OVERSIZE PAGES

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3005-0402190001

CH2M HILL
Mound, Inc.
1 Mound Road
P.O. Box 3030
Miamisburg, OH
45343-3030

CH2MHILL

SM-029/03
May 29, 2003

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

ATTENTION: Paul Lucas

SUBJECT: Contract No. DE-AC24-03OH20152
BUILDING 94, BUILDING DATA PACKAGE, FINAL

REFERENCE: Statement of Work Requirement 055 - Regulator Reports

Dear Mr. Provencher:

Paul Lucas from your office has approved the release of the following final document:

- Building 94, Building Data Package, Final

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

Sincerely,

K. L. Kehler
SMPP/TFV Project Manager

KLK/VKD

Enclosures

Approved: Frank Schmaltz for Paul Lucas
CERCLA Program Manager

cc: Dave Seely, USEPA, (1) w/attachments
Brian Nickel, OEPA, (1) w/attachments
Ruth Vandegrift, ODH, (1) w/attachments
Frank Schmaltz, DOE/MCP, (1) w/attachments
Randy Tormey, DOE/OH, (1) w/attachments
Terry Tracy, DOE/HQ, (1) w/attachments
Dann Bird, MMCIC, (3) w/attachments
Jim Bonfiglio, MESH, (1) w/attachments
Public Reading Room (4) w/attachments
John Fulton, CH2M Hill, w/o attachments
Bob Ransbottom, CH2M Hill, (1) w/attachments
Val Darnell, CH2M Hill, (1) w/attachments
Kurt Kehler, CH2M Hill, (1) w/attachments
DCC (1) w/attachments
Administrative Record (2) w/attachments

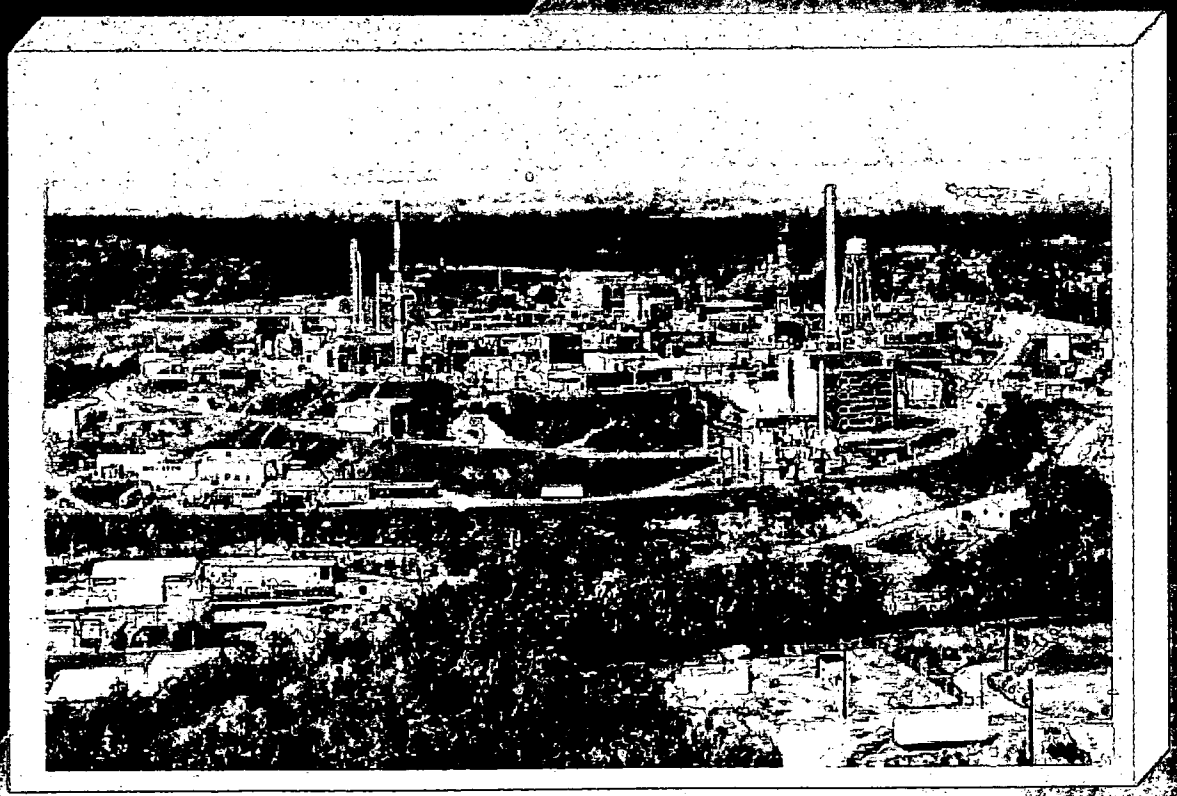
MOUND

Environmental Restoration Program

OhioEPA

MIAMISBURG CLOSURE PROJECT
Building Data Package
Building 94

Final
May 2003



MOUND

Environmental Restoration Program

MIAMISBURG CLOSURE PROJECT BUILDING DATA PACKAGE

Notice of Public Review Period

The following Building Data Package (BDP) is available for public review in the CERCLA Public Reading Room, 305 E. Central Ave., Miamisburg, Ohio. Public comment on this document will be accepted 22 January 2003 through 20 February 2003.

BDP Building 94: Materials Compatibility

Questions can be referred to Paul Lucas at (937) 865-4578.

BDP Building 94

REV	DESCRIPTION	DATE
WORKING DRAFT (to DOE)		**January 2003**
DRAFT (to Core Team)	BDPs for construction demolitions undergo simultaneous review by the Core Team and public.	**N/A**
DRAFT PROPOSED FINAL (incorporates Core Team comments)		**N/A**
PUBLIC REVIEW DRAFT	The public review period is January 22, 2003 through February 20, 2003.	**January 2003**
FINAL	No public comments were received. No USEPA comments were received. OEPA comments were addressed. Text changes include: additional narrative added to Section 4.2.4.3 regarding the pilot test study, and a revision of the list of chemicals previously in the building (Appendix K).	**May 2003**

BUILDING DATA PACKAGE (BDP)

Building 94

(Demolition)

DOE MIAMISBURG CLOSURE PROJECT

MIAMISBURG, OHIO 45343

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1.0 GENERAL OVERVIEW

1.1 Introduction

The purpose of this Building Data Package (BDP) is to prepare for the demolition of Building 94 (Materials Compatibility) and to identify, if possible, any recognized environmental conditions (defined below) that may affect the subject property and building.

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 air, ground, groundwater, or surface water near the building.

1.2 Scope

This document has been prepared in accordance with the agreements and requirements as specified in the *Work Plan for Environmental Restoration of the DOE Mound Site, The Mound 2000 Approach*. This document is a BDP for Building 94 located at the Department of Energy (DOE) Miamisburg Closure Project (MCP) in Miamisburg, Ohio. The investigation performed to support this BDP models procedures found in *ASTM Standard Practice for Environmental Site Assessments; Phase I Environmental Site Assessment Process* (Designation E 1527-97).

The scope of the investigation included Building 94, the soil beneath, and a 15-foot wide perimeter border around the building. The investigation of Building 94 included the following:

A) A building and perimeter inspection.
B) An examination of historical aerial photographs and maps.
C) A review of federal and state regulatory agency records.
D) Personnel interviews.
E) A review of site records for:

   1) History of spills, releases, and chemical inventories
   2) Past sampling data

      - Radiological survey
      - Soil sampling
      - Lead-based paint
      - Asbestos
      - Radon

In addition to the building investigation conducted by site contractor personnel, documents were reviewed. Information used to compile BDPs includes the following:

- Characterization of Mound's Hazardous, Radioactive, and Mixed Wastes, August 1990
- Operable Unit 9 (OU-9) Site Scoping Report, Volumes 1-12
- Mound Facility Physical Characterization, December 1992
- Active Underground Storage Tank Plan, November 1994
- OU-9 Hydrological Investigation, Bedrock Report, January 1994
- OU-9 Hydrological Investigation, Buried Valley Aquifer Report, March 1994
- Environmental Appraisal Report of the Mound Plant, March 1996
- Title Search
- Lease Information
- EDR Report - Radius Map
- Building Prints
- Potential Release Site (PRS) information
- MD-22153, Mound Site Radionuclides By Location, July 1995 Contaminant Surveys
- MLM-3791, Mound Facility Physical Characterization, December 1993

2.0 BUILDING SPECIFIC OVERVIEW

Building 94, was constructed in the 1984/85 timeframe in the plant valley area near the western edge of the site boundary (see Appendix E photos). It is a single-story, 1,240 square-foot, pre-fabricated "Butler"-type metal building with a metal roof, constructed on a one-foot thick reinforced concrete slab. The building has four rooms: three larger bays (Bays 1-3) and one smaller mechanical area (Room 4). Floor plans are provided as Appendix D.

The building is serviced with window air conditioner units for cooling and heat is provided by thermostatically controlled electric heaters located in each of the three bays. The smaller room has an electric fin-tube-type radiation heater. There are louver covered exhaust fans located in each bay. The building has potable water and sanitary services provided by the site facility. Electric service is 240 volts.

2.1 Current Uses of Building 94

Building 94 is currently vacant and inactive. Safe Shutdown is in process.

2.2 Past Uses of Building 94

Building 94 was built as the "Materials Compatibility Building" to support detonator and explosives program operations. Originally, Bays 1 through 3 were oven rooms, and

Room 4 was an equipment room. Subsequently, the building was used for materials aging as described in one report that notes "explosives, pyrotechnics, and explosive components are heated in ovens (aged)." When the material aging processes were discontinued, the ovens were removed from the building. Later, the building was used as a staging area for soil and water sample storage.

In 1998, the building housed a pilot study to evaluate the effectiveness of extracting plutonium and thorium contamination from soil collected at the MCP site. Because of the process' ineffectiveness at removing thorium and high cost of operation, the program ended in 1999. The equipment was removed from the building and the building was cleaned.

In 2000, the building was turned over to the Test Fire Valley (TFV) project and was used to store Environmental Restoration (ER) project soil and water samples that had been collected at the site, analyzed at offsite laboratories, and returned to the site for disposal. In June 2002, the building was vacated and preparations for demolition were initiated.

2.3 Summary of Environmental Concerns and Findings - Building 94

Table 1: Summary of Environmental Concerns and Findings

Description	Comment	Resolution
Lead-Based Paint	No previous lead surveys or sampling data could be found. The paint coatings in a few areas within the building were analyzed in the field using a Niton Model XL-309 XRF (x-ray flourescence) lead detector. The sampled paints were found to not contain any amount of lead within the instrument's detection limit (Appendix J). No lead paint hazards currently exist within the building, and no further action is necessary unless any of the untested coatings were to be disturbed by close worker contact.	If lead-based paint were present, there would be no impact to the demolition or disposal of the facility. Close worker disturbance of paint coatings (sanding, grinding, scraping, torching) would be avoided during demolition. If close disturbance is necessary, the point of contact will be tested for lead and appropriate controls and personal protective equipment (PPE) used for disturbance as required.
Chemicals	All chemicals have been removed from the building.	N/A
Fluorescent Lamps and Polychlorinated Biphenyls (PCBs)	N/A	N/A
Air Emissions	N/A	N/A

Table 1: Summary of Environmental Concerns and Findings

Description	Comment	Resolution
Asbestos	An asbestos survey of the building was conducted in accordance with Environmental Protection Agency (EPA) National Emission Standards for Hazardous Air Pollutants (NESHAP) requirements. No asbestos-containing materials were identified. See Appendix I.	N/A
Drainage Sumps	N/A	N/A
Lead	N/A	N/A
Mercury	N/A	N/A
Radiological	Radiological surveys of building surfaces showed areas with readings above surface release criteria.	Areas with elevated radiological readings were remediated. All final surveys showed that remediation was successful and all areas meet surface release criteria. See Section 2.4 and Appendix G.
Soil Contamination	Of the historic soil samples collected within a 15-foot perimeter of Building 94, one boring location west of the building showed one analytical result (at a depth of 1.5 feet below ground surface) above screening level (Section 4.2.4.2; Appendix L).	Based on the soil analytical results, no additional protective measures are indicated during building demolition activities. The boring location with the elevated reading will be evaluated as part of the PRS 41 Further Assessment Sampling and Analysis Plan. Any required soil sampling and remediation will be handled by the ER group.
Septic System	N/A	N/A
Wastewater	Handled by the site wastewater facility.	N/A
Stains & Corrosion/HVAC	N/A	N/A
Storage Tanks	N/A	N/A
Solid Waste Disposal	N/A	N/A
Migratory Hazards	N/A	N/A
Radon	Within acceptable limits.	N/A
Energetic Material	N/A	N/A

N/A: not applicable

2.4 Radiological Characterization Summary for Building 94

A radiological assessment of Building 94 was performed by reviewing operational history, and radiological survey information. Building 94 was initially placed in service to support detonator and explosives program operations. It then was used to store Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) program materials, including aqueous and soil samples collected on site, analyzed at offsite laboratories, and returned to the site for disposition. The building was subsequently used as a site for demonstration of a process for washing radioactively contaminated soils. The most recent use was for ER sampling support.

Building 94 was classified as radiologically impacted because of its history of radioactive material processing and storage. Surveys were performed throughout the building in accordance with the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM). Several areas of elevated surface activity were identified on the floor and remediated. The Final Status surveys demonstrate that remediation was complete and no additional elevated areas were found. The review team has concluded that the building meets radiological surface release criteria established by DOE Order 5400.5 (see Table 2), and no further radiological surveys are required. Supporting documentation for the information summarized in the following table is contained in Appendix G.

Table 2: Radiological Summary

TYPE	RSDS (Radiological Survey Data Sheet)	LOCATION	SURVEY RESULTS (dpm/100 cm^2) (Note 1)	SURFACE CONTAMINATION GUIDELINES (dpm/100 cm^2) (Note 2)
Highest Alpha Smearable Activity	02-TF-1462	Internal Floor Surface	8.74	20
Highest Alpha Fixed Activity	02-TF-1461	Internal Floor Surface	85	100
Highest Beta Smearable Activity	02-TF-1459	Internal Wall Surface	9.59	1,000
Highest Beta Fixed Activity	02-TF-1462	Internal Floor Surface	960	5,000
Highest Tritium Smearable Activity	02-TF-1465	External Wall Surface	28.62	10,000

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

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

3.0 SITE DESCRIPTION

3.1 Site/Vicinity Location and Characteristics

Building 94 is located at the DOE MCP site, formerly known as Mound Plant. The site is located in the City of Miamisburg, Miami Township, Montgomery County, State of Ohio as shown in Appendix B.

The site at one time encompassed approximately 300 acres of land and contained 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, consisted of two hills and an intervening valley that runs approximately east and west. The 124-acre tract acquired in 1981 was 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 onsite.

To the west lies a railroad line and the north south trending Miami-Erie Canal. The northern boundaries of the site abut the 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 formed the southern property line of the site (at the 300-acre stage), with agricultural fields and farms occupying the lands beyond.

3.2 Description of Structures, Roads, Other Improvements in Proximity to Building 94

As shown on Figures 2 and 4, Building 94 is bordered on the south by a gravel area, the west by an asphalt/gravel area, and the north by a concrete walkway and gravel area. The building's four entrances are all located on the east-facing wall, and are accessed at the concrete dock. Beyond the dock is an asphalt parking area. The north and west walls of the building are contiguous with the current site security fence. In the vicinity of Building 94 are the plant's sanitary treatment plant (to the southeast) and the railroad tracks that enter the site to the west and continue around the north side of the building.

3.3 Current and Past Uses of Buildings in Proximity to Building 94

The closest buildings (Figure 3) to Building 94 are:

- Building 57 (Sanitary Sewage Disposal Plant), located east of Building 94, is a 510 square-foot building used as the control room and lab for the Sanitary Sewer Plant.

- Building 112 (Sand Filters Building), located southeast of Building 94, is a 785 square-foot building used to house equipment and filters for effluent treatment, testing, and monitoring.

- Building 113 (Dewatering Building), located east of Building 94, is a 547 square-foot building used for chemical and equipment storage.

- Building 432 (Sand Filters Building), located southeast of Building 94, is a 192 square-foot building used to house water testing equipment.

- Electrical Generator (EG) 8 (Standby Generator), located east of Building 94, is a 135 square-foot building that contains an electrical generator. The building is attached to Building 57.

4.0 RECORDS REVIEW

4.1 General/Historical CERCLA Information

In compliance with permit requirements under the Resource Conservation and Recovery Act (RCRA), Clean Water Act (CWA), Safe Drinking Water Act (SDWA), and Clean Air Act (CAA), the MCP site has applied for or has received permits for its surface water discharges, air emissions, and hazardous waste program. The site is currently operating a hazardous waste storage facility under a RCRA Part B Permit dated October 18, 1996, and maintains a National Pollutant Discharge Elimination System (NPDES) surface water discharge permit with Facility I.D. number OH 0009857. Operations that produce particulate or vaporous emissions are either permitted or registered with the Regional Air Pollution Control Agency (RAPCA) and the Ohio Environmental Protection Agency (OEPA). The site submits annual Emergency and Hazardous Chemical Inventory forms to OEPA, pursuant to the Superfund Amendment and Reauthorization Act (SARA) Title III, the Emergency Planning and Community Right-to-Know Act. The 2001 version of this report indicated that no chemicals (meeting reporting criteria) are stored in Building 94.

The Mound Plant was identified as a contaminated site on the National Priorities List under CERCLA (Superfund) in 1989. The site was originally listed because of volatile organic compound (VOC) contamination in the western end of the lower valley area. The cleanup of the site was originally to be accomplished under the CERCLA-mandated procedures for regulating Superfund sites using the OU system to define and characterize cleanup areas. As the cleanup effort went forward, it became apparent that the site did not fit the profile for a cleanup strategy based on the operable units. The DOE, the United States Environmental Protection Agency (USEPA), and OEPA designed a new decision making process for the cleanup of the site. 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 the site into geographical parcels containing over 400 PRSs with approximately equal numbers of PRSs concerned with potentially contaminated soil and with potential contamination in or associated primarily with building operations. A PRS is an area where historic or current process knowledge indicates that an area may have had

releases of radioactive and/or hazardous materials. For a more detailed description, refer to the *Work Plan for Environmental Restoration of the DOE Mound Site, the Mound 2000 Approach*.

4.2 Specific Record Sources for Building 94

4.2.1 Occurrence Reports

A search of the occurrence reporting system revealed one report (Appendix M):

- Contaminated Wrench Found in Building 94

4.2.2 Spills and Releases

- None

4.2.3 Associated PRS Overview

As a result of the investigations and documentation accomplished to comply with the CERCLA cleanup process via the Federal Facilities Agreement (FFA)/DOE ER Program, DOE and the site contractor tabulated all the PRSs identified under the various regulatory programs in effect at the site. Of these 440 PRSs, six are near Building 94 (see Table 3, and Appendix N); however, none of the PRSs are associated with Building 94.

Table 3: PRSs in Proximity to Building 94

PRS	CERCLA or Bldg. Related	Binning Status	Comments
7	CERCLA	Further Assessment (FA)	Plant Sanitary Outfall Pipeline.
31	CERCLA	No Further Assessment (NFA)	Underground Sanitary Sewer Line G5.
41	CERCLA	FA*	Area 3, Thorium Drum Storage and Redrumming Area. Building 94 is located entirely within PRS 41.
54	Buildings	Unbinned	Building 57 Sand Filters (2 Units).
56	Buildings	Unbinned	Building 57 Chlorine Contact Chamber (Tank 112).
356	CERCLA	NFA	Elevated Soil Gas Location.

** PRS 41 is currently undergoing further assessment soil sampling; samples will be taken around the Building 94 footprint. Any required soil sampling and remediation will be handled by the ER group.*

4.2.4 Sampling Data

4.2.4.1 Radiological Surveys

Initial radiological surveys showed some results above screening criteria. Remediation was performed and final surveys showed that the remediation was effective and no additional elevated areas remain. The review team concluded that Building 94 meets radiological surface release criteria established by DOE Order 5400.5 (see Section 2.4 and Appendix G).

4.2.4.2 Soil Sampling Data

Appendix L provides a graphic showing all soil sample locations within a 15-foot perimeter of Building 94, and provides tables for all detected compounds (results above laboratory detection limits) and non-detected compounds (results below laboratory detection limits). Maximum exceedances to screening levels (the Core Team approved, or the most restrictive of either the 10^{-6} Risk-Based Guideline Values [RBGVs] plus background or Hazard Index = 1) are listed in Table 4. All other results are below applicable levels.

Table 4: Maximum Results Exceeding Screening Levels

Analyte	Maximum Result	Background	RBGV* (10^{-6})	Screening Level
Thorium-232 (pCi/g)	3.56	1.4	0.07	1.47

**RBGV: most stringent of construction and office worker scenarios per Risk-Based Guideline Values, March 1997, Final, as performed using April 2001 HEAST slope factors.*

As shown in Table 4 above, one result from boring location CO115 had a thorium-232 result that exceeded the screening level. The sample was collected from a depth of 1.5 feet below ground surface. That boring location will be evaluated as part of the PRS 41 Further Assessment Sampling and Analysis Plan. Any required soil sampling and remediation will be handled by the ER group.

Based on the soil analytical results, no additional protective measures are indicated during building demolition activities.

4.2.4.3 Chemical History

The 1998 Pilot Test Program (described in Section 2.2) used a number of chemicals in its process of extracting plutonium and thorium from contaminated soil. Appendix K provides a list of the chemicals used in the extraction process. Chemicals associated with this program were removed from the building when the program was terminated.

As a former weapons materials compatibility/aging facility, Building 94 once contained small quantities of most materials typical of Mound-produced explosive assemblies. These materials were contained within the assemblies and included explosives, pyrotechnics,

plastics, adhesives, and metals. The weapons materials compatibility assemblies were prepared in other buildings and aged in environmental chambers in Building 94. Disassembly of the compatibility assemblies and subsequent characterization and analyses were also carried out in other buildings. A list of the non-weapons related chemicals known to have been used in Building 94 is included in Appendix K.

All weapons materials and other chemicals have been removed from building. The most recent (March 2002) annual chemical inventory report found one "emergency and hazardous" chemical located in the building: gasoline. All gasoline has been removed from the building in preparation for demolition. Applicable pages of the report are included in Appendix K.

4.2.4.4 Lead-Based Paint

No prior lead surveys or sampling data could be found for Building 94. The paint coatings in a few areas within the building exhibited some disturbance due to impact damage. Representative samples of the damaged paint were analyzed in the field using a Niton Model XL-309 XRF lead detector. The sampled paints were found to not contain any amount of lead within the instrument's limit of detection. A copy of the Niton's lead sample readout is provided in Appendix J. No lead paint hazards currently exist within the building, and no further action would be necessary unless any of the untested coating were to be disturbed by close worker contact (sanding, grinding, scraping, torching).

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

4.2.4.5 Asbestos

An asbestos survey was conducted in accordance with EPA NESHAP requirements prior to demolition. No asbestos-containing materials were identified. A copy of the survey is provided in Appendix I.

4.2.4.6 Radon

The results of a 1989-90 Mound Indoor Radon study indicated an average radon concentration of 0.5 picoCuries/liter (pCi/L) in Building 94 (Appendix H). The USEPA recommended standard for a maximum radon level is 4.0 pCi/L.

4.3 Review of Building Prints

Building prints were reviewed and no significant items were identified. Floor plans are included in Appendix D.

4.4 Aerial Photographs

Aerial photographs from 1983 (prior to construction), 1994 (following construction), and 1996 (most recent aerial photo) were reviewed and no significant items were identified. Aerial photographs are presented in Appendix E.

4.5 Interviews

Past Building Manager, K.G. Koehler, was interviewed via a building manager questionnaire (included in Appendix F). The current Building Manager is Gary Weidenbach. No significant items in the building were identified based on the questionnaire or interviews.

