3005-0301160004

MOUND

Environmental Restoration Program

OhioEPA

MOUND PLANT
Closeout Report
Building 85

Final
March 2002

Closeout Report

Building 85

DOE Mound Plant
Miamisburg, Ohio 45343

Prepared for:

United States Department of Energy
Miamisburg Environmental Management Project
P.O. Box 3020
Miamisburg, Ohio 45343-3020

Prepared by:

BWXT of Ohio, Inc.

TABLE OF CONTENTS

Section | Page

1.0 Purpose 1
2.0 Background 1
3.0 Actions Taken 1
4.0 Problems Encountered 2
5.0 Resources Committed 2
6.0 References 3

Tables

Table 1: Materials Disposition 2
Table 2: Personnel Organization for the Demolition 2
Table 3: Total Cost 3

Appendices

Appendix A Figures
Figure 1: Location of Building 85
Figure 2: Building 85 and Vicinity
Figure 3: Building 85 - Before, During, and After Demolition

Appendix B Work Package

Appendix C Radiological Summary

1.0 Purpose

This is the final report documenting completion of the demolition of Building 85 located at the DOE Mound Site, as shown in Figures 1 and 2 (Appendix A). This project was defined in the Work Package for Demolition of Building 85 (Reference 1), which is included in Appendix B. The scope of work relating to this building is considered complete.

2.0 Background

Building 85 was a 3,160 square-foot, single-story, highly reinforced concrete structure, built to withstand high explosive detonations. Built in 1989, the building was originally designed and constructed as a Class I explosive powder processing facility, but was never put into operation.

Building 85 had a total of eight rooms: five explosives processing cells, a control room, a storage room, and an equipment room. Each of the rooms were accessed through individual outside entries; none were connected by interior doors. Wall and ceiling thickness varied from 1 foot to 3.5 feet depending on the room's intended use. The concrete walls and ceiling were reinforced with massive amounts of steel rods, with rod diameters up to 1-1/4 inches. Outside walls were faced with metal to act as blast walls. Floor thickness varied from six inches to one foot, with two to three-foot footers.

3.0 Actions Taken

Building 85 was radiologically surveyed in December 2000 and in July 2001. All radiological sampling results were below surface release criteria (direct readings <100 dpm/100cm^2 for alpha, and <5000 dpm/100cm^2 for beta). All dose rate readings and smear readings were non-detects (Appendix C).

The demolition of Building 85 was accomplished as a non-CERCLA project. Demolition commenced on August 23, 2001 and was completed on December 20, 2001. Photographs taken before, during, and after demolition are provided in Figure 3.

All preparation and demolition activities were performed in accordance with a detailed Work Package (Appendix B) for safe shutdown of utilities, site access control, structure demolition, and debris removal. The pad and foundation were left in place as explained in Section 4.0, Problems Encountered. There were no Potential Release Sites (PRSs) associated directly with Building 85. The only PRS in the immediate vicinity (PRS 71) is an underground tank that was never used.

Post-demolition soil samples were radiological surveyed in December 2001. All soil analysis results were below screening levels (SLs=10^{-6} Risk-Based Guideline Value + background).

Demolition material, waste, and debris were dispositioned as noted in Table 1.

Table 1 - Materials Disposition

Material	Quantity	Method	Location
Construction Debris (concrete/masonry)	25,000 cubic feet	Landfill	Koogler
Construction Debris (metals)	9,000 cubic feet	Recycled	Franklin Iron & Metal
Construction Debris (mixed/miscellaneous)	3,000 cubic feet	Landfill	Koogler
Asbestos	0 cubic feet	N/A	N/A
Liquid Waste	0 gallons	N/A	N/A

N/A – not applicable

4.0 Problems Encountered

Building 85 was successfully demolished per the Work Package with one approved modification. The Work Package initially planned for the removal of the concrete pad, foundation, and footers to a level of three feet below grade. Due to the difficulty encountered in demolishing the building caused by the extensive rebar used during construction, BWXTO petitioned the DOE and EPA to be allowed to deviate from the Work Package by leaving the pad, foundation, and footers in place. DOE and EPA approved the request with the additional requirements that (1) the pad location be marked on the final site drawings, and (2) the pad be covered with dirt and reseeded (Appendix B). The project was completed per the Work Package with the above-mentioned modification.

5.0 Resources Committed

Table 2 lists the personnel organization for the demolition. Table 3 provides a summary of the total cost.

Table 2 - Personnel Organization for the Demolition

Agencies or Parties Involved	Contact	Description of Participation
US EPA HSRM-6J 77 W. Jackson Chicago, IL 60604 312-886-5787	Tim Fischer	Federal agency responsible for Mound Plant oversight.
Ohio EPA 410 E. Fifth Street Dayton, OH 45402-2911 937-285-6468	Brian Nickel	State agency responsible for Mound Plant oversight.

Table 2 - Personnel Organization for the Demolition

Agencies or Parties Involved	Contact	Description of Participation
DOE/MEMP P.O. Box 66 1 Mound Road Miamisburg, OH 45343-0066 937-865-3620	Ronald Church / Frank Schmaltz	DOE/MEMP Project Manager responsible for project oversight and success.
BWXT of Ohio, Inc. Main Hill Project P.O. Box 3030 1 Mound Road Miamisburg, OH 45343-3030 937-865-4071	Budd Thompson	Provided the DOE/MEMP Project Manager with technical assistance, administrative support, sampling, decontamination, photo and site documentation, site safety, and report preparation.
BWXT of Ohio, Inc. General Superintendent and Equipment Manager P.O. Box 3030 1 Mound Road Miamisburg, OH 45343-3030 937-865-4071	Budd Thompson	Provided the personnel and equipment necessary for the demolition.

Table 3 - Total Cost

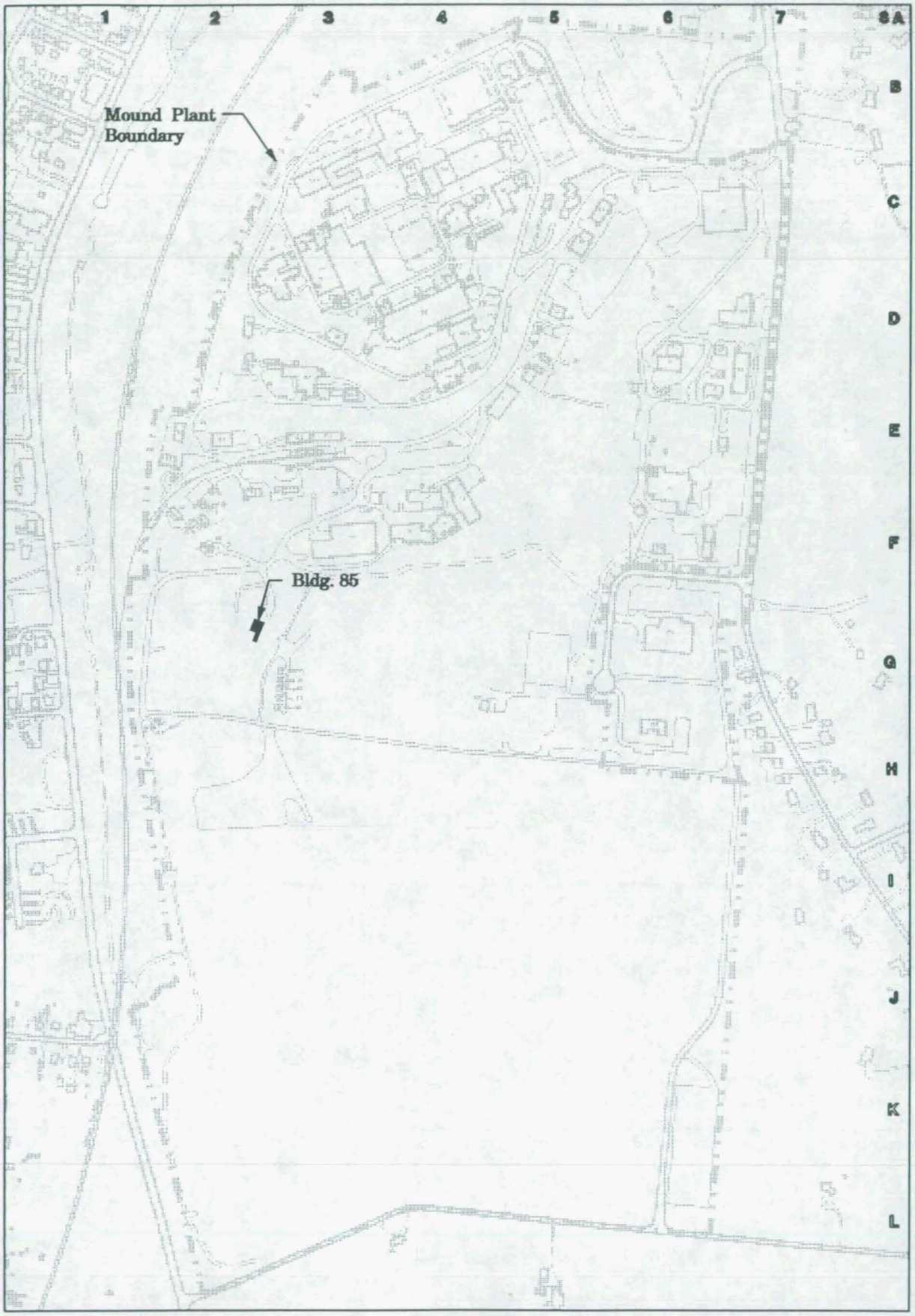
Summary Activity	Cost
Work Planning	$16,395
Safe Shutdown	$40,153
Characterization	$4,749
Decontamination and Demolition	$87,773
Hauling and Disposal	$15,315
Historical Costs	$183
Total Cost	**$164,568**

6.0 References

Reference 1 Test Fire Valley Work Package No. TV8501 Demolition of Building 85 (copy provided in Appendix B)

Appendix A

Figures



Legend

- Structures
- Paved roadway
- Unpaved roadway
- Railroad
- Water course
- Fence
- Mound Plant boundary
- Contour line

0 100 200 400 600 800 1000
Scale In Feet

	01/28/02	ISSUE FOR GENERAL USE	SSP			
GS	DATE	REVISION	BY	CHKR	ENG	M

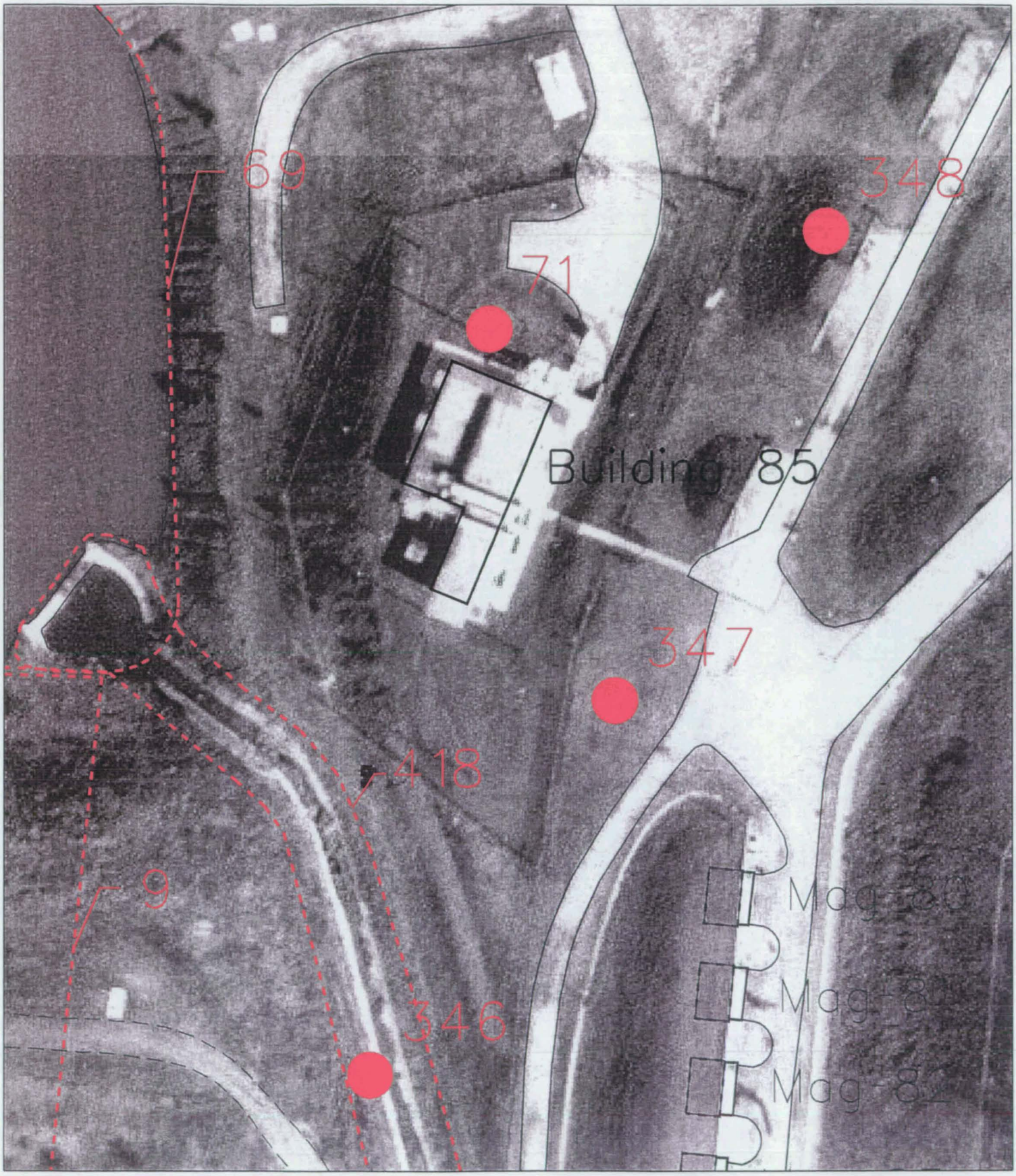
MOUND
Environmental Restoration Geographic Information System

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 A
PART CLASSIFICATION
( ) TITLE CLASSIFICATION

Figure 1
Location of Building 85

DRAWING CLASSIFICATION: UNCLASSIFIED
SIZE: D
DRAWING NUMBER: gen_site_plan.dgn
JOB NUMBER:
DWG TYPE: SITE
PROJ:
CASE:
SCALE: Graphic
SHEET 1 OF
STATUS: MO-REL-09/14/99
ORIGIN: MSTATION / J

gen_site_plan.dgn



PRS Point

PRS Area

PRS Line

ISS	DATE	REVISION	BY	CHKR	ENG	UPREC	APVD	M
	03/06/02		SSF					

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
ISSUE																				
SHEET	1	2	3	4	5	6														
ISSUE	*																			

PART CLASSIFICATION

Figure 2
Building 85
and Vicinity

DRAWING CLASSIFICATION: UNCLASSIFIED

SIZE | DRAWING NUMBER: vicinity.dgn | JOB NUMBER

DWG TYPE: STE | PRNG: ER-GIS | CAGEC | SCALE | SHEET 1 OF

STATUS: MD-REL-**/**/** | ORIGIN: MSTATION / J

Figure 3:
Building 85

Before, During, and After Demolition

Appendix B

Work Package

Department of Energy

Ohio Field Office
Miamisburg Environmental Management Project
P.O. Box 66
Miamisburg, Ohio 45343-0066

✓ File - Bldg -85
Copy To: Bob R
FYI

Mr. Peyton S. Baker
Site Manager
Babcock and Wilcox Technologies
of Ohio, Inc.
P. O. Box 3030
Miamisburg, OH 45343-3000

MB-0025-02

Dear Mr. Baker:

Building 85 Pad may be left in place as long as it is marked on the final site drawings, covered with dirt and reseeded. See attached meeting record.

Please implement this change to your remediation plans. Please contact Oba Vincent at 3278, if you have any questions concerning this guidance.

Sincerely,

Richard B. Provencher
Director

Attachment

cc w/attachment:
D. Franklin, DOE-MEMP
R. Rothman, DOE-MEMP
R. Church, DOE-MEMP
B. Thompson, BWXTO

Memo for the Record
Building 85 Slab

During the "small" reuse meeting in OSW room 213 on 28 September 2001, a discussion was held concerning the slab under building 85. Mike Grauwelman, MMCIC, John Krueger, BWXTO, Oba Vincent and Rick Provencher from MEMP were in attendance. During this meeting, the issue of leaving the building 85 pad was brought up and Mike did not object to the concept of leaving it due to its thickness and the fact that the area was not planned to be reutilized. Mike was concerned that the area would be graded and covered to a depth which would allow grass to grow, that the stairs would be removed with the building and that the pad location would be marked on the site map.

