number
 \odot # = swipe number
 \odot #/ α or β = direct cont. measurement in dpm/100cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
Probe	8394/5414	6-9-98

Completed by: (Signature/HP#)	Date:
<i>[Signature]</i>	1-27-98
Counted by: (Signature/HP#)	Date:
Reviewed/Approved by: (Signature/HP#)	Date:

Health Physics Counting Lab -- Wipe Analysis

Date: 1/28/98
 Counting Unit id: 1
 Data file name: C:\LBXL\UNIT1\Sme1E003.csv
 Batch Ended: 1/27/98 17:20
 Crosstalk Correction: Applied
 Cal. Due Date: 12/18/98

Alpha activity action level (DPM): 20.00
 Beta activity action level (DPM): 200.00

System Serial #: 64937

Batch ID: T 98-SM-035 ADKISON BLDG.33 EXTERIOR GR.E (50) CY .

Carrier	Sample	Alpha Activity			Beta Activity			Count time (min)	Completion Date - Time
		DPM	σ	flags	DPM	σ	flags		
124	1	0.790	1.77	<MDA	3.18	3.13	<MDA	1.50	1/27/98 15:58
14	2	2.518	2.41	<AL	0.00	2.28	<MDA	1.50	1/27/98 16:00
21	3	0.000	1.74	<MDA	0.00	1.70	<MDA	1.50	1/27/98 16:02
6	4	0.892	1.74	<MDA	0.00	1.70	<MDA	1.50	1/27/98 16:03
27	5	2.349	2.45	<MDA	7.53	4.09	<AL	1.50	1/27/98 16:05
7	6	0.892	1.74	<MDA	0.00	1.70	<MDA	1.50	1/27/98 16:07
9	7	0.000	1.74	<MDA	0.00	1.70	<MDA	1.50	1/27/98 16:08
43	8	0.000	1.74	<MDA	0.00	1.70	<MDA	1.50	1/27/98 16:10
10	9	2.383	2.44	<AL	6.02	3.80	<AL	1.50	1/27/98 16:12
5	10	0.790	1.77	<MDA	3.18	3.13	<MDA	1.50	1/27/98 16:14
70	11	0.858	1.75	<MDA	0.15	2.28	<MDA	1.50	1/27/98 16:15
71	12	0.000	1.77	<MDA	3.39	3.13	<MDA	1.50	1/27/98 16:17
11	13	0.000	1.74	<MDA	0.00	1.70	<MDA	1.50	1/27/98 16:18
12	14	0.000	1.76	<MDA	1.87	2.74	<MDA	1.50	1/27/98 16:20
143	15	0.892	1.74	<MDA	0.00	1.70	<MDA	1.50	1/27/98 16:22
22	16	0.000	1.76	<MDA	1.87	2.74	<MDA	1.50	1/27/98 16:23
52	17	0.621	1.83	<MDA	10.77	4.62	<AL	1.50	1/27/98 16:25
41	18	0.824	1.76	<MDA	1.67	2.74	<MDA	1.50	1/27/98 16:27
55	19	0.000	1.75	<MDA	0.35	2.28	<MDA	1.50	1/27/98 16:29
9	20	0.000	1.77	<MDA	3.39	3.13	<MDA	1.50	1/27/98 16:30
30	21	0.000	1.74	<MDA	0.00	1.70	<MDA	1.50	1/27/98 16:32
144	22	0.824	1.76	<MDA	1.87	2.74	<MDA	1.50	1/27/98 16:34
34	23	0.000	1.77	<MDA	3.39	3.13	<MDA	1.50	1/27/98 16:35
47	24	2.416	2.44	<AL	4.50	3.48	<AL	1.50	1/27/98 16:37
71	25	2.586	2.40	<AL	0.00	1.70	<MDA	1.50	1/27/98 16:39
5	26	2.484	2.42	<AL	1.46	2.74	<MDA	1.50	1/27/98 16:40
97	27	0.858	1.75	<MDA	0.15	2.28	<MDA	1.50	1/27/98 16:42
84	28	4.178	2.93	<AL	0.00	2.28	<MDA	1.50	1/27/98 16:44
77	29	2.450	2.43	<AL	2.98	3.13	<MDA	1.50	1/27/98 16:45
30	30	2.450	2.43	<AL	2.98	3.13	<MDA	1.50	1/27/98 16:47

COPY

missing, was not
 in sample envelope
 1-27-98 Cyr.