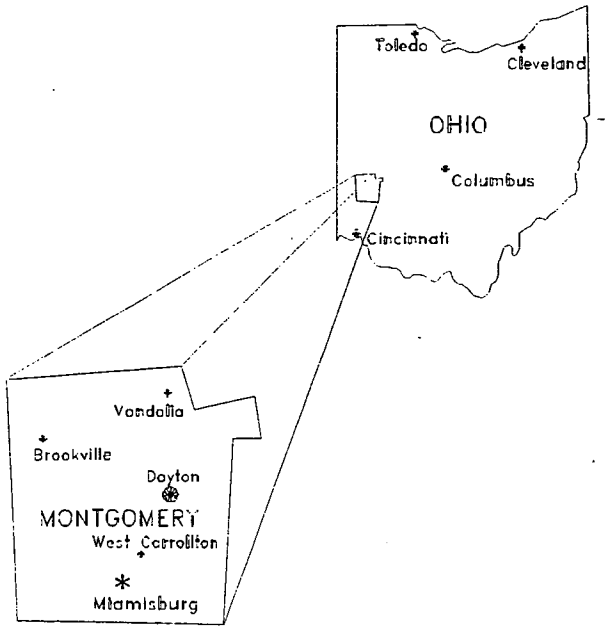
Appendix A

General Listing of Acronyms

ASTM	American Society for Testing and Materials
BDP	Building Data Package
BWXTO	BWXT of Ohio, Inc.
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation & Liability Act
cm^2	centimeters squared
CWA	Clean Water Act
DOE	United States Department of Energy
DPM	disintegrations per minute
EPA	United States Environmental Protection Agency
ER	Environmental Restoration (Program)
FFA	Federal Facility Agreement
HAZMAT	hazardous materials
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MCP	Miamisburg Closure Project
N/A	not applicable
NPDES	National Pollutant Discharge Elimination System
OEPA	Ohio Environmental Protection Agency
OU	Operable Unit
PCB	polychlorinated biphenyl
pCi/L	picoCuries per liter
PRS	Potential Release Site
RI/FS	Remedial Investigation/Feasibility Study
RAPCA	Regional Air Pollution Control Agency
RCRA	Resource Conservation and Recovery Act
RSDS	Radiological Survey Data Sheet
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound

Appendix B

Map of Montgomery County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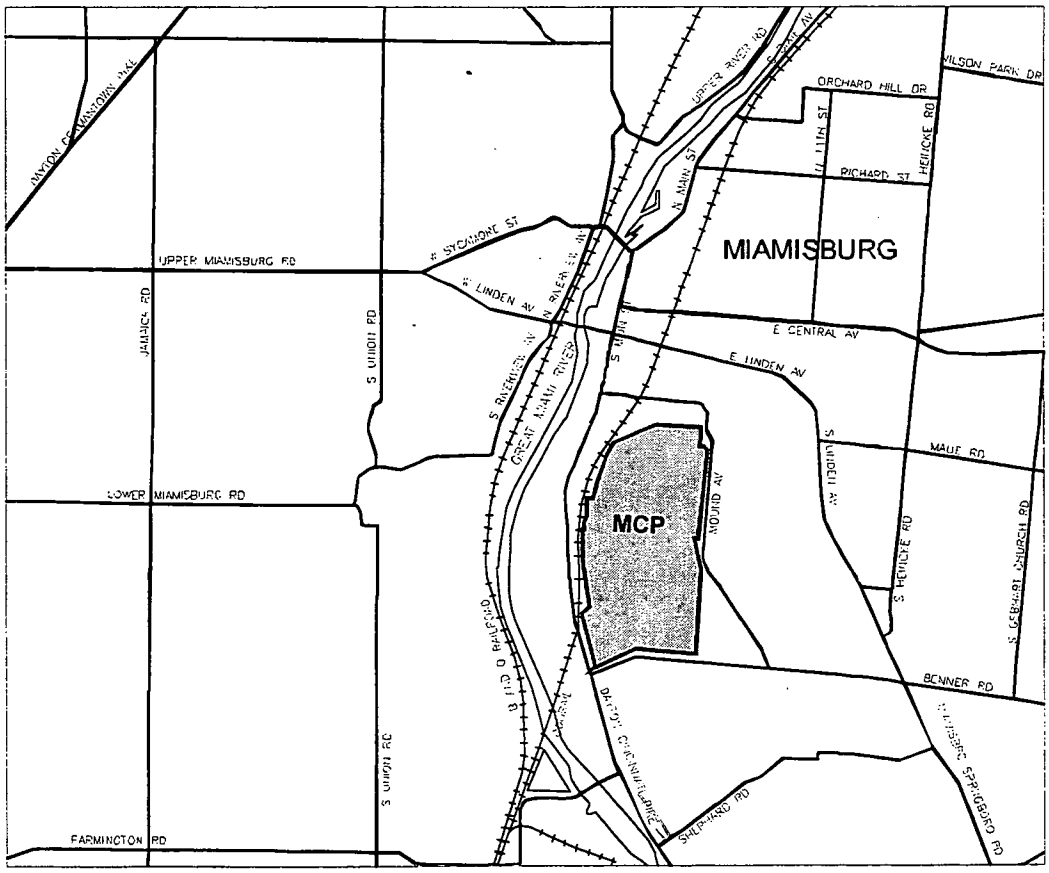
OHIO
Columbus
Cincinnati
Vandalia
Brookville
Dayton
MONTGOMERY
West Carrollton
Miamisburg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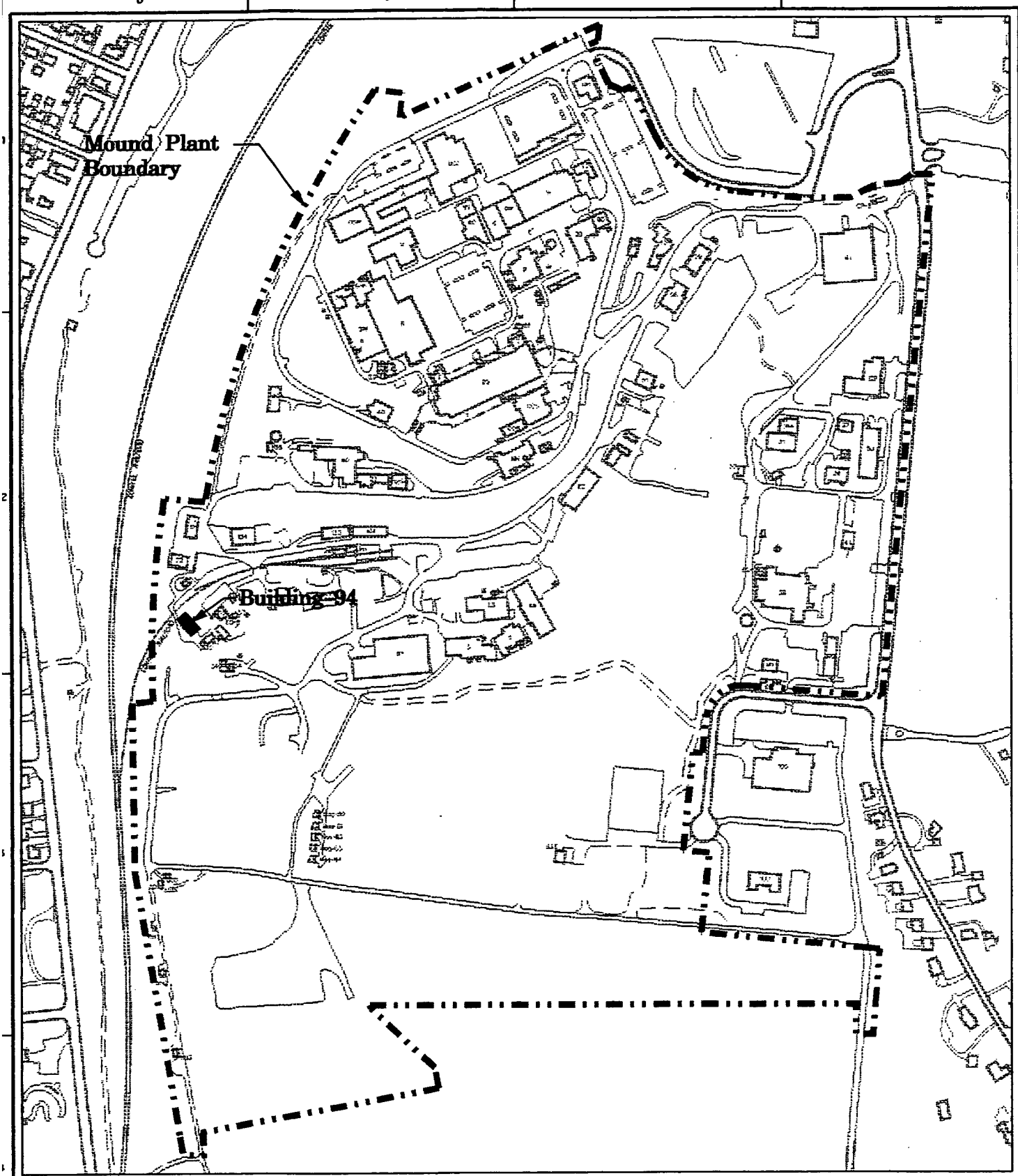
MCP
UPPER MIAMISBURG RD
LOWER MIAMISBURG RD
FARMINGTON RD
JAMICK RD
S UNION RD
S SYCAMORE ST
S LINDEN AV
N RIVER ST
S RIVER ST
GREAT MIAMI RIVER
N MAIN ST
S MAIN ST
UPPER RIVER RD
ORCHARD HILL DR
WILSON PARK DR
HILLTOP ST
RICHARD ST
HEMOKE RD
E CENTRAL AV
E LINDEN AV
S LINDEN AV
MAUE RD
MOUND AV
S HEMOKE RD
S GEBHART CHURCH RD
BONNER RD
SHEPHARD RD
SPRINGBORO RD

B 1 of 1

Appendix C

Figures



Legend

Structures
Paved roadway
Unpaved roadway
Mound Plant boundary
Railroad

0 100 200 400 600 800 1000
Scale In Feet

MOUND
Environmental Restoration Geographic Information System

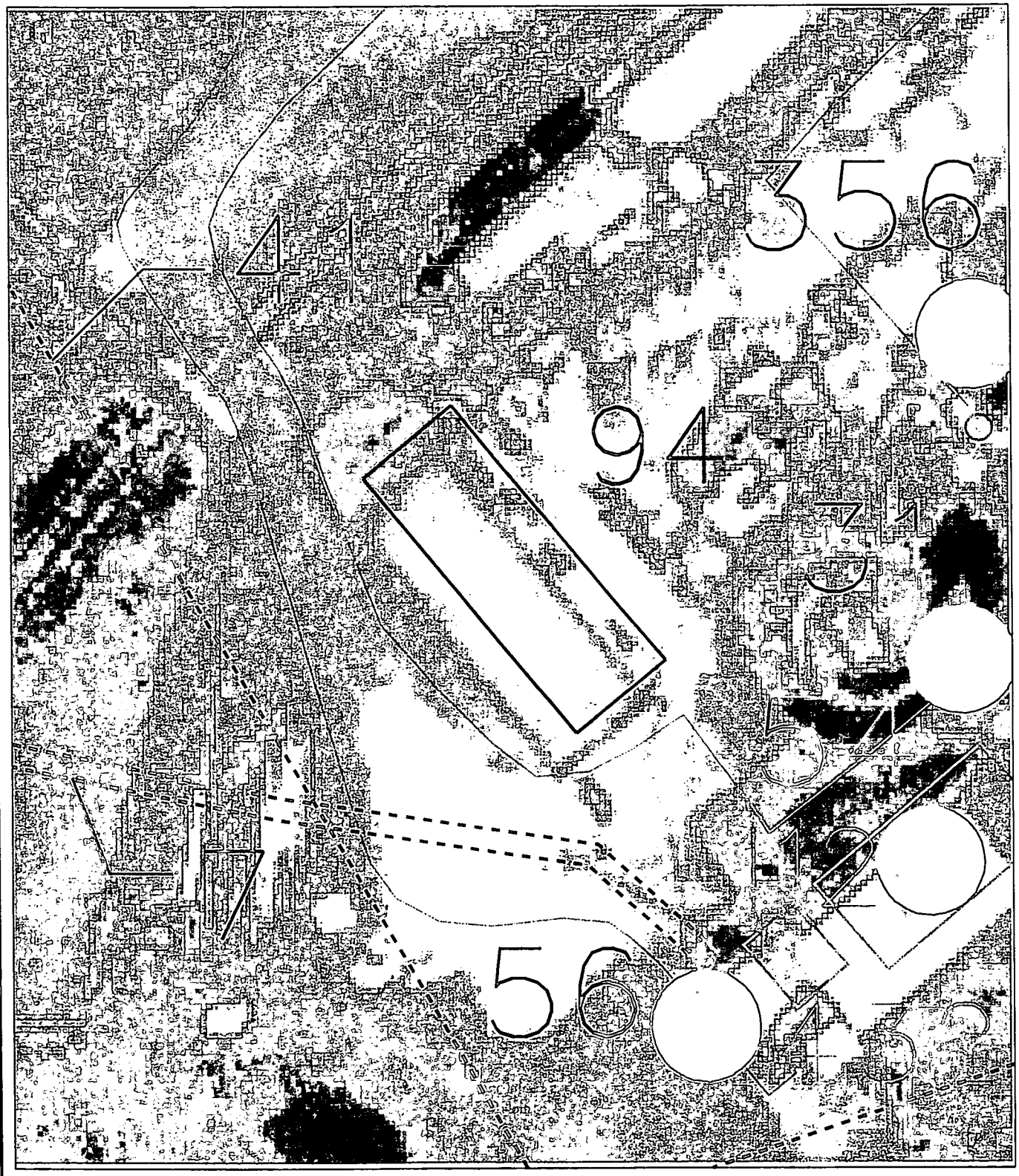
SHEET	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
ISSUE																					
SHEET	1	2	3	4	5	6															
ISSUE																					

PART CLASSIFICATION

Figure 1
Location of Building 94

DRAWING CLASSIFICATION: UNCLASSIFIED
SIZE
DRAWING NUMBER: gen_site_plan.dgn
JOB NUMBER
DWG TYPE: STE
PRNG: ER-GIS
CADD
SCALE
SHEET 1 OF
STATUS: MD-REL-**/**/**
ORIGIN: MSTATION / J

ISS	DATE	REVISION	BY	CHKD	DWG	UPRZ	APVD	B
	04/13/02	*	SSP					



PRS Point

PRS Area

PRS Line

MOUND

Environmental Restoration Geographic Information System

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

PART CLASSIFICATION

GRAPHIC CLASSIFICATION: UNCLASSIFIED

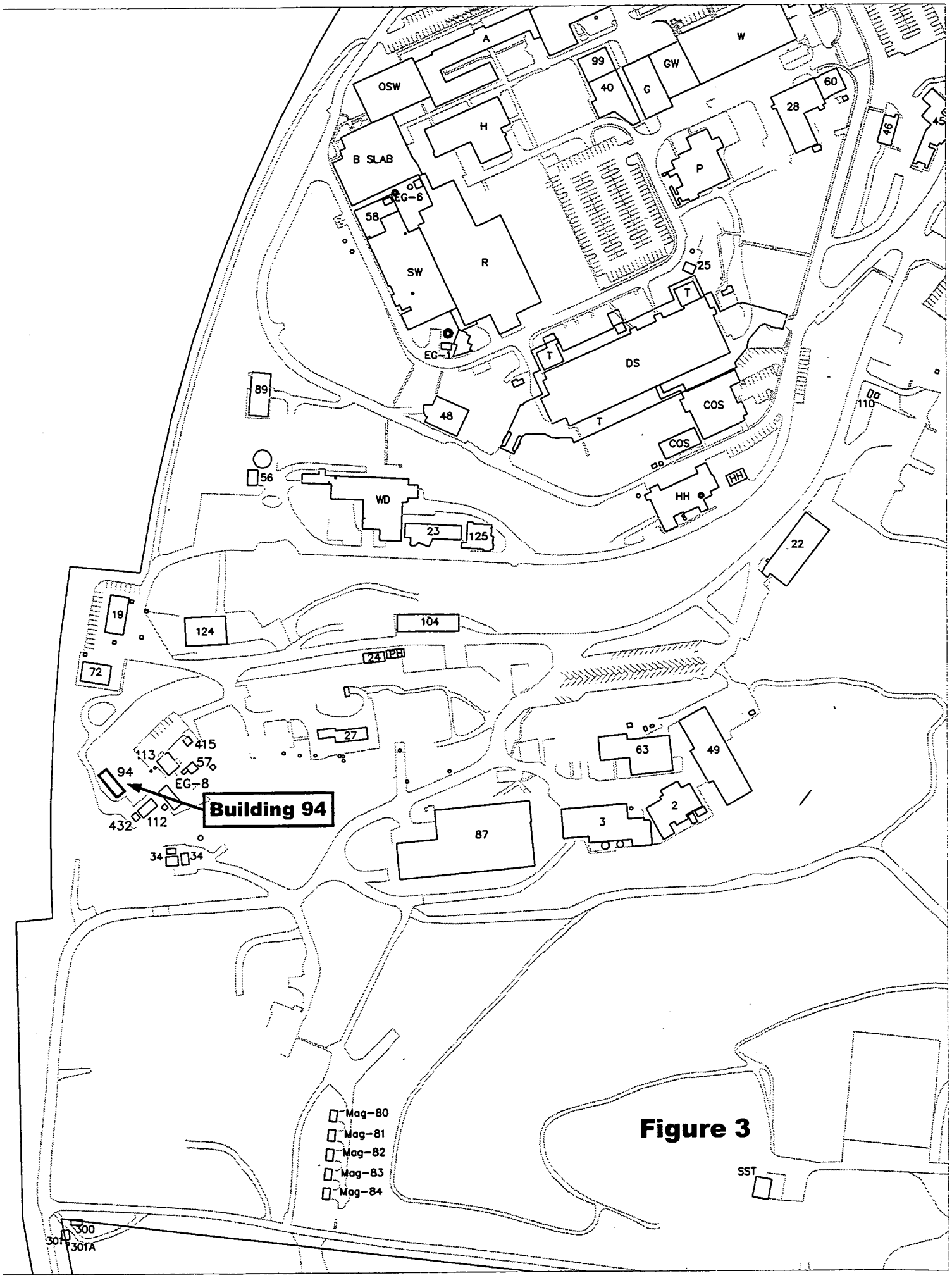
SIZE | DRAWING NUMBER: vicinity.dgn | JOB NUMBER

DGN TYPE: STE | PROJ: ER-GIS | CAGEC | SCALE | SHEET 1 OF

STATUS: MO-REL -[illegible] | ORIGIN: MSTATION / J

Figure 2
Building 94
and Vicinity

ISS	DATE	REVISION	BY	CHKR	ENG	LPREC	APVD	B
	04/13/02		SSF					


A
W
99
GW
OSW
40
G
60
28
H
46
45
B SLAB
P
EG-6
58
SW
R
25
T
EG-1
T
DS
89
48
COS
110
T
COS
56
HH
HH
WD
23
125
22
19
124
104
24
PH
72
27
415
63
49
113
57
94
EG-8
Building 94
432
112
87
3
2
34
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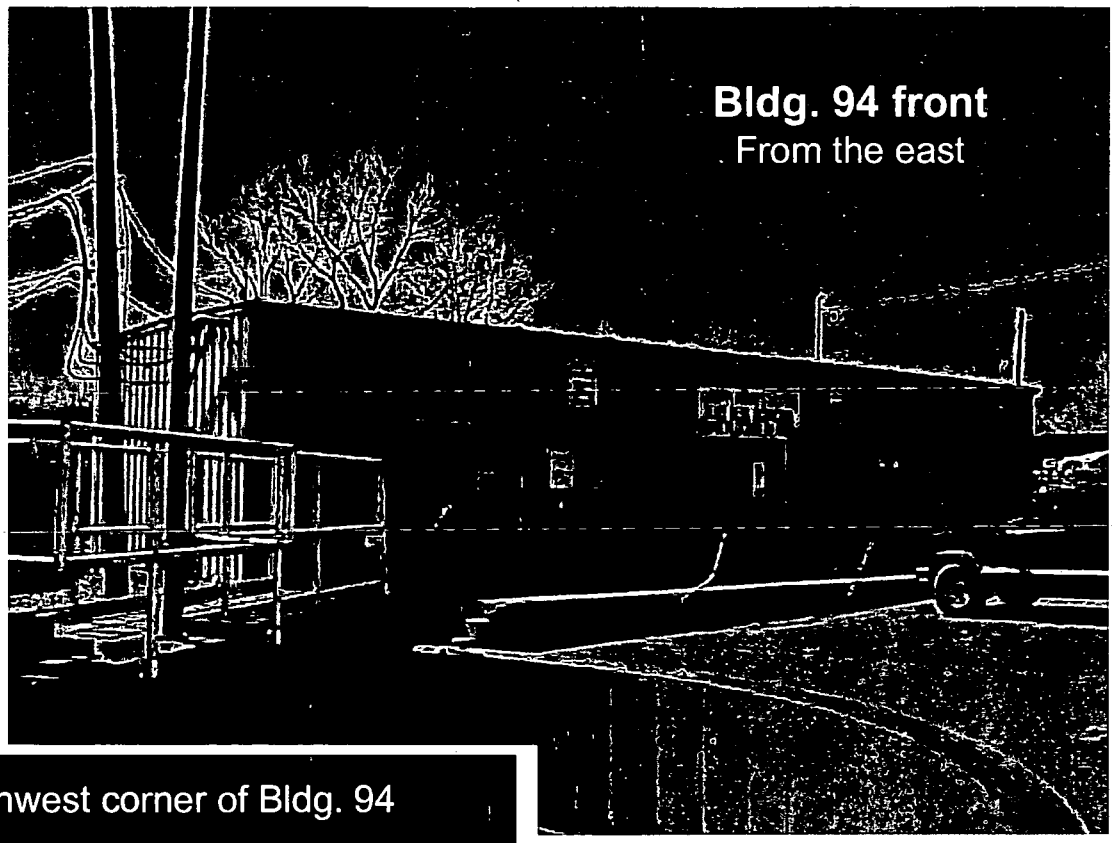
Mag-80
Mag-81
Mag-82
Mag-83
Mag-84
SST
300
301
301A

Figure 3



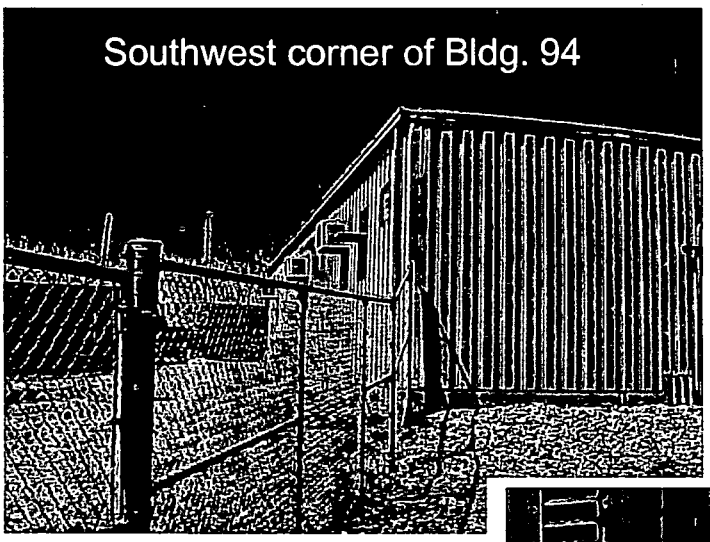


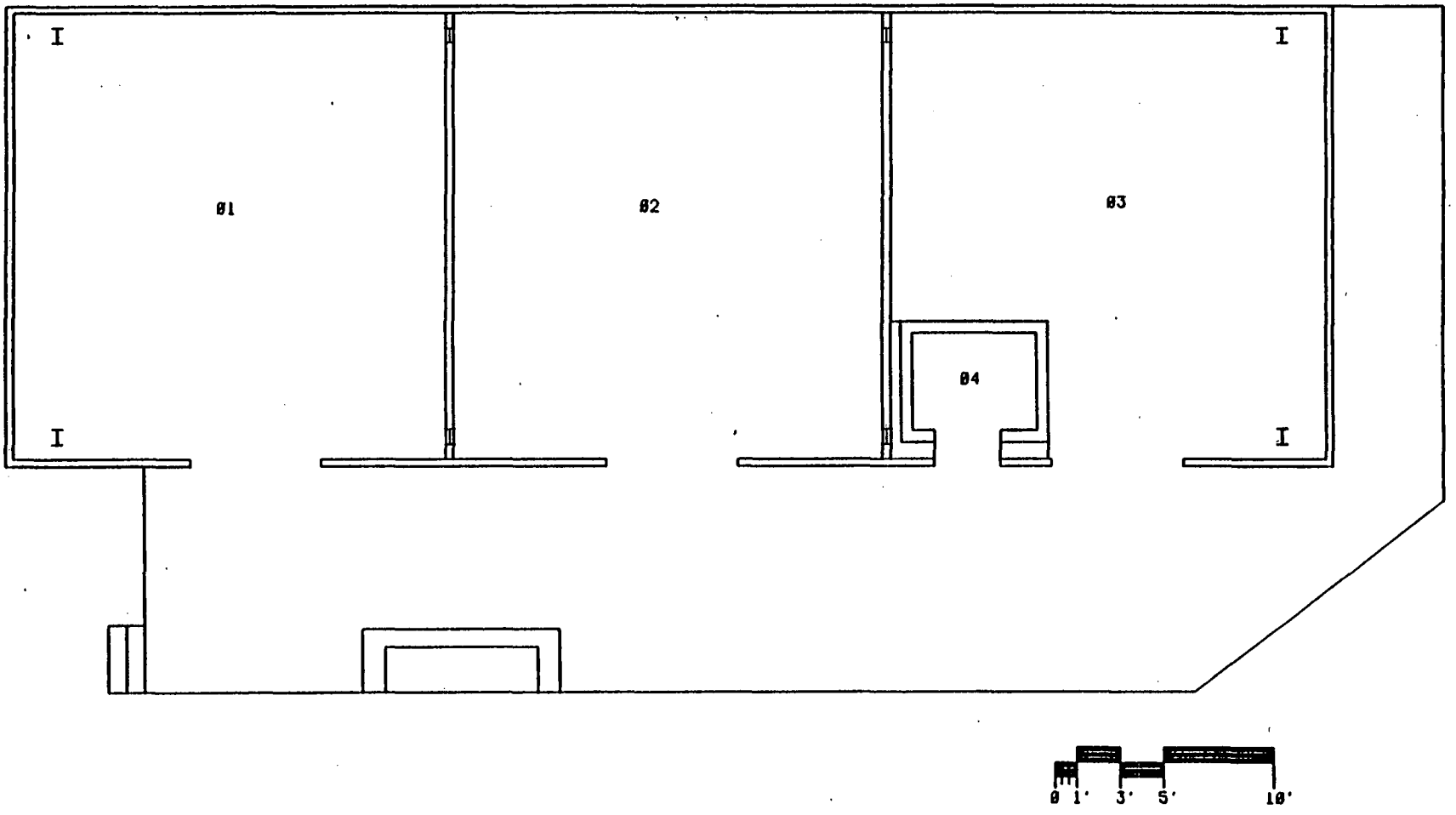
Figure 4

Building 94
Recent Photos

Appendix D

Floor Plans

ISS	DATE	REVISION	BY	CHKR	DES	UPDT	APVD	R
0	12/12/91	ASBUILT ISSUE	DCW				DVD	



BLDG #94
FIRST FLOOR
BLDG CODE:3094

APPROVALS: DATE:
SAFETY COMMITTEE REQUIRED:
___NONE ___TRUEDOC ___TEDOC ___EDOC
TECH. REP. ____ ____
GR. MGR. ____ ____
TRUEDOC ____ ____
TEDOC ____ ____
EDOC ____ ____