Oba L. Vincent
MEMP, Deputy Director
17 Oct 01

JOB SPECIFIC WORK PLAN

Title:	BUILDING 85 DEMOLITION		
Work Package No. (JSWP or MSR)	SM-01-02	If MSR Indicate Low, Moderate, or High Hazard Moderate	Rev. 0

Job Specific Work Plan

1. WORK SCOPE

1.1. Introduction

1.1.1. This Job Specific Work Package (JSWP) follows the outline of MD-10502, General Work Plan for Building Decontamination or Decontamination and Transition at the Mound Site, Miamisburg, Ohio. Included are a General Work Planning Checklist and a Job Safety & Hazard Analysis (JSHA). A Pre-Job Briefing Form (ML-9657) and the Project Manager's Authorization to Commence Work signature will be completed to document that the workers were briefed on the activities covered in this JSWP before work begins.

1.2. Description

1.2.1. The purpose of this effort is to demolish Building 85, remove the debris, and restore the area. This will be accomplished by confirming that all utilities have been isolated, removing miscellaneous equipment, establishing a construction zone, and using heavy duty equipment to demolish the building. After this the concrete slabs, foundations, and footers will be demolished/removed down to 3-feet below grade. The last step will be to remove the debris and grade/reclaim the area. Concrete waste and miscellaneous construction debris will be placed in a roll-off for disposal at a landfill. (Note: Concrete debris may be sent to the on-site concrete crusher if it can be size reduced and rebar removed so as to be acceptable to the crusher)

1.3. Site Information

1.3.1. Building 85, Powder Blending and Processing, is a one story, 3,160-square-foot reinforced concrete structure with a roof of reinforced concrete. Building 85 was constructed in 1989. The building was built as a Class I powder processing facility, with a high bay area, 3 ½ foot thick reinforced concrete walls and ceilings, and explosive-proof electrical system. The building has underground electrical service of 480V power and underground water and sanitary services. No underground storm drains are associated with the building. No fume hoods or fuel-burning units are within the building. Due to the intended processes, the building is equipped with a central air collection system, with a high-efficiency particulate air (HEPA) filter.

1.3.2. The building has never been used or occupied since it was constructed.

1.3.3. There are no D&D Potential Release Sites (PRSs) associated with this building. The only CERCLA PRS (PRS 71) is an underground tank that was never used. This PRS was binned as No Further Action (NFA) by the DOE/EPA. Building 85 will be demolished as a Non-CERCLA project.

2. DRAWINGS AND REFERENCES

2.1. MD-10502 Issue 5, General Work Plan for D&D
2.2. PP-1059A, Issue 4, "Integrated Work Control Program"
2.3. PP-1059B, Issue 5, "Analysis and Control of Hazards"
2.4. MD-50000, Issue 8, "Maintenance Work Order and Material Processing"

3. INITIAL CONDITIONS AND PREREQUISITES

3.1. LESSONS LEARNED

3.1.1. A search of the Lessons Learned Database found the following relevant item:

Catastrophic Failure of 15,000 Pound Demolition Shear
See Appendix F for the full report. The result of the Lessons Learned is that the shear should not be used as a hammer and the shear should be inspected periodically for cracks and signs of failure.

3.2. **INDUSTRIAL SAFETY AND HEALTH REQUIREMENTS**

3.2.1. A Job Specific Hazards Analysis (JSHA) is required. The construction zone, as defined in Appendix A, identifies construction boundaries, evacuation routes, the take shelter area, and the assembly area. Debris will be cleared from the immediate demolition zone as required to promote safe equipment activity.

3.2.2. Underground electrical utilities will be identified and field located by scanning the area prior to any activities beginning. Lock-out-tag-out procedures will be followed and electrical energy detection will be performed prior to any electrical demolition activities.

3.2.3. An excavation/soil disturbance permit will be required prior to demolition activities.

3.2.4. Monitoring for crystalline silica (concrete dust) will be performed periodically as determined by previous monitoring results and site Safety and Health. Site Safety and Health will be notified before the demolition of concrete begins.

3.2.5. Whole body vibration will be administratively controlled and by reviewing topic at Pre-job meeting.

3.2.6. A Hot Work Permit will be required if a torch is used for cutting and possibly for generator operation. Coordinate with site Safety and Health.

3.2.7. Monitoring of noise levels will be performed as determined by previous monitoring results and site Safety and Health.

3.2.8. Due to the many high weeds in the area surrounding Building 85 and the likely presence of chiggers and ticks, the area will be mowed prior to work beginning. If necessary the area will be sprayed with insecticide and insect repellant will be made available to the workers.

3.2.9. A Confined Space Entry Permit will be required for entry into manholes and sumps.

4. RADIATION PROTECTION REQUIREMENTS

4.1. The building was evaluated using the MARSSIM screening protocol. Based on process history and recent radiological surveys, minimal additional surveys were performed including the water in the associated vacuum unit and sump. No readings were above action levels. Therefore, no roll-off or debris pile surveys will be required during demolition of the building. However, during removal of the pad and foundation, radiological surveys will be performed in association with the Excavation/Soil Disturbance Permit and as recommended in the MARSSIM Historical Site Assessment.

5. ENVIRONMENTAL COMPLIANCE REQUIREMENTS

5.1. **CERCLA**

5.1.1. Building 85 demolition will be accomplished as non-CERCLA project.

5.2. **National Emissions Standards for Hazardous Air Pollutants (NESHAPs)**

5.2.1. Per Environmental Practice 2.2, if buildings to be demolished have a surface area less than 72 million square feet, direct readings below MDA, and wipe results below applicable action levels,

additional dose calculations are not necessary. Building 85's surface area is 14,000 square feet and direct readings and wipes were below applicable thresholds. No further calculations are necessary.

5.3. **PRSs associated with Building 85**

5.3.1. PRS 71 Building 85 Waste Solvent Shed was binned No Further Action (NFA) on October 19, 1995.

5.4. **Notification**

5.4.1. A Notification of Demolition and Renovation form must be filed with the Regional Air Pollution Control Agency (RAPCA) at least 10 business days before planned building demolition. There was no asbestos to be abated.

5.5. **Restriction of emission of fugitive dust (OAC 3745-17-08)**

Reasonably available control measures must be employed to prevent fugitive dust from becoming airborne. Visual particulate emissions from any fugitive dust source shall not exceed 20% opacity as a three-minute average. Appropriate activities would include:

5.5.1. Water misting or other suitable dust suppression will be used to minimize fugitive dust from demolition activities.

5.5.2. Periodic application of water or other suitable dust suppression to adjacent roadways and parking lots will be used to prevent dust from becoming airborne.

5.5.3. Trucks hauling debris to the on-site spoils area should be covered while in transit.

5.5.4. If present, segregate any lead pipe conduits from concrete debris going to the spoils area in order to avoid producing lead dust and particulate.

5.6. **Clean Water Act**

5.6.1. Water source permitting requirements do not apply, as there is no significant new or increased discharge related to this project. All inlets to the sanitary and storm systems will be plugged to prevent accidental discharges to the wastewater treatment plant or the environment.

5.7. **Storm Water Pollution Prevention**

The site's National Pollutant Discharge Elimination System (NPDES) Permit No. 1IO00005*HD requires the use of control measures to ensure the quality of storm water leaving the site. These control measures and practices are outlined in the sites' Storm Water Pollution Prevention Plan OPA980099. Appropriate activities would include:

5.7.1. Redirect flow patterns around the project site to prevent storm water run-on.

5.7.2. Provide inlet protection to the storm sewer system by covering catch basins immediately adjacent to the project site and plugging roof drains at ground level until which time the underground pipes can be appropriately abandoned.

5.7.3. Exercise good housekeeping techniques by segregating materials in a timely manner, including the prompt disposal of wastes, and sweeping debris from the streets to prevent storm water pollution.

5.7.4. Water that has collected in an open excavation or in sumps, must be monitored prior to discharging to the sanitary or storm sewer systems. Contact Environmental Monitoring at extension 4188 for monitoring and review of these non-routine discharges.

5.8. **National Historic Preservation Act (NHPA)**

5.8.1. Building 85 is not listed as a historic structure with the Ohio Historic Preservation Office (OHPO No mitigative documentation package is required. However, if any items or artifacts are discovered as this project progresses, the Cultural Resource Representative will be notified at extension 3691. Work will be suspended until which time the items or artifacts have been recovered.

5.9. **Safe Drinking Water Act**

5.9.1. The potable water supply to Building 85 was turned-off and was capped to protect the integrity of the water supply to that portion of the plant site.

5.10. **Emergency Spill Response**

5.10.1. Building 85 has been disconnected from all utility services and the lines drained. There should be no regulated component that will be encountered. In the event of a major spill of any regulated substances, or the rupture of a non-isolated utility line (fire, domestic water, ethylene glycol) call 911 if using an on-site phone or 937-865-4040 if using a cell or other outside phone to report it. All spills must be contained onsite and should be prevented from entering the storm drains if possible. If spills enter the storm drains, all effluent must be retained onsite at the overflow pond.

6. CHEMICAL AND WASTE MANAGEMENT REQUIREMENTS

6.1. All waste will be managed in accordance with the Waste Management Plan for the Mound Exit Project, MD-10499. The Waste Coordinator will ensure that this is accomplished and summarize in a Job Specific Waste Management Plan, which is included below.

6.2. Due to the extensive amount of re-bar used to construct Building 85 it may not practical or cost effective to dispose of the concrete rubble on site utilizing the concrete crusher. If unusable, the concrete will be taken to a construction debris landfill.

6.3. Fluorescent tubes and non-PCB containing ballasts will be left in place, and will be demolished with the building. However, if PCB containing ballasts are encountered, they will be removed and disposed through Waste Management. Note: If fluorescent tube breakage would present a safety hazard while workers are in the building, they may be removed separately. It has been determined that the seals on the explosion-proof lights are not asbestos containing. Therefore, they will not be removed, and will be demolished with the building. Note: If a suspect seal is encountered, contact site Safety and Health for guidance.

7. QUALITY ASSURANCE REQUIREMENTS

7.1. The Quality Level for this project is 2 due to the hazards of demolition. This work plan and the accompanying JSHA fulfill the requirements for QA. See Appendix B.

8. EMERGENCY PREPAREDNESS

8.1. Site Notification Procedures

8.1.1. Use **911** for all emergency services on-site. This is the first response for any emergency, spill, or release. If using a cell phone, dial **865-4040**. This number will ring into the plant 911 system.

8.1.2. Any injury, no matter how minor, shall be reported immediately to the Medical Department for evaluation and treatment. The injured employee shall report any injury to the supervisor in charge or designee.

8.1.3. Employees working will be notified of emergency or abnormal conditions by the plant paging system or project two-way radios. Additionally, unique sheltering and evacuation signals are available should site-wide protective actions be necessary.

8.2. Evacuation Route/Assembly Areas

8.2.1. The assembly area is northeast of Building 85 on the road that accesses the site. See map per Appendix E.

8.3. Take Shelter Area

8.3.1. The take shelter area is in the center of Building 19. See map per Appendix E.

9. PRE-DEMOLITION SEQUENCE OF WORK

9.1. SITE CHARACTERIZATION

9.1.1. Physical Characterization

9.1.1.1. A structural engineering survey was performed and documented for Building 85 to meet the requirements of OSHA 29 CFR 1926.850(a). A walkdown of the structure was used to identify potential hazards as listed in 29 CFR 1926.850(e) through (i). It has been determined the building does not meet the criteria that cause the structure to be historically significant.

9.1.2. Radiological Characterization

9.1.2.1. Based on the radiological characterization summaries that have been performed for Building 85, annual surveys, and process history, there are no radiological concerns and a Radiation Work Permit will not be required.

9.1.3. Chemical and Metals Characterization

9.1.3.1. To the best of the Project Team's knowledge, no chemicals were used in the building since it never went operational. All Freon has been previously removed and recycled.

9.1.4. Asbestos Characterization

9.1.4.1. No asbestos-containing material was identified in connection with Building 85.

9.2. SITE PREPARATION

9.2.1. Site Access Control

9.2.1.1. The demolition area will be identified utilizing the existing fence around the building, or at the discretion of the project superintendent, marked off with barricade tape/fencing.

9.2.2. Clearing and Grubbing

9.2.2.1. The weeds will be mowed in the area around the building and insecticide will be sprayed if appropriate. Coordinate with site Safety and Health and Environmental Compliance.

HAZARD	MITIGATION
Insect bites Exposure to insecticide	Mow area around building. If appropriate, wear long pants and long sleeve shirt. tape arm and leg opening, if desired. Follow requirements of MD-10286 D2. Use licensed personnel. Follow label directions and MSDS.

9.2.3. **Temporary Utilities**

9.2.3.1. The only temporary utility that may be required is electrical. A portable generator would be utilized. A Hot Work Permit may be required to operate the generator. Coordinate with site Safety and Health.

9.2.4. **Temporary Facilities**

9.2.4.1. This project may use the existing Test Fire Valley project trailer and the new shower/restroom trailer. Also, a portable toilet has been located at the job site.

9.2.5. **Temporary Communications**

9.2.5.1. Temporary communications are required (cell phone, radios) due to the difficulty of hearing plant announcements and emergency notifications. At the job site, plant announcements and emergency notifications can be heard on the Plant radio channel.

9.2.6. **Staging Areas**

9.2.6.1. The project site is of sufficient size to also be used as a staging area.

9.3. **PRELIMINARY ACTIVITIES**

9.3.1. Domestic water, fire water, electrical, and communications lines have been disconnected under separate MSRs, except for the fire alarm system which will be disconnected approximately two days prior to start of demolition after concurrence by the Fire department.. These include:

- MSR 26690 for electrical isolation (fire alarm disconnection will be done under this MSR)
- MSR 26573 for domestic and fire water isolation

9.3.2. The power cables, which were disconnected under MSR 26690, will be removed from the duct bank under this work plan. Confirm the cables feeding Building 85 have been deenergized and disconnected from the CTF substation. After obtaining a confined space entry permit and confirming rad survey data, enter the manhole closest to 85 and cut the cables feeding 85. Then enter the manhole located midway between Building 87 (CTF sub) and building 85. Cut the cables in the manhole and pull out the section of cable going to CTF and the section going to 85. Have the cables rad surveyed after they have been removed from the manhole.

HAZARD	MITIGATION
Asphyxiation hazard	Obtain Confined Space Entry permit and follow requirements per MD10286 M-11.

9.3.3. After the cables have been removed from the ductbank, remove the manhole covers and collars from the electric and telephone manholes adjacent to 85. Backfill the manholes with crushed rock to facilitate movement of heavy duty equipment over the area.

9.3.4. An excavation/soil disturbance permit will be required prior to excavation activities.

9.3.5. The only above ground utilities in the immediate area are lights on seven poles, which will be removed, and lightning protection strung between two poles, which also will be removed.

9.3.6. Check equipment for printed circuit boards. If found dispose through Waste Management as lead containing waste.

9.3.7. Check building for mercury containing switches. If found, dispose through Waste Management.

9.3.8. Confirm all Freon has been previously removed and recycled from HVAC units inside and outside of the building.

9.3.9. Fluorescent tubes, ballasts, and explosion proof lights will remain in place. If PCB containing ballasts are encountered, remove and dispose through Waste Management. Note: Contact site Safety and Health with any concerns about fluorescent tubes, ballast, or explosion proof fixture seals.

HAZARD	MITIGATION
Fall hazard	Follow requirements of MD-10286 M-14

9.3.10. Confirm sample results, and pump water from cistern/sump and dispose to the storm system.

10. BUILDING DEMOLITION SEQUENCE OF WORK

10.1. A work zone boundary using the existing fence or with barricade tape or fencing as directed by the Project Superintendent. Proper signage will be placed at all access points to the site. This zone is not to be entered by anyone not directly involved with the demolition unless they have contacted the Project Superintendent first.

Do not begin any demolition activities until the following items are completed.

10.2. All new workers assigned to this project have receive a pre-job briefing prior to performing work and a walkdown of the project area.

10.3. The *Pre-Job Column of the General Work Plan Checklist* is complete.

10.4. The *Pre-Job Briefing Record* is complete and signed.

10.5. The *Job Specific Hazards Analysis (JSHA) has been reviewed*

NOTE: All workers have Stop Work Authority. Situations where stop work authority is to be exercised are:

- To stop unsafe work.
- To stop unauthorized work, for example, work outside the scope of this work package.

10.3. Confirm electric/communication has been disconnected to Building 85.

10.4. Confirm all utilities have been isolated and blanked-off.

HAZARD	MITIGATION
Struck by flying debris Struck by moving equipment Noise Hazard	Establish construction boundary Wear Hard Hat Safety Glasses, Safety Shoes, Reflective Vest inside construction area Maintain the following distances from operating equipment: Shear – 75 feet Hoe Ram – 50 feet Other heavy duty equipment – 30 feet Bobcat – 15 feet Wear hearing protection while running heavy duty equipment Follow the requirements of MD-10286 D9

Burns from torch cutting	Obtain and follow Hot Work permit per MD-10286 O2
Heat/Cold Stress	Follow the requirements of MD-10286 D13/D16

10.5. Disconnect and remove seven (7) light poles from around Building 85. Excess the light fixtures and salvage the poles if practical. Note: Have rad protection survey the portion of the pole that was in the ground.