Health Physics Counting Lab -- Wipe Analysis

Date: 1/28/98
 Counting Unit id: 1
 Data file name: C:\LBXL\UNIT1\Sme1E003.csv
 Batch Ended: 1/27/98 17:20
 Crosstalk Correction: Applied
 Cal. Due Date: 12/18/98

Alpha activity action level (DPM): 20.00
 Beta activity action level (DPM): 200.00

System Serial #: 64937

Batch ID: T 98-SM-035 ADKISON BLDG.33 EXTERIOR GR.E (50) CY .

Carrier	Sample	Alpha Activity			Beta Activity			Count time (min)	Completion Date - Time
		DPM	σ	flags	DPM	σ	flags		
140	31	0.858	1.75	<MDA	0.15	2.28	<MDA	1.50	1/27/98 16:49
69	32	0.756	1.78	<MDA	4.70	3.48	<AL	1.50	1/27/98 16:50
114	33	0.000	1.76	<MDA	1.87	2.74	<MDA	1.50	1/27/98 16:52
37	34	2.450	2.43	<AL	2.98	3.13	<MDA	1.50	1/27/98 16:54
103	35	0.824	1.76	<MDA	1.67	2.74	<MDA	1.50	1/27/98 16:55
83	36	0.722	1.79	<MDA	6.22	3.80	<AL	1.50	1/27/98 16:57
37	37	0.925	1.74	<MDA	0.00	1.70	<MDA	1.50	1/27/98 16:59
71	38	0.000	1.74	<MDA	0.00	1.70	<MDA	1.50	1/27/98 17:00
84	39	0.000	1.76	<MDA	1.87	2.74	<MDA	1.50	1/27/98 17:02
14	40	0.000	1.76	<MDA	1.87	2.74	<MDA	1.50	1/27/98 17:04
10	41	0.000	1.74	<MDA	0.00	1.70	<MDA	1.50	1/27/98 17:05
36	42	0.756	1.78	<MDA	4.70	3.48	<AL	1.50	1/27/98 17:07
127	43	0.000	1.79	<MDA	6.42	3.80	<AL	1.50	1/27/98 17:09
70	44	2.518	2.41	<AL	0.00	2.28	<MDA	1.50	1/27/98 17:10
34	45	0.790	1.77	<MDA	3.18	3.13	<MDA	1.50	1/27/98 17:12
94	46	4.178	2.93	<AL	0.00	2.28	<MDA	1.50	1/27/98 17:14
37	47	0.000	1.75	<MDA	0.35	2.28	<MDA	1.50	1/27/98 17:15
75	48	0.000	1.74	<MDA	0.00	1.70	<MDA	1.50	1/27/98 17:17
149	49	0.000	1.74	<MDA	0.00	1.70	<MDA	1.50	1/27/98 17:19
7	50	0.000	1.75	<MDA	0.35	2.28	<MDA	1.50	1/27/98 17:20

✓

✓

✓

✓

COPY

Time: 2.00

Data Mode: DPM

Nuclide: SM-PW-UG

Quench Set: SM-PW-UG

COPY

Background Subtract: 1st Vial

	LL	UL	LCR	2S2	BKG
Region A:	0.5 - 18.6		0	0.0	7.90
Region B:	2.0 - 18.6		0	0.0	7.60
Region C:	20.0 - 2000		0	0.0	12.70