DESIGN DWG	PROJ MGR
DRGMB	DWG SUPV
LP & EC	PCER REV
DWG MGR	
APVD	DATE

SHEET	1	2	3	4	5	6
ISSUE	0					

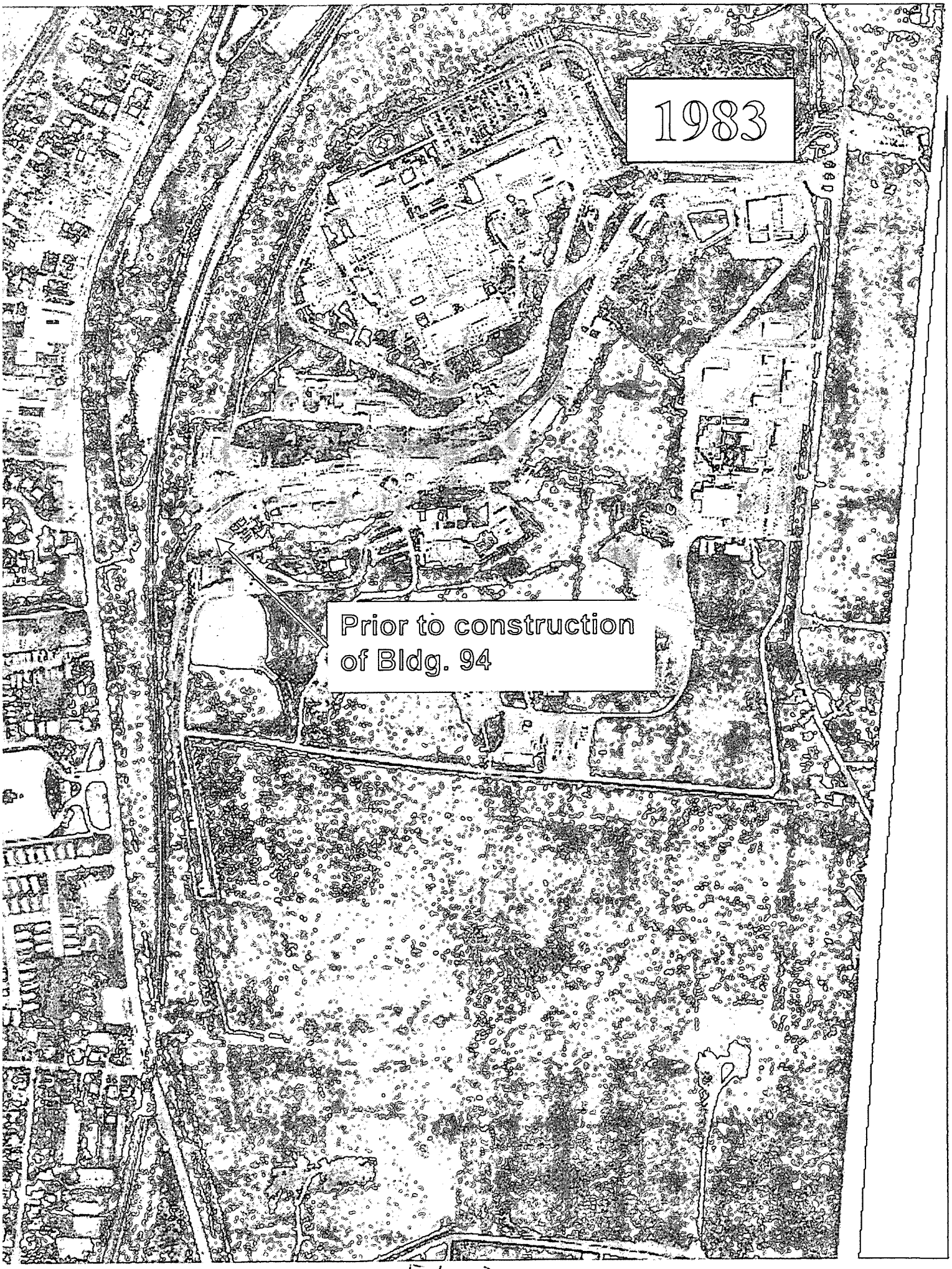
PART CLASSIFICATION

TITLE (U) TITLE CLASSIFICATION
BLDG #94
FLOOR PLANS

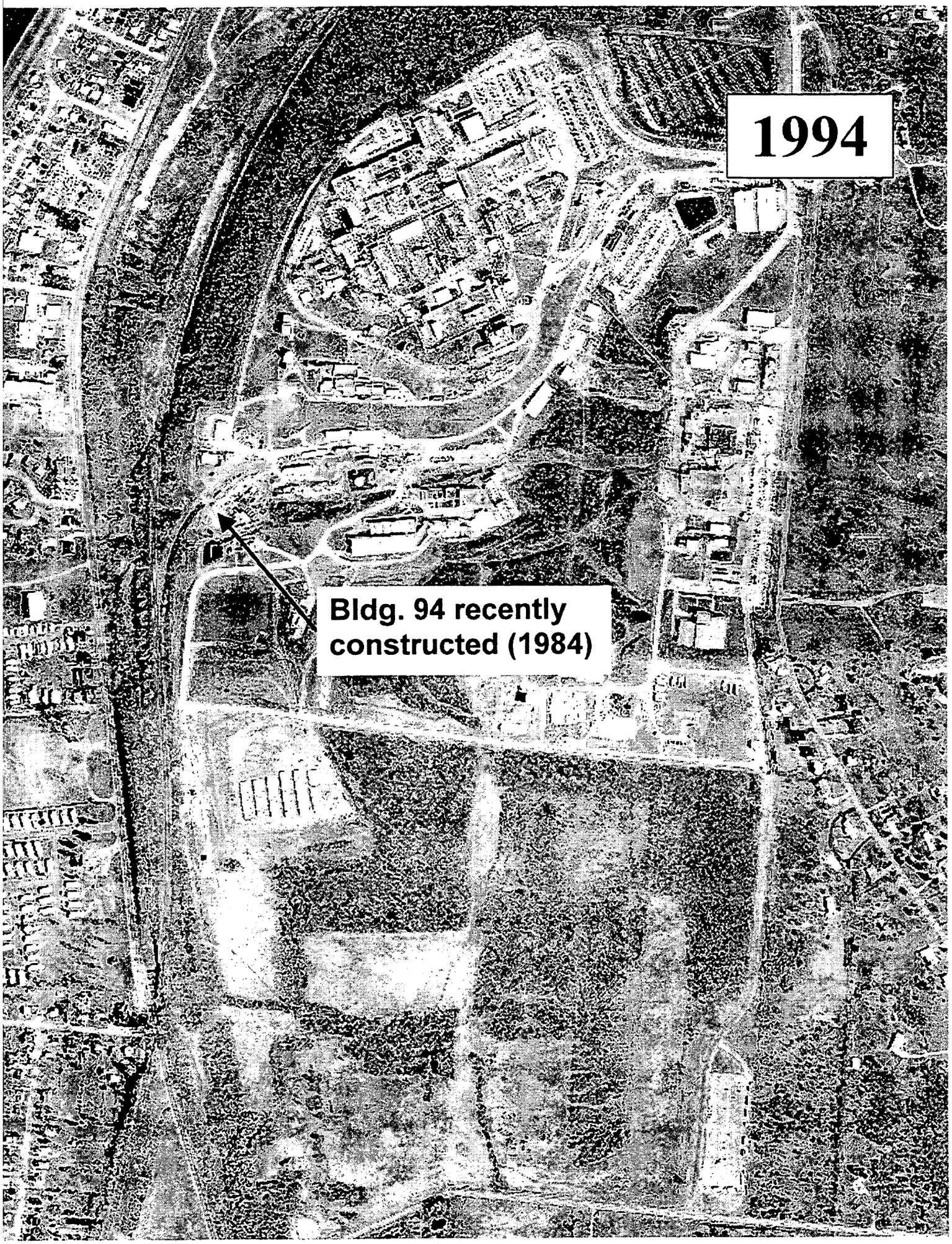
DRAWING CLASSIFICATION: UNCLASSIFIED
SIZE: C
DRAWING NUMBER: FSC911286
JOB NUMBER: 12335
DWG TYPE: SFP
PROJ: BLDG #94
CHKR: 14865
SCALE: AS NOTED
SHEET 1 OF 1
STATUS: MD-REL-12/12/91
ORIGIN: MD-BR3-V3.4

Appendix E

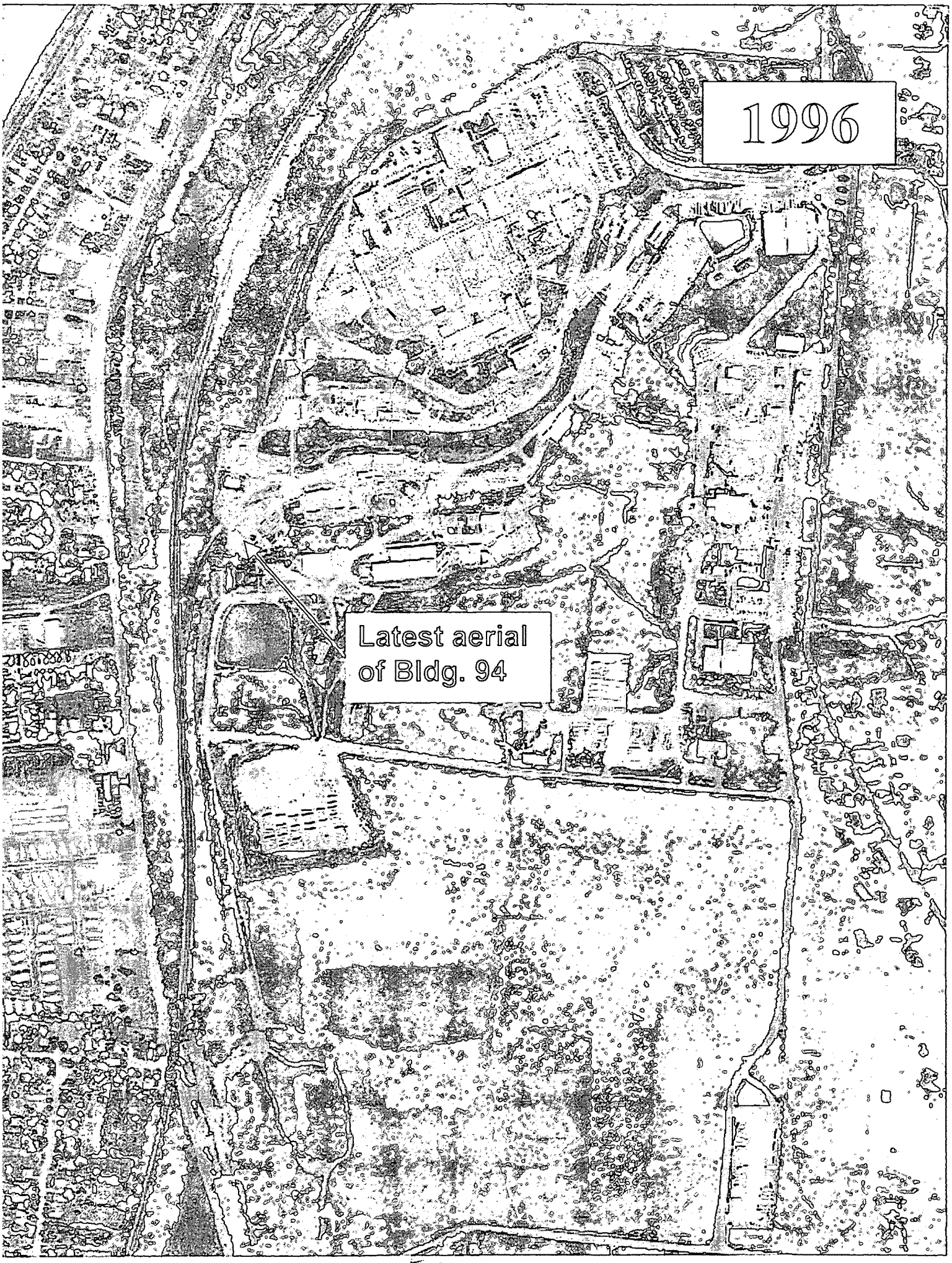
Aerial Photographs



E 1 of 3



E2 of 3



E 3 of 3.

Appendix F

Environmental Appraisal Report of the Mound Plant (excerpt)

9.101 BUILDING 94

9.101.1 Scope of Building 94 Report

In late 1995 and the early months of 1996, EG&G MAT performed a review of environmental conditions at the Mound Plant. The purpose was to develop a performance baseline, and to identify areas for improvement on a building and a sitewide basis. EG&G MAT did not perform a "due diligence" or Phase I Environmental Site Assessment as specified by ASTM 1527 or ASTM 1528. The scope of the appraisal effort and a discussion of the appraisal methodology are detailed in Sections 2.0 and 5.0, found in Volume 1 of this report.

The appraisal team performed a walk-through of Building 94 on the morning of February 5, 1996. The Environmental Appraisal Checklist (EAC) was used to record findings. The EAC is presented as Attachment 1 (Section 9.101.6.1). The appraisers were accompanied by the building manager and the process manager. Other information was supplied by the building manager and recorded on the Building Manager's Questionnaire (BMQ), included as Attachment 2 (Section 9.101.6.2).

9.101.2 Description of Building 94

Building 94 is used for Comprehensive Environmental Response, Compsensation, and Liability Act of 1980 (CERCLA) program contractor staging and for Environmental Restoration (ER) program soil and water sample storage. It is located northwest of the sewage treatment plant, Buildings 112 and 113, close to the west perimeter fence. The location is shown in Attachment 3 (Section 9.101.6.3).

The building is a 1,240-square-foot prefabricated metal building with a metal roof. It was constructed in 1985. There is electrical service of 240V. The building is supplied with potable water.

The inside of the building is divided into three bays. A floor plan is presented as Attachment 4 (Section 9.101.6.4). The building originally housed a laboratory in one bay, and environmental ovens in the other two bays. Investigations related to materials compatibility was conducted. The work was discontinued, and the equipment in the laboratory and the environmental ovens were removed.

At the time of the walk-through, one bay of the building was used for a field office and field laboratory for EG&G MAT contractors who performed work at mound related to the ER program. The other two bays were used by the EG&G MAT ER program personnel to store aqueous and solid samples. The samples were collected and analyzed under CERCLA guidelines.

The samples of water and soil from the Mound plant had been analyzed at an offsite laboratory to determine levels of contaminants, then returned to Mound for subsequent disposal. The samples had been returned in the summer of 1995 and stored in Building 94. At the time of

collection, some samples had been established by adding small quantities of acids and bases, in accordance with ASTM procedures. The samples were contained in plastic bottles of various sizes but nome more than 500 milliliters (ml). There were several hundred bottles. Soil samples were not stabilized with acids and bases. They were stored in 30-gallon cardboard drums.

On the day of the walk-through the ambient temperature was 15°F. The building was not heated. Aqueous samples were not frozen.

9.101.3 Summary of Findings

Building 94 was used to store CERCLA program materials, including aqueous and soil samples collected at Mound, analyzed at offsite laboratories, and returned to Mound for deposit. When the building was appraised, returned samples were in storage indefinitely. Following discussions with the appraisal team, CERCLA program managers have devised a plan to neutralize samples and dispose of them. Resource Conservation and Recovery Act (RCRA) and Clean Water Act (CWA) issues related to storage and neutralization must be addressed.

9.101.4 Observations

9.101.4.1 Air Emissions

There are no processes or fuel-burning units in the building. Heat is provided by electric resistance units. There are no sources of emissions, and the building is not included in the Mound Air Emissions Database, 11-30-95. There is no fugitive dust. No applications for air emissions permits have been submitted for activities in this building.

9.101.4.2 Wastewater Emissions

The Mound Facility has three wastewater collection systems: a sanitary wastewater system; a storm water system; and a radioactively contaminated process wastewater system. Sanitary wastewater is treated at an onsite tertiary treatment plant and subsequently discharged by hard pipe to the Great Miami River. Storm water and any non-process wastewater, single pass cooling water, and softener backwash may be discharged directly to the Great Miami River, via the Miami-Erie Canal, or may be diverted to a 3.1-million-gallon holding pond for settling prior to discharge. Radioactively contaminated wastewater is treated in Building WD by physical-chemical treatment. If appropriate, wastewater may be discharged by hard pipe to the Great Miami River. If concentrations of radioactive contaminants cannot be reduced to acceptable levels, wastewater is solidified and shipped to the Nevada Test Site or Envirocare for disposal. All outfalls are permitted under an active NPDES permit. Routine monitoring activities are in place. Based on NPDES monitoring report data reviewed, it appears that the facility is in compliance with qualitative and quantitative conditions of the permit.

9.101.4.2.1 Sanitary Wastewater

According to a diagram of underground lines, presented as Attachment 5 (Section 9.101.6.5), the building is serviced by a sanitary wastewater collection line. There is a floor drain in each of the three bays. It appears that the floor drains are tied to the sanitary lines. It was outside the scope of this appraisal to confirm that floor drains are connected to the sanitary collection system.

A visual inspection of the floor drains in each of the three bays showed one to contain a liquid. This was in one of the bays that contained aqueous samples. An attempt was made to determine where the liquid came from, as it was expected that the drain would be dry in a building which has no janitorial service or personnel that visit the building frequently and pour water in the drain. The building manager did not have a key to the bay and had not entered the bay for several months. The process manager had a key but had not poured water into the floor drain. No other personnel other than the fire department had a key to the bay.

The samples were contained in plastic bottles which were inside of cardboard boxes stacked on the floor approximately six feet from the floor drain. The boxes were dry, and there was no evidence of leakage, such as a mark on the concrete floor. Neither the building manager nor the process manager could explain why the drain contained liquid.

9.101.4.2.2 Storm Wastewater

The building is not serviced by storm drains, according to drawings presented in Attachment 5 (Section 9.101.6.5). Roof drains discharge onto the ground and subsequently drain into the nearest storm drains. No exterior grates and drains were observed in the area around the building.

9.101.4.3 Potable and Service Water

Potable water is supplied to the building, according to the information presented in the site's underground utility lines drawing, and shown as Attachment 5 (Section 9.101.6.5). There is no water cooler, nor is service water supplied to the building.

9.101.4.4 Chemical Storage and Hazardous Materials

There are no janitorial supplies stored in the building. As described earlier in this report, there are aqueous and soil samples stored in two bays. The samples, returned following laboratory analysis, are related to the corrective action activities. Building 94 is not designated as a storage unit for regulated waste. Some of the samples are marked with U.S. Department of Transportation (USDOT) hazard classifications indicating that the sample material is corrosive. In one bay, aqueous samples are contained in plastic bottles of various sizes, in cardboard boxes. The soil is in plastic bags inside of 30-gallon cardboard drums. The boxes and drums are stacked on the floor, close to a floor drain. There is no secondary containment. There is no heat in the

building. In the second bay, there are aqueous samples. They are stored in plastic thermal chests, which serve as secondary containment, should a bottle break.

There are no requirements for Material Safety Data Sheets (MSDS's) in Building 94.

The building is equipped with appropriate emergency response equipment such as an eyewash, a safety shower, and a fire extinguisher. Inspection tags are current. There is an Emergency Evacuation Plan, and signs were posted in work areas.

There are no aboveground storage tanks in or around the building. According to the PCB Annual Document Log, the building does not contain polychlorinated biphemyls (PCB's).

It is assumed that the building contains asbestos, based on screening recorded in the MD-10391, *Asbestos Program Manual* (9-14-95). There was no visual evidence of friable asbestos.

9.101.4.5 Solid, Hazardous, and Radioactive Wastes

According to information provided by the BMQ, hazardous wastes are generated in Building 94. It should be noted that the materials listed are related to the former use of the building as a laboratory for materials testing, and are no longer generated in the building. At the time of the walk-through, there was no solid, hazardous, or radioactive wastes to pick up from Building 94.

Aqueous and soil samples which have been analyzed by an offsite laboratory and returned to the Mound for disposal are stored in Building 94. Some of the samples have been stabilized by acids and bases, and are corrosive (ph less than 2 and greater than 12), and may be regulated under the Resource Conservation and Recovery Act (RCRA). At the time of the walk-through, the samples were not considered a waste by the process manager. However, after discussion with environmental professionals, the materials are now considered a waste.

The process manager has developed a procedure to dispose of the liquid samples. Plans call for accumulating samples until they reach a quantity of 300 gallons. At that time samples will be batch-treated. Water samples not stabilized by acid or base will be placed in a drum. Acid-stabilized samples will be added, then base-stabilized samples will be added, to adjust the pH to neutral. Drum contents will be released gradually to the sanitary wastewater treatment plant. The procedure has been approved by the plant manager and by the EG&G MAT Safety Office.

Solid waste is not currently generated in Building 94. However, when samples are treated under the current plan, solid waste such as sample bottles and cardboard containers will be generated.

At Mound, solid waste is removed by janitorial personnel to a site collection point, then is shipped to a local landfill by a service contractor. Aluminum cans, glass, and cardboard are removed by janitorial personnel to specific collection points, then are sent offsite to be recycled by the same contractor. White paper is collected and sent offsite to be recycled by another service contractor.

9.101.4.6 Waste Minimization and Pollution Prevention

At Mound there is an active program to minimize waste streams in accordance with state and federal requirements and Executive Order 12856.

There is a plan within the CERCLA program to minimize waste streams. If the plan for neutralizing samples is followed, waste will be significantly reduced. The alternative disposal option would be solidification and disposal as a hazardous waste.

9.101.5 Findings and Recommendations

Photographs were taken to document the environmental appraisal. They are included as Attachment 6 (Section 9.101.6.6).

Findings related to the environmental appraisal of Building 94 indicates that the following action items, in priority order, should be planned and scheduled.

94-1 Storage, treatment and disposal of samples stored in Building 94 falls under guidelines for hazardous wastes established in RCRA, 40 CFR 261-265. The specific exemptions for CERCLA samples applies only until analysis is completed. On return of lab samples, the generator must make a hazardous waste determination, document it, and properly label samples in accordance with 40 CFR 261.4d.

94-2 A formal plan for neutralization of samples and subsequent release to the sanitary wastewater plant was discussed with the EG&G MAT environmental professionals. The NPDES permit was modified in December 1994 to allow discharge of "investigative derived aqueous waste." Waste Management professionals must be contacted to confirm that the activity would not conflict with requirements set forth in RCRA guidelines:

- the generator must make a waste determination;
- waste cannot be stored for more than 90 days in a designated area; and,
- the designated 90-day area and the neutralization activities must be identified in the RCRA contingency plan or facility permit.

Samples are corrosive, and may be a hazardous waste, as defined in 40 CFR 265. Building 94 is not a designated storage area.

94-3 There is no formal procedure at Mound under which processes such as the one planned by the ER personnel are reviewed by environmental compliance and waste management professions to establish that the process is appropriate under site regulatory constraints.

94-4 The sample storage in Building 94 may qualify as a 90-day waste storage area. It is not currently treated as such. A review of the EG&G MAT process and procedures related to RCRA requirements should be conducted.

94-5 The source of liquid in the floor drain in one bay of Building 94 should be determined. It must be confirmed that disposal of samples is not occurring.

ENVIRONMENTAL APPRAISAL CHECKLIST

Building Name 94

Appraisers:

Nancy Vyas
Name Discipline

John Hausfeld
Name Discipline

Mike Mercer
Name Discipline

Name Discipline

Building Manager: Kathy Koehler

Process Manager: Denny Gault

Date: 2-5-90

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ENVIRONMENTAL APPRAISAL CHECKLIST

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Hazardous Materials	4
Safe Drinking Water Act	7
RCRA Hazardous Waste	8
TSCA and NESHAP Requirements for Asbestos	13
TSCA—PCB	14
Low-level and Transuranic Waste	17
Waste Minimization/Pollution Prevention Activities	22

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Environmen A..raisal Checklist

Building Name: B94 Appraisers: Uga/Hauefield/Meiker Date: 2-5-96am

Clean Water Act (CWA) Screening Checklist

Question	Response	Comments
Does the outside drain spouting of the building discharge directly to a storm sewer/sanitary system?	Y / N	If the answer to any of these questions is yes, proceed with the following checklist.
Are there sinks, toilets and floor drains in the building?	(Y) N	
Are chemicals being used in the building?	(Y) N	
Is there a process which discharges to the storm or sanitary system?	(Y / N)	

CWA Checklist

Regulatory Guideline	Question	Response	Comments
40 CFR 122 Appendix D Table V	If chemicals are used/stored in the building, are they on the attached list? Are they properly contained?	Y (N) Y (N)	CHEMICALS ON LIST IN BMQ related to former use of bld
	Is the building in operation? What are the processes and where do they discharge to?	(Y) N _____ _____	NOT A LAB – USED to Store CERCLA SAMPLES
	Do the floor drains, sinks & toilets appear to be draining properly?	(Y) N	water in floor drains – ~~building NOT in use~~
OAC 3745-33	Do the floor drains and sinks drain to a sanitary or storm sewer?	(Sanitary Storm)	NOT KNOWN: FROM drawing appears to go to sanitary drain
	Is there a sump/pit in the building? If so, what does it contain? How often is it pumped out? Does water collect in sump? Does sump have secondary containment?	Y / (N) _____ _____ Y / N Y / N	
	Are there any manholes, catch basins, drains, or fill pipes in or around the building? If so, are there any unusual appearances, colors, and/or odors? Describe in comment section. Can chemicals flow into the drain?	Y / N Y / N Y / N	

Building no longer used for laboratories as described in BMQ. Used to store returned CERCLA samples, + for contractor staging area

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9.101-11

9.101-12

Environmental Appraisal Checklist

Building Name: B94 Appraisers: Vyas/Hausfeld/Merker Date: 2 [illegible]-96 am

Clean Air Act (CAA) Screening Checklist

Regulatory Guideline	Question	Response	Comments
	Are there any rooms that have air emissions sources that vent to the outside of the building, e.g., fumehoods, equipment? If so, note the rooms.	Y / N	
OAC 3745-35	Using the air emissions inventory reference for this building, are there any sources in the building that are not documented?	Y / N	
	Is there evidence of fugitive dust emissions inside or outside of the building	Y / N	

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CAA Checklist

Regulatory Guideline	Question	Response	Comments
	Are there existing air permits or applications applicable to the building?	Y / N	
OAC 3745-31,35	If yes, are the terms and conditions of the permit or the information included on the application (see air emissions database) being followed? Note any differences and update the air emissions database.	Y / N	
OAC 3745-31	Are there any sources that are not included in the air emissions database? If so, note the room, hood number, active or not, POC, and applicable air emission database information on Table B.	Y / N	
OAC 3745-31-03	Are there sources which are lab equipment of lab fumeheads used exclusively for chemical or physical analyses and bench scale lab equipment? These sources do not require a permit. However, the air emissions database should be updated.	Y / N	
	Has there been any release of air contaminants from this building?	Y / N	

Environment ...raisal Checklist

Building Name: B94

Appraisers: Vyas / Hausfeld / Merker Date: 2-5-96am

CAA Checklist

Comments: Note the number of sources/hoods per room, the number that are active, and the POC on the reference document.