10.6. Disconnect and remove two (2) lightning protection poles. Excess lightning protection hardware and salvage the poles if practical. . Note: Have rad protection survey the portion of the pole that was in the ground.

10.7. Remove blast walls and dispose in a roll-off.

10.8. Remove the drying oven from Cell #4 and stage for pick-up by Oak Ridge Recyclers. Contact Sherrie Neff at x4406 when it is ready for pick-up.

10.9. Remove ventilation equipment from roof utilizing Shear/Grapple and dispose in a roll-off.

10.10. Begin concrete demolition of Building 85 by using a hoe ram along with shear and grapple as required. Working the top of the building and exterior walls demolish and size for disposal. Rebar will require sizing with the shear. Torch cut the rebar as required to support demolition and downsizing. A Hot Work Permit is required.

10.11. As the interior walls become accessible, continue process as identified in item #12.

10.12. Continue until the building is completely razed. Note: The progressions of the building demolition will ultimately be determined in the field.

10.13. Begin process of waste/rubble removal and transfer to the appropriate waste stream per Waste Management

10.14. Remove all waste and prepare the area for demolition of the concrete slab, footer, and foundation.

11. SLAB and BELOW GRADE REMOVAL

11.1. Break apart the building slab using a Hoe-Ram, and allow rad controls personnel to perform radiological screening of the concrete. Based on radiological screening results, transport to Mound's spoils area or rail spur as directed by Waste Management.

HAZARD	MITIGATION
Strike underground utilities	Obtain Excavation permit and follow its requirements per MD-10286 O5

11.2. Break apart the building footer and foundation down to a depth of 3 feet below grade and allow rad controls to perform radiological screening of the concrete. Based on radiological screening results, transport to Mound's spoils area or rail spur as directed by Waste Management.

12. SITE RESTORATION

12.1. After the slab and foundation are removed, allow rad controls to perform radiological screening then backfill and grade the area to match the surrounding area. After the area has been graded with

appropriate topsoil material, seed the area, mulch, and water periodically to promote the growth of new grasses. Refer to the *Storm Water Pollution Prevention Plan* OPA980099 for details.

Appendix C

Radiological Summary

Radiological Characterization Summary for Building 85

TYPE	RSDS	LOCATION	SURVEY RESULTS ($dpm/100cm^2$)	Surface Contamination Guideline ($dpm/100cm^2$) (Note 2)	COMMENTS
Highest Alpha Smearable Activity	00-TF-258	Equipment	6.01	20	
Highest Alpha Fixed Activity	Note 1	Note 1	<100	100	
Highest Beta Smearable Activity	00-TF-258	Equipment	5.79	1000	
Highest Beta Fixed Activity	Note 1	Note 1	<5,000	5,000	
Highest Tritium Smearable Activity	00-TF-258	Equipment	262	10,000	

Note 1: All RSDS's associated with the surveys were <100 $dpm/100cm^2$ alpha, and <5000 $dpm/100cm^2$ beta.

Note 2: Core Team Determined Values

Radiological Survey Data Breakdown for Building 85

The following radiological surveys for Building 85 were reviewed for inclusion into the overall Historical Site Assessment, pursuant to the pre-demolition MARSSIM review:

SURVEY TYPE	RSDS#	LOCATION/ ITEM(S)	ALPHA MAX RESULTS ($dpm/100cm^2$) SMEAR/DIRECT[1]	BETA MAX RESULTS ($dpm/100cm^2$) SMEAR/DIRECT[1]
Routine Annual	00-TF-439	Building Rooms	1.66/<100	2.61/<5000
Equipment	00-TF-258	Cart of Computer Equipment	6.01/<100	4.21/<5000
Equipment	00-TF-258	Cart of Computer Equipment	1.28/<100	4.48/<5000
Equipment	00-TF-258	Cart of Computer Equipment	3.58/<100	4.60/<5000
Equipment	00-TF-258	Cart of Computer Equipment	3.06/<100	2.80/<5000
Equipment	00-TF-258	Cart of Lab Equipment	3.28/<100	5.79/<5000
Equipment	00-TF-258	Cart of A/V Equipment	0.00/<100	1.44/<5000
Equipment	00-TF-258	Cart of Computer Equipment	5.37/<100	3.53/<5000
Equipment	00-TF-258	Cart of Printer Paper Trays	2.67/<100	3.69/<5000
Equipment	00-TF-258	Cart of Computers and Software	4.96/<100	1.42/<5000
Equipment	00-TF-258	Cart of Computer Equipment	1.04/<100	0.45/<5000
Equipment	00-TF-258	Cart of Lab Equipment	1.22/<100	2.50/<5000
Equipment	01-TF-1253	Chair	3.60/<100	5.06/<5000
Equipment	01-TF-1253	Chair	3.61/<100	3.93/<5000
Equipment	01-TF-1253	Sift Machine	5.59/<100	0.51/<5000
Equipment	01-TF-1253	Sift Machine	5.59/<100	3.92/<5000
Equipment	01-TF-1253	Broom	1.62/<100	2.78/<5000

[1]The guideline surface contamination values ($dpm/100cm^2$) are Alpha: 20 removable, 100 fixed; Beta: 1000 removable, 5000 fixed.

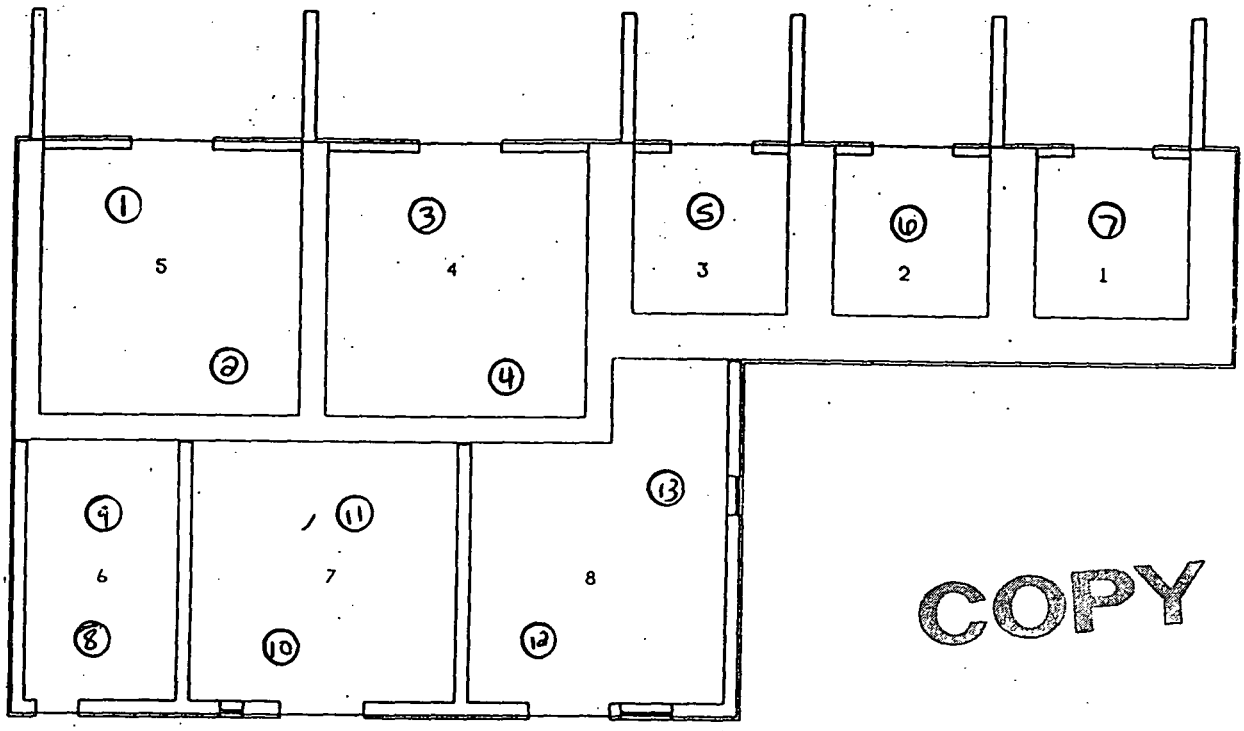
Note: All smears were analyzed for tritium contamination, ranging from 0.0 to 262 $dpm/100cm^2$, and the guideline value being 10.000 $dpm/100cm^2$.

CT-E13-30-23
P5

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG/AREA/ROOM) BUILDING 7485	SURVEY NO. 00-TF-439
PURPOSE: ANNUAL SURVEY	RWP NO. N/A
	DATE: 12-12-00
	TIME: 1530

MAP/DRAWING



COPY

DIRECT MEASUREMENTS TAKEN AT OR NEAR SMEAR LOCATIONS

$\alpha < 100$ dpm/100 cm^2 $\beta^- < 5000$ dpm/100cm^2

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/100cm^2

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
ELECTRA	S612	2-22-01

Completed by: (Signature)	HP# [redacted]	Date: 12-12-00
Completed by: (Print Name) MICHAEL J RUBADUE		
Counted by: (Signature) Carol Y. Robinson	HP# [redacted]	Date: 12-14-00
Counted by: (Print Name) CAROL Y. ROBINSON		
Reviewed/Approved by: (Signature)	HP# [redacted]	Date: 12-19-00
Reviewed/Approved by: (Print Name) GALEN TOMLINSON		

ML-9620 (2-98)

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1	SEE	ATTACH	ED	floor
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13	SEE	ATTACHED		floor

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

COPY

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 (4-98)

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Blue
Data file name: SMEAR133
Batch Ended: 12/14/2000 10:21
Cal. Due Date: 5/22/2001
Serial Number: 26966-3

Alpha activity action level (DPM): 20
Beta activity action level (DPM): 200

Batch ID: 00-TF-439 RUBADUE BLDG.#85 (13) CYR

Detector ID	Sample ID	Alpha Activity			Beta Activity		
		DPM	σ	flags	DPM	σ	flags
A2	1	0.00	2.20	<MDA	0.00	1.42	<MDA
A3	2	0.00	1.93	<MDA	0.00	1.31	<MDA
A4	3	1.66	2.12	<MDA	0.18	1.99	<MDA
B1	4	0.00	2.03	<MDA	0.00	1.65	<MDA
B2	5	0.00	1.90	<MDA	1.38	2.34	<MDA
B3	6	0.00	2.03	<MDA	0.00	1.59	<MDA
B4	7	0.00	1.91	<MDA	0.00	1.48	<MDA
C1	8	1.25	1.68	<MDA	0.00	1.27	<MDA
C2	9	0.00	1.81	<MDA	1.05	1.96	<MDA
C3	10	0.00	1.98	<MDA	0.00	1.40	<MDA
C4	11	0.00	1.78	<MDA	0.26	1.67	<MDA
D1	12	0.00	2.06	<MDA	2.61	2.70	<MDA
D2	13	0.00	2.09	<MDA	1.52	2.07	<MDA

Mol Mol

COPY

PAGE 3 of 4

Time: 2.00
Data Mode: DPM Nuclide: SMVIAL3 Quench Set: SMVIAL3
Background Subtract: 1st Vial

	LL	UL	LCR	2S%	BKG
Region A:	0.5 -	18.6	0	0.0	5.10
Region B:	2.0 -	18.6	0	0.0	4.82
Region C:	40.0 -	2000	0	0.0	11.40

Quench Indicator: tSIE/AEC
Ext Std Terminator: Count
00-TF-439 RUBADUE BLDG.85 (30-23 E1-E13) CYR
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	5.10	4.82	11.40	660.39	11	B		0.00
0	2.00	974.22	935.37	5.60	543.91	0		2325.54	200.46
1	2.00	6.60	6.28	0.00	501.32	0		16.38	12.62
2	2.00	0.40	0.68	0.00	520.73	0		0.97	8.85
3	2.00	2.90	2.99	0.00	557.43	0		6.84	10.08
4	2.00	1.66	1.57	0.60	535.67	7		3.98	9.54
5	2.00	5.80	5.23	0.73	513.52	0		14.32	12.[illegible]
6	2.00	3.40	3.89	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
[illegible]	2.00	1.09	1.15	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
10	2.00	5.40	5.21	[illegible]	[illegible]	[illegible]		12.43	11.16
11	2.00	4.29	3.88	0.00	575.80	0		9.96	10.88
12	2.00	7.31	5.19	0.00	573.86	0		17.01	12.18
13	2.00	0.90	1.18	0.00	590.52	0		2.06	8.85

mol

COPY

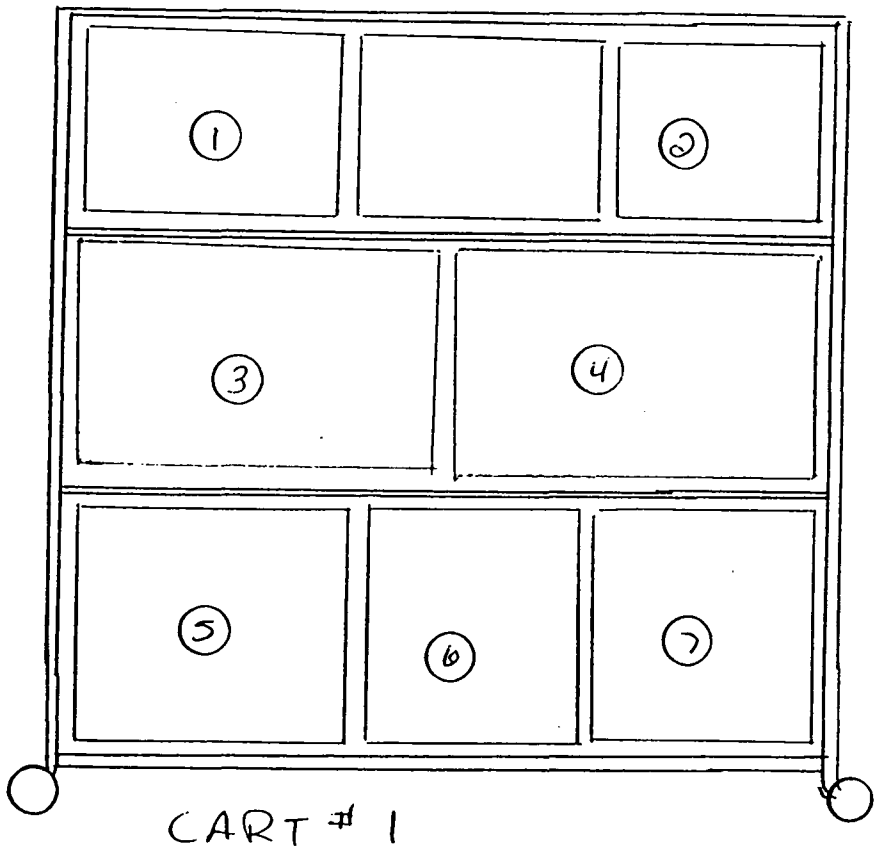
RADIOLOGICAL SURVEY DATA SHEET

P4 (30-12) 4?