Quench Indicator: tSIE/AEC

Ext Std Terminator: Count

98-SM-035 ADKISON BLDG.33 EXTERIOR (E1-E50) CYR

Luminescence Correction On

Coincidence Time(ns): 18

Delay Before Burst(ns): Normal

Protocol Data Filename: C:\DATA\PROT1.DAT

Count Data Filename: C:\DATA\SDATA1.DAT

S#	TIME	CPMA	CPMB	CPMC	tSIE	LUM	FLAG	DPM1	2SIGMA
-1	10.00	7.90	7.60	12.70	630.92	0	B		0.00
0	2.00	386.60	368.90	12.30	597.05	0		761.42	78.61
1	2.00	0.00	0.00	4.80	315.49	9		0.00	0.00
2	2.00	3.60	3.40	2.30	500.63	0		7.69	10.95
3	2.00	1.60	1.40	11.80	540.74	0		3.32	9.77
4	2.00	3.60	3.90	18.30	375.92	0		9.24	13.14
5	2.00	0.10	0.40	2.30	434.03	0		0.23	10.15
6	2.00	0.10	0.40	0.30	391.32	0		0.25	10.92
7	2.00	0.00	0.00	4.30	356.61	0		0.00	0.00
8	2.00	6.60	6.90	0.00	567.00	0		13.29	11.46
9	2.00	0.10	0.40	5.80	317.32	0		0.29	12.62
10	2.00	3.10	2.90	1.30	547.43	0		6.38	10.34
11	2.00	0.10	0.40	10.30	523.85	0		0.21	9.24
12	2.00	2.10	1.90	8.80	566.97	0		4.23	9.70
13	2.00	0.00	0.00	2.30	561.58	0		0.00	0.00
14	2.00	0.00	0.00	6.80	580.75	0		0.00	0.00
15	2.00	0.10	0.00	0.00	560.79	0		0.20	8.88
16	2.00	0.00	0.00	5.30	325.09	0		0.00	0.00
17	2.00	0.00	0.00	5.30	385.84	0		0.00	0.00
18	2.00	3.10	3.40	1.30	568.16	0		6.23	10.10
19	2.00	0.00	0.00	0.80	589.76	0		0.00	0.00
20	2.00	1.10	1.40	0.00	571.44	0		2.20	9.22
21	2.00	0.10	0.40	0.00	565.70	0		0.20	8.83
1 MISSING TUBE(S)									
23	2.00	0.60	0.90	0.30	499.24	0		1.28	9.60
24	2.00	0.00	0.00	1.30	505.66	0		0.00	0.00
25	2.00	4.10	4.40	0.30	569.48	0		8.23	10.48
26	2.00	0.00	0.00	1.80	435.54	0		0.00	0.00
27	2.00	0.00	0.00	0.30	583.62	0		0.00	0.00
28	2.00	0.00	0.00	2.30	546.91	0		0.00	0.00
29	2.00	0.00	0.00	5.30	463.25	0		0.00	0.00
30	2.00	0.00	0.00	0.00	440.70	0		0.00	0.00
31	2.00	0.00	0.00	0.00	377.80	0		0.00	0.00
32	2.00	0.10	0.40	0.30	360.77	0		0.26	11.56
33	2.00	2.60	2.90	7.30	481.00	0		5.62	10.63
34	2.00	0.00	0.00	3.80	476.13	0		0.00	0.00
35	2.00	0.00	0.00	0.30	462.46	0		0.00	0.00

✓

COPY

S#	TIME	CPMA	CPMB	CPMC	tSIE	LUM	FLAG	DFM1	2SIGMA
36	2.00	4.60	4.90	5.30	500.96	0		9.83	11.36
37	2.00	0.00	0.00	2.30	545.30	0		0.00	0.00
38	2.00	5.10	4.40	1.80	522.65	0		10.77	11.43
39	2.00	4.10	3.90	3.80	494.13	0		8.79	11.20
40	2.00	0.00	0.00	3.80	499.47	0		0.00	0.00
41	2.00	0.00	0.00	0.00	466.26	0		0.00	0.00
42	2.00	0.00	0.00	1.80	549.34	0		0.00	0.00
43	2.00	1.10	1.40	2.80	570.95	0		2.21	9.22
44	2.00	0.00	0.00	1.80	402.63	0		0.00	0.00
45	2.00	2.10	1.90	2.80	523.53	0		4.43	10.16
46	2.00	0.00	0.00	1.30	484.33	0		0.00	0.00
47	2.00	0.10	0.40	3.80	523.08	0		0.21	9.24
48	2.00	0.00	0.00	0.80	586.25	0		0.00	0.00
49	2.00	0.10	0.40	0.00	544.80	0		0.21	9.04
50	2.00	2.10	2.40	0.00	547.48	0		4.32	9.92