NOT completed

TABLE A									
Process Source	Room Number	Hood Number	In Database	Active	Chemicals Used	Quantity Used	Quantity to Waste Management	Hours/Yr. Operation	Air Emissions
			Y / N	Y / N					
			Y / N	Y / N					
			Y / N	Y / N					
			Y / N	Y / N					
			Y / N	Y / N					

Source: _____

Filed 49

9.101-13

Environmental Appraisal Checklist

Building Name: 94 Appraisers: Merker/Vyas/Hausfeld Date: 2-5-96am

Hazardous Materials (HM) Screening Checklist

Question	Response	Comments
Are any chemicals used or stored in this building, now or in the past?	(Y) N	If the answer is yes, proceed with the following checklist.

chemicals-samples-stored in overpacked cardboard drums, plastic sample bottles
NO HEAT. SAMPLES NOT FROZEN

HM Checklist

Regulatory Guideline	Question	Response	Comments
29 CFR 1910.1200(b,f)	All containers of hazardous chemicals shall be labeled as to the identity of the chemical and the appropriate hazard warnings.	(Y) N	
29 CFR 1910.1200(g)	MSDS shall be available to the employees in close proximity to the work area.	Y / N NA	NOT CHEMICALS - SAMPLES
29 CFR 1910.22, 1910.106, 1910.176	All places of employment, passageways, storerooms and service areas shall be kept clean and orderly and in a sanitary manner. Aisles shall be unobstructed. Drums and containers are not leaking and are tightly sealed.	(Y) N	
29 CFR 1910.106	Storage cabinets for flammable materials are constantly kept closed, are fire resistant and are labeled "FLAMMABLE - Keep Fire Away". Containers inside should be labeled and closed. No spills inside cabinet.	Y / N NA	
29 CFR 1910.106(d)(7)	Incompatible chemicals are not stored together. NA	Y / N NA	
29 CFR 1910.106(d)(4)	Inside Flammable/combustible storage rooms must meet the following: 4 in. raised sill or trench that drains to a safe area, liquid tight wall/floor joints, self-closing doors, gravity or mechanical exhaust providing 6 room changes/hr., exhaust switch located outside room, at least one 3 ft. aisle; no cracks in secondary containment.	Y / N NA	

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Building Name: 44 Appraisers: Vyas/Hausfeld/Merker Date: 2-5-96am

HM Checklist

Regulatory Guideline	Question	Response	Comments
29 CFR 1910.106(d)(7)	All flammable/combustible storage locations have at least one 12-B portable fire extinguisher located outside and within 10 ft. of a door opening into any room for storage. No smoking signs are posted.	Y / N NA	
29 CFR 1910.151	Eyewashes/showers shall be provided within the work area. Ensure unit is operational.	(Y) / N	
CGA P-1 3.3 & 3.3.10	All gas cylinders (full or empty) shall carry a legible label or marking identifying the contents.	Y / N NA	
CGA P-1 3.5.3	Full and empty containers should be stored separately with the storage layout planned so that containers comprising of old stock can be removed first with a minimum handling of other containers.	Y / N NA	
CGA P-1 3.5.8	All compressed gas containers in service or in storage shall be stored standing upright and the container shall be secured.	Y / N NA	
CGA P-1 4.2.2	Oxygen cylinders shall be separated from flammable gas containers or combustible materials a minimum of 20 ft. or a noncombustible barrier 5 ft. high.	Y / N NA	
29 CFR 1910.104(2)(10)	Oxygen stored as a liquid shall be on a noncombustible surface. Asphalt is considered combustible. Wood and long dry grass shall be cut back 15 ft. from the container.	Y / N NA	
29 CFR 1910.104	Bulk oxygen storage shall be permanently placarded "OXYGEN - NO SMOKING - NO OPEN FLAMES".	Y / N NA	
	Is there a sign posted in each work area regarding emergency egress and emergency response action?	(Y) / N	
	Is there an emergency response plan available?	(Y) / N	

✓ ✓ ✓

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9.101-15

Environmental Appraisal Checklist

Building Name: 94 Appraisers: Vyas/Hanford/Merker Date: 2-5-96 am

HM Checklist

Regulatory Guideline	Question	Response	Comments
	Is there a process area?	Y / N	sample storage - temporary process no production activity
	Does it have proper containment?	Y / N	
	Is there a liquid bulk transfer area?	Y / N	
	Is there proper containment?	Y / N	
	Is there an above ground storage tank? If so, complete Table B.	Y / N	

Above Ground Storage Tanks Inventory

TABLE B—Above Ground Storage Tanks Inventory

Building	Capacity (Gal.)	Contents	Estimated Volume	In Service	Containment	Visual Stains/ Contamination	If Empty, Flushed
	NONE			Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N

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Source: _____

Building Name: 94 Appraisers: Vyas/Hausfeld/Merker Date: 2-5-96am

Safe Drinking Water Act (SDWA) Screening Checklist

Does this facility have potable water?	Y / N	If yes, conduct the following survey.

per drawing "DOMESTIC WATER" ~~Prefixed~~ provided to bldg.

SDWA Checklist

Regulatory Guideline	Question	Response	Comments
OAC 3745 95-02 (A)	Do actual or potential cross-connections exist between potable (light green) and service water (dark green)?	Y / N	
OAC 3745 95-04 (B)(C)	Are backflow prevention devices installed where cross connections (hoses connected to faucets, hot water tank vented directly to a drain) exist?	Y / N NA	
	Are sources of service water (janitorial and laboratory faucets, or outdoor spigots) posted as non-potable water sources?	Y / N	
	Does the facility contain any water coolers or fountains that are not lead free? Complete Table C.	Y / N	NO COOLERS OR FOUNTAINS

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TABLE C—Water Fountain Survey

Building	Location	Model #	Comments / Date of Analysis for Lead

Source: _____

9.101-17

Environmental Appraisal Checklist

Building Name: 94 Appraisers: Vyas/Hausfeld/Merker Date: 2-5-96 am

RCRA Screening Checklist

Does this facility generate waste or use chemicals?	(Y) / N	If yes, conduct the following survey.

NOT CHEMICALS LISTED ON BMQ – Those are from previous bldg use.

RCRA Checklist

Regulatory Guideline	Question	Response	Comments
OAC 3745 52-11	Has any material generated been characterized RCRA hazardous? Was charactarization by analysis or by process knowledge? Are lab results or documentation of process knowledge readily available? Note any uncharacterized material in comment section. Is it waste? If yes, proceed with next section.	Y / N analysis / process (Y) N Y / N	Waste not characterized Lab analyses of CERCLA samples available.
OAC 3745 52-11	Are any of the materials noted RCRA hazardous waste? If no, note and stop here. If yes, note the location of the management unit, and the method of management, and proceed with the appropriate section below.	Y / N	

Water Samples collected & stabilized: Include water; acid stabilized samples; base treated samples. Samples sent to contract labs, then returned to Mound following analyses. Samples returned 7-8-95 to 1-96. Stored in B-94 for ultimate disposal. Samples stored in plastic bottles in cardboard boxes – no secondary containment. Soil in plastic bags in cardboard drums – no secondary containment.

FIG 6 of 49

Building Name: 94 Appraisers: Vyas/Hausfeld/Merker Date: 2-5-96 am

RCRA Checklist

Regulatory Guideline	Question	Response	Comments
I. HAZARDOUS WASTE STORED IN CONTAINERS			
	Is there an area in the building that could qualify as a Satellite Accumulation Area?	(Y) N	If aqueous samples are RCRA hazardous due to acid or base stabilization, They should be accumulated in SAT ACC area.
	Is it treated as such?	Y (N)	
OAC 3475-52-34 (C)	Has any of the RCRA hazardous waste in this building been managed in Satellite Accumulation Areas? If no, proceed to the next section. If yes, answer the following.	Y (N)	
	Are the containers marked with the words hazardous waste, or other words denoting the hazard?	Y / N	
	Are the containers in good condition?	Y / N	
	Are the waste compatible with the containers?	Y / N	
	Are containers managing ignitable hazardous waste stored at least 50 feet from the plant site boundary?	Y / N	
	Are containers kept closed and locked except during filling?	Y / N	
	Are containers moved within 3 days of being filled?	Y / N	

Samples (wastes) accumulate. They will be batch treated. Water samples (not stabilized with acid or base) will be poured from plastic sample bottles into 55 gal drum; acid stabilized samples will be added; base stabilized samples will be added. pH will be adjusted to neutral. Contents will be released gradually to sanitary ww treatment plant; approved by F Baker, operator. Approved by Safety.

Batch treatment will occur when 300 gal of samples accumulate.

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Environmental Appraisal Checklist

Building Name: 94

Appraisers: Vyas/Hausfeld/Merkel Date: 2-5-96 cm

NOT completed

RCRA Checklist

Regulatory Guideline	Question	Response	Comments
OAC 3745-52-11 (A)	If a Satellite accumulation area has been abandoned and/or if waste left in place, and the containers may be subject to the 90-day-storage exclusion. If this exclusion does not apply, go to the next section. If the containers have been in storage under this exclusion, answer the following:		
	Are the containers in good condition?	Y / N	
	Are the waste compatible with the containers?	Y / N	
	Are the containers kept closed except during filling?	Y / N	
	Are the containers managed in such a way, that they are not ruptured, or leaks caused?	Y / N	
	Is the area inspected at least once weekly?	Y / N	
	Is the inspection recorded? • Where is the log? Is it properly completed, dated, and signed?	Y / N Y / N	
	Are containers managing ignitable hazardous waste stored at least 50 feet from the facility boundary?	Y / N	
	Are incompatible wastes managed in such a way that they will not react with another incompatible waste?	Y / N	
OAC 3745-52-34(B)	Has any of the waste (except in Building 23, Building 72 and the Burn Area) been managed in excess of 90-days?	Y / N	
	If no go to next section.		
	If yes, note.		
	For Building 23, Building 72 & Burn Area use special checklist.		

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Building Name: 94 Appraisers: Vyas/Haesfeld/Merker Date: 2-5-96 am

RCRA Checklist

Regulatory Guideline	Question	Response	Comments
II. HAZARDOUS WASTE STORED IN TANKS			
OAC 3745-52-32 (B)	Has any chemical waste stored in a tank, piece of process equipment or ancillary equipment been in storage in excess of 90-days?	~~Y/N~~ N	Samples stored since 8-95
	If the answer was no, then proceed with the following:	Y / N	
	Has the tank or piece of equipment had an integrity assessment?	Y / N NA	
	Is there a sump?	Y / N	NA
	Is it dry?	NA Y / N	
	Does the tank or equipment have secondary containment?	Y / N	
	Does the tank or equipment have leak detection device(s)?	Y / N	
	Has spill control prevention been enacted?	Y / N	
	Has any hazardous waste stored in a tank, piece of process equipment or ancillary equipment been in storage in excess of 90-days?	Y / N	
	If the answer was no, then proceed with the following:		
	Has the tank or piece of equipment had an integrity assessment?	Y / N	
	Does the tank or equipment have secondary containment?	Y / N	NA
	Does the tank or equipment have leak detection device(s)?	Y / N	
	Has spill control prevention been enacted?	Y / N	
	Is there a closure plan?	Y / N	
	If yes, then note.		
OAC 3745-67	Has any of the waste been managed in a surface impoundment? If yes, then note. Go to the next section.	Y / N	

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Environmental Appraisal Checklist

Building Name: 94 Appraisers: Vyas/Merker/Hausfeld Date: 2-5-96 am

RCRA Checklist

Regulatory Guideline	Question	Response	Comments
OAC 3745-68	Has any of the waste been managed in a Landfill? If yes, then note. Go to the next section.	Y / N	
OAC 3745-68	Has any of the waste been managed in an Incinerator (other than Burn area units)? If yes, then note. Go to the next section.	Y / N	
OAC 3745-68	Has any of the waste been managed in a Thermal treatment Unit (other than Burn area units)? If yes, then note. Go to the next section	Y / N	
OAC 3745-69	Has any of the waste been managed in a Miscellaneous Treatment Unit (other than Burn area units)? If yes, then not. Go to the next section.	Y / N	
OAC 3745-56	Has any of the waste been managed in a Waste Pile? If yes, then note. Go to the next section.	Y / N	

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General Comments:

Water samples are in plastic bottles in cardboard boxes & in plastic coolers chests. There is no sign of leakage from samples. However, floor drains have liquid in water trap. Building is not in use. How did water get in floor drains? Where did it come from? BM & PM have no knowledge.

BM's keys don't work! Lock changed 9 months ago.

Building Name: 94 Appraisers: Vyas/Merker/Hauefeld Date: 2-5 96am

Asbestos Screening Checklist

Does this facility contain ACBM?	(Y) N	If yes, conduct the following survey.

Asbestos Checklist per Asbestos Program Manual contamination assumed

Note: Routinely, the asbestos standard for ACBM in schools has been applied to facilities for purpose of cleanup. In addition to AEHERA, there are additional standards in the NESHAPS that may be of importance.

Regulatory Guideline	Question	Response	Comments
ADAPTED FROM TSCA ACBM IN SCHOOLS:			
	Has this building been characterized either through process knowledge, by analyses, or by inspection to determine if it contains asbestos?	(Y) N	tested; contamination "assumed"
	If no for this building or area note this conclusion in the comment section.		
	Is there any evidence of friable asbestos?	Y / (N)	
	Is the asbestos removal properly managed? (See questions listed below)	Y / N	If there is no asbestos removal, do not complete the following section.
NESHAPS FOR ASBESTOS FOR ANY ONGOING ASBESTOS REMOVAL:			
40 CFR 61.156	There are no discharges of visible emissions to the outside air from collection, processing, packaging, transporting, or deposition of ACBM during the removal.	Y / N	
40 CFR 61.152(b) (1)	ACBM is treated with water in accordance with 40 CFR 152(b)?	Y / N	
40 CFR 61.154	Is friable asbestos adequately wetted during stripping? Or, has an adequate ventilation and collection system been installed?	Y / N	
40 CFR 61.152	Is wetting continued until the waste friable asbestos is collected for disposal?	Y / N	

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Environmental Appraisal Checklist

Building Name: 94 Appraisers: Vyas/Hausfeld/Merker Date: 2-5-96am

Toxic Substances and Control Act (TSCA) PCB's Screening Checklist

Does this facility potentially contain any PCB's or PCB contaminated equipment?	Y (N)	If yes, are transformers labeled (Blue or Yellow stickers)? If yes, conduct the following survey.

TSCA Checklist

Regulatory Guideline	Question	Response	Comments
40 CFR 761	Has any waste generated in, or from, this building been characterized either through process knowledge or by analyses to determine if it contains PCB's ? If the answer is no, note . If the answer is yes, proceed with next section.	Y (N)	NOT IN PCB ANNUAL DOCUMENT LOG
	Based on an inspection, are any of the materials or equipment potentially PCB contaminated? If no, note and stop here. If yes, note the location of the management unit, and the method of management, and proceed.	Y / N	
40 CFR 761.65 (c) (5)	Are PCB articles or containers stored in this building checked for leaks at least once every 30 days?	Y / N	
	If yes, are auditable records maintained.	Y / N	
40 CFR.30 (a) (1) (ix)	Are any PCB transformers in use, or stored for possible reuse, that contain PCB's at concentrations of 500 ppm or greater?	Y / N	
	Are they visually inspected quarterly? If yes, are auditable records maintained?	Y / N	

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Building Name: 44 Appraisers: Vyas / Hausfeld / Merker Date: 2-5 96am

Not completed

TSCA Checklist

Regulatory Guideline	Question	Response	Comments
40 CFR 761.30 (a) 1,viii	Are all combustible materials (i.e., paints, solvents, plastics, paper, sawn wood, etc.) cleared from areas containing PCB transformers to a distance of five meters?	Y / N	
40 CFR 761.65 (b) (8)	Are all PCB articles and containers labeled with the date they were placed in storage?	Y / N	
	Are labeled PCB articles and containers stored so that the labels can be referenced?	Y / N	
40 CFR 761.65 (a)	Are all PCB's and PCB contaminated items at concentrations above 50 PPM, that are stored for disposal, stored no longer than one year from the date they were placed in storage?	Y / N	
40 CFR 761.62 (b) (1) (i)	Do all PCB storage areas have an adequate roof and walls to prevent rainwater from reaching the stored items?	Y / N	
40 CFR 761.62 (b) (1) (iv)	Are storage are floors curbed and constructed of continuous smooth and impervious materials?	Y / N	
40 CFR 761.62 (b) (1) (i)	Are the curbs at least 6 inches high?	Y / N	
40 CFR 761.62 (b) (1) (iii)	No drains are allowed in storage areas. Are there drains in the storage areas?	Y / N	

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Environmental Appraisal Checklist

Building Name: 94 Appraisers: Vyas/Hausfeld/Merker Date: 2-5-96am

NOT completed

TSCA Checklist

Regulatory Guideline	Question	Response	Comments
40 CFR 761.65 (c) (2)	Only non-leaking and undamaged large high voltage PCB's capacitators and PCB-containing electrical equipment are allowed to be stored outside of PCB storage areas, on pallets if stored outside, with containment for 10 percent of the volume of the equipment. Do all PCB's stored in this configuration conform with this requirement?	Y / N	
40 CFR 761.45 and .65	Are all PCB storage areas marked with a large PCB mark as described in 40 CFR 761.45 (a)?	Y / N	
40 CFR 761.65 (c) (5)	Have all leaking PCB articles and containers been transferred to non-leaking containers?	Y / N	
40 CFR 761.65 (c) (6)	Do all PCB storage containers for the storage of liquid and non-liquid PCB's comply with DOT shipping container specifications?	Y / N	

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GENERAL COMMENTS:

Building Name: 94 Appraisers: Vyas/Hausfeld/Merker Date: 2-5-96 am

Low-Level Waste and Transuranic Waste Screening Checklist

Does this facility contain radioactive waste ?	Y / N	If yes, conduct the following survey.

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
Low-Level Waste			
DOE Order 5820.2A Chapter III	Can any waste generated in, or from, this building be characterized either through process knowledge or by analyses to determine if it is LLW ? If the answer is no, note. If the answer is yes, proceed with next section.	Y / N	
DOE Order 5820.2A Chapter III.	Are any of the materials noted by inspection LLW? If no, The audit would stop here, because there are no LLW. If yes, note the location of the management unit, and the method of management, and proceed with the section below.	Y / N	
DOE Order 5820.2A Chapter III, 3.a.	Have the storage configurations in use in this area been taken into account for keeping external exposures to the general public below 25 mrem/yr?	Y / N	
	Is the waste stored in a configuration that protects ground-water resources?	Y / N	
DOE Order 5820.2A Chapter III, 3.b.	Has monitoring been conducted in this area in accordance with DOE Order 5820.2A in order to evaluate the area against the performance standard?	Y / N	
	Based on field data, does the monitoring conducted in this area conform to the performance standard?	Y / N	

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Environmental Appraisal Checklist

Building Name: 94

Appraisers: Vygas/Housfield/Merker Date: 2-5-96 am

NOT completed

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
DOE Order 5820.2A Chapter III, 3.d.	Based on field data, is the characterization of the materials in this area sufficient to assure proper segregation to assure proper segregation, treatment, storage, and disposal?	Y / N	
	Based on field data does the characterization as documented at the time of generation of the waste ensure that the actual physical and chemical characteristics, and major radionuclide content of this material are recorded and known at all stages of the waste management process?	Y / N	
	Do characterization data include the following:		
	Physical and chemical characteristics of the waste?	Y / N	
	Volume of the waste (including solidification and absorbent material)?	Y / N	
	Weight of the waste (including solidification and absorbent material)?	Y / N	
	Major radionuclides and their concentrations?	Y / N	
	Packaging date, package weight, external volume?	Y / N	
	How were the concentration of radionuclides determined? Direct methods?	_____	
	How were the concentrations of radionuclides determined? Indirect methods?	_____	
DOE Order 5820.2A Chapter III, 3.h	Is the storage configuration in long term storage sufficient to meet the performance standard?	Y / N	
	Are records maintained at the facility enabling this waste to be traced from its origin?	Y / N	

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Building Name: 44

Appraisers: Vyas / Hausfeld / Merker Date: 2-5 96 am

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
TRU WASTE			
	Can any waste generated in, or from this building be characterized either through process knowledge or by analyses to determine if it is TRU waste? If no, note and stop. If yes, proceed with the next section.	Y / N	
	Are any of the materials noted as being TRU waste during an inspection? If no, note and stop. If the answer is yes, note the location of the management unit, and the method of management and proceed with the appropriate section below.	Y / N	
DOE Order 5820.2A, Chapter II, 3.a.	Was this material evaluated as soon as possible in the generating process, to determine if it is TRU (>100nCi/g), if it is recoverable, or if it is waste? (Note if the activity level is less than 100nCi/g, the waste is not TRU, and can be managed as LLW.)	Y / N	
	Did the determination of TRU radionuclide concentration include the mass of the container, including shielding? These should be included in calculating the specific activity of the waste.	Y / N	

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Environmental Appraisal Checklist

Building Name: 44 Appraisers: Vyas/Hausfeld/Merker Date: 2-5-96 am

not completed

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
DOE Order 5820.2A, Chapter II, 3.b	Has the TRU waste been assayed or otherwise evaluated to determine its radioactive content prior to storage?	Y / N	
	Has the TRU waste been characterized or otherwise evaluated to determine if hazardous waste is present?	Y / N	
	Has classified TRU waste been treated to destroy the classified characteristics?	Y / N	
DOE Order 5820.2A, Chapter II 3.d	Has all newly generated TRU waste been packaged in non-combustible packaging that meets DOT requirements?	Y / N	
	Have all Type A TRU waste packages been equipped with a method to prevent pressure buildup?	Y / N	
	Have all TRU packages been marked, labeled and sealed in accordance with 40 CFR 261 Subpart C and 49 CFR 172 Subparts D, E and 49 CFR 173 Subpart I?	Y / N	

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Building Name: 94 Appraisers: Vyas/Hausfield/Merker Date: 2-5-96 am

not completed

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
DOE Order 5820.2A, Chapter II 3.e	Has the TRU waste been segregated in manner that will not permit commingling of TRU waste with LLW or high-level waste?	Y / N	
	Has the TRU waste been protected from unauthorized access?	Y / N	
	Has the TRU waste been monitored periodically to ensure that it is not releasing its radioactive and/or hazardous constituents?	Y / N	
	Has this TRU waste storage area been designed, constructed, maintained, and operated to minimize the possibility of fire, explosion, or accidental release of its radioactive and/or hazardous constituents?	Y / N	
	Does the facility have a contingency plan designed to minimize the adverse impacts of fire, explosion, or accidental release of its radioactive and/or hazardous constituents?	Y / N	

GENERAL COMMENTS:

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Environmental Appraisal Checklist

Building Name: 94 Appraisers: Vyas/Merker/Hausfeld Date: 2-5-96 am

Waste Minimization/Pollution Prevention Activities Screening Checklist

Does this facility generate waste or use chemicals?	Y N	If yes, conduct the following survey.