LOCATION (BLDG/AREA/ROOM) 85	SURVEY NO 00-TF-258
PURPOSE: CUSORY SURVEY OF ITEMS IN BUILDING 85	RWP NO. N/A
	DATE 7-11-00
	TIME 1200

MAP / DRAWING

DIRECT MEASUREMENTS TAKEN AT OR NEAR SMEAR LOCATIONS
$\alpha < 100$ dpm/100cm^2 $\beta^- < 5000$ dpm/100cm^2



CART # 1

DOE # 203392, 300172, 300724, 300819

CART CONTAINS MONITORS, PRINTERS AND CABLES

LEGEND:
= mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
— · — · — = radiological boundary
△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm^2

INSTRUMENTS USED

Instrument	Serial Number	Cal Due Date
NE ELECTRA	5435	10-25-00
N		
	A	

Completed by: (Signature)	HP# [redacted]	Date: 7-11-00
Completed by: (Print Name) MICHAEL J RUBADUE		
Counted by: (Signature)	HP# [redacted]	Date: 7/18/00
Counted by: (Print Name) B Smith Brown		
Reviewed/Approved by: (Signature)	HP# [redacted]	Date: 7-22-00
Reviewed/Approved by: (Print Name) GALEN TOMLINSON		

ML-9620 (2-98) Computer Generated

Survey No.
00-TF-258

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1	SEE	ATTACHED		MONITOR
2				MONITOR
3				POWER DIRECTOR
4				PRINTER
5				CABLES
6				CABLES
7	SEE	ATTACHED		CABLES

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

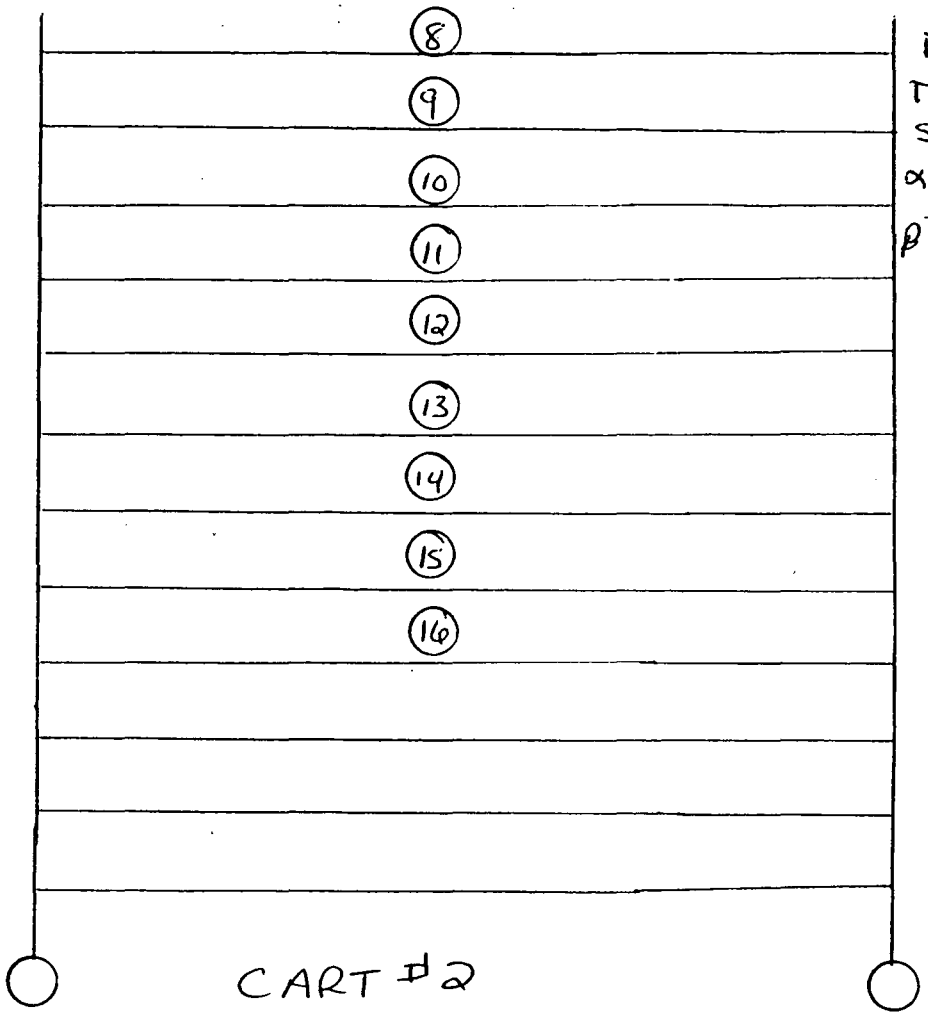
COMMENTS: SMEARS FIELD SCREEN < 1000 dpm/100cm²

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.

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) 85	SURVEY NO. 00-TF-258
PURPOSE: CUSORY SURVEY OF ITEMS IN BUILDING 85	RWP NO. N/A
	DATE: 7-11-00
	TIME: 1200

MAP / DRAWING



DIRECT MEASUREMENT TAKEN AT OR NEAR SMEAR LOCATIONS
$\alpha < 100$ dpm/100 cm^2
$\beta^- < 5000$ dpm/100 cm^2

CART CONTAINS PRINTER PAPER TRAYS

LEGEND:
= mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
— · — · · = radiological boundary
△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm^2

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
NE ELECTRA	5435	10-25-00

Completed by: (Signature)	HP# [redacted]	Date: 7-11-00
Completed by: (Print Name) MICHAEL J RUBADUE		
Counted by: (Signature)	HP#	Date:
Counted by: (Print Name)		
Reviewed/Approved by: (Signature)	HP#	Date:
Reviewed/Approved by: (Print Name)		

ML-9620 (2-98) Computer Generated

Survey No.
00-TF-258

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
8	SEE	ATTA	CHED	PAPER TRAY
9				
10				PAPER TRAY
11				MONITOR STAND
12				PAPER TRAY
13				
14				
15				
16	SEE	ATTAC	HED	PAPER TRAY

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

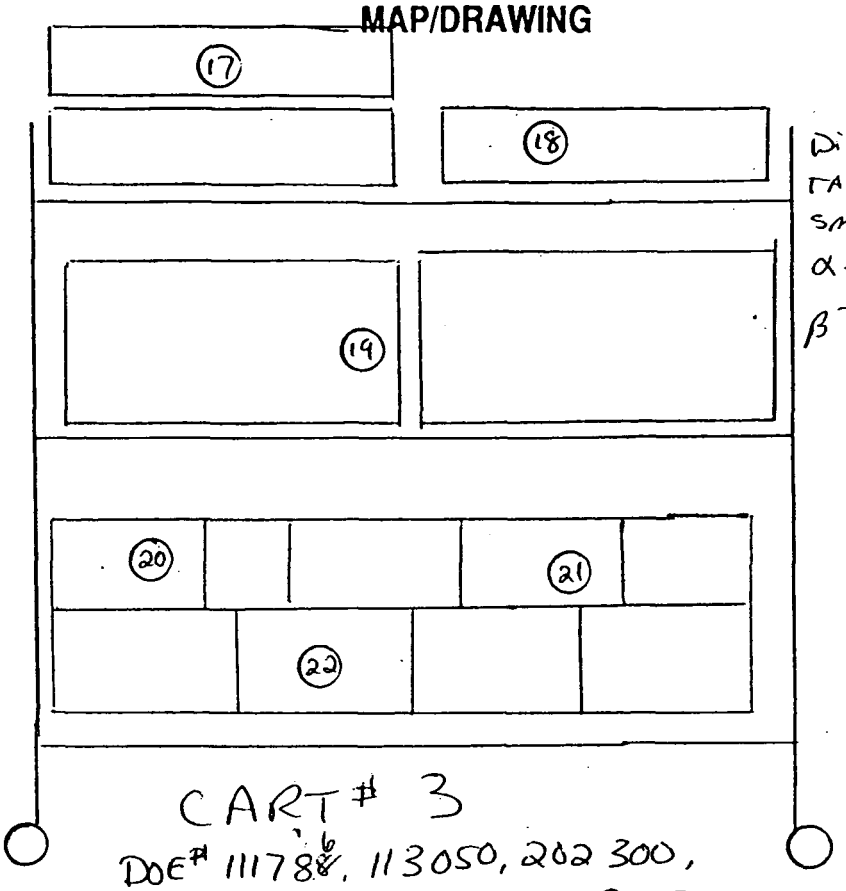
COMMENTS: SMEARS FIELD SCREEN < 1000 dpm/100 cm²

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.

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) 85	SURVEY NO. 00-TF-258
PURPOSE: CUSORY SURVEY OF ITEMS IN BUILDING 85	RWP NO. N/A
	DATE: 7-11-00
	TIME: 1200

MAP/DRAWING



DIRECT MEASUREMENTS TAKEN AT OR NEAR SMEAR LOCATIONS
$\alpha < 100$ dpm/100cm^2
$\beta^- < 5000$ dpm/100cm^2

CART # 3
DOE# 111786, 113050, 202300, 203508, 205707, 300367, 300449, 300481, 300651, 300724, 302618, 203267
CART CONTAINS COMPUTERS & SOFTWARE

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/100cm^2

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
NE ELECTRA	5435	10-25-00
N		
	A	

Completed by: (Signature)	HP# [redacted]	Date: 7-11-00
Completed by: (Print Name) MICHAEL J RUBADUE		
Counted by: (Signature)	HP#	Date:
Counted by: (Print Name)		
Reviewed/Approved by: (Signature)	HP#	Date:
Reviewed/Approved by: (Print Name)		

ML-9620 (2-98)

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
17	SEE	ATTACH	ED	COMPUTER
18	↓	↓	↓	COMPUTER
19				COMPUTER
20				SOFTWARE
21				COMPUTER
22	SEE	ATTA	CHED	COMPUTER

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

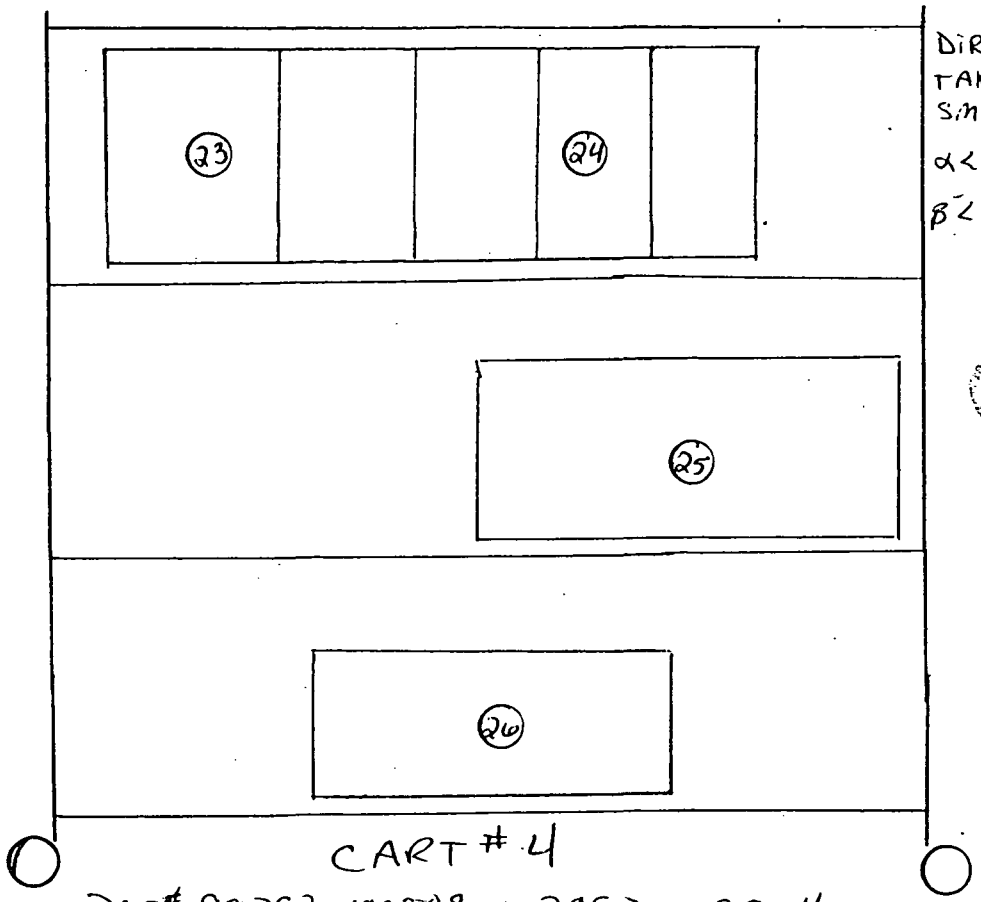
COMMENTS: SMEARS FIELD SCREENED < 1000 dpm/100 cm²

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.

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) 85	SURVEY NO. 00-TF-258
PURPOSE: CUSORY SURVEY OF ITEMS IN BUILDING 85	RWP NO. N/A
	DATE: 7-11-00
	TIME: 1200

MAP/DRAWING



DIRECT MEASUREMENTS TAKEN AT OR NEAR SMEAR LOCATIONS
α < 100 dpm/100cm²
β < 5000 dpm/100cm²

CART # 4

DOE# 98792, 100509, 102057, 109264
111351, 204149, 204535, 205614
CART CONTAINS COMPUTERS, COMPUTER W/CARRY CASE, AND COLOR PRINTER

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
NE ELECTRA	5435	10-25-00
	N	
	A	

Completed by: (Signature)	HP# [redacted]	Date: 7-11-00
Completed by: (Print Name) MICHAEL J RUBADUE		
Counted by: (Signature)	HP#	Date:
Counted by: (Print Name) N		
Reviewed/Approved by: (Signature)	HP# A	Date:
Reviewed/Approved by: (Print Name)		

ML-9620 (2-98)

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
23	SEE	ATTAC	HED	COMPUTER
24	↓	↓	↓	COMPUTER
25	↓	↓	↓	COMPUTER W/CARRYCASE
26	SEE	ATTAC	HED	COLOR PRINTER

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

COMMENTS: SMEARS FIELD SCREENED <1000 dpm/100 cm²

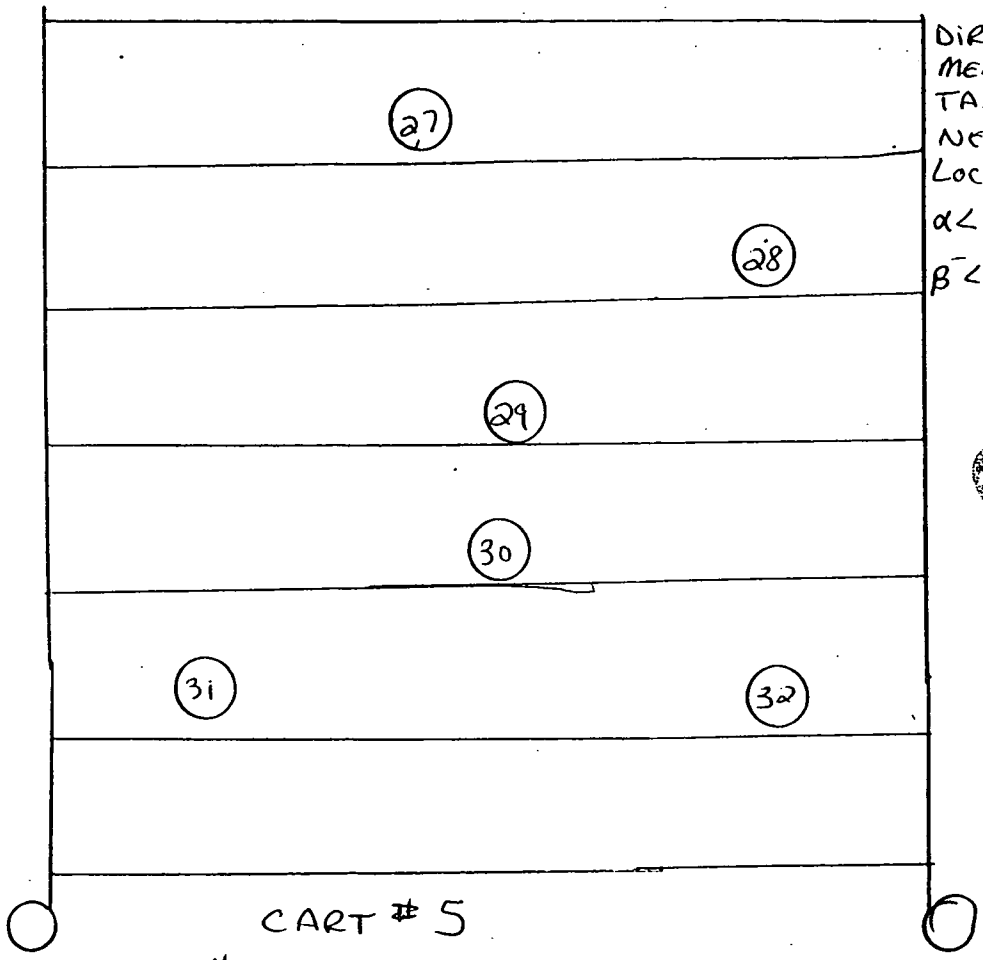
NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample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

ML-9620 (4-98)

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) 85	SURVEY NO. 00-TF-258
PURPOSE: CUSORY SURVEY OF ITEMS IN BUILDING 85	RWP NO. N/A
	DATE: 7-11-00
	TIME: 1200

MAP/DRAWING



DIRECT MEASUREMENTS TAKEN AT OR NEAR SMEAR LOCATIONS
$\alpha < 100$ dpm/100cm^2
$\beta^- < 5000$ dpm/100cm^2

DOE# 107798, 109549, 205194

CART CONTAINS POWER DIRECTORS, LUMINANCE METER, PRINTER AND DESKTOP COPIER

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/100cm^2

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
NE ELECTRA	5435	10-25-00

Completed by: (Signature)	HP# [redacted]	Date: 7-11-00
Completed by: (Print Name) MICHAEL J RUBADUE		
Counted by: (Signature)	HP#	Date:
Counted by: (Print Name)		
Reviewed/Approved by: (Signature)	HP#	Date:
Reviewed/Approved by: (Print Name)		

ML-9620 (2-98)

RADIOLOGICAL SURVEY DATA SHEET (cont.)