✓

Portable Instrument Performance Test Record for Dose Rate Instrument Source Checks at the Calibration Lab

Inst. Manufacturer:	Calibration Date:	Test Source:
Inst. Model:	Calibration Due Date:	Source Serial #
Inst. Serial #:	Instrument Location:	Isotope(s)/Activity:

		Source Position								
		1	2	3	4	5	6	7		
Range Switch Setting									Test Results	
Reference Readings:										
Acceptable Range ($\pm 20\%$):										
Test Date:	Test Time:								SAT/ UNSAT	RCT Initials

Attachment 4

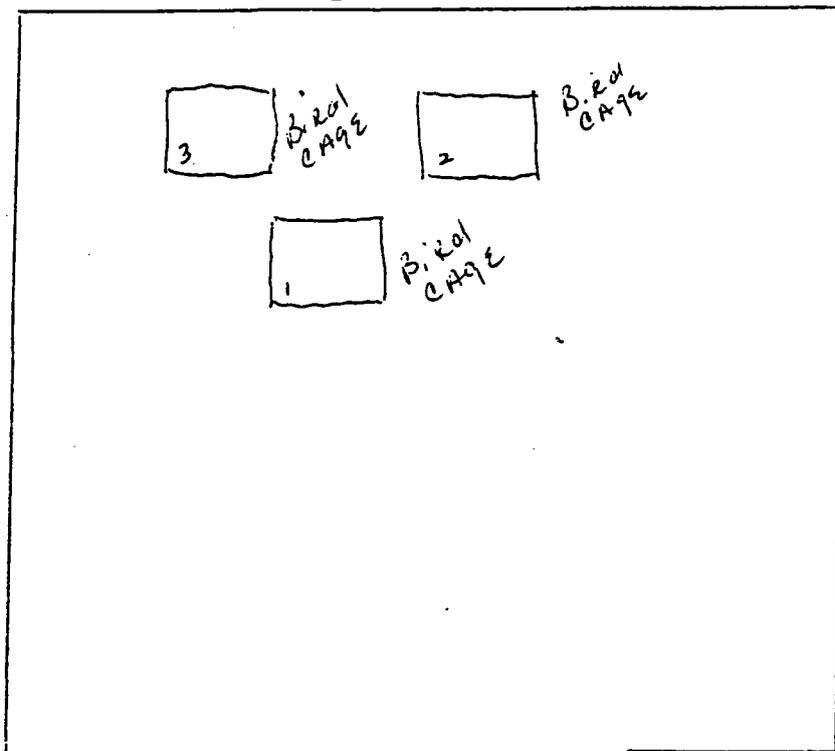
RADIOLOGICAL SURVEY DATA SHEET

COPY

LOCATION: (BLDG./AREA/ROOM) <i>Shed south of Bldg 33</i>	SURVEY NO. <i>97-GA-375</i>
PURPOSE: <i>for Release of RMA# Verify no contamination</i>	RWP NO. <i>NT</i>
	DATE: <i>08-01-97</i>
	TIME: <i>AM</i>

MAP/DRAWING

Shed



Roll up Door

100 ppm 08-01-97

*Direct Readings $\alpha < 500$ dpm/100cm²
 $\beta < 5000$ dpm/100cm²*

LEGEND: # = mrem/hr (γ) whole body
 # E = mrem/hr ($\beta + \gamma$) extremity on contact

Δ # = 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
<i>NIE/Electra</i>	<i>5435/5436</i>	<i>09-06-97</i>
<i>NIE</i>		

<i>6016</i>	Date: <i>08-01-97</i>
<i>6016</i>	Date: <i>08-01-97</i>
<i>6031</i>	Date: <i>8-4-97</i>