Waste Minimiaztion/Pollution Prevention Activities Checklist waste storage

Regulatory Guideline	Question	Response	Comments
	Based on available information and a walk through, are there any apparent opportunities to curtail the consumption of raw materials (including but not limited to paper, chemicals, electricity, and etc.). If yes, list candidate areas in the comment section.	Y / N	samples can be consolidated, treated, + discharged to sanitary ww trtment plant.
	Are there solvent wastes?	Y / N	
	Is vehicle maintenance performed?	Y / N	
	Are oils used ?	Y / N	
	Are these corrosive wastes?	Y / N	
	Are there sludges?	Y / N	
	Are there halogenated organic (nonsolvent) wastes?	Y / N	
	Are metals recovered from wastewater?	Y / N	
	Is waste sludge generated?	Y / N	
	Are any waste minimization practices used that reduce the generation of sludge?	Y / N	
	Ion exchange process?	Y / N	
	Lead in gasoline lowered to reduce tank sludge toxicity?	Y / N	
	Storage tank agitators installed?	Y / N	
	Corrosive resistant materials used?	Y / N	
	Prevention of crude oil oxidation ?	Y / N	
	Drying?	Y / N	

Building Name: 94 Appraisers: Vyas/Hausfeld/Merker Date: 2-5-96 am

Waste Minimization/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
HALOGENATED ORGANIC (NONSOLVENT) WASTES		NA	
	Are halogenated organic wastes used as fuel in cement kilns?	Y / N	
	Are baghouse filters used to collect pesticides and pesticide intermediates?	Y / N	
	Are solid wastes generated from the collection of baghouse dust?	Y / N	
	Wet instead of dry grinding used?	Y / N	
	The output spray dried?	Y / N	
	Has baghouse emptying and recycling of baghouse fines been scheduled?	Y / N	
	Have operations been evaluated to improve procedures such as handling, storage and spill prevention for increased efficiency?	Y / N	
METAL WASTES		NA	
	Are any technologies for the recovering of metals from waste rinsewater used?	Y / N	
	Evaporation of waste rinsewater?	Y / N	
	Reverse osmosis?	Y / N	
	Ion exchange?	Y / N	
	Electrolysis?	Y / N	
	Agglomeration?	Y / N	
CORROSIVE WASTES		NA	
	Are acidic or basic cleaning solutions used as treatment for pH adjustment chemicals?	Y / N	

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Environmental Appraisal Checklist

Building Name: 94 Appraisers: Vyas/Hausfeld/Merker Date: 2-5-96am

Waste Minimization/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
	Are ion exchange resins used to remove heavy metals and cyanides from acid and base solutions?	Y / N	
	Is crystallization used to remove corrosives from solution by cooling?	Y / N	
	Is the process of evaporation of liquid wastes by heating used to leave behind a more concentrated solution?	Y / N	
CYANIDE AND REACTIVE WASTES		NA	
	Has non-cyanide or low concentration of cyanide process replaced zinc cyanide bath ?	Y / N	
	Are any of these processes used to recycle cyanide wastes?	Y / N	
	Refrigeration/crystallization?	Y / N	
	Evaporation?	Y / N	
	Ion exchange?	Y / N	
	Membrane separation which includes reverse osmosis or electrodialysis?	Y / N	
VEHICLE MAINTENANCE		NA	
	How are auto parts cleaned?	Y / N	
	Solvent sink?	Y / N	
	Solvent dunk bucket?	Y / N	
	Solvent dip tank?	Y / N	
	Are parts cleaning solvents used for anything else besides cleaning parts?	Y / N	
	Are spills reduced by locating sinks or dunk buckets near auto service bays?	Y / N	

Building Name: 94 Appraisers: Vygis/Hauenfeld/Merker Date: 2-5-96 am

Waste Minimization/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
	Are cleaned parts drained on the sink to minimize solvent spills?	Y / N	
	Are drip tanks used to capture losses?	Y / N	
	Is a solvent sink used for mineral solvents rather than a dunk bucket or dip tank?	Y / N	
	Does a waste hauler collect solvent waste for recycling or treatment?	Y / N	
OILS		NA	
	What kind of oils are used?		
	Hydraulic oil?	Y / N	
	Transformer oil?	Y / N	
	Metal working fluids?	Y / N	
	Spent lubricating oils?	Y / N	
	Can the process be modified or changed to use water-based fluids?	Y / N	
	Are these good housekeeping and operation practices used to minimize oil waste production?		
	Use oils not contaminated with other liquids?	Y / N	
	Oil spills prevented?	Y / N	
	Drip pans installed?	Y / N	
	Oil soaked rags laundered?	Y / N	
	Rags and absorbants used to their limit?	Y / N	

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Environmental Appraisal Checklist

Building Name: 94 Appraisers: Vigas/Hausfeld/Merker Date: 2-5-96am

Waste Minimization/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
	Are these treatment techniques used to promote separation of oil/water wastes?		
	Reclaiming process to remove water and solvents by heat?	Y / N	
	Gravity setting?	Y / N	
	Screening?	Y / N	
	Centrifugation?	Y / N	
	Filtration?	Y / N	
SOLVENT WASTES		NA	
	Has there been an attempt to reduce volume or toxicity by:		
	Eliminating solvents?	Y / N	
	Reducing the use of solvents?	Y / N	
	Reducing the loss of solvents?	Y / N	
	Increasing recyclability?	Y / N	
	Are solvents segregated?	Y / N	
	Are waste solvents free from water and garbage?	Y / N	
	Are recycled solvent containers labeled as such?	Y / N	
	Are containers kept closed?	Y / N	
	Free and sheltered from the elements?	Y / N	
	Are solvent tanks kept as free from contaminations as possible so that the waste can be recycled?	Y / N	
	Is a method used to minimize the use of new materials such as a countercurrent process?	Y / N	

Building Name: 914 Appraisers: Vyas/Hausfeld/Merker Date: 2-5-96 am

Waste Minimization/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
	If there is a recycling program, what technique is used?	Y / N	NA
	Distillation?	Y / N	
	Solids removal?	Y / N	
	Dispersion breaking?	Y / N	
	Dissolved and emulsified organics recovery?	Y / N	
	Are any of these housekeeping procedures used to minimize the production of solvent wastes?		
	Separators cleaned and checked?	Y / N	
	Parts not allowed to enter the degreaser while wet?	Y / N	
	Sludge from the bottom of the tank not allowed to accumulate?	Y / N	
	Lids kept on tanks?	Y / N	
	Freeboard space on tanks increased?	Y / N	
	Are better operating practices used to reduce waste?	Y / N	
	How long is solvent waste stored and where?	_____ _____	

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9.101-37

M u n d Electronic Message/AOS

From :Katherine Koehler
KOEHKG
Dept. :ENGINEERING
Tel. No :865-4886
Date :05-Feb-1996 04:55pm EST
Subject :MSR Request - Building 94 Environmental Audit

Margie,

Please place the following MSR's on the AMMO system as a result of the environmental audit conducted at building 94 on 2/5/96.

HP: 5277 Phone Extension: 4886

MSR Title: Turn on the Heat, Building 94

Description: Turn on the heat at building 94, bay 1, bay 2, and bay 3. Supply sufficient heat to ensure liquids stored within the building do not freeze. Check and replace thermostats as deemed appropriate to maintain temperatures of 35 degrees or higher. Thermostats should be "lockable" to prevent contractors who utilize the facility from adjusting the heat. Thermostats are to be adjusted by authorized personnel to allow for intermittent personnel occupancy. Provide Keys and or codes to thermostat to: Kathy Koehler, Bob Ward, Denny Gault, and Keith McMahan.

MSR Title: Floor Drain Plugs/Covers, Building 94

Description: Install floor drain plugs or covers to prevent spilled (potential) liquids in the field laboratory from entering the sanitary sewage system.

John Hausfeld,

I contacted Chuck Geloff today, 2/5/96, and he said he would have the fire extinguisher filled and verify that it was on the list to be maintained.

This takes care of my three corrective actions.

Kathy

istribution:

):	Margaret Sticklen	(STICMA2)
::	John Hausfeld	(HAUSJR)
::	Eunice Warmoth	(WARMEM)
::	ALLEN W. UPSHAW	(UPSHAW)
::	Dennis Gault	(GAULDJ)
::	Keith McMahan	(MCMABK)
::	Charles Geloff	(GELOCG)
::	David L. Heitz	(HEITDL)
::	Steve Etter	(ETTESC)
::	W. B. Clark	(CLARWB)

Building Manager's Questionnaire

Building Name: 94 Building Manager: K.G. Koehler Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

1. What are the access requirements (training, clearance, etc.)?

2. What protective equipment is required to enter the building?

3. Are there any restricted areas? Yes No
   Where are they?

4. Provide a physical description of the building.

This is a prefabricated metal building with a metal roof. Total area is 1,240 ft^2. One-third of Building 94 is used for laboratories; two-thirds is used for environmental ovens. The building is not contaminated with any radioactive or energetic materials.

Source: Mound Facility Physical Characterization, 12-1-93

5. Provide a drawing of the building.

Attached

6. What is the current building use?

The building is used for materials compatibility studies in support of defense programs.

Source: Mound Buildings, 5-9-95

7. What is the history of building use other than that described in #6?

Source: Mound Buildings, 5-9-95

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Building Manager's Questionnaire

Building Name: 94 Building Manager: K.G. Koehler Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

8. What are ongoing operations or processes? What are the raw materials and waste streams from each process? Who is the best contact for each process?

Process(es) Housed: Materials aging

How Wastes Are Generated:

No hazardous wastes are generated in this building.

Contact:
Phone #:

Source: Characterization of Mound's Hazardous, Radioactive, and Mixed Waste, (8-15-90).

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Building Manager's Questionnaire

Building Name: 94 Building Manager: K.G. Koehler Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

9. In the last six months, have any modifications been made to the building or to processes in the building? Yes No

10. Does the building have air emission sources? No

Process Source	Room Number	Hood Number	Active	Chemicals Used	Quantity Used	Quantity to Waste Management	Lbs./Yr. Operation	Air Emissi
			Y / N					
			Y / N					
			Y / N					
			Y / N					
			Y / N					

Source: Mound Air Emissions Database 11/30/95

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Building Manager's Questionnaire

Building Name: 94 Building Manager: K.G. Koehler Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

11. Describe air pollution control equipment used to reduce emissions for each source. None Listed

Process Source	Emissions	Control Equipment	Functioning
			Y / N
			Y / N
			Y / N
			Y / N
			Y / N

Source: Air Permits 2/4/95

12. For existing permits are emissions monitored? At what frequency? Where are the records maintained? None Listed

Process Source	Permit	Log	Permit Conditions & Frequency of Monitoring
		Y / N	
		Y / N	
		Y / N	
		Y / N	
		Y / N	

Source: Air Permits 2/4/95

13. Does the building have domestic water service? Yes No
Is there bottled water? Yes No

14. Does the building discharge to the storm sewer? Yes No
Where?

15. Does the building discharge to the sanitary sewer? Yes No
Where?

16. Has an asbestos survey been conducted? Yes
What are the results? ASSUMED

Source: Technical Manual MD-10391, Issue 3 Asbestos Program Manual 9/6/95

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o 101-46

Building Manager's Questionnaire

Building Name: 94 Building Manager: K.G. Koehler Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

17. Does the building contain transformers or capacitors? No

Source: PCB ANNUAL DOCUMENT LOG

18. Has the building been identified as containing PCBs? No

Source: PCB ANNUAL DOCUMENT LOG

19. What chemicals are used or stored inside or outside of the building? Include compressed gasses not in large tanks.

Chemical Name	State	Amount (MAX)
NONE		

Source: Chemical Inventory 1994

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Building Manager's Questionnaire

Building Name: 94 Building Manager: K.G. Koehler Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

20. Has there been a reported spill, leak, or other release of any chemical? Yes No
What, how much, and what clean-up measures were followed?

Chemical	Amount	Clean-up Measures

Source: _____

21. Where do waste chemicals go?

22. What janitorial supplies are stored inside or outside of the building?

23. Where do excess janitorial supplies go?

Source: _____

24. Are pesticides or herbicides stored or used in or around the building? Yes No

Chemical	Amount	Chemical	Amount

Source: _____

Building Manager's Questionnaire

Building Name: 94 Building Manager: K.G. Koehler Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

25. Does the building contain active or inactive above ground storage tanks? Yes No
For each tank, list the content, quantity, last inspection, registration number.

NONE

26. Is there a sump or pit or underground tank in or around the building?
Yes No Unknown
Is it double-walled? What does it contain? How many days per year is it filled?
Is there an emergency overflow tank? Have there been previous overflows?

Double-Walled	Contents	Days/Year in Use	Overflow Tank	Previous Overflow
Y / N			Y / N	Y / N

Source: _____

27. Does the building generate, store, or dispose of hazardous waste? Yes No

Materials	Amount
Ammonium Chloride	0.1
Ammonium Sulfate	1.1
Amyl Acetate	0.2
Benzil	0.2
Di-N-Butyl Succinate	0.1
Dibutyl Adipate	0.1
Diphenyl Silanediol	0.3
Ethyl Caproate	1.6
Ethyl Hexanoate	0.1
Humidity Salts	13.6
Iso Butyl Amine	1.4
Iso Butyric Acid	0.5
Iso Butyro Nitrile	1.0
Iso Butryl Chloride	0.9
Isobutyr Aldehyde	1.4
Methyl Enanthate	1.5
Methyl Hexanoate	0.1
Methyl Myristate	0.1
Methyl Nonanoate	0.1
Methyl Octanoate	0.1
Methyl Propanol (2-,-1-)	0.6
Methylene Iodide	1.5
Phenolic Resin	0.8
Poly Vinyl Pyrrolidone	0.1
Polyacrylonitrile	0.1
Potassium Acetate	0.7

Building Manager's Questionnaire

Building Name: 94 Building Manager: K.G. Koehler Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

Materials	Amount
Sodium Dichromate	0.8
Spectrum Magenta Premix	2.5
Succinic Acid	0.1
Tartaric Acid	0.1

Source: Characterization of Mounds Hazardous, Radioactive, and Mixed Wastes 08/15/90

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Building Manager's Questionnaire

Building Name: 94 Building Manager: K.G. Koehler Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

28. Does the building have abandoned process equipment such as tanks, piping, containers, etc.? Yes No

29. Is waste material stored in or around the building for more than 90 days?
Yes No

30. Has the building been identified as a 90-day waste accumulation area?
Yes No

31. Has any area in the building been identified as a satellite accumulation area?
Yes No

32. Is mixed waste generated, stored, or disposed of from the building? Yes No
Where are logs found?

Process	Waste	Stored	Disposed	Logs
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N

Source: _____

Building Manager's Questionnaire

Building Name: 94 Building Manager: K.G. Koehler Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

33. Is TRU radioactive waste generated, stored, or disposed of from the building?
Yes No
Where are logs found?

Process	Waste	Stored	Disposed	Logs
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N

Source: _____

Building Name: 94 Building Manager: K.G. Koehler Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

34. Is low-level radioactive waste generated, stored, or disposed of from the building? Yes No
Where are logs found?

Process	Waste	Stored	Disposed	Logs
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N

Source: _____

35. Identify all administrative orders, temporary or permanent injunctions, civil administrative penalties, or criminal activities issued against the building.

Building Manager's Questionnaire

Building Name: 94 Building Manager: K.G. Koehler Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

36. Is there a waste minimization program in the building? Yes No
Discuss your ideas about how to minimize waste.

37. Has a pollution prevention program been developed for the building? Yes No

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Appendix G

Radiological Information

Final Status Report

For

Building 94

Prepared by:	Roderick C. Case /	Date:	November 4, 2002
Reviewed by:	Joseph Guido ~~Kevin Doody /~~	Date:	11/7/02
Approved by:	Dan Riley /	Date:	11-12-02

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1.0 Historical Review

Building 94 is a single floor pre-fabricated building of the Butler design. It is located in the plant valley area near the western end of the site boundary. Based upon construction drawings, Building 94 was constructed in the mid-1980s as the "Materials Compatibility Building." Building 94 square footage is 1,240 ft^2. There have been no additions to Building 94.
It is laid out as four rooms. Rooms 1, 2, and 3 are separated by drywall material. Room 4, a smaller mechanical area, is constructed with concrete block. The exterior walls are sheet metal with a pre-finished paint inside and outside. The roof is a galvanized metal. The floor of the structure is unpainted concrete slab. A concrete loading area extends across the front of the building.

Building 94 has been placed in service for three functions. Initially, it supported detonator and explosives program operations. As noted in a mid-1990's environmental assessment of the Mound site, Building 94 was, at that time, used to store CERCLA program materials, including aqueous and soil samples collected at Mound, analyzed at offsite laboratories, and returned to Mound for deposit. When the building was appraised, returned samples were placed in storage indefinitely. Later information indicates that the Building was transformed into a site for a pilot study to extract plutonium and thorium from site soils and was used to house the equipment for a soil washing technology demonstration project. The equipment areas were posted as RMMA (Radioactive Material Monitoring Area) and the building was posted as a Controlled Area in accordance with Mound Rad Con procedures. The technology demonstration was completed and the equipment was surveyed and released, decontaminated, or disposed of as low level radioactive waste. All process equipment was moved out of the building and radiological surveys were completed in April 2000 to release the building from radiological controls. Building 94 was subsequently used as an office and storage facility until August 2002 when it was vacated in preparation for demolition in accordance with the Mound Exit Plan. A complete building history can be found in Reference 1.

2.0 Survey Objectives

The objective of this survey plan is to determine whether or not the residual radioactivity of the surfaces of building materials associated with Building 94 satisfy the site release criteria. This is accomplished by measuring the fixed and removable contamination on building surfaces and performing isotopic analysis on any sediment found in building drains. The survey data is compared to the release criteria of DOE Order 5400.5 using methods defined in Reference 2. The specific survey objectives are outlined in each Survey Plan Form (see Enclosures).

Table 1 lists the permissible surface contamination guideline values as stated in DOE Order 4500.5. These limits are the Derived Concentration Guidelines (DCGL's) for building and structure release.

Table 1

Allowable Total Residual Surface Contamination (dpm/100cm^2)*				
Radionuclides*		**Average***	**Maximum***	**Removable***
Group 1	Transuranics, I-125, I129, Ra-226, Ac-227, Ra-228, Th-228, Th-230, Pa-231	100	300	20
Group 2	Th-Natural, Sr-90, I-126, I-131, I-133, Ra-223, Ra-224, U-232, Th-232	1,000	3,000	200
Group 3	U-Natural, U-235, U-238 and associated decay products, alpha emitters	5,000	15,000	1,000
Group 4	Beta-gamma emitters (Radionuclides with decay modes other than alpha emission or spontaneous fission) except for Sr-90 and others noted above	5,000	15,000	1,000
Tritium		N/A	N/A	10,000

* Note: Refer to DOE Order 5400.5, Radiation Protection of the Public and the Environment, for specific information on surface contamination guidelines and additional notes.

The average activity levels shown in Table 1 assumes that the residual contamination is uniformly distributed across the survey unit and is the $DCGL_w$ for this survey. The maximum activity shown in Table 1 represents the Elevated Measurement Comparison ($DCGL_{emc}$) for small (<100cm^2) areas of activity that may be observed in the survey unit while scanning.

2.1 Survey Design

The characterization survey was designed to evaluate each of the four rooms in this building, the building external surfaces, and the loading dock area. The areas were arranged into survey units based on the building history and the potential for residual contamination in accordance with Reference 2.

Floors and walls up to 6' in rooms 1&2 were classified as Class 2 areas and were designated as Survey Unit 1&2 respectively. Since the variability is expected to be small within the survey unit, the Type I error chosen is $\alpha = 0.05$ and the Type II error is $\beta = 0.01$. The number of data points is determined by calculating the relative shift (Δ/σ) from the DCGL value, the lower bound of the gray region (LBGR), and the standard deviation (σ) of the contaminant in the survey unit (Δ/σ = DCGL-LBGR/σ). For this survey plan, the LBGR is set at 50% of the $DCGL_w$. The standard deviation was estimated to be 17dpm/100cm^2 and the relative shift was calculated as 2.95. The required number of data points ($n = 20$) for the Class 2 survey units was obtained from Table 5.5, Reference 2. The average alpha measurements for the Class 2 survey units is 23.24dpm/100cm2

±12.4dpm/100cm^2 (σ). The Δ/σ = 4.03 and the calculated minimum number of data points (n) per Equation 5-2, Reference 2 is 19. This demonstrates that the survey design had sufficient power (probability) to meet the DQO's for these survey units.

A triangular grid sample pattern was selected and calculated as follows:

$$L = \sqrt{\frac{A}{0.866n}}$$

Where: A = Survey unit area
n = # of data points

For Survey Unit 1 & 2, L = 7'8"
The distance between each row is given as L X 0.866 = 6'8".
The starting location in each survey unit was obtained by a computer generated random number. Survey Units 1&2 are shown in Attachment 1.

Walls above 6' and ceilings in rooms 1&2 are classified as Class 3 areas per Reference 2 and designated as Survey Unit 3. The floor of Rooms 3&4 are classified as Class 3 areas and designated as Survey Unit 4. The data points for these survey units are randomly selected and plotted as shown in Attachment 1.

External surfaces and the loading dock have the least potential for residual contamination from building processes and are designated Survey Units 5 & 6. Data points were bias located within these survey units. The following table shows the classification and size of each Survey Unit.

Survey Unit Number	Survey Unit Room Designation	Area (ft^2)	Survey Unit Classification	# Data Points
1	Room 1 Floor and Walls to 6'	1024	2	20
2	Room 2 Floor and Walls to 6'	1024	2	20
3	Room 1&2 Walls above 6' and ceiling	1600	3	20
4	Rooms 3&4 floor	400	3	10
5	Loading Platform	550.9	3	10
6	Exterior Walls and Roof	3046	3	13

The walls and ceiling of Rooms 3 & 4 were considered non-impacted and were surveyed at 20 biased locations. A 2ft^2 area around each data point was scanned and the highest reading in each area documented. The scanned area is approximately 10% of the total surface area of the survey unit.

Ten (10) additional judgmental data points were surveyed for alpha and beta on beams and horizontal structural surfaces in Survey Units 1&2. Sediment samples were collected from floor drains and roof drains. If no sediment was available in these areas, smears were obtained for isotopic analysis.

Replicate surveys were performed in accordance with Reference 3.

The instruments selected for this survey were the Ludlum 2350-1 data logger with a 43-20 hand-held gas flow proportional (GFP) detector and a 43-37 GFP large area floor probe for alpha measurements. A NE Electra with a dual scintillation probe was selected for beta measurements. Laboratory instruments used were appropriate for the analysis requested. Instrument calibration and source check data is documented in accordance with Mound procedures.

2.2 Survey Data

The gross alpha and beta fixed point measurements from Survey Units 1&2 were averaged and compared to the $DCGL_w$. None of the fixed point results were greater than the $DCGL_w$, therefore the Sign Test was not utilized. The alpha and beta fixed point measurements for Survey Units 3&4 were all less than the $DCGL_w$. All of the judgmental survey points and scans were less than the $DCGL_w$. A graphical representation of the average total activity for each survey unit is shown in Attachment 2.

Two of the gross alpha measurements on the roof and three alpha measurements on the loading dock (Survey Units 5&6) were in excess of the $DCGL_w$. The highest observed activity on the roof was 147dpm/100cm^2 and on the dock was 289dpm/100cm2. It was noted that these areas showed significant rust stains from nearby iron fixtures. These areas were sampled by intrusive methods (acid etching) to determine the radionuclide(s) present. The data point with the highest activity was selected as the sample location. The sample results show the major alpha activity contributor is Po^{210} (~80%), which is observed to be present in the background and is associated with iron oxides (rust) on external surfaces. When corrected for Po^{210}, the highest alpha reading on the dock is 51dpm/100cm^2 and the highest alpha reading on the roof is 11dpm/100cm^2. The highest activity measured on the exterior walls was 51dpm/100cm^2.

The following table shows the net results of the maximum and average total (fixed and removable) alpha and beta activity for each area.

Total Activity Results

Area	Alpha (dpm/100cm^2)			Beta (dpm/100cm^2)		
	Max	Average	± σ	Max	Average	± σ
Survey Unit 1	64	28.30	14.8	838	342.8	339.80
Survey Unit 2	51	25.64	12.95	799	308.38	314.55
Survey Unit 3	51	13.30	12.67	133	26.28	41.26
Survey Unit 4	45	25.70	9.12	960	712.2	138.39
Survey Unit 5	51	19.98	15.6	821	620.40	93.08
Survey Unit 6	11	6.34	2.89	128	25.50	43.05

The removable alpha and beta surface activity results are shown below. All results were significantly less than the $DCGL_w$.

Removable Alpha & Beta Activity Results

Area	Alpha (dpm/100cm^2)			Beta (dpm/100cm^2)		
	Max	Average	± σ	Max	Average	± σ
Survey Unit 1	4.0	0.5	1.1	3.8	1.9	1.3
Survey Unit 2	1.99	.20	0.61	6.4	2.16	1.81
Survey Unit 3	2.19	0.66	1.03	5.48	2.29	1.59
Survey Unit 4	8.74	1.97	2.81	8.06	3.97	2.27
Survey Unit 5	4.37	1.75	1.38	5.48	3.98	1.30
Survey Unit 6	6.55	1.74	1.95	83.42	7.49	18.04

The highest removable tritium activity was 28.62 dpm/100cm2 (RSDS# 02-TF-1465). The average removable tritium was 5.31 dpm/100cm2 (±5.78).

Ten percent of the Class 3 areas were scanned for alpha activity. The highest alpha measurement observed by scanning these survey units was 36dpm/100cm^2.

Fifty percent of the total surface area in Survey Units 1&2 were scanned for alpha contamination in accordance with SPF 94-01. The highest observed measurement in Survey Unit 1, Room 1 was 77dpm/100cm2 (See RSDS# 02-TF-1463). The highest observed measurement in Survey Unit 2, Room 2 was 139dpm/100cm^2 (See RSDS# 02-TF-1467). The area was resurveyed using the hand probe (43-20) to determine the size and extent of activity. The highest activity found was 623dpm/100cm^2 in a small area of approximately 181cm^2. The area was sampled by acid etching to determine the isotopic mix of the elevated measurement. The sample results showed that 44% of the alpha activity is from $Pu^{239/240}$ and 29% is from U^{238}. These results are indicative of residual activity associated with the soil washing process that was demonstrated in this room. Remediation was accomplished by way of the acid etch sampling technique and post-etching surveys indicate that all of the contamination was removed.