PAGE 10 of 31

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
27	SEE	ATTA	CHED	POWER DIRECTOR
28	↓	↓	↓	POWER DIRECTOR
29				LUMINANCE METER
30				PRINTER
31				POWER DIRECTOR
32	SEE	ATTA	CHED	COPIER

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

COMMENTS: SMEARS FIELD SCREENED < 1000 dpm/100cm²

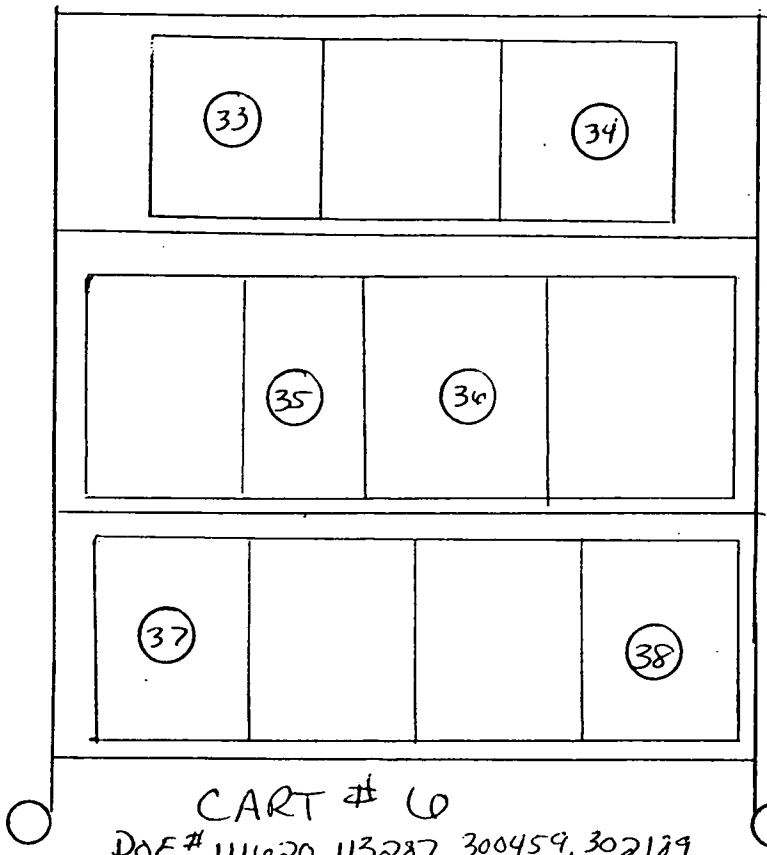
NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample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

ML-9620 (4-98)

RADIOLOGICAL SURVEY DATA SHEET

LOCATION (BLDG /AREA/ROOM): 85	SURVEY NO: 00-TF-258
PURPOSE: CUSORY SURVEY OF ITEMS IN BUILDING 85	RWP NO: N/A
	DATE: 7-12-00
	TIME: 0900

MAP / DRAWING



DIRECT MEASUREMENTS TAKEN AT OR NEAR SMEAR LOCATIONS
α < 100dpm/100cm²
β⁻ < 5000dpm/100cm²

CART # 6
DOE # 111620, 113287, 300459, 302189
CART CONTAINS MONITORS

LEGEND:
= mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K ▫ factor of 1000
— · — · — = 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	5435	10-25-00

Completed by. (Signature)	[redacted]	Date: 7-12-00
Completed by (Print Name)	MICHAEL J RUBADUE	
Counted by (Signature)	HP#	Date
Counted by. (Print Name)		
Reviewed/Approved by: (Signature)	HP#	Date:
Reviewed/Approved by: (Print Name)		

ML-9620 (2-98) Computer Generated

Survey No.
00-TF-258

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
33	SEE	ATTACHED		MONITOR
34	↓	↓	↓	↓
35	↓	↓	↓	↓
36	↓	↓	↓	↓
37	↓	↓	↓	↓
38	SEE	ATTACHED		MONITOR

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

COMMENTS: SMEARS FIELD SCREENED < 1000 dpm / 100cm²

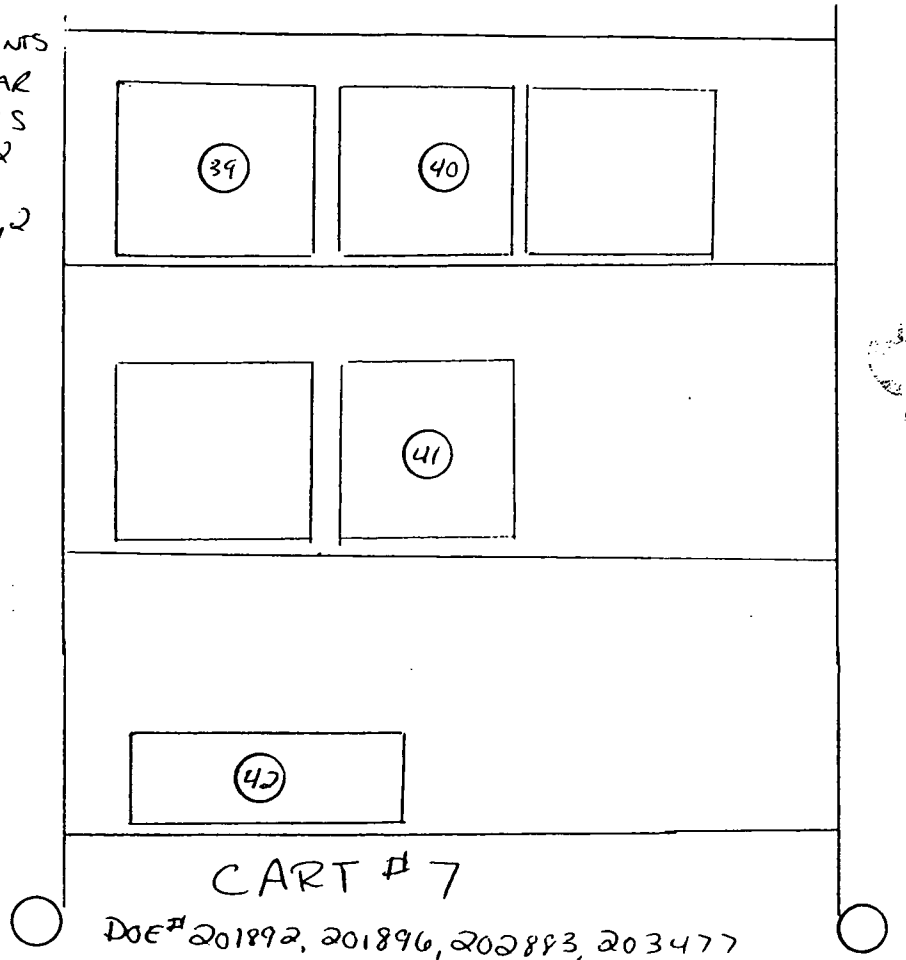
NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample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

RADIOLOGICAL SURVEY DATA SHEET

LOCATION (BLDG /AREA/ROOM) 85	SURVEY NO 00-TF-258
PURPOSE CUSORY SURVEY OF ITEMS IN BUILDING 85	RWP NO N/A
	DATE 7-12-00
	TIME 0900

MAP / DRAWING

DIRECT MEASUREMENTS TAKEN AT OR NEAR SMEAR LOCATIONS
$\alpha < 100 dpm/100 cm^2$
$\beta < 5000 dpm/100 cm^2$



CART # 7
DOE# 201892, 201896, 202883, 203477
300931
CART CONTAINS MONITORS AND A COMPUTER

LEGEND:
= mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
— · — · — = 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	5435	10-25-00
N		
	A	

Completed by: (Signature)	HP# [redacted]	Date: 7-12-00
Completed by (Print Name) MICHAEL J RUBADUE		
Counted by (Signature)	HP#	Date
Counted by. (Print Name)		
Reviewed/Approved by: (Signature)	HP#	Date:
Reviewed/Approved by: (Print Name)		

ML-9620 (2-98) Computer Generated

Survey No. 00-TF-258

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
39	SEE	ATTACHED		MONITOR
40	↓	↓	↓	MONITOR
41	↓	↓	↓	MONITOR
42	SEE	ATTACHED		COMPUTER
		N	A	

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

COMMENTS: SMEARS FIELD SCREENED < 1000 dpm/100 cm²

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.

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) 85	SURVEY NO. 00-TF-258
PURPOSE: CUSORY SURVEY OF ITEMS IN BUILDING 85	RWP NO. N/A
	DATE: 7-12-00
	TIME: 0900

MAP / DRAWING

SEE PAGE 16 FOR SMEAR DESCRIPTION
APPROX EVERY 3RD KEYBOARD WAS SMEARED

DIRECT MEASUREMENTS TAKEN ON ALL KEYBOARDS
$\alpha < 100$ dpm/100cm^2
$\beta^- < 5000$ dpm/100cm^2

CART # 8
DOE# 107975, 200724

CART CONTAINS KEYBOARDS AND PRINTERS

LEGEND:
= mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
— · — · — = radiological boundary
△# = mrem/hr neutron
= air sample number
(#) = swipe number
(#/α) or /β = direct contamination measurement in dpm/100 cm^2

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
NE ELECTRA	5435	10-25-00
N		
	A	

Completed by: (Signature)	HP# [redacted]	Date: 7-12-00
Completed by: (Print Name) MICHAEL J ROBADUE		
Counted by: (Signature)	HP#	Date:
Counted by: (Print Name)		
Reviewed/Approved by: (Signature)	HP#	Date:
Reviewed/Approved by: (Print Name)		

Survey No. 00-TF-258

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
43	SEE	ATTACHED		KEYBOARD
44				
45				
46				
47				
48				
49				
50				
51				
52				
53				
54				
55				
56				
57				
58				KEYBOARD
59				PRINTER
60	SEE	ATTACHED		PRINTER

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

COMMENTS: SMEARS FIELD SCREENED <1000 dpm/100cm²

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.

RADIOLOGICAL SURVEY DATA SHEET

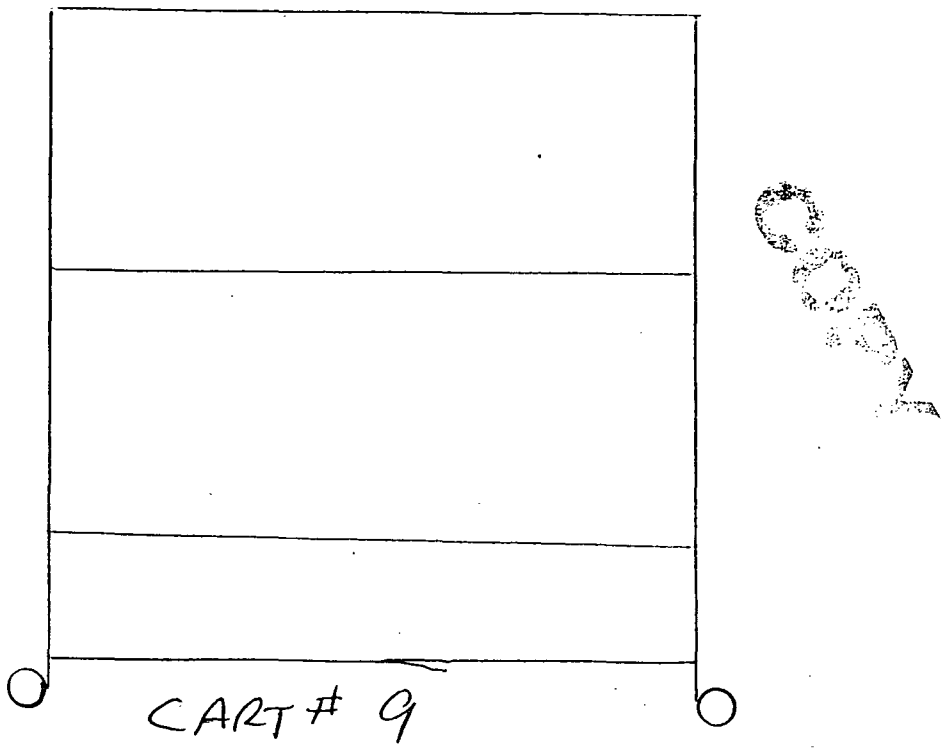
LOCATION: (BLDG./AREA/ROOM) 8S	SURVEY NO. 00-TF-258
PURPOSE CUSORY SURVEY OF ITEMS IN BUILDING 8S	RWP NO N/A
	DATE: 7-12-00
	TIME: 0900

MAP / DRAWING

SEE NEXT PAG FOR SMEAR LOCATIONS
DIRECT MEASUREMENTS TAKEN AT OR NEAR SMEAR LOCATIONS

$\alpha < 100$ dpm/100cm^2

$\beta^- < 5000$ dpm/100cm^2



CART # 9

DOE# 111495, 114188, 200652
201864, 300451, 300478

CART CONTAINS MONITORS, KEY BOARDS, AND A COMPUTER

LEGEND:
= mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
— · — · — 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	5435	10-~~25~~ MUR-00
N		
	A	

Completed by: (Signature)	H[redacted]	Date: 7-12-00
Completed by: (Print Name) MICHAEL J RUBADUE		
Counted by (Signature)	HP#	Date
Counted by: (Print Name)		
Reviewed/Approved by: (Signature)	HP#	Date:
Reviewed/Approved by: (Print Name)		

ML-9620 (2-98) Computer Generated

Survey No. 00-TF-258

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
61	SEE	ATTACHED		KEYBOARD
62				
63				
64				KEYBOARD
65				MONITOR
66				
67				
68				
69				MONITOR
70	SEE	ATTACHED		COMPUTER

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

COMMENTS: SMEARS FIELD SCREENED < 1000 dpm/100cm²

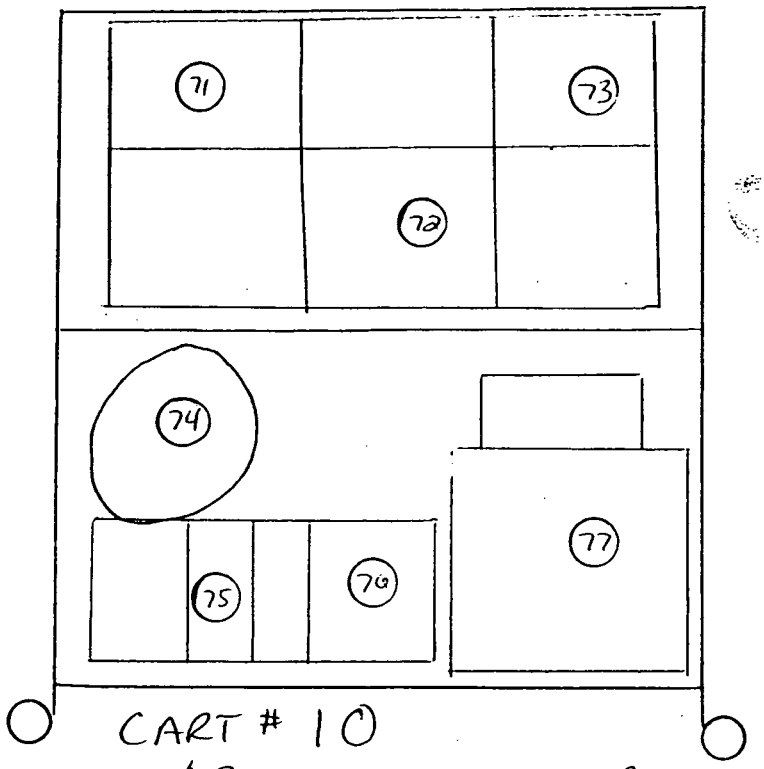
NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample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

RADIOLOGICAL SURVEY DATA SHEET

LOCATION (BLDG./AREA/ROOM) 8S	SURVEY NO 00-TF-258
PURPOSE CUSORY SURVEY OF ITEMS IN BUILDING 8S	RWP NO N/A
	DATE: 7-12-00
	TIME: 0900

MAP / DRAWING

DIRECT MEASUREMENTS TAKEN AT OR NEAR SMEAR LOCATIONS
$\alpha < 100$ dpm/100 cm^2 $\beta^- < 5000$ dpm/100 cm^2



CART # 10
DOE# 96788, 103317, 105697
202257, 300104

CART CONTAINS MONITORS, MICROSCOPES
AND A/V EQUIPMENT

LEGEND
= mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
— · — · — = radiological boundary
(#) = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm^2

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
NE ELECTRA	5435	10-25-00

Completed by: (Signature)	HP# [redacted]	Date: 7-12-00
Completed by: (Print Name) MICHAEL J RUBADUE		
Counted by: (Signature)	HP#	Date:
Counted by: (Print Name)		
Reviewed/Approved by: (Signature)	HP#	Date:
Reviewed/Approved by: (Print Name)		

ML-9620 (2-98) Computer Generated

Survey No.
00-TF-258

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
71	SEE	ATTACHED		MONITOR
72				MONITOR
73				MONITOR
74				PROJECTOR
75				MICROSCOPE
76				MONITOR
77	SEE	ATTACHED		TELEVISION

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

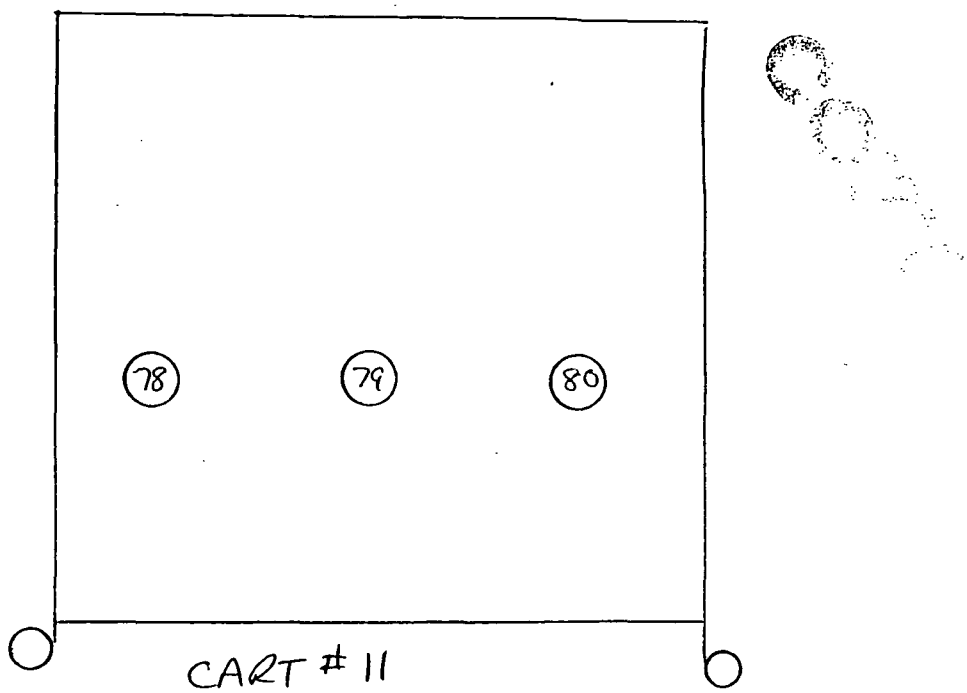
COMMENTS: SMEARS FIELD SCREENED <1000 dpm/100cm²

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.

RADIOLOGICAL SURVEY DATA SHEET

LOCATION. (BLDG /AREA/ROOM) 8S	SURVEY NO 00-TF-258
PURPOSE CUSORY SURVEY OF ITEMS IN BUILDING 8S	RWP NO N/A
	DATE: 7-12-00
	TIME: 0900

MAP / DRAWING



CART # 11

CART CONTAINS A/V EQUIPMENT

DIRECT MEASUREMENTS TAKEN AT OR NEAR SMEAR LOCATIONS

$\alpha < 100$ dpm/100 cm^2 $\beta^- < 5000$ dpm/100 cm^2

LEGEND:
= mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
— · — · — = radiological boundary
△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm^2

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
NE ELECTRA	5435	10-25-00

Completed by: (Signature)	HP# [redacted]	Date: 7-12-00
Completed by: (Print Name) MICHAEL J RUBADUE		
Counted by: (Signature)	HP#	Date:
Counted by: (Print Name)		
Reviewed/Approved by: (Signature)	HP#	Date:
Reviewed/Approved by: (Print Name)		

Survey No.
00-TF-258

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
78	SEE	ATTACHED		OVERHEAD PROJECTOR
79	↓	↓	↓	PROJECTOR
80	SEE	ATTACHED		CASE

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

COMMENTS: SMEARS FIELD SCREENED <1000 dpm/100 cm²

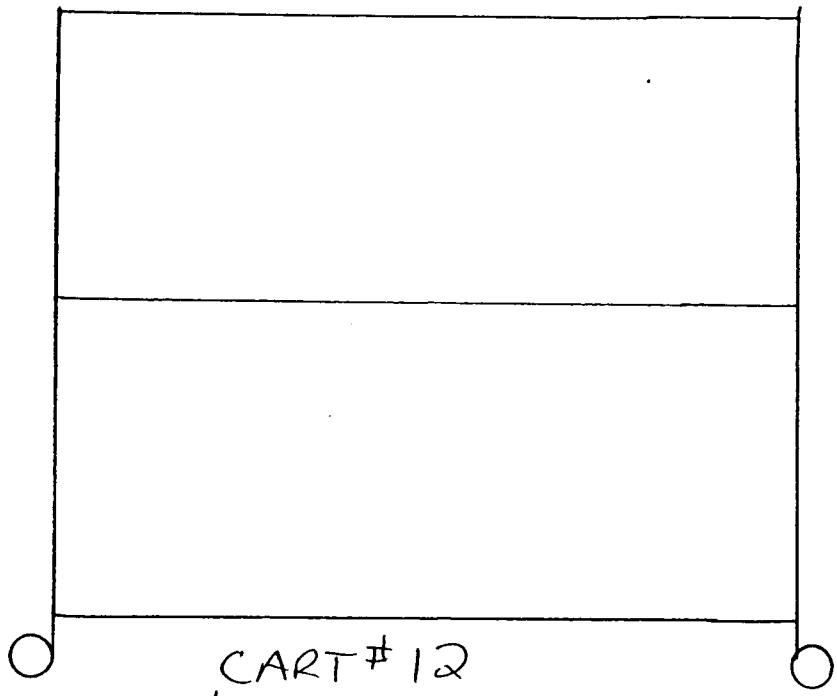
NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample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

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) 85	SURVEY NO 00-TF-258
PURPOSE CUSORY SURVEY OF ITEMS IN BUILDING 85	RWP NO N/A
	DATE: 7-13-00
	TIME: 1000

MAP / DRAWING

SEE NEXT PAGE FOR SMEAR LOCATIONS
DIRECT MEASUREMENTS TAKEN AT OR NEAR SMEAR LOCATIONS
$\alpha < 100$ dpm/100 cm^2 $\beta^- < 5000$ dpm/100 cm^2



CART # 12
DOE# 78250, 111701, 204033, 300376

CART CONTAINS MONITORS, PRINTERS, SCALES AND COMPUTER

LEGEND:
= mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
— · — · — = radiological boundary
△# = mrem/hr neutron
□# = air sample number
(#) = swipe number
(#/α) or /β = direct contamination measurement in dpm/100 cm^2

INSTRUMENTS USED

Instrument	Serial Number	Cal Due Date
NE ELECTRA	5435	10-25-00

Completed by: (Signature)	HP# [redacted]	Date: 7-13-00
Completed by: (Print Name) MICHAEL J RUBADUE		
Counted by: (Signature)	HP#	Date
Counted by: (Print Name)		
Reviewed/Approved by: (Signature)	HP#	Date
Reviewed/Approved by: (Print Name)		

ML-9620 (2-98) Computer Generated

Survey No.
00-TF-258

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
81	SEE	ATTACHED		MONITOR
82				MONITOR
83				SCALES
84				PLOTTER
85				PLOTTER
86				PRINTER
87				POWER DIRECTOR
88				COMPUTER WITH CASE
89				BRANSON
90				SCALES
91				SCALES
92				COMPUTER
93	SEE	ATTACHED		BOX

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

COMMENTS: SMEARS field SCREENED < 1000 dpm/100 cm²

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)

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Blue
Data file name: SMEAR097
Batch Ended: 7/18/2000 15:22
Cal. Due Date: 5/22/2001
Serial Number: 26966-3

Alpha activity action level (DPM): 20
Beta activity action level (DPM): 200

Batch ID: 00-TF-258 RUBADUE - BSB

Detector ID	Sample ID	Alpha Activity			Beta Activity		
		DPM	σ	flags	DPM	σ	flags
A1	1	0.00	2.09	<MDA	4.48	3.34	<AL
A2	2	0.00	2.21	<MDA	0.00	1.54	<MDA
A3	3	0.00	1.92	<MDA	0.00	1.31	<MDA
A4	4	0.00	2.15	<MDA	0.46	2.06	<MDA
B1	5	1.28	2.05	<MDA	0.48	2.10	<MDA
B2	6	0.00	1.89	<MDA	0.45	1.91	<MDA
B3	7	0.00	2.01	<MDA	0.00	1.54	<MDA
B4	8	1.47	1.93	<MDA	0.00	1.46	<MDA
C1	9	2.67	2.36	<AL	0.00	1.70	<MDA
C2	10	0.00	1.79	<MDA	0.00	1.24	<MDA
C3	11	1.18	2.03	<MDA	1.54	2.31	<MDA
C4	12	0.00	1.84	<MDA	0.45	2.38	<MDA
D1	13	0.00	2.01	<MDA	0.00	1.50	<MDA
D2	14	0.00	2.04	<MDA	0.16	1.74	<MDA
D3	15	1.55	2.12	<MDA	0.19	2.09	<MDA
D4	16	1.64	2.02	<AL	3.69	2.71	<AL

MJL MJL

PAGE 26 of 31

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Blue
Data file name: SMEAR094
Batch Ended: 7/18/2000 14:45
Cal. Due Date: 5/22/2001
Serial Number: 26966-3

Alpha activity action level (DPM): 20
Beta activity action level (DPM): 200

Batch ID: 00-TF-258 RUBADUE - BSB

Detector ID	Sample ID	Alpha Activity			Beta Activity		
		DPM	σ	flags	DPM	σ	flags
A1	17	0.00	2.05	<MDA	0.00	1.50	<MDA
A2	18	0.00	2.21	<MDA	0.00	1.54	<MDA
A3	19	1.60	1.92	<AL	0.00	1.31	<MDA
A4	20	0.00	2.14	<MDA	0.00	1.56	<MDA
B1	21	1.28	2.05	<MDA	0.48	2.10	<MDA
B2	22	4.96	3.22	<AL	1.42	2.30	<MDA
B3	23	1.43	2.01	<MDA	0.00	1.54	<MDA
B4	24	0.00	1.93	<MDA	0.00	1.46	<MDA
C1	25	1.04	1.71	<MDA	0.00	1.70	<MDA
C2	26	0.00	1.79	<MDA	0.00	1.24	<MDA
C3	27	0.00	2.02	<MDA	0.45	1.95	<MDA
C4	28	1.22	1.86	<MDA	2.50	2.85	<MDA
D1	29	0.00	2.01	<MDA	0.00	1.50	<MDA
D2	30	0.00	2.05	<MDA	1.31	2.09	<MDA
D3	31	0.00	2.13	<MDA	1.72	2.51	<MDA
D4	32	0.00	2.01	<MDA	1.44	2.13	<MDA
A1	33	0.82	2.06	<MDA	0.00	2.28	<MDA
A2	34	6.01	3.80	<AL	4.21	3.20	<AL
A3	35	0.00	1.95	<MDA	3.94	2.65	<AL
A4	36	0.00	2.15	<MDA	0.46	2.06	<MDA
B1	37	1.28	2.05	<MDA	0.48	2.10	<MDA
B2	38	0.00	1.89	<MDA	0.45	1.91	<MDA
B3	39	0.00	2.01	<MDA	0.54	2.09	<MDA
B4	40	1.16	1.95	<MDA	4.48	3.00	<AL
C1	41	1.04	1.73	<MDA	0.24	2.30	<MDA
C2	42	1.13	1.80	<MDA	0.00	1.64	<MDA
C3	43	1.18	2.01	<MDA	0.00	1.49	<MDA

MDL MDL

PAGE 27 of 31

COPY

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Blue
Data file name: SMEAR094
Batch Ended: 7/18/2000 14:45
Cal. Due Date: 5/22/2001
Serial Number: 26966-3

Alpha activity action level (DPM): 20
Beta activity action level (DPM): 200

Batch ID: 00-TF-258 RUBADUE - BSB

Detector ID	Sample ID	Alpha Activity			Beta Activity		
		DPM	σ	flags	DPM	σ	flags
C4	44	0.00	1.85	<MDA	1.56	2.63	<MDA
D1	45	3.58	2.80	<AL	0.00	1.50	<MDA
D2	46	1.72	2.04	<AL	0.03	1.74	<MDA
D3	47	0.00	2.12	<MDA	0.34	2.09	<MDA
D4	48	0.00	1.99	<MDA	0.00	1.33	<MDA
A1	49	0.00	2.06	<MDA	0.00	2.28	<MDA
A2	50	1.68	2.26	<MDA	4.55	3.20	<AL
A3	51	0.00	1.94	<MDA	1.63	2.09	<MDA
A4	52	0.00	2.14	<MDA	0.00	1.56	<MDA
B1	53	1.28	2.05	<MDA	0.48	2.10	<MDA
B2	54	0.00	1.89	<MDA	0.45	1.91	<MDA
B3	55	3.18	2.82	<AL	4.60	3.23	<AL
B4	56	0.00	1.93	<MDA	0.00	1.46	<MDA
C1	57	1.04	1.71	<MDA	0.00	1.70	<MDA
C2	58	0.00	1.80	<MDA	0.00	1.64	<MDA
C3	59	0.00	2.01	<MDA	0.00	1.49	<MDA
C4	60	0.00	1.84	<MDA	0.45	2.38	<MDA
D1	61	0.00	2.01	<MDA	0.00	1.50	<MDA
D2	62	0.00	2.05	<MDA	1.31	2.09	<MDA
D3	63	0.00	2.12	<MDA	0.34	2.09	<MDA
D4	64	0.00	1.99	<MDA	0.00	1.33	<MDA
A1	65	0.00	2.06	<MDA	0.00	1.93	<MDA
A2	66	1.69	2.22	<MDA	0.35	2.08	<MDA
A3	67	0.00	1.92	<MDA	0.00	1.31	<MDA
A4	68	0.00	2.16	<MDA	1.81	2.46	<MDA
B1	69	0.00	2.05	<MDA	0.00	1.56	<MDA
B2	70	3.06	2.65	<AL	2.80	2.63	<MDA
B3	71	3.28	2.81	<AL	1.76	2.53	<MDA
B4	72	1.10	1.95	<MDA	5.79	3.27	<AL
C1	73	0.00	1.72	<MDA	0.00	2.03	<MDA

MJR MJR

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Blue
Data file name: SMEAR094
Batch Ended: 7/18/2000 14:45
Cal. Due Date: 5/22/2001
Serial Number: 26966-3

Alpha activity action level (DPM): 20
Beta activity action level (DPM): 200

Batch ID: 00-TF-258 RUBADUE - BSB

Detector ID	Sample ID	Alpha Activity			Beta Activity		
		DPM	σ	flags	DPM	σ	flags
C2	74	0.00	1.80	<MDA	0.00	1.64	<MDA
C3	75	0.00	2.03	<MDA	1.70	2.31	<MDA
C4	76	0.00	1.88	<MDA	3.78	3.06	<AL
D1	77	0.00	2.03	<MDA	0.20	1.99	<MDA
D2	78	0.00	2.04	<MDA	0.16	1.74	<MDA
D3	79	0.00	2.12	<MDA	0.34	2.09	<MDA
D4	80	0.00	2.01	<MDA	1.44	2.13	<MDA
A1	81	0.82	2.05	<MDA	0.00	1.50	<MDA
A2	82	0.00	2.22	<MDA	0.51	2.08	<MDA
A3	83	5.37	3.30	<AL	1.29	2.09	<MDA
A4	84	0.00	2.16	<MDA	1.81	2.46	<MDA
B1	85	0.00	2.05	<MDA	0.00	1.56	<MDA
B2	86	3.12	2.65	<AL	1.52	2.30	<MDA
B3	87	0.00	2.01	<MDA	0.00	1.54	<MDA
B4	88	1.28	1.94	<MDA	1.86	2.36	<MDA
C1	89	1.04	1.77	<MDA	3.53	2.99	<MDA
C2	90	0.00	1.79	<MDA	0.00	1.24	<MDA
C3	91	0.00	2.02	<MDA	0.45	1.95	<MDA
C4	92	0.00	1.84	<MDA	0.45	2.38	<MDA
D1	93	0.00	2.04	<MDA	1.51	2.38	<MDA

NOR NOR

18 Jul 2000 17:28 TRI-CARB - 1.09
Protocol #: 4 Pw H3 20cc #407906 User : 5268

Time: 2.00
Data Mode: DPM Nuclide: SMVIAL3 Quench Set: SMVIAL3
Background Subtract: 1st Vial

	LL	UL	LCR	2S%	BKG
Region A:	0.5 -	18.6	0	0.0	8.21
Region B:	3.0 -	18.6	0	0.0	7.81
Region C:	40.0 -	2000	0	0.0	10.00