Room 2 floor was relabeled Survey Unit 7 and was designated a Class 1 area since remediation was necessary. A post remediation Survey Plan (SPF 94-02) was developed to assess the completeness of the remediation by resurvey of the entire floor area. Data point locations were plotted in the same manner as the original survey (Area = 392.5 ft2, L = 5' and spacing is 4'). The variability of the activity based on the previous survey was small and the Type I and Type II error percentages were not changed. The number of data points required was 20. A surface scan of 100% of the floor was required to satisfy the Class 1 requirements of Reference 2 and ensure that additional elevated measurement areas were not present in the survey unit. The fixed-point data results were all less than the $DCGL_w$ and the survey parameters were consistent with previous survey data (RSDS# 02-TF-1487). However, the scan results located a second spot that is above the $DCGL_{emc}$ (RSDS# 02-TF-1488). The scan data initially identified two adjacent spots that were elevated, but subsequent examination showed that this was a very small area (3"x3") located in an area that was not covered in the original 50%

floor scan. Additional remediation and resurvey of Survey Unit 7 was required. The results of the post remediation survey of Survey Unit 7 are shown in the table below:

Total Activity Results[1] for Survey Unit 7 (1st Remediation)

Area	Alpha Fixed Point (dpm/100cm^2)			Alpha Scan (dpm/100cm^2)		
	Max	Average	± σ	Max	Average	± σ
Room 2 Floor	64	28.3	16.21	637	83.78	189.03
Note 1-Results corrected for background						

Survey Unit 7 second remediation was accomplished by acid etching the areas of concern. In addition, acid etch samples were obtained in Room 1 and Room 2 as a control set. The alpha spectroscopy result of the leachate from the elevated measurement area was predominately Pu-238 (163dpm, 85%). A control sample was obtained from the floor of Rooms 1 and 2 to determine the relative mix of the isotopes present outside of the elevated measurement areas. Sample locations were randomly selected and a 181cm2 area was acid etched using the same process as the elevated area samples. The alpha spectroscopy results of the control samples show little variation between the survey units and the isotopic mix is significantly different from the elevated measurement samples. This is strong evidence that the contamination found at the elevated measurement areas is a result of isolated residual contamination from the soil processing demonstration project and not from a general impact of the building. The control sample results are shown in the following table with the gross alpha activity corrected to 100cm^2:

Control Sample Results (dpm/sample)

Location	Pu-238	Pu-239/240	Th-230	Th-230	Th-228	Th-227	U-238	U-235	U-233/234	Gross Activity (dpm/100cm^2)
Room 1 Floor	0.98	<0.33	0.71	4.39	1.15	1.04	6.02	0.40	4.67	10.7
%	5	0	4	23	6	5	31	2	24	
Room 2 Floor	1.82	<0.85	1.05	4.21	0.94	0.44	6.51	0.68	6.09	12.0
%	8	0	5	19	4	2	30	3	28	

A survey plan was developed (SPF 94-03) to perform a 100% floor scan after the second remediation as the final survey of this unit. Additionally, a 100% floor scan was required for Room 1 to ensure that there were no elevated measurement areas that were missed in that room.

The fixed point survey results for Survey unit 7 were accepted for the final status survey since the results were consistent with the characterization survey for the same area (Room 2 floor). The spatial variability between the two surveys was within a factor of two

as required by Reference 3 (S^2 =167.71/262.85 = .64) and the averages were within 1 standard deviation (25.65/28.3dpm/100cm^2, ±12.95). Therefore, no fixed-point surveys were required for SPF 94-03. The re-scan survey results for Rooms 1&2 floors were all less than the $DCGL_w$ and no further surveys are required (See RSDS# 02-TF-1492).

Re-Scan Results[1]

Area	Alpha Scan (dpm/100cm^2)		
	Max	Average	± σ
Room 2 Floor	77	31.67	20.12
Room 1 Floor	85	32.33	30.32
Note 1 – Results corrected for background			

2.3 Sediment Sample Data

Sediment samples were obtained from floor drains, roof gutters, and ventilation units. No sediment was observed in any floor drain or roof gutter and smear samples were obtained in each of these locations. Water was observed in the floor drain of Room 3 and a sample was obtained for analysis. Filter media was taken from each of the through-the-wall ventilation units for gamma spectroscopy analysis. No activity was observed above background in the filter media samples (See RSDS# 02-TF-1489). The highest gross alpha activity was 3.51 dpm/smear and the highest gross beta activity was 8.60 dpm/smear (See RSDS # 02-TF-1474). The water sample obtained from the floor drain in room 3 was analyzed for gross alpha and tritium activity. The gross alpha results are <1.95dpm/ml (Screening Level = 2dpm/ml) and the tritium activity is 1.64nCi/L (Screening Level = 1000nCi/L).

2.4 Quality Control

Quality control measurements were taken to ensure the quality of the data. Eleven data points were selected at random from the sample group of 150 data points. The locations were reviewed to ensure the data points were representative of each survey unit. Replicate measurements were taken at these locations using the same instruments and performed in the same manner as the original survey. The acceptance criterion for fixed-point measurements is that the variance in the measurements of the original sample population is within a factor of two of the variance in the replicate samples (at 95% confidence level). Negative beta values occur when the measured value is below the instrument background level. These values are used for this analysis to show the true variability of the data set. The results of the replicate surveys are shown in the following table:

Replicate Analysis Results

Location #	Alpha (dpm/100cm^2)			Beta (dpm/100cm^2)		
	Initial	± 2σ	Replicate	Initial	± 2σ	Replicate
U2QC 3-4	13	7.21	0	-40	12.65	3.9
U2QC 11-17	51	14.28	32	716	53.52	785
U1QC 11-4	26	10.20	13	-1	2.00	-30
U3QC 28-24	32	11.31	39	-67.1	16.38	116
U3QC 40-11	6	4.90	19	35.1	11.85	301
QC J-4	13	7.21	19	-21.3	9.23	-186
RM3QC 15	32	11.31	6	1	2.00	-8.8
RM3QC 3	13	7.21	6	177	26.61	133
U4QC 13-13	26	10.2	39	755	54.95	875
DKQC 9	64	16.0	51	563	47.46	848
EXTQC 4	26	10.2	13	-57	15.1	121
Variance (S^2)	302.47		269.27	105597.4		147744.3
Ratio			1.1			0.7
Agreement			Yes			Yes

Replicate analysis were not performed on smears since the analysis for tritium is a destructive process. Quality control procedures, blanks, and spikes are a part of the laboratory quality control program at Mound. Participation in the DOE/EML inter-laboratory quality assurance program provides acceptable assurance of nuclide identification reliability and ensures a high quality of sample results. Since a relatively small number of samples were taken for this survey, additional replicate analysis is not required for this survey.

Field instrumentation is source checked each day prior to use and again at the completion of survey activities for that day. A known source is placed in a source holder to ensure a reproducible geometry is achieved. Acceptance criteria is ± 20% of the initial source response following calibration. Results are documented in accordance with Mound Radiological Control procedures. Laboratory instrumentation is source checked and documented in accordance with Mound Laboratory procedures.

Chain of custody was maintained for all sediment samples and is documented on the Field Sample Data Collection Sheet.

2.5 Conclusion

The objective of this survey plan is to determine whether or not the residual radioactivity of the surfaces of building materials associated with Building 94 satisfy the site release criteria established by DOE Order 5400.5. This is accomplished by comparing the survey data to the release criteria using statistical methods as defined by the MARSSIM (Reference 2). Since all of the fixed point survey results are below the $DCGL_w$, the Sign test was not necessary. The scan survey results demonstrate that there are no elevated measurement areas above the $DCGL_{emc}$. No process related isotopes were found in sediment media above background values.

All of the DQO's for this survey plan have been met and no further surveys are required. The null hypothesis is rejected in favor of the alternate hypothesis in each survey unit. Building 94 meets the release criteria established by DOE Order 5400.5.

The following tables show the maximum fixed and removable activity on the inside and outside building surfaces.

Building 94 Survey Results (Inside Surfaces)

TYPE	RSDS	LOCATION	SURVEY RESULTS (dpm/100 cm^2) (Note 2)	SURFACE CONTAMINATION GUIDELINES (dpm/100 cm^2) (Note 1)	COMMENTS
Highest Alpha Smearable Activity	02-TF-1462	U4 18-4	8.74	20	
Highest Alpha Fixed Activity	02-TF-1461	U1 19-17	64	100	Highest alpha activity observed by scanning Room 1 floor 85 dpm/100cm^2
Highest Beta Smearable Activity	02-TF-1459	J 04	9.59	1,000	
Highest Beta Fixed Activity	02-TF-1462	U4 3-9	960	5,000	
Highest Tritium Smearable Activity	02-TF-1462	U4 7-2	14.17	10,000	

Note 1: DOE Order 5400.5 (DCGLw)
Note 2: Corrected for background

Building 94 Survey Results (Outside Surfaces)

TYPE	RSDS	LOCATION	SURVEY RESULTS (dpm/100 cm^2) (Note 2)	SURFACE CONTAMINATION GUIDELINES (dpm/100 cm^2) (Note 1)	COMMENTS
Highest Alpha Smearable Activity	02-TF-1465	Dock	4.37	20	
Highest Alpha Fixed Activity	02-TF-1465	Dock	51	100	Note 3
Highest Beta Smearable Activity	02-TF-1465	Dock	5.48	1000	
Highest Beta Fixed Activity	02-TF-1465	Dock	848	5000	
Highest Tritium Smearable Activity	02-TF-1465	Wall	28.62	10,000	

Note 1: DOE Order 5400.5 (DCGLw)
Note 2: Corrected for background
Note 3: Corrected for Po-210 interference

3.0 Attachments and Enclosures

Attachment 1 – Survey Unit Grid Point Plots

Attachment 2 – Average Total Alpha and Beta Graph

Attachment 3 – Sample Data Analysis Worksheets

Enclosures – SPF 94-01

SPF 94-02

SPF 94-03

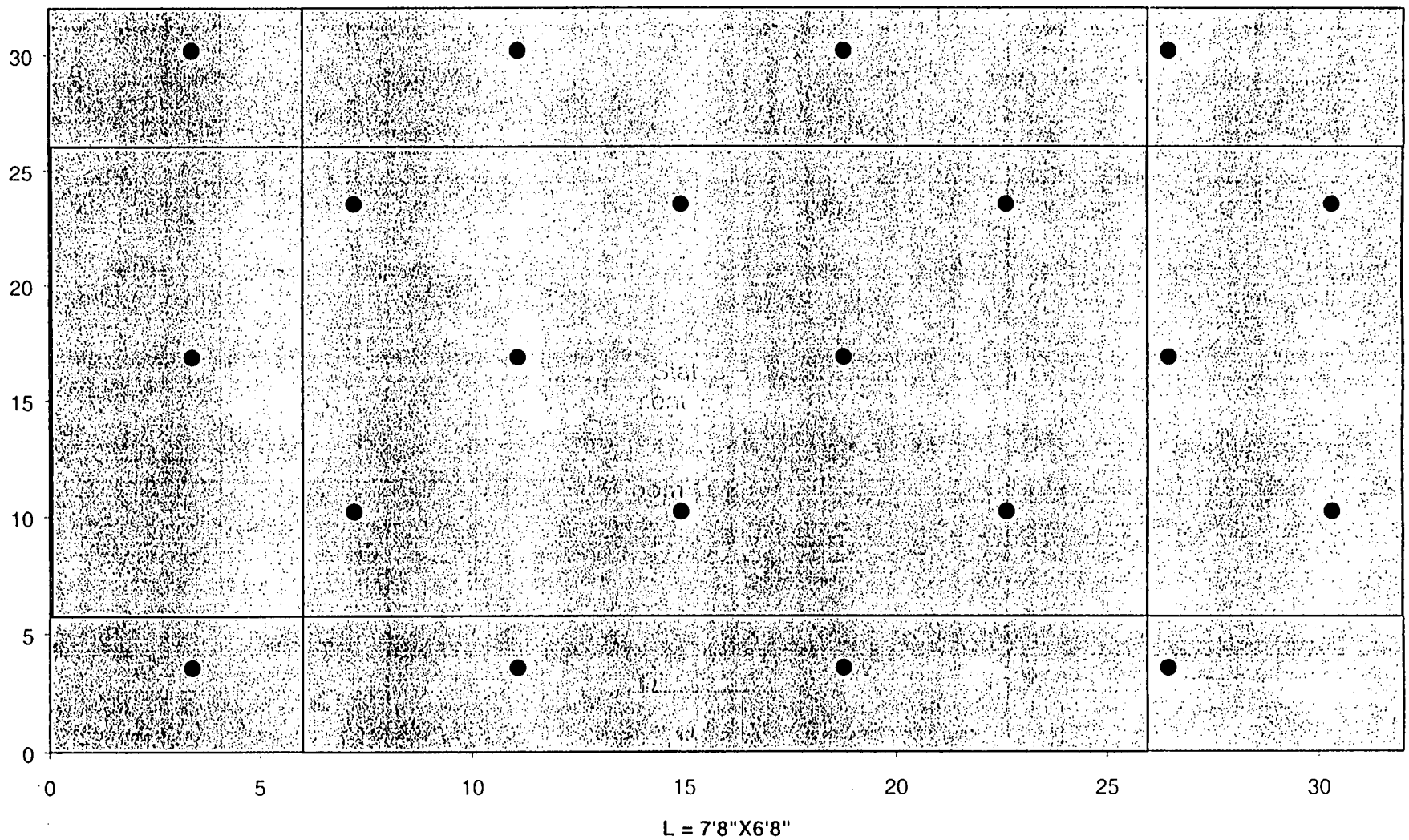
4.0 References

1. BWXTO, EC&AS Department, White Paper: *Building 94 Structural History and Process History Summary Background Document*, February 2002

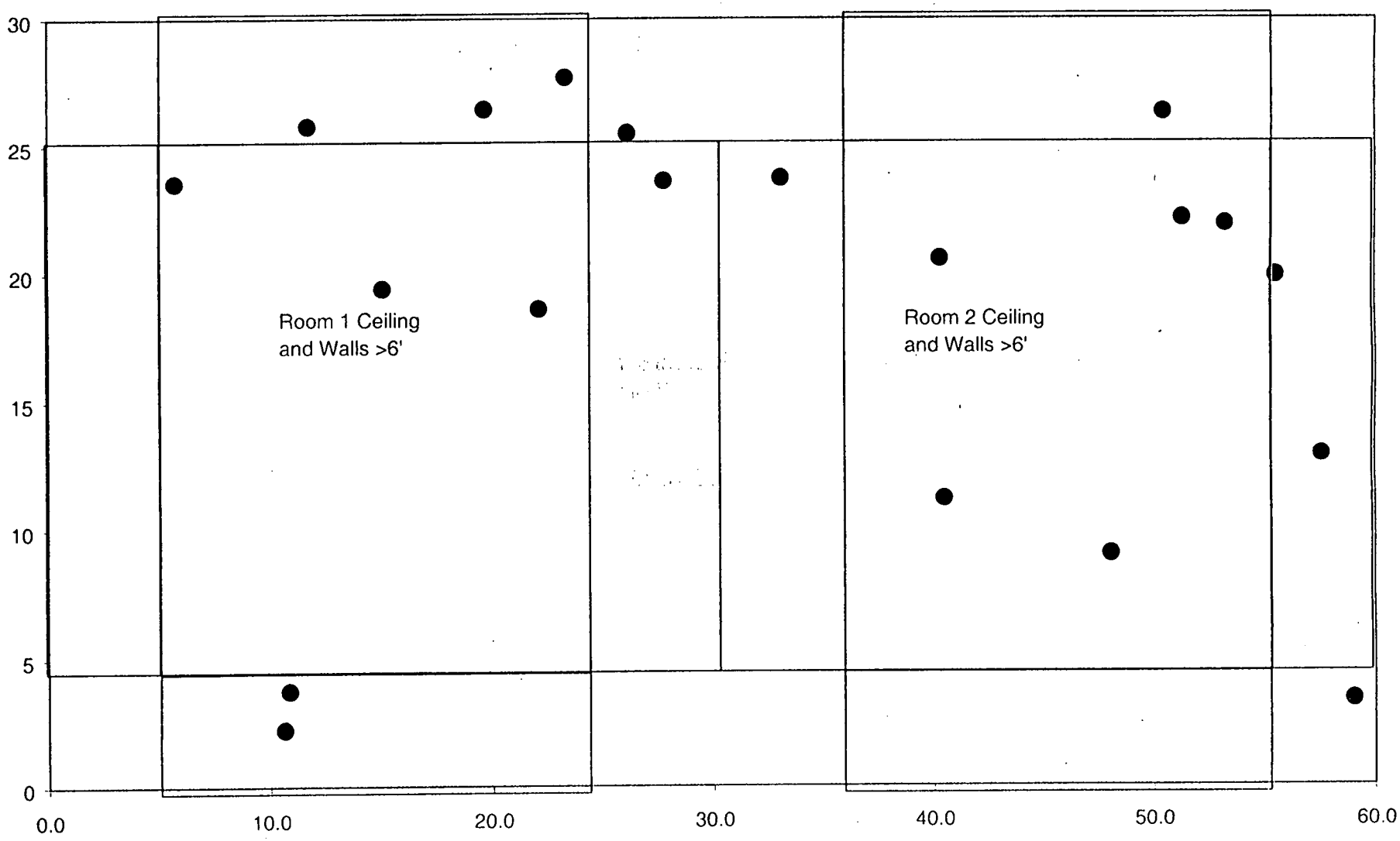
2. NUREG 1575, Rev 1, Aug 2000, *Multi-Agency Radiation Survey and Site Investigation Manual*, (MARSSIM)

3. MARSSIM Implementing Procedures, *Field Quality Control for Building Contamination Surveys*, MD-80046, Op. 402

Survey Unit 1& 2 Grid Points



Survey Unit 3 Room 1&2, Ceilings & Walls > 6'



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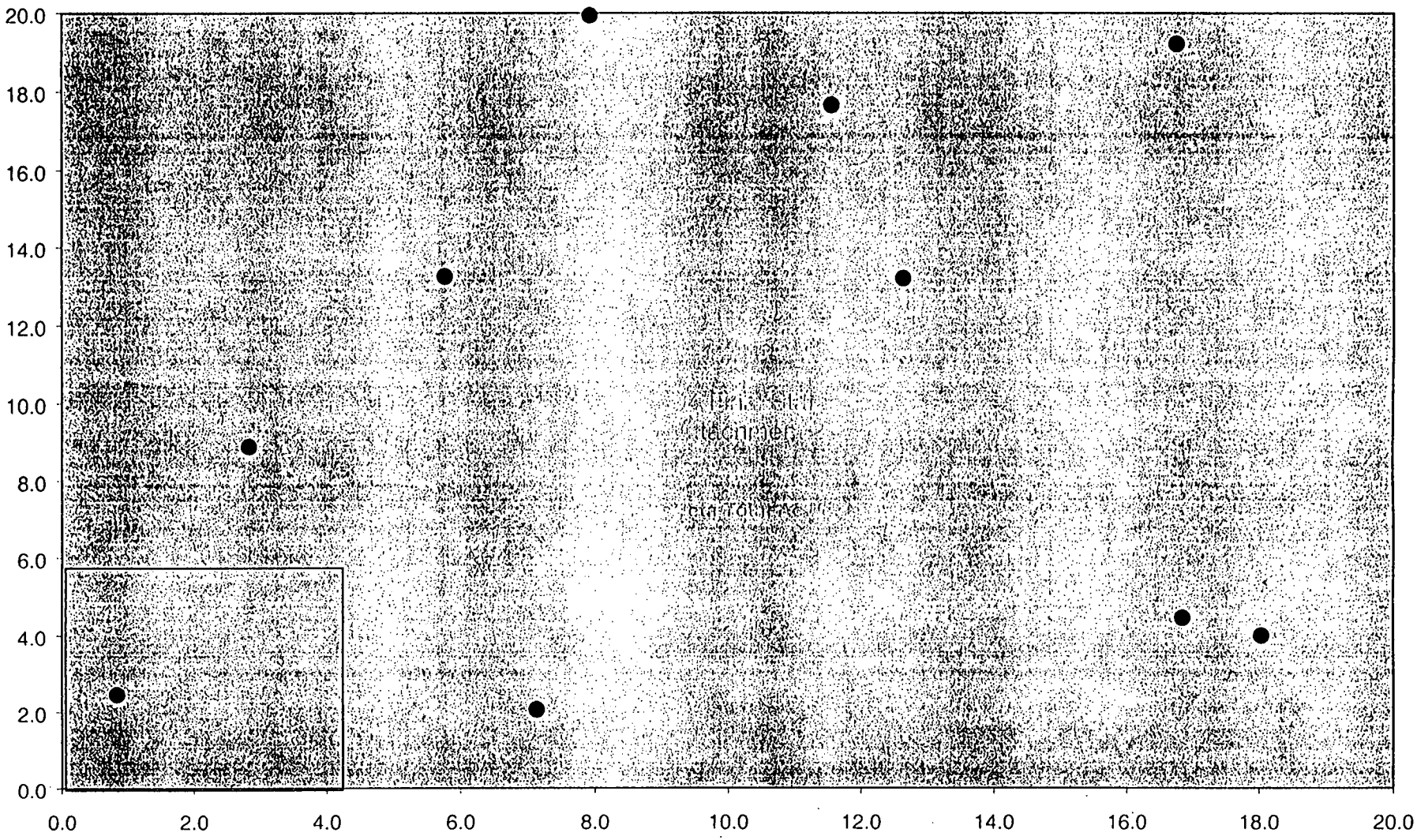
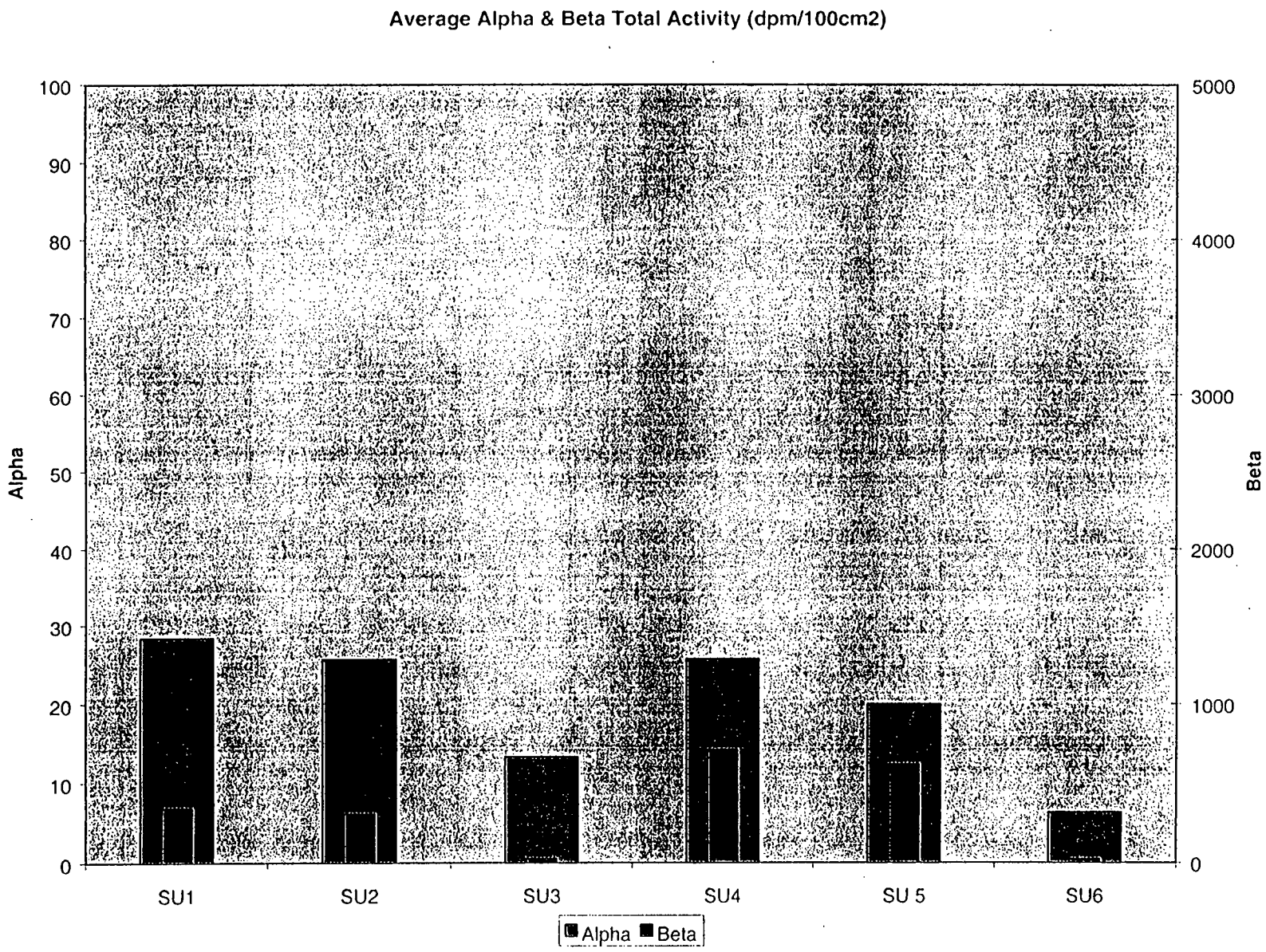
Survey Unit 4 Floor Grid Points



Building 94 Final Status Report
Attachment 2



SURVEY PLAN FORM

SP NUMBER	94-001	DATE OF REQUEST	August 13, 2002
TYPE OF SP	☐ FSS ☒ CHARACTERIZATION ☐ REFERENCE ☐ OTHER:		
AREA/LOCATION	Building 94		
PURPOSE	The purpose of this SP is to characterize Building 94 to support decisions on final disposition.		
SURVEY UNIT # 1&2	Rooms 1&2 Floors and Walls < 6'	SURVEY UNIT # 5	Loading Dock
SURVEY UNIT # 3	Rooms 1 & 2 Ceiling and Walls > 6'	SURVEY UNIT # 6	Roof and Exterior Walls
SURVEY UNIT # 4	Rooms 3 & 4	SURVEY UNIT	

SAMPLE TYPE

☐ **SURFACE SOIL SAMPLE:**

☐ **SUB-SURFACE SOIL SAMPLE:**

☒ **SEDIMENT SAMPLE:** See specific sediment sampling instructions on page 3.