COPY

Quench Indicator: tSIE/AEC
Ext Std Terminator: Count
90-T-258 RUBADUE(30-21)93 BSB
Luminescence Correction On
Coincidence Time(ns):.18
Delay Before Burst(ns): Normal
Protocol Data Filename: C:\DATA\PROT1.DAT
Count Data Filename: C:\DATA\SDATA4.DAT
Spectrum Data Drive & Path: C:\DATA

R#	TIME	CPMA	CPMB	LUM	FLAG	tSIE	DPM1	2SIGMA	CPMC
-1	10.00	8.21	7.81	0	B	658.05		0.000	10.00
0	2.00	795.18	725.35	0		525.51	3620.20	262.317	3.50
1	2.00	1.58	1.86	0		631.87	3.61	11.024	0.00
2	2.00	0.00	0.00	0		618.88	0.00	0.000	0.00
3	2.00	0.00	0.00	0		[illegible]	0.00	0.000	0.00
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	0.00	0.00	0		[illegible]	0.00	0.000	0.00
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	0.00	0.00			515.30	0.00	0.000	0.00
[illegible]	[illegible]	1.29	1.86	0		586.39	17.06	22.549	0.00
[illegible]	[illegible]	0.00	0.00	0		554.44	0.00	0.000	0.00
[illegible]	[illegible]	0.53	0.21	0		563.14	8.53	53.970	0.00
10	2.00	0.00	0.00	0		587.00	0.00	0.000	3.00
13	2.00	0.00	0.00	0		599.55	0.00	0.000	0.00
14	2.00	0.00	0.00	0		577.57	0.00	0.000	0.00
15	2.00	0.00	0.00	0		607.15	0.00	0.000	2.00
16	2.00	2.20	2.60	0		573.73	61.88	138.348	0.00
17	2.00	0.79	0.07	0		619.65	2.34	13.725	0.00
18	2.00	0.00	0.00	0		614.09	0.00	0.000	2.00
19	2.00	0.00	0.00	0		516.89	0.00	0.000	0.00
20	2.00	0.00	0.00	0		629.20	0.00	0.000	2.50
21	2.00	0.00	0.00	0		625.96	0.00	0.000	0.00
22	2.00	5.29	4.91	0		599.50	30.11	31.375	0.00
23	2.00	0.00	0.00	0		616.13	0.00	0.000	0.00
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]
25	2.00	1.79	2.02	0		541.88	11.38	30.716	0.00
26	2.00	0.00	0.00	0		555.76	0.00	0.000	0.00
27	2.00	2.79	2.44	0		515.37	10.79	19.473	0.00
28	2.00	0.00	0.00	0		588.46	0.00	0.000	0.00
29	2.00	3.13	2.88	0		629.46	7.57	12.307	0.00
30	2.00	3.30	3.22	0		579.66	187.80	292.394	0.50
31	2.00	2.87	2.67	0		613.62	9.95	17.512	0.00
32	2.00	4.79	4.25	0		578.03	250.65	283.598	1.00
33	2.00	0.79	0.43	0		589.39	8.29	48.531	0.00
34	2.00	3.55	3.75	0		560.54	41.35	60.339	2.50

#7 look in 7/18/00 HIO

MJC

18 Jul 2000 19:03 TRI-CARB - 1.09
Protocol #: 4 Pw H3 20cc #407906 User : 5268

S#	TIME	CPMA	CPMB	LUM FLAG	tSIE	DPM1	2SIGMA	CPMC
35	2.00	1.29	0.69	0	583.18	28.26	103.594	0.00
36	2.00	0.00	0.00	0	590.54	0.00	0.000	0.00
37	2.00	3.29	3.36	0	629.59	7.91	12.348	0.00
38	2.00	1.29	1.19	0	608.42	5.23	19.140	0.00
39	2.00	1.94	2.03	0	617.83	6.02	15.101	0.00
40	2.00	2.79	2.68	0	587.64	34.35	61.988	0.00
41	2.00	0.00	0.00	0	608.15	0.00	0.000	0.00
42	2.00	2.29	0.87	0	621.98	6.45	13.896	4.22
43	2.00	0.00	0.00	0	565.90	0.00	0.000	0.00
44	2.00	0.00	0.00	0	591.89	0.00	0.000	0.00
45	2.00	0.00	0.00	0	513.82	0.00	0.000	2.16
46	2.00	1.00	1.14	0	591.88	8.70	40.543	0.50
47	2.00	0.79	1.19	0	591.72	6.93	40.594	0.00
48	2.00	3.17	3.57	0	601.98	16.23	26.152	1.45
49	2.00	0.00	0.00	0	590.68	0.00	0.000	0.00
50	2.00	0.00	0.00	0	549.19	0.00	0.000	0.00
51	2.00	2.73	2.63	0	605.69	12.15	22.313	0.00
52	2.00	5.29	5.06	0	621.72	14.99	15.622	0.00
53	2.00	0.00	0.00	0	617.98	0.00	0.000	0.00
54	2.00	0.00	0.00	0	548.88	0.00	0.000	0.00
55	2.00	0.00	0.00	0	549.75	0.00	0.000	0.83
56	2.00	0.00	0.00	0	619.47	0.00	0.000	0.00
57	2.00	1.29	1.19	0	613.56	4.45	16.411	0.00
58	2.00	0.00	0.00	0	577.83	0.00	0.000	1.31
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
61	2.00	0.00	0.00	0	621.38	0.00	0.000	0.00
62	2.00	0.00	0.00	0	610.11	0.00	0.000	0.00
63	2.00	5.29	5.63	0	611.98	16.13	20.040	0.00
64	2.00	0.04	0.00	0	524.43	0.32	82.899	0.00
65	2.00	1.79	2.13	0	586.54	24.70	66.681	0.00
66	2.00	0.00	0.00	0	583.13	0.00	0.000	0.00
67	2.00	3.29	3.83	0	[illegible]	30.27	47.638	0.00
68	2.00	13.29	7.63	0	587.35	168.66	86.735	2.00
69	2.00	0.00	0.00	0	593.11	0.00	0.000	0.00
70	2.00	0.00	0.00	0	599.58	0.00	0.000	0.00
71	2.00	0.00	0.00	0	574.77	0.00	0.000	3.00
72	2.00	0.79	0.19	0	555.20	7.42	43.423	0.00
73	2.00	0.00	0.00	0	524.72	0.00	0.000	0.00
74	2.00	0.00	0.00	0	613.19	0.00	0.000	0.00
75	2.00	1.98	0.65	0	559.32	21.60	53.702	0.98
76	2.00	0.00	0.00	0	547.20	0.00	0.000	0.00
77	2.00	0.00	0.00	0	450.64	0.00	0.000	0.00
78	2.00	2.79	2.39	0	489.86	7.84	14.141	0.00
79	2.00	0.00	0.00	0	575.81	0.00	0.000	0.00
81	2.00	4.77	3.23	0	578.27	282.66	297.988	3.50
82	2.00	0.00	0.00	0	553.32	0.00	0.000	1.00
83	2.00	0.00	0.00	0	502.91	0.00	0.000	1.00
84	2.00	0.00	0.00	0	548.25	0.00	0.000	0.38
85	2.00	2.79	3.13	0	570.78	52.45	107.278	0.00
86	2.00	1.48	1.37	0	590.71	23.50	47.071	0.00
87	2.00	0.00	0.00	0	552.71	0.00	0.000	0.00
88	2.00	0.00	0.00	0	608.22	0.00	0.000	1.00
89	2.00	4.98	3.69	0	585.63	76.46	83.776	0.00
90	2.00	0.00	0.00	0	638.49	0.00	0.000	2.50

MR

18 Jul 2000 21:36 TRI-CARB - 1.09 Page #3

Protocol #: 4 Pw H3 20cc #407906 User : 5268

S#	TIME	CPMA	CPMB	LUM FLAG	tSIE	DPM1	2SIGMA	CPMC
91	2.00	0.00	0.00	0	615.78	0.00	0.000	0.00
92	2.00	0.00	0.00	0	574.68	0.00	0.000	0.00
93	2.00	0.00	0.00	0	585.58	0.00	0.000	0.00

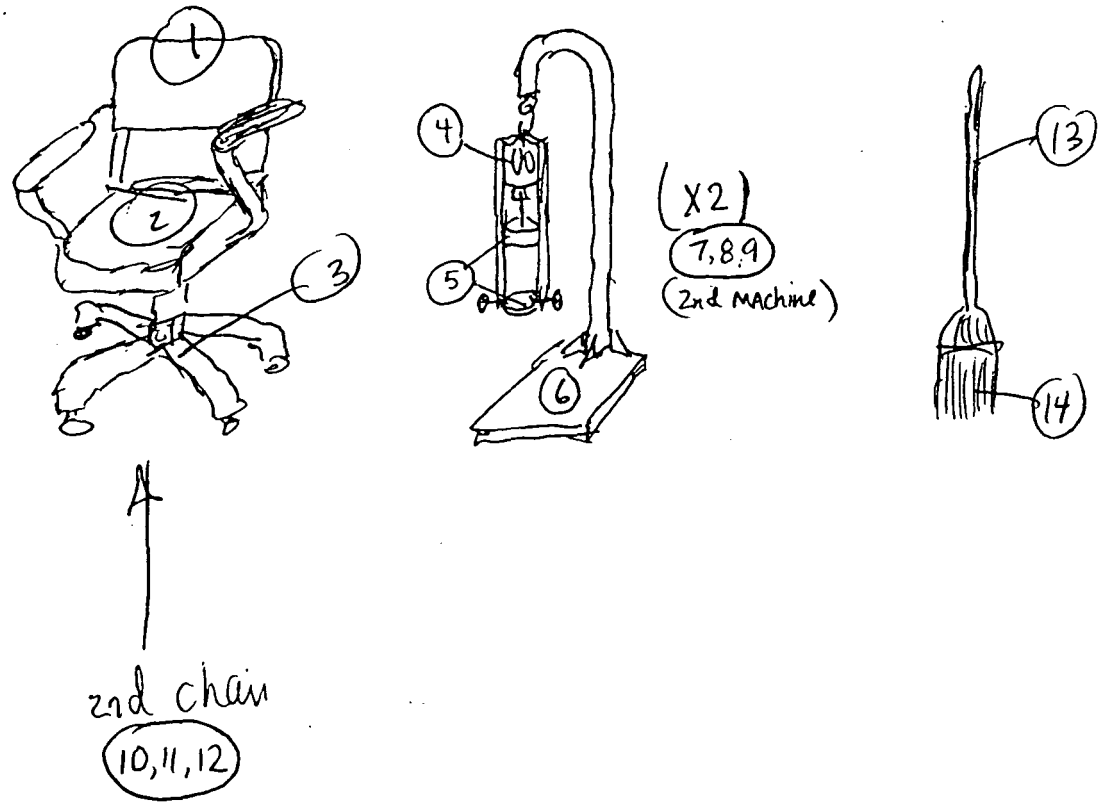
MJK

Copy

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) Bldg 85	SURVEY NO. 01-TF-1253
PURPOSE: Investigative survey of suspect items	RWP NO. N/A
	DATE: 07-16-01
	TIME: 1520

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

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
NE ELECTRA	5504/5503	10/11/01

Completed by: (Signature) Robert Coblentz / Daniel J. Harvey	HP # [redacted]	Date: 07/16/01
Completed by: (Print Name) Robert Coblentz / DANIEL J. HARVEY		
Counted by: (Signature) Dmith Brown	HP # [redacted]	Date: 7/18/01
Counted by: (Print Name) Smith-Brown		
Reviewed/Approved by: (Signature)	HP #	Date:
Reviewed/Approved by: (Print Name)		

ML-9620 (2-98)

1 H (14) R1

Survey No. 01-TF-1253

Page ___ of ___

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1	See attached sheet			Chair
2				Chair
3				Chair
4				Sift Machine
5				
6				
7				
8				
9				
10				Chair
11				Chair
12				Chair
13				Broom
14				Broom

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

COMMENTS: Bldg to be demolished. These items were potentially moved from other areas of site.

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-9620A (4-98)

Alpha/Beta Analysis

Batch ID: 01-TF-1253 HARVEY/COBLENTZ(14) BSB

Batch File: Smear Unit 1 - 200107171516
Group: H
Device: Unit 1
Geometry: Swipe/Smear
Serial Number: 64937

Acquisition Date: 7/17/2001
Count Time (min): 1.5
Recalibration Date: 5/22/2003

Sample ID	Carrier	Alpha (dpm)	2σ	Beta (dpm)	2σ
1	93	1.62	4.03	5.06	5.68
2	139	1.62	4.03	2.78	4.68
3	94	3.60	5.66	5.05	5.68
4	16	0.00	0.66	0.51	3.40
5	116	5.59	6.91	0.00	2.53
6	7	1.62	4.03	0.51	3.40
7	120	1.62	4.03	0.00	2.53
8	93	1.62	4.03	3.92	5.21
9	27	5.59	6.91	3.90	5.21
10	65	0.00	0.66	3.93	5.21
11	113	1.62	4.03	2.78	4.68
12	11	3.61	5.66	1.64	4.09
13	18	1.62	4.03	2.78	4.68
14	129	1.62	4.03	2.78	4.68

Protocol #: 7 PW H3 #403727 User : 526

Time: 2.00
Data Mode: DPM Nuclide: H3 QUENCH Quench Set: H3QUENCH
Background Subtract: 1st Vial

	LL	UL	LCR	2S%	BKG
Region A:	0.5 -	18.6	0	0.0	6.13
Region B:	2.0 -	18.6	0	0.0	5.99
Region C:	40.0 -	2000	0	0.0	10.46

Quench Indicator: tSIE/AEC
Ext Std Terminator: Count
01-TF-1253 HARVEY/COBLENTZ(14) BSB
Luminescence Correction On
Coincidence Time(ns): 18
Delay Before Burst(ns): Normal
Protocol Data Filename: C:\DATA\PROT7.DAT
Count Data Filename: C:\DATA\SDATA7.DAT

S#	TIME	CPMA	CPMB	CPMC	tSIE	LUM	FLAG	DPM1	2SIGMA
-1	10.00	6.13	5.99	10.46	647.50	2	B		0.00
0	2.00	274.93	263.75	0.54	536.25	0		558.27	63.23
1	2.00	4.87	5.01	1.04	557.35	0		9.71	9.89
2	2.00	0.00	0.01	1.04	522.84	0		0.00	0.00
3	2.00	0.00	0.00	1.54	512.99	0		0.00	0.00
4	2.00	0.02	0.11	4.54	464.73	0		0.05	8.46
5	2.00	0.37	0.00	0.00	556.59	0		0.74	7.84
6	2.00	0.00	0.00	1.54	567.20	0		0.00	0.00
7	2.00	0.87	0.83	0.00	549.40	0		1.75	8.14
8	2.00	1.09	1.20	0.00	466.58	0		2.39	9.03
9	2.00	0.00	0.00	0.00	510.78	0		0.00	0.00
10	2.00	1.85	1.99	2.54	547.89	0		3.71	8.63
11	2.00	0.00	0.00	0.00	573.03	0		0.00	0.00
12	2.00	0.70	0.85	1.54	455.21	0		1.56	8.95
13	2.00	4.32	4.46	0.00	605.90	0		8.27	9.27
14	2.00	4.37	4.51	0.04	638.21	0		8.15	9.05

SOIL ANALYSIS REPORT

FIELD SAMPLE ID:
LAB SAMPLE ID: ML10768
FILE ID: MC100067.S0
PRIORITY:

Description\Location:
BLD 85 WATER SAMPLE - AIR SCRubber

Collector:

Date Received: 7/24/200 **Date Collected:**

Radionuclide		Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)
Co-60	*	0.00	0.02	45,000
Cs-137	*	0.00	0.01	45,000
Pb-210		0.27	0.08	45,000
Ra-226	*	0.00	0.15	800
Ac-227 (D)	*	0.00	0.04	40
Th-230	*	0.05	0.78	800
Th-232 (D)	*	0.00	0.04	130
Pu-238	*	0.06	0.54	500
Am-241	*	0.00	0.01	500

Other Nuclides:

Radionuclide	Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)

Σ DOT 0.00 nCi/g

Σ Respirator 0.00

Σ Respirator <1 indicates soil levels below limit.
Values > or = 1 indicate soil levels exceed limit. Limits based on MD-10438 table 4.

Σ DOT 2 nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation.

Instrument type: High Purity Germanium

Comments: GRAMS EQUAL TO ML FOR WATER

Date: 7/25/2001 Counted By: 5613 Analyzed By: 5613 INITIALS GJM

BWXT of Ohio, Inc.

ANALYTICAL SERVICES REQUEST FOR ANALYSIS

DATE SUBMITTED:	SAMPLE TYPE:	COLLECTED BY:	NUMBER OF SAMPLES
7-31-01	Liquid	Robert Coblentz	1
PROJECT/FUNCTION:	**PRIMARY CONTACT/PHONE NO.:**		**MAIL STOP:**
SMPP/TFV	Bob Coblentz / 4324		OSW-4
CHARGE NUMBER:	**DATE(S) COLLECTED:**	**RSDS# (if applicable):**	**ATTACHMENTS (list):**
J00799	7-24-01	N/A	Gamma Spec report

ANALYSES REQUESTED (check):

- [x] ^3H
- [ ] Characterize/Approve for Sanitary or Storm Discharge. Estimate of Total Volume for Release_____ Approved_____
- [ ] Gross Alpha
- [ ] Air Filter – Isotopic Analysis
- [ ] Characterization per MD-80036, Operation #10015
- [ ] Isotopic Analysis: Pu____ U____ Th____ Am____ Other____
- [ ] Other _____

ADDITIONAL INFORMATION:

NOTE: Attach additional information (e.g. RSDS, screening results, collection data, and gamma spec. results) if applicable

LAB IDENTIFICATION	SAMPLE LOCATION	SAMPLE NUMBER	3H RESULTS
0107935	Bldg 85 Air Scrubber	1	< LDL LDL = 0.6 nCi/L

COMMENTS: α = < LDL
LDL = 0.6 dpm/mL

ANALYZED BY: [signature] DATE: 7.31.01

ML-5222 (1-01)

SOIL ANALYSIS REPORT

FIELD SAMPLE ID:
LAB SAMPLE ID: ML10769
FILE ID: MC100068.S0
PRIORITY:

Description\Location:
BLD 85 WATER SAMPLE - SUMP

Collector:

Date Received: 7/24/200 **Date Collected:**

Radionuclide		Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)
Co-60	*	0.00	0.02	45,000
Cs-137	*	0.00	0.01	45,000
Pb-210	*	0.02	0.08	45,000
Ra-226	*	0.04	0.17	800
Ac-227 (D)	*	0.00	0.04	40
Th-230	*	0.00	0.90	800
Th-232 (D)	*	0.01	0.04	130
Pu-238	*	0.00	0.67	500
Am-241	*	0.00	0.01	500

Other Nuclides:

Radionuclide	Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)

Σ DOT **0.00** **nCi/g**

Σ Respirator **0.00**

Σ Respirator <1 indicates soil levels below limit.
Values > or = 1 indicate soil levels exceed limit. Limits based on MD-10438 table 4.

Σ DOT 2 nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation.

Instrument type: High Purity Germanium

Comments: GRAMS EQUAL TO ML FOR WATER

Date: 7/26/2001 Counted By: 5613 Analyzed By: 5613 INITIALS GJM

BWXT of Ohio, Inc.

ANALYTICAL SERVICES REQUEST FOR ANALYSIS

DATE SUBMITTED:	SAMPLE TYPE:	COLLECTED BY:	NUMBER OF SAMPLES
7-31-01	Liquid	Robert Coblentz	1

PROJECT/FUNCTION:	PRIMARY CONTACT/PHONE NO.:	MAIL STOP:
SMPP/TFV	Robert Coblentz / 4324	OSW 4

CHARGE NUMBER:	DATE(S) COLLECTED:	RSDS# (if applicable):	ATTACHMENTS (list):
J00799	7-24-01	N/A	Gamma Spec report

ANALYSES REQUESTED (check):

- [x] ^3H
- [ ] Characterize/Approve for Sanitary or Storm Discharge. Estimate of Total Volume for Release_____ Approved_____
- [ ] Gross Alpha
- [ ] Air Filter – Isotopic Analysis
- [ ] Characterization per MD-80036, Operation #10015
- [ ] Isotopic Analysis: Pu____ U____ Th____ Am____ Other____
- [ ] Other _____

ADDITIONAL INFORMATION:

NOTE: Attach additional information (e.g. RSDS, screening results, collection data, and gamma spec. results) if applicable

LAB IDENTIFICATION	SAMPLE LOCATION	SAMPLE NUMBER	^3H RESULTS
0107934	Bldg 85 Sump	1	<LDL LDL=0.6nCi/L

COMMENTS:

α <LDL = 0.6 dpm/mL

ANALYZED BY:	DATE:
[signature]	7-31-01

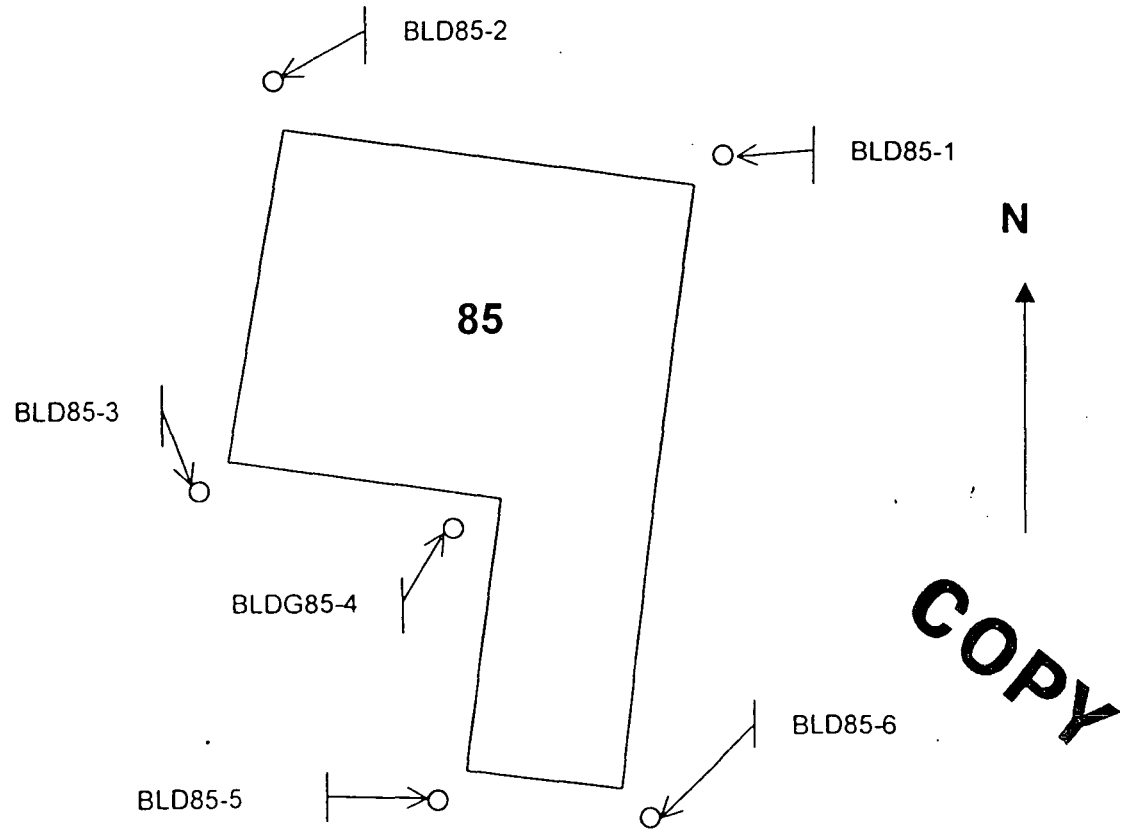
ML-3222 (1-01)

RADIOLOGICAL SURVEY DATA SHEET

1 of 89 DJH 1-21-02

LOCATION: (BLDG./AREA/ROOM) 85 SLAB	SURVEY NO. 01-OSA-079
PURPOSE: 85 BUILDING SOIL SAMPLES	RWP NO. N/A
	DATE: 11-19-01 ~~12-17-01~~ DJH 12-17-01
	TIME: 1005

MAP/DRAWING



* NOTE: LARGE AREA WIPES AND DIRECT'S TAKEN ON ~~SAMPLE~~ SAMPLE DJH 12-17-01
CONTAINER RESULTS ⇒ <100 α <5K β-

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
BICRON	3532/3825	8-7-02
ELECTRA	5393/5407	9-17-02
	N/A	

Completed by: (Signature)	HP # [redacted]	Date: 12-17-01
Completed by: (Print Name) DANIEL J. HARVEY		
Counted by: (Signature) N/A	HP #	Date:
Counted by: (Print Name) N/A		
Reviewed/Approved by: (Signature)	HP # [redacted]	Date: 12-17-01
Reviewed/Approved by: (Print Name) RMCoblentz		

ML-9620 (2-98)

2 of 84 01-OSA-079 Page ___ of ___

DH 1-21-02

RADIOLOGICAL SURVEY DATA SHEET (cont.)

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

N/A

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

N/A

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 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-9620A (4-98)

SOIL ANALYSIS REPORT

FIELD SAMPLE ID:
LAB SAMPLE ID: ML12117
FILE ID: MG101231.S0
PRIORITY: Y

Description\Location:
Building 85 #1
Long Count

Collector: 6178

Date Received: 11/19/01 **Date Collected:**

Radionuclide		Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)
Co-60	*	0.00	0.02	45,000
Cs-137	*	0.00	0.01	45,000
Pb-210		0.58	0.17	45,000
Ra-226		1.40	0.27	800
Ac-227 (D)	*	0.00	0.07	40
Th-230	*	0.46	1.82	800
Th-232 (D)		0.36	0.05	130
Pu-238	*	0.00	4.28	500
Am-241	*	0.00	0.02	500

Other Nuclides:

Radionuclide	Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)

Σ DOT **0.01** **nCi/g**

Σ Respirator **0.02**

Σ Respirator <1 indicates soil levels below limit.
Values > or = 1 indicate soil levels exceed limit. Limits based on MD-10438 table 4.

Σ DOT 2 nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation.

Instrument type: High Purity Germanium

Comments:

01-OSA-079 DJA 3 of 89 DJA 1-21-02

Date: 12/3/01 Counted By: 5801 Analyzed By: 5755 INITIALS JSS

SOIL ANALYSIS REPORT

FIELD SAMPLE ID: BD-85 #2
LAB SAMPLE ID: ML12118
FILE ID: MG200819.S0
PRIORITY: Y

Description\Location:
85 Building #2
Long Count

Collector: D. Harvey, [redacted]

Date Received: 11/19/01 **Date Collected:**

Radionuclide		Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)
Co-60	*	0.00	0.01	45,000
Cs-137	*	0.00	0.01	45,000
Pb-210		0.46	0.21	45,000
Ra-226		1.73	0.22	800
Ac-227 (D)	*	0.06	0.10	40
Th-230	*	0.38	2.17	800
Th-232 (D)		0.38	0.03	130
Pu-238	*	0.06	22.96	500
Am-241	*	0.00	0.02	500

Other Nuclides:

Radionuclide	Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)

Σ DOT **0.03** **nCi/g**

Σ Respirator **0.06**

Σ Respirator <1 indicates soil levels below limit.
Values > or = 1 indicate soil levels exceed limit. Limits based on MD-10438 table 4.

Σ DOT 2 nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation.

Instrument type: High Purity Germanium

Comments:

DJH

01-OSA-079

4 of 89 1-21-02

Date: 12/3/01 Counted By: 5801 Analyzed By: 5801 INITIALS

SOIL ANALYSIS REPORT

FIELD SAMPLE ID: BD-85 #3
LAB SAMPLE ID: ML12119
FILE ID: MG300762.S0
PRIORITY: Y

Description\Location:
85 Building #3
Long Count

Collector: D. Harvey, [redacted]

Date Received: 11/19/01 **Date Collected:**

Radionuclide		Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)
Co-60	*	0.01	0.02	45,000
Cs-137	*	0.00	0.01	45,000
Pb-210		0.37	0.24	45,000
Ra-226		1.60	0.30	800
Ac-227 (D)	*	0.08	0.08	40
Th-230	*	0.00	2.60	800
Th-232 (D)		0.31	0.05	130
Pu-238	*	0.42	7.40	500
Am-241	*	0.00	0.03	500

Other Nuclides:

Radionuclide	Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)

Σ DOT **0.01** **nCi/g**

Σ Respirator **0.02**

Σ Respirator <1 indicates soil levels below limit.
Values > or = 1 indicate soil levels exceed limit. Limits based on MD-10438 table 4.

Σ DOT 2 nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation.

Instrument type: High Purity Germanium

Comments:

01-OSA-079

5 of 89

1-21-02

Date: 12/3/01 Counted By: 5801 Analyzed By: 5801 INITIALS

SOIL ANALYSIS REPORT

FIELD SAMPLE ID: BD-85 #4
LAB SAMPLE ID: ML12120
FILE ID: MG400167.S0
PRIORITY: Y

Description\Location:
85 Building #4
Long Count

Collector: D. Harvey, [redacted]

Date Received: 11/19/01 **Date Collected:**

Radionuclide		Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)
Co-60	*	0.00	0.01	45,000
Cs-137	*	0.00	0.01	45,000
Pb-210		0.63	0.19	45,000
Ra-226		1.54	0.22	800
Ac-227 (D)	*	0.04	0.06	40
Th-230	*	1.24	1.93	800
Th-232 (D)		0.36	0.03	130
Pu-238	*	0.00	15.54	500
Am-241	*	0.00	0.02	500

Other Nuclides:

Radionuclide	Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)

Σ DOT **0.02** **nCi/g**

Σ Respirator **0.04**

Σ Respirator <1 indicates soil levels below limit.
Values > or = 1 indicate soil levels exceed limit. Limits based on MD-10438 table 4.

Σ DOT 2 nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation.

Instrument type: High Purity Germanium

Comments:

01-OSA-079

DJH 6 of 8 9 11-21-02

Date: 12/3/01 Counted By: 5801 Analyzed By: 5801 INITIALS 3JH

SOIL ANALYSIS REPORT

FIELD SAMPLE ID:
LAB SAMPLE ID: ML12121
FILE ID: MG200832.S0
PRIORITY: Y

Description\Location:
Building 85 #5

Collector: 6178

Date Received: 11/19/01 **Date Collected:**

Radionuclide		Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)
Co-60	*	0.01	0.01	45,000
Cs-137	*	0.01	0.01	45,000
Pb-210		0.70	0.28	45,000
Ra-226		1.65	0.33	800
Ac-227 (D)	*	0.08	0.09	40
Th-230	*	0.45	2.87	800
Th-232 (D)		0.42	0.04	130
Pu-238	*	6.61	7.22	500
Am-241	*	0.01	0.03	500

Other Nuclides:

Radionuclide	Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)

Σ DOT **0.01** **nCi/g**

Σ Respirator **0.03**

Σ Respirator <1 indicates soil levels below limit.
Values > or = 1 indicate soil levels exceed limit. Limits based on MD-10438 table 4.

Σ DOT 2 nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation.

Instrument type: High Purity Germanium

Comments:

01-OSA-079 DJH DJH 1-21-02 7of89

Date: 12/6/01 Counted By: 5801 Analyzed By: 5755 INITIALS

SOIL ANALYSIS REPORT

FIELD SAMPLE ID:
LAB SAMPLE ID: ML12122
FILE ID: MG300770.S0
PRIORITY: Y

Description\Location:
Building 85 #6

Collector: 6178

Date Received: 11/19/01 **Date Collected:**

Radionuclide		Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)
Co-60	*	0.00	0.02	45,000
Cs-137	*	0.01	0.02	45,000
Pb-210		0.43	0.34	45,000
Ra-226		1.76	0.38	800
Ac-227 (D)		0.23	0.11	40
Th-230	*	2.14	3.30	800
Th-232 (D)		0.33	0.07	130
Pu-238	*	0.00	10.97	500
Am-241	*	0.03	0.04	500

Other Nuclides:

Radionuclide	Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)

Σ DOT **0.02** **nCi/g**

Σ Respirator **0.04**

Σ Respirator <1 indicates soil levels below limit.
Values > or = 1 indicate soil levels exceed limit. Limits based on MD-10438 table 4.

Σ DOT 2 nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation.

Instrument type: High Purity Germanium

Comments: DJH 1-21-02 TH-230 ~~TH-230~~ MDA TO HIGH SAMPLE RESUBMITTED AND REANALYZED. RESULTS ON PAGE 9 01-OSA-079 DJH DJH-1-21-02 8 of 89

Date: 12/6/01 Counted By: 5801 Analyzed By: 5755 INITIALS JSS

Laboratory ID#: 0200349
Project/function: Bldg 85
Submitted: Jan 8, 2002
Submitted by: Dan Harvey
Point of Contact: Dan Harvey
RSDS#: 01-OSA-079
Date: Jan 17, 2002

0200349

Isotope	Sample Location	pCi/g	Uncertainty +/-	LDL (pCi/g)
Th-232	Bldg 85	0.42	0.09	0.029
Th-230	Bldg 85	1.11	0.18	0.029
Th-228	Bldg 85	0.48	0.10	0.078
Th-227	Bldg 85	0.16	0.05	0.029

* NOTE: THIS IS A REANALYSIS OF PAGE 8

Bradley D Justice — [redacted] — 1/17/02
Analyst — HP # — Date

L. A. Hopkins — [redacted] — 1-17-02
Data Verification — HP # — Date

DQA