☐ **Rubbelized Material:**

☐ **OTHER:**

SURVEY TYPE

SURFACE SCAN	☐ BETA ☐ GAMMA ☒ ALPHA	INST. TYPE PROBE TYPE	L-2350 43-37 Floor Probe or 43-20 Hand Probe	SCAN RATE & DETECTOR DISTANCE FROM SURFACE	Scan surface at a rate of 1" per second at a distance of not more than ¼" from surface
STATIC MEASURE-MENT	☐ BETA ☐ GAMMA ☒ ALPHA	INST. TYPE PROBE TYPE	L-2350 43-20 Hand Probe	SCAN RATE & DETECTOR DISTANCE FROM SURFACE	Perform 1 minute counts at specified locations not more than ¼" from surface
STATIC MEASURE-MENT	☒ BETA ☐ GAMMA ☐ ALPHA	INST. TYPE PROBE TYPE	NE Electra Dual Scintillator Hand Probe	COUNT TIME & DETECTOR DISTANCE FROM SURFACE	Perform 1 minute counts at specified locations not more than ¼" from surface
DOSE RATE MEASURE-MENT	☐ BETA ☒ GAMMA ☐ ALPHA	INST. TYPE PROBE TYPE	Bicron MicroRem Internal	DETECTOR DISTANCE FROM SURFACE	Perform General Area survey at 1 meter from floor

OTHER SURVEY TYPES OR COMMENTS

All surveys shall be performed and documented in accordance with Mound Radiological Control procedures.

Take photographs of survey units, if possible. Pay particular attention to grid markings or other identifying features. Date and label photos.

Rad Con shall document all discrepancies from the above sampling and surveying instructions on the Survey Plan Continuation Sheet.

SP NUMBER	94-001	DATE OF REQUEST	August 13, 2002

SPECIFIC SAMPLING / SURVEY INSTRUCTIONS

Safety Considerations

1. Obtain assistance from the responsible building custodian for access to upper walls, ceilings, roof, etc. Exercise extreme caution when performing surveys from ladders or scaffolds. Follow appropriate site safety procedures when accessing areas requiring fall protection measures.
2. Ensure ventilation units are de-energized prior to attempting to collect a sample. Obtain approval and assistance from the responsible building custodian to dismantle any equipment for sample collection.

Data Point Location

1. Locate the data points in each survey unit using the coordinates shown in Attachment 2.
2. Mark each data point with tape or other non-permanent marking.
3. Document locations on the appropriate RSDS Map.

Loose Surface Contamination

1. Obtain a smear of $100cm^2$ at each survey point identified above.
2. Count each smear for alpha, beta, and H^3. H^3 analysis is not required for building external surfaces.
3. Record location and results on RSDS map in accordance with Mound Rad Con procedures.

Floor Scan Measurements using a Ludlum 2350 with 43-37 alpha probe

1. Perform a floor scan at 1" per second using a serpentine pattern on 50% of the floor surface in Survey Units 1 & 2 (Approximately 2' between each scan path).
2. Perform a floor scan at 1" per second using a serpentine pattern on at least 10% of the floor surface in Survey Unit 4 (Approximately 4' between each scan path).
3. If two (2) or more counts are heard using the audible output of the instrument during a five (5) second scanning period, perform a thirty (30) second integrated count at that location.
4. Record the location of the area scanned on the RSDS map and indicate any integrated counts.

Surface Scan Using a Ludlum 2350-1 with a 43-20 Hand (Alpha) probe

1. Perform a surface scan of Survey Unit 1 & 2 walls < 6' using a serpentine pattern on 50% of the wall surfaces (Approximately 1' between each scan path).
2. If two (2) or more counts are heard using the audible output of the instrument during a five (5) second scanning period, perform a thirty (30) second integrated count at that location.
3. Perform a surface scan of Survey unit 3 on upper walls and ceilings. At each data point, scan an area of approximately $2ft^2$ and document the highest reading in each area on the RSDS.

Static Measurements Using L 2350 With a 43-20 alpha probe and NE Electra (β)(or equivalent)

1. Perform a 1 minute integrated alpha and beta count at each data point in Survey Units 1, 2, 3, and 4.
2. Perform at least ten (10) 1 minute integrated alpha and beta measurements on beams, supports, or other horizontal structural surfaces in Survey Units 1 & 2 where, in the judgement of the surveyor, a potential exists for residual contamination.
3. Perform a 1 minute integrated alpha and beta count at 20 data points on the walls and ceilings of rooms 3 & 4. Data points are randomly selected by the surveyor throughout the survey unit and should be broadly representative of the entire survey unit.
4. Perform a 1 minute integrated alpha and beta measurement at 10 data points in Survey Unit 5 (Loading Dock & Sidewalk). Data points are randomly selected by the surveyor throughout the survey unit and should be broadly representative of the entire survey unit.

Continued Next Page

Specific Sampling and Survey Instructions Continued

5. Perform a 1 minute integrated alpha and beta measurement at 8 data points on Building 94 roof and 12 data points on the external walls (3 per side). Data points should be spaced throughout the survey unit and may be selected at random by the surveyor.
6. Record location, material type, and results on RSDS map in accordance with Mound Rad Con procedures.
7. Document gross activity for each location (No "<" values). Record instrument background at survey location.

Sediment Samples

1. Collect approximately 250ml of debris from each accessible ventilation unit opening, floor drain, roof gutter and any other area where debris has accumulated.
2. If insufficient material is present at these sample locations, obtain a representative smear or swab.
3. Label sample container (EPA Dish) with sample number, date, time, and location in accordance with Mound procedures.
4. Document sample information and description of material on Attachment 1.
5. Show sample location on the RSDS map.
6. Submit sample to laboratory for gamma spectroscopy analysis.
7. Additional intrusive samples may be collected on roof or other areas of elevated activity as determined by the MARSSIM Engineer.

General Area Dose Rates using Bicron MicroRem Meter (or equivalent).

1. Obtain a general area dose rate 3' from the floor at each data point in Rooms 1 & 2.
2. Document results and instrument background at survey location on RSDS map.

Quality Control

1. QC measurements will be performed by re-surveying 5% of the data points in each survey unit, as determined by the MARSSIM Engineer.
2. Sediment samples or smears with measured activity above the MDA may be resubmitted for replicate analysis. Ensure alpha and beta smear results are obtained before performing H^3 analysis.
3. Record location, material, and results on RSDS in accordance with Mound Rad Con procedures.

APPROVAL SIGNATURES			
MARISSM Engineer	R. Case	DATE	August 13, 2002
Technical Reviewer	GALEN TOMLINSON	DATE	8-13-02
Rad Con Manager	S. COLLAS	DATE	8-13-02
SP CLOSE-OUT SIGNATURES			
MARISSM Engineer	R. CASE	DATE	11-4-02
Technical Reviewer	Joseph Guido	DATE	11/11/02
Rad Con Manager	D. RILEY	DATE	11-12-02
COMMENTS			

RSDS# 02-TF-1461 - SKETCH DATA POINTS 1, 3, 6, 10, 21, 23, 26, 30 WERE LOCATED ON ADJACENT WALL SECTORS. R. CASE 11/4/02

Field Sample Data Collection Sheet

Sheet ___ of ___.

Attachment 1

Sample Number	Sample Date	Sample Time	Sample Volume /Weight	Sample Description	Sampled By	Chain of Custody: Relinquished to Lab: Date	Time	Initials	Rec'd By
94-01- 001	9-23-02	1400	N/A	ACID ETCH - O/S DOCK	[redacted] 6178	9-23-02	1405	DGA	HOP
94-01- 002	9-23-02	1430	N/A	ACID ETCH - I/S Rm #2	[redacted] 6178	9-23-02	1435	DGH	HOP
94-01- 003	10-2-02	1315	N/A	ACID ETCH - ROOF	[redacted] 6178	10-2-02	1320	DGH	HOP
94-01- 008	10-14-02	0900	N/A	ACID ETCH Room #1 STD	[redacted] 6178	10-14-02	0900	DGH	HOP
94-01- 009	10-14-02	0915	N/A	ACID ETCH Room #2 STD	[redacted] 6178	10-14-02	0915	DGH	HOP
94-01- 010	10-14-02	0925	N/A	ACID ETCH Room #2 - Row #11 #8 + #9	6178 [redacted]	10-14-02	0925	DGH	HOP
94-01- 011	10-14-02	0937	N/A	ACID ETCH Room #2 Row #12 #14	6178 [redacted]	10-14-02	0937	DGH	HOP
94-01- 012	10-29-02	1400	N/A	SMEAR DRAIN Room 1	7868 [redacted]	10-29-02	1500	DGH	[illegible]
94-01- 013	10-29-02	1405	N/A	SMEAR DRAIN Room 2	7868 [redacted]	10-29-02	1500	DGH	[illegible]
94-01- 014	10-29-02	1410	N/A	SMEAR DRAIN Room 3	7868 [redacted]	10-29-02	1500	DGH	[illegible]
94-01-									
94-01-				NO FURTHER ENTRIES THIS PAGE					
94-01-									

02-TF-1489

DGH

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Field Sample Data Collection Sheet

Attachment 1

02-TF-1489

Sheet ___ of ___

Sample Number	Sample Date	Sample Time	Sample Volume Weight	Sample Description	Sampled By	Chain of Custody: Relinquished to Lab Date	Time	Initials	Rec'd By
94-01- 0040	10-7-02	1310		Rm #1 INTAKE FILTER	7868 [redacted]	10-7-02	1540	PGR	[illegible]
94-01- 0050 2	10-7-02	1320		Rm #2 INTAKE FILTER	7868 [redacted]	10-7-02	1540	PGR	[illegible]
94-01- 0060 3	10-7-02	1330		Rm #3 INTAKE FILTER	7868 [redacted]	10-7-02	1540	PGR	[illegible]
94-01- 0070 4 PGR 10-8-02	10-7-02	1300	50ml	Rm #3 - H20 FROM DRAIN	7868 [redacted]	10-7-02	1530	PGR	[illegible]
94-01-									
94-01-									
94-01-									
94-01-									
94-01-									
94-01-									
94-01-									
94-01-									
94-01-									
94-01-									

NO FURTHER ENTRIES THIS PAGE

DJH

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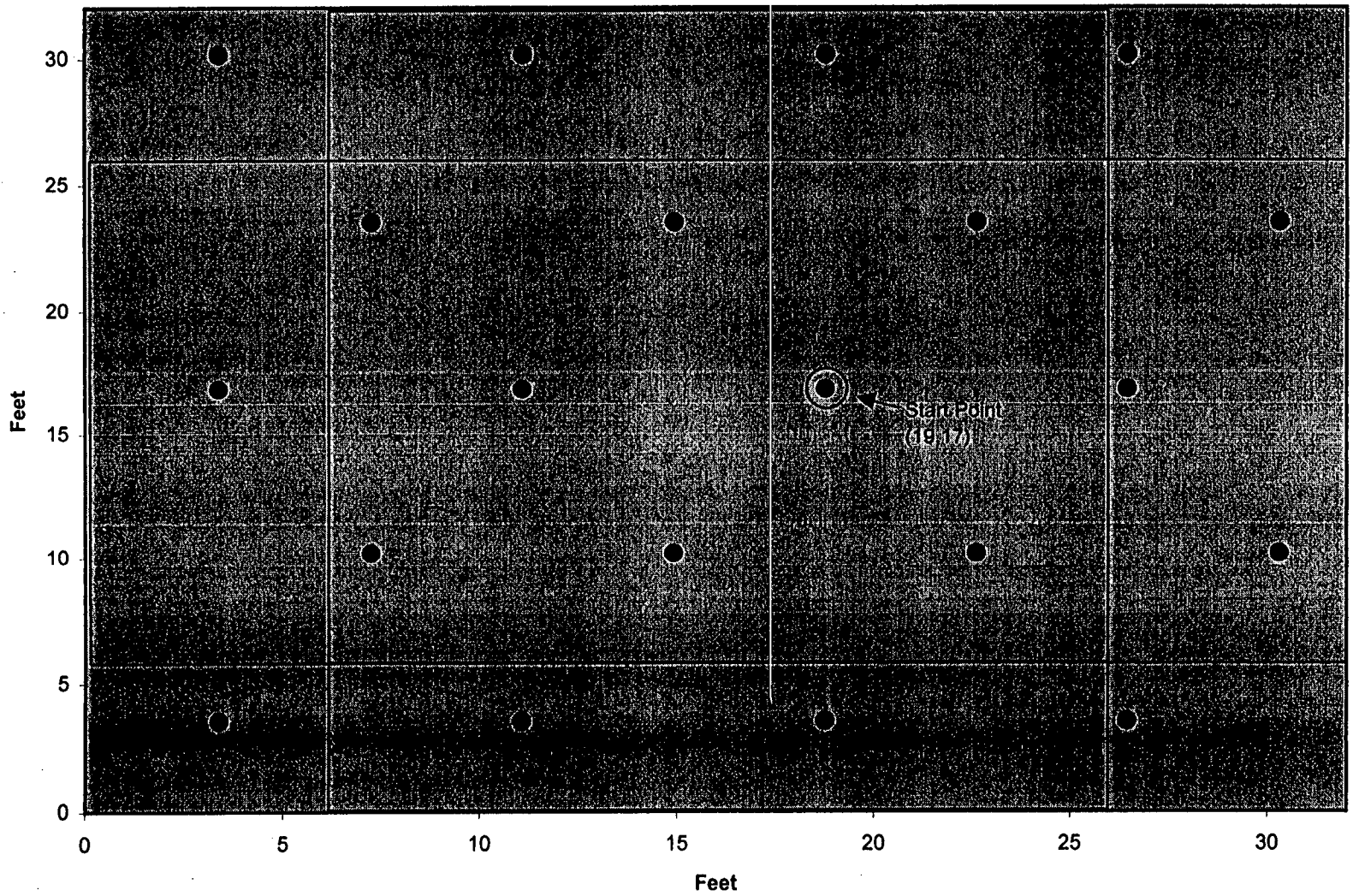
Attachment 2

Survey Unit 1& 2 Grid Points



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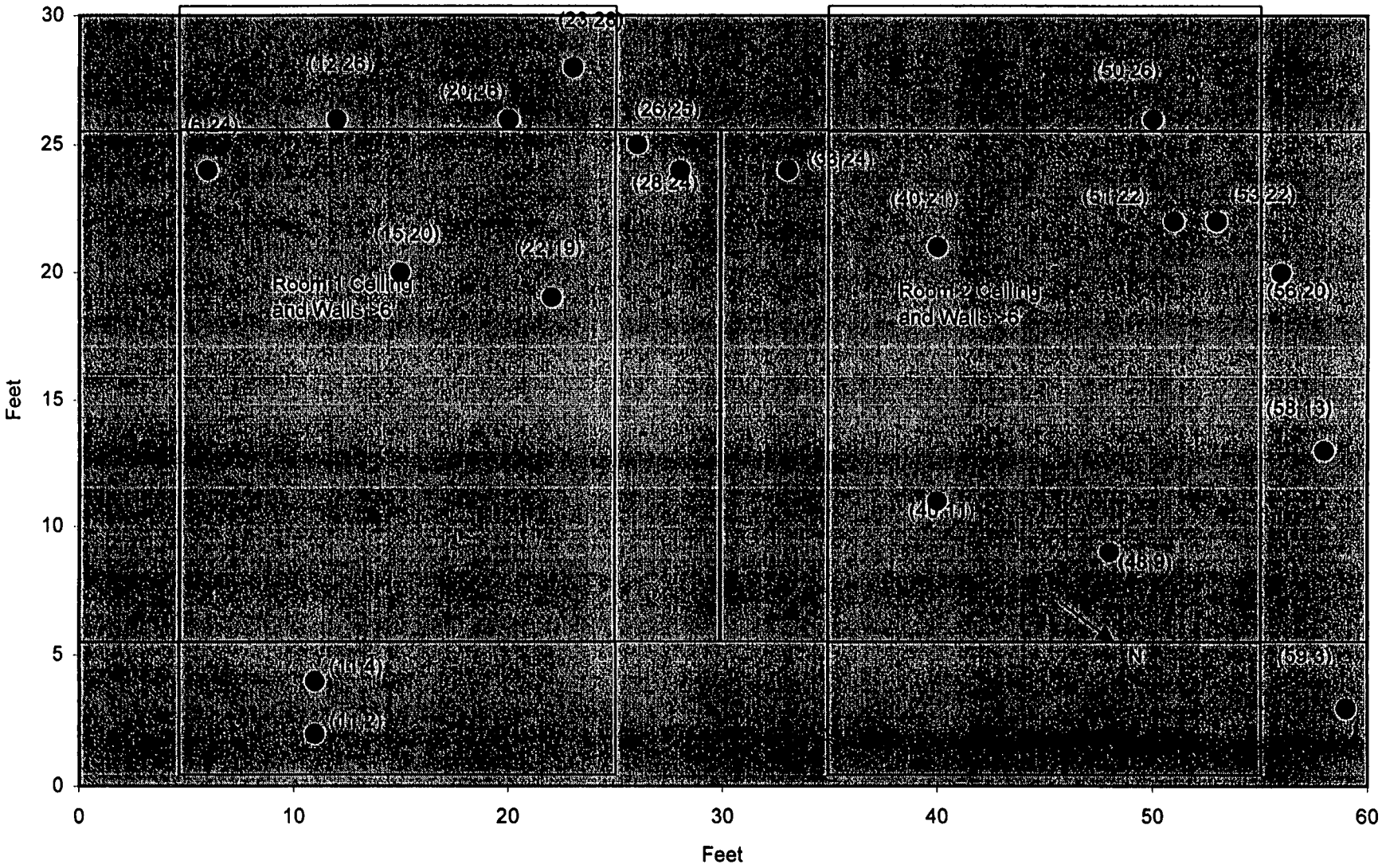
Attachment 2

Survey Unit 3 Room 1&2, Ceilings & Walls > 6'



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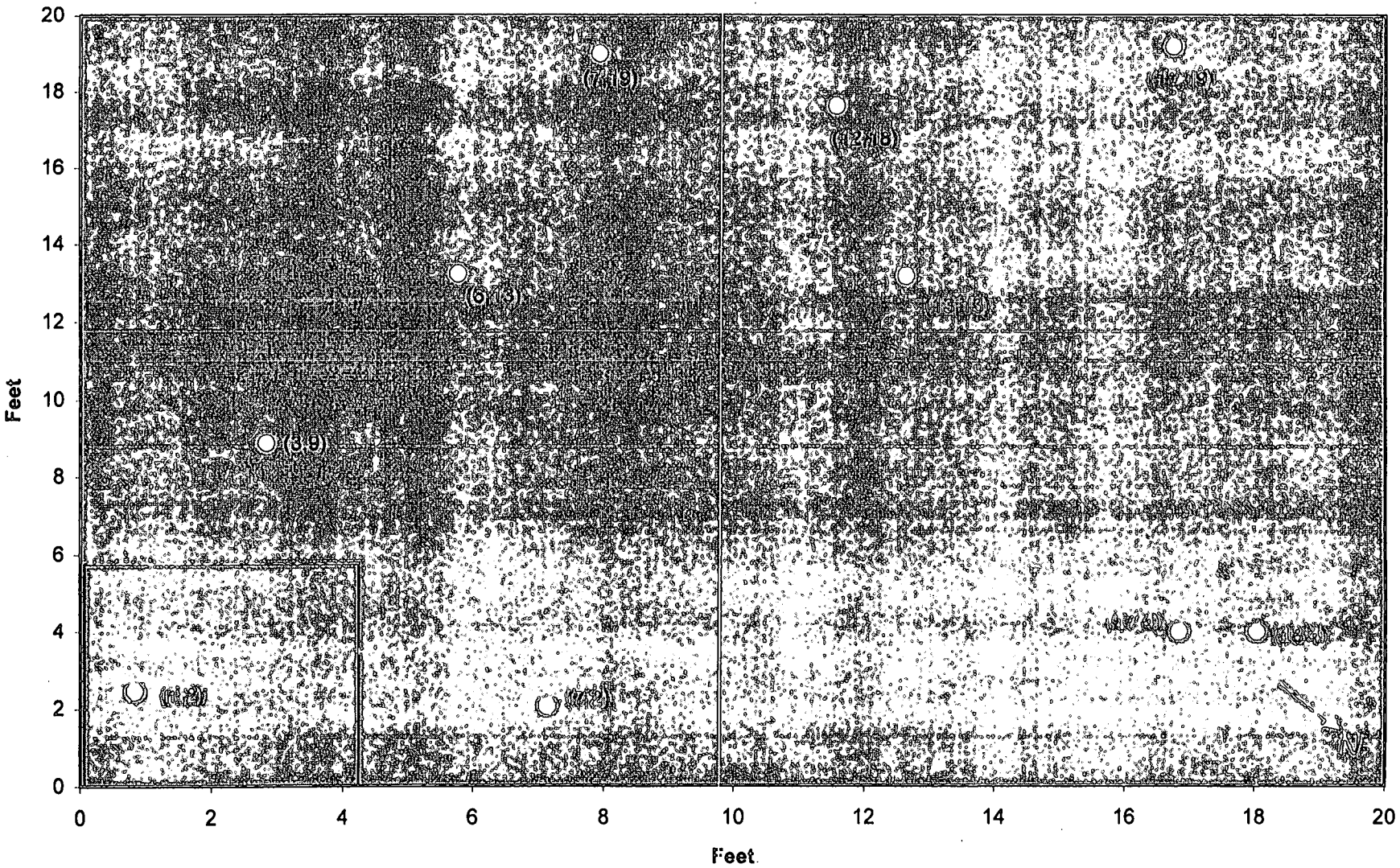
Attachment 2

Survey Unit 4 Floor Grid Points



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Building 94 Data Point Coordinates

Room 1 or 2 Floors & walls <6'	
X	Y
26	4
19	4
11	4
3	4
7	10
15	10
23	10
30	10
26	17
19	17
11	17
3	17
7	24
15	24
23	24
30	24
26	30
19	30
11	30
3	30

SU 3 Ceiling s & walls >6'	
X	Y
12	26
15	19
28	24
40	11
11	4
6	24
22	19
59	3
11	2
51	22
53	22
48	9
58	13
50	26
20	26
40	21
26	25
55	20
33	24
23	28

Room 3&4	
X	Y
12	18
7	2
8	20
18	4
17	4
17	19
3	9
6	13
13	13
1	2

L = 8' (Data Point Spacing)
L X .866 = 7' (Row Spacing)

Note: All points are measured from the southeast corner of each survey unit.

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RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) BUILDING 94 - ROOMS 1+2	SURVEY NO. 02-TF-1461
PURPOSE: CHARACTERIZATION SURVEY IN ACCORDANCE WITH SURVEY PLAN 94-01	RWP NO. N/A
	DATE: 9-4-02
	TIME: 1345

MAP/DRAWING

THIS SURVEY IS OF UNIT 1&2 IN ROOMS 1&2. GRID POINTS DETERMINED FROM SURVEY PLAN 94-01 ATTACHMENT 2.

INTEGRATED ALPHA + BETA AT EACH POINT, PLUS SMEAR

SEE ATTACHED FOR MAPS AND RESULTS

COPY

LEGEND: # = mrem/hr (γ) whole body

= mrem/hr (γ) exterior 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
ELECTRA	5607/5608	5-9-03
2350	5673/5143	8-13-03
	N/A	

[redacted]

#6178 7868	Date: 9-5-02
[redacted]	
HP #	Date:
ED	
HP # 7707	Date: 9-5-02
[redacted]	

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Survey No. 02-TF-1461

Page ___ of ___

RADIOLOGICAL SURVEY DATA SHEET (cont.)

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

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comment
36	SEE	ATTACH	ED	Unit 2 11
37	↓	↓	↓	19
38	↓	↓	↓	7,
39	↓	↓	↓	15,
40	↓	↓	↓	23,

N/A

COMMENTS: N/A

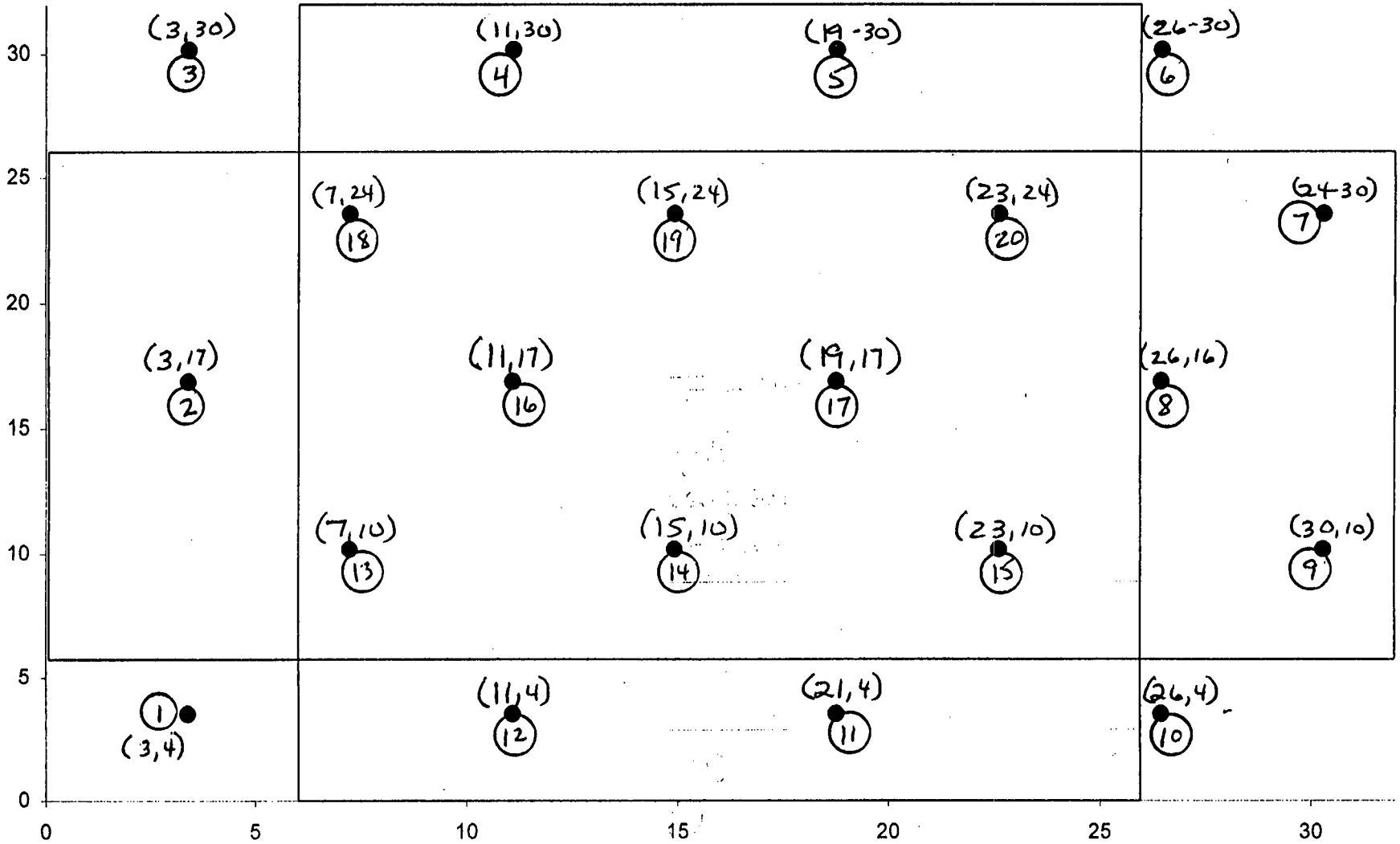
NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of rest are attached, write "see attached" in column.
3. Annotate special sample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

ML-9620A (4-98)

02-TF-1461
DOH

Survey Unit 1& 2 Grid Points

UNIT 1 - Room 1

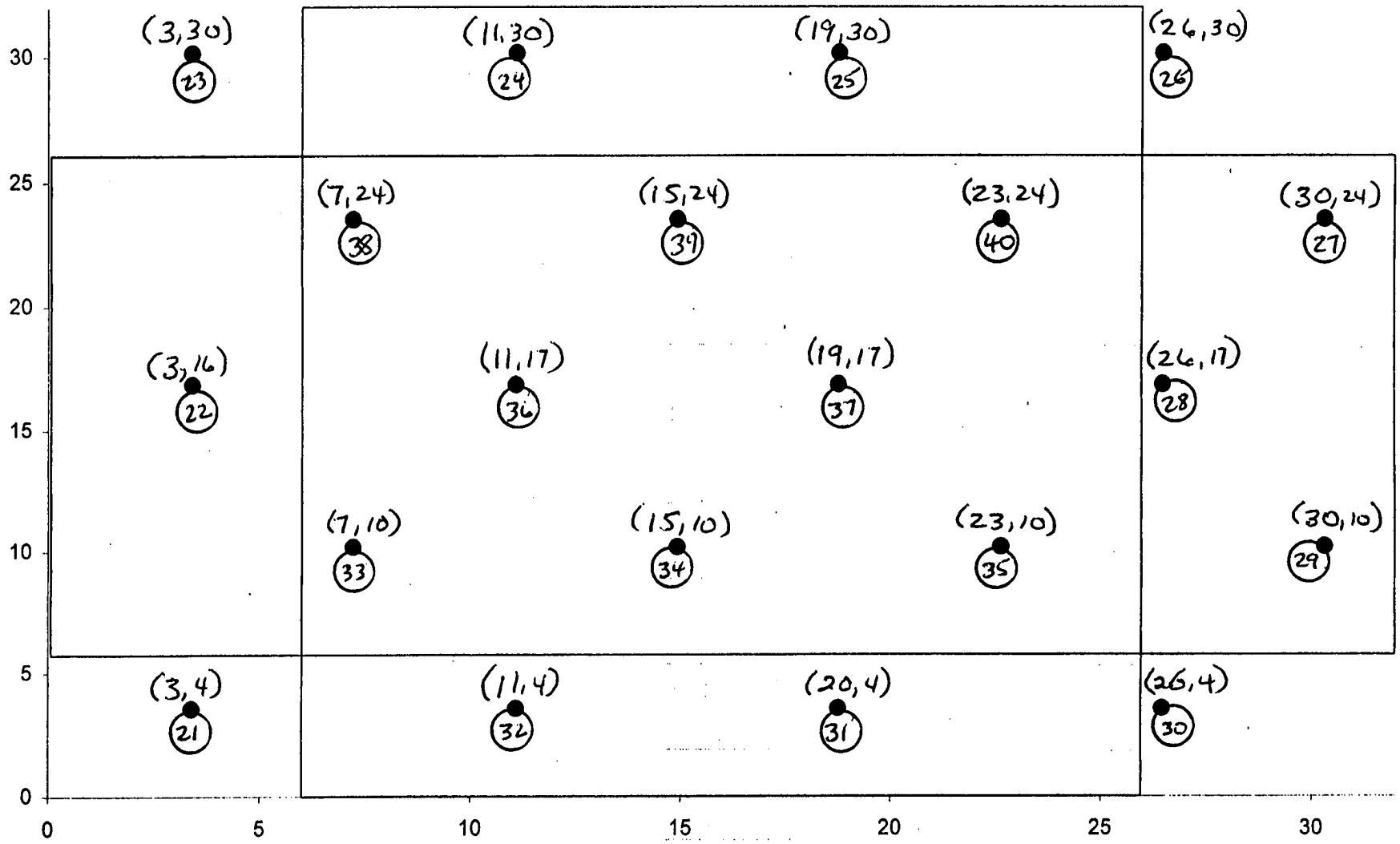


02-TF-1461

Dwg H

Survey Unit 1& 2 Grid Points

UNIT 2 - ROOM 2



94-BLDG CHARACTERIZATION SURVEY

RSDS# 02-TF-1461 RCT: DJH RCT: _____

43-20 BKG:	0	EFF:	0.172	PROBE AREA:	181	cm2	Surface Eff:		0.5	Detector # :	2
43-37 BKG:	0	EFF:	0.212	PROBE AREA:	584	cm2	Surface Eff:		0.5	Detector # :	3
LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2	
SRCBKG	5673	6178	5143	2		9/4/02	9:06	4	300	5	
SRCCHECK	5673	6178	5143	2		9/4/02	9:09	1970	60	12656	
SRCCHECK	5673	6178	5143	2		9/4/02	9:11	2174	60	13966	
SRCCHECK	5673	6178	5143	2		9/4/02	9:12	1848	60	11872	
SRCCHECK	5673	6178	5143	2		9/4/02	9:13	1986	60	12759	
U-1 3-4	5673	6178	5143	2	1	9/4/02	9:34	2	60	13	
U-1 3-17	5673	6178	5143	2	2	9/4/02	9:35	2	60	13	
U-1 3-30	5673	6178	5143	2	3	9/4/02	9:37	3	60	19	
U-1 11-30	5673	6178	5143	2	4	9/4/02	9:39	3	60	19	
U-1 19-30	5673	6178	5143	2	5	9/4/02	9:40	2	60	13	
U-1 26-30	5673	6178	5143	2	6	9/4/02	9:41	3	60	19	
U-1 24-30	5673	6178	5143	2	7	9/4/02	9:43	7	60	45	
U-1 26-16	5673	6178	5143	2	8	9/4/02	9:44	4	60	26	
U-1 30-10	5673	6178	5143	2	9	9/4/02	9:46	3	60	19	
U-1 26-4	5673	6178	5143	2	10	9/4/02	9:49	2	60	13	
U-1 21-4	5673	6178	5143	2	11	9/4/02	9:50	4	60	26	
U-1 11-4	5673	6178	5143	2	12	9/4/02	9:52	4	60	26	
U-1 7-10	5673	6178	5143	2	13	9/4/02	9:54	3	60	19	
U-1 15-10	5673	6178	5143	2	14	9/4/02	9:55	8	60	51	
U-1 23-10	5673	6178	5143	2	15	9/4/02	9:57	7	60	45	
U-1 11-17	5673	6178	5143	2	16	9/4/02	9:58	6	60	39	
U-1 19-17	5673	6178	5143	2	17	9/4/02	10:00	10	60	64	
U-1 7-24	5673	6178	5143	2	18	9/4/02	10:01	4	60	26	
U-1 15-24	5673	6178	5143	2	19	9/4/02	10:02	4	60	26	
U-1 23-24	5673	6178	5143	2	20	9/4/02	10:04	7	60	45	
U-2 3-4	5673	6178	5143	2	21	9/4/02	12:12	2	60	13	
U-2 3-16	5673	6178	5143	2	22	9/4/02	12:13	4	60	26	
U-2 3-30	5673	6178	5143	2	23	9/4/02	12:15	4	60	26	
U-2 11-30	5673	6178	5143	2	24	9/4/02	12:16	3	60	19	
U-2 19-30	5673	6178	5143	2	25	9/4/02	12:17	5	60	32	
U-2 26-30	5673	6178	5143	2	26	9/4/02	12:19	5	60	32	
U-2 30-24	5673	6178	5143	2	27	9/4/02	12:20	3	60	19	
U-2 26-17	5673	6178	5143	2	28	9/4/02	12:21	3	60	19	
U-2 30-10	5673	6178	5143	2	29	9/4/02	12:23	3	60	19	

94-BLDG CHARACTERIZATION SURVEY

RSDS# 02-TF-1461 RCT: DJH RCT: _____

LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
U-2 20-4	5673	6178	5143	2	30	9/4/02	12:24	1	60	6
U-2 26-4	5673	6178	5143	2	31	9/4/02	12:25	2	60	13
U-2 11-4	5673	6178	5143	2	32	9/4/02	12:27	1	60	6
U-2 7-10	5673	6178	5143	2	33	9/4/02	12:28	6	60	39
U-2 15-10	5673	6178	5143	2	34	9/4/02	12:29	3	60	19
U-2 23-10	5673	6178	5143	2	35	9/4/02	12:31	3	60	19
U-2 11-17	5673	6178	5143	2	36	9/4/02	12:32	8	60	51
U-2 19-17	5673	6178	5143	2	37	9/4/02	12:34	7	60	45
U-2 7-24	5673	6178	5143	2	38	9/4/02	12:35	6	60	39
U-2 15-24	5673	6178	5143	2	39	9/4/02	12:36	7	60	45
U-2 23-24	5673	6178	5143	2	40	9/4/02	12:38	4	60	26
U2QC 3-4	5673	7868	5143	2	1	9/4/02	13:38	0	60	0
U2QC 11-17	5673	7868	5143	2	2	9/4/02	13:41	5	60	32
U1QC 11-4	5673	7868	5143	2	3	9/4/02	13:43	2	60	13

94-BLDG CHARACTIZATION BETA SURVEY

RSDS# 02-TF-1461 RCT: DGH RCT: _____

LOCATION	electra	RCT ID	PROBE	ITEM #	DATE	CT TIME	dpm/100cm2
U-1 3-4	5607	7868	5608	1	9/4/02	60	82.0
U-1 3-17	5607	7868	5608	2	9/4/02	60	-88.8
U-1 3-30	5607	7868	5608	3	9/4/02	60	-138.0
U-1 11-30	5607	7868	5608	4	9/4/02	60	52.7
U-1 19-30	5607	7868	5608	5	9/4/02	60	253.0
U-1 26-30	5607	7868	5608	6	9/4/02	60	13.7
U-1 24-30	5607	7868	5608	7	9/4/02	60	111.0
U-1 26-16	5607	7868	5608	8	9/4/02	60	189.0
U-1 30-10	5607	7868	5608	9	9/4/02	60	145.0
U-1 26-4	5607	7868	5608	10	9/4/02	60	121.0
U-1 21-4	5607	7868	5608	11	9/4/02	60	-59.5
U-1 11-4	5607	7868	5608	12	9/4/02	60	-1.0
U-1 7-10	5607	7868	5608	13	9/4/02	60	623.0
U-1 15-10	5607	7868	5608	14	9/4/02	60	838.0
U-1 23-10	5607	7868	5608	15	9/4/02	60	726.0
U-1 11-17	5607	7868	5608	16	9/4/02	60	833.0
U-1 19-17	5607	7868	5608	17	9/4/02	60	711.0
U-1 7-24	5607	7868	5608	18	9/4/02	60	809.0
U-1 15-24	5607	7868	5608	19	9/4/02	60	726.0
U-1 23-24	5607	7868	5608	20	9/4/02	60	623.0
U-2 3-4	5607	7868	5608	21	9/4/02	60	-40.0
U-2 3-16	5607	7868	5608	22	9/4/02	60	23.4
U-2 3-30	5607	7868	5608	23	9/4/02	60	101.0
U-2 11-30	5607	7868	5608	24	9/4/02	60	13.7
U-2 19-30	5607	7868	5608	25	9/4/02	60	-1.0
U-2 26-30	5607	7868	5608	26	9/4/02	60	42.9
U-2 30-24	5607	7868	5608	27	9/4/02	60	228.0
U-2 26-17	5607	7868	5608	28	9/4/02	60	136.0
U-2 30-10	5607	7868	5608	29	9/4/02	60	160.0
U-2 20-4	5607	7868	5608	30	9/4/02	60	47.8
U-2 26-4	5607	7868	5608	31	9/4/02	60	-25.4
U-2 11-4	5607	7868	5608	32	9/4/02	60	13.7
U-2 7-10	5607	7868	5608	33	9/4/02	60	799.0
U-2 15-10	5607	7868	5608	34	9/4/02	60	623.0
U-2 23-10	5607	7868	5608	35	9/4/02	60	658.0
U-2 11-17	5607	7868	5608	36	9/4/02	60	716.0
U-2 19-17	5607	7868	5608	37	9/4/02	60	677.0
U-2 7-24	5607	7868	5608	38	9/4/02	60	667.0

94-BLDG CHARACTIZATION BETA SURVEY

RSDS# 02-TF-1461 RCT: 29 H RCT:_____

LOCATION	electra	RCT ID	PROBE	ITEM #	DATE	CT TIME	dpm/100cm2
U-2 15-24	5607	7868	5608	39	9/4/02	60	628.0
U-2 23-24	5607	7868	5608	40	9/4/02	60	633.0
U2QC 3-4	5607	6178	5608	1	9/4/02	60	3.9
U2QC 11-17	5607	6178	5608	2	9/4/02	60	785.0
U1QC 11-4	5607	6178	5608	3	9/4/02	60	-30.0
BETA BACKGROUND FOR 9-4-2002 WAS 869 dpm/ 100cm2							

Alpha/Beta Analysis

Batch ID:	Smear Unit 2 - 200209041446	Count Date:	9/4/2002
Group:	F	Count Minutes:	1.5
Serial Number:	78218-2	Count Mode:	Simultaneous
Batch ID:	02-TF-1461 RADLEY(40) BSB	Operating Volts:	1410
Selected Geometry:	Swipe/Smear	Cal Due Dates:	6/19/2004

Efficiency (%)				Spillover (%)			
Alpha:	35.30	±	0.11	Alpha to Beta:	9.38	±	0.00
Beta:	44.94	±	0.12	Beta to Alpha:	0.85	±	0.00

Sample ID	Carrier ID	Alpha (dpm)	σ	Beta (dpm)	σ
1	100	0.00	0.00	0.00	0.00
2	7	4.00	2.67	3.60	2.58
3	20	0.00	0.03	3.84	2.57
4	14	0.00	0.02	2.56	2.10
5	79	0.00	0.02	1.28	1.48
6	45	0.00	0.02	2.56	2.10
7	71	1.99	1.89	2.44	2.10
8	17	0.00	0.02	2.56	2.10
9	5	0.00	0.02	2.56	2.10
10	10	1.99	1.89	2.44	2.10
11	72	0.00	0.02	1.28	1.48
12	94	0.00	0.02	2.56	2.10
13	33	0.00	0.00	0.00	0.00
14	85	0.00	0.02	1.28	1.48
15	91	0.00	0.02	2.56	2.10
16	77	0.00	0.03	3.84	2.57
17	1	0.00	0.00	0.00	0.00
18	27	0.00	0.00	0.00	0.00
19	4	0.00	0.02	2.56	2.10
20	53	2.02	1.89	0.00	0.14
21	11	1.99	1.89	2.44	2.10
22	89	0.00	0.03	5.12	2.97
23	75	0.00	0.02	1.28	1.48
24	29	0.00	0.00	0.00	0.00
25	3	1.97	1.89	3.72	2.58
26	70	0.00	0.04	6.40	3.32
27	24	0.00	0.02	1.28	1.48
28	22	0.00	0.02	2.56	2.10
29	80	0.00	0.03	5.12	2.97
30	30	0.00	0.02	1.28	1.48
31	51	0.00	0.00	0.00	0.00
32	42	0.00	0.00	0.00	0.00
33	5	0.00	0.02	2.56	2.10
34	76	0.00	0.02	1.28	1.48
35	60	0.00	0.02	2.56	2.10
36	31	0.00	0.02	1.28	1.48
37	60	0.00	0.02	2.56	2.10

LBBrown

DJH DJH DJH

~~Page 1 of 3~~

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Alpha/Beta Analysis

Efficiency (%)				Spillover (%)			
Alpha:	35.30	±	0.11	Alpha to Beta:	9.38	±	0.00
Beta:	44.94	±	0.12	Beta to Alpha:	0.85	±	0.00

Sample ID	Carrier ID	Alpha (dpm)	σ	Beta (dpm)	σ
38	65	0.00	0.02	2.56	2.10
39	41	0.00	0.02	1.28	1.48
40	20	0.00	0.00	0.00	0.00

DJH DJH

Batch ID: 02-TF-1461 RADLEY(40) BSB

04 Sep 2002 16:49 ALPHA/BETA - 1.09 Page #1
Protocol #: 4 PW H3 #403727 User : 526

Time: 2.00
Data Mode: DPM Nuclide: SMGLS02 Quench Set: SMGLS02
Background Subtract: 1st Vial

	LL	UL	LCR	2S%	BKG
Region A:	0.5 -	18.6	0	0.0	7.50
Region B:	2.0 -	18.6	0	0.0	7.34
Region C:	40.0 -	2000	0	0.0	9.88

Quench Indicator: tSIE/AEC
Ext Std Terminator: Count
02-TF-1461 RADLEY(40) BSB
Luminescence Correction On
Coincidence Time(ns): 18
Delay Before Burst(ns): Normal
Protocol Data Filename: C:\DATA\PROT4.dat
Count Data Filename: C:\DATA\SDATA4.DAT

LBABrown

S#	TIME	CPMA	CPMB	CPMC	tSIE	LUM	FLAG	DPM1	2SIGMA
-1	10.00	7.50	7.34	9.88	537.73	1	B		0.00
0	2.00	308.42	297.09	0.12	492.84	0		670.28	73.52
1	2.00	6.50	6.23	20.62	687.80	0		12.18	10.45
2	2.00	6.49	6.65	15.12	677.70	0		12.20	10.50
3	2.00	3.22	2.12	10.12	681.06	0		6.04	9.29
4	2.00	4.29	3.58	6.12	655.82	0		8.16	9.82
5	2.00	4.50	4.66	21.12	658.03	0		8.55	9.89
6	2.00	0.00	0.16	7.11	662.38	0		0.00	0.00
7	2.00	1.86	1.53	0.12	689.61	0		3.48	8.71
8	2.00	0.00	0.00	5.12	638.96	0		0.00	0.00
9	2.00	0.13	0.00	4.12	705.00	0		0.23	7.92
10	2.00	0.00	0.00	1.36	648.83	0		0.00	0.00
11	2.00	0.00	0.00	3.12	689.43	0		0.00	0.00
12	2.00	3.00	2.70	0.62	702.56	0		5.57	9.10
13	2.00	0.96	1.13	0.00	665.96	0		1.82	8.44
14	2.00	0.00	0.00	8.62	652.58	0		0.00	0.00
15	2.00	1.50	0.72	3.62	622.61	0		2.91	8.90
16	2.00	3.50	3.38	3.12	606.94	0		6.87	9.82
17	2.00	2.50	2.52	8.12	529.21	0		5.20	9.98
18	2.00	5.00	5.16	0.00	551.44	0		10.21	10.83
19	2.00	2.50	1.77	2.12	614.14	0		4.88	9.37
20	2.00	0.00	0.00	6.12	641.77	0		0.00	0.00
21	2.00	0.00	0.00	0.12	693.90	0		0.00	0.00
22	2.00	0.95	0.67	0.62	694.44	0		1.76	8.31
23	2.00	3.00	2.74	2.62	683.45	0		5.62	9.18
24	2.00	1.80	0.83	0.00	655.97	0		3.41	8.84
25	2.00	0.00	0.00	1.12	686.38	0		0.00	0.00
26	2.00	0.34	0.00	4.66	598.27	0		0.66	8.53
27	2.00	1.50	1.66	0.00	681.72	0		2.81	8.60
28	2.00	0.00	0.00	0.62	637.44	0		0.00	0.00
29	2.00	2.23	1.90	3.12	681.82	0		4.19	8.90
30	2.00	0.00	0.00	0.00	596.35	0		0.00	0.00
31	2.00	0.00	0.00	3.62	639.85	0		0.00	0.00
32	2.00	2.00	2.16	3.12	617.76	0		3.88	9.14
33	2.00	0.00	0.00	3.62	652.59	0		0.00	0.00
34	2.00	0.00	0.00	2.62	631.28	0		0.00	0.00
35	2.00	0.00	0.00	0.00	565.33	0		0.00	0.00

DJH

~~40~~
DJH
9-5-02

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04 Sep 2002 18:41 ALPHA/BETA - 1.09 Page #2
Protocol #: 4 PW H3 #403727 User : 5261

S#	TIME	CPMA	CPMB	CPMC	tSIE	LUM	FLAG	DPM1	2SIGMA
36	2.00	0.00	0.00	0.00	651.23	0		0.00	0.00
37	2.00	0.00	0.00	5.62	641.77	0		0.00	0.00
38	2.00	0.00	0.00	0.62	675.65	0		0.00	0.00
39	2.00	0.00	0.00	4.12	634.04	0		0.00	0.00
40	2.00	0.00	0.00	0.00	645.33	0		0.00	0.00

DJ*

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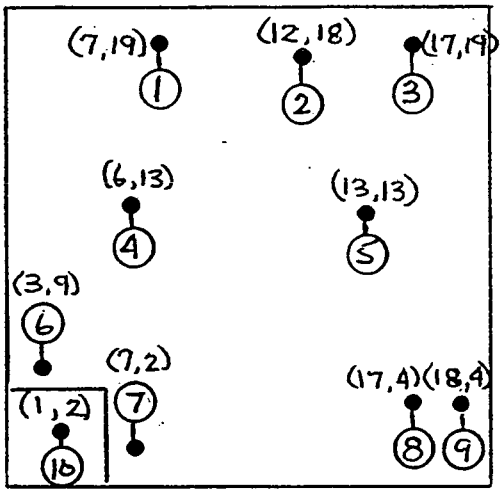
RADIOLOGICAL SURVEY DATA SHEET

1 of 6

LOCATION: (BLDG./AREA/ROOM) 94/3	SURVEY NO. 02-TF-1462
PURPOSE: FLOOR CHARACTERIZATION UNIT-4	RWP NO. N/A
	DATE: 9-5-02
	TIME: 1300

MAP/DRAWING



COPY

IAW SURVEY PLAN 94-01

LEGEND: # = mrem/hr (γ) whole body
i.e. # = mrem/hr (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
ELECTRA	5607/5608	5-9-03
23560	5673/5143	8-13-03
PDR	N	
	A	

[redacted]

HP # 7868 6178	Date: 9-5-02
HP #	Date:
HP # 7707	Date: 9-12-02

ML-9620 (2-98)

2 of 6

Survey No. 02-TF-1462

RADIOLOGICAL SURVEY DATA SHEET (cont.)

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

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

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 res 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)

94-BLDG CHARACTERIZATION SURVEY

RSDS# 02-TF-1462 RCT: DJH RCT: [illegible]

43-20 BKG:	0	EFF:	0.172	PROBE AREA:	181	cm2	Surface Eff:		0.5	Detector # :	2
43-37 BKG:	0	EFF:	0.212	PROBE AREA:	584	cm2	Surface Eff:		0.5	Detector # :	3
LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2	
SRCBKG	5673	6178	5143	2		9/5/02	12:26	5	300	6	
SRCCHECK	5673	6178	5143	2		9/5/02	12:31	2102	60	13504	
SRCCHECK	5673	6178	5143	2		9/5/02	12:32	2286	60	14686	
SRCCHECK	5673	6178	5143	2		9/5/02	12:34	1950	60	12527	
SRCCHECK	5673	6178	5143	2		9/5/02	12:35	2027	60	13022	
U-4 7-19	5673	6178	5143	2	1	9/5/02	12:40	3	60	19	
U-4 12-18	5673	6178	5143	2	2	9/5/02	12:41	5	60	32	
U-4 17-19	5673	6178	5143	2	3	9/5/02	12:43	4	60	26	
U-4 6-13	5673	6178	5143	2	4	9/5/02	12:44	3	60	19	
U-4 13-13	5673	6178	5143	2	5	9/5/02	12:46	4	60	26	
U-4 3-9	5673	6178	5143	2	6	9/5/02	12:47	4	60	26	
U-4 7-2	5673	6178	5143	2	7	9/5/02	12:48	5	60	32	
U-4 17-4	5673	6178	5143	2	8	9/5/02	12:49	2	60	13	
U-4 18-4	5673	6178	5143	2	9	9/5/02	12:50	3	60	19	
U-4 1-2	5673	6178	5143	2	10	9/5/02	12:52	7	60	45	
U4QC 13-13	5673	7868	5143	2	1	9/9/02	8:35	6	60	39	

94-BLDG MARSSIM BETA SURVEY

RSDS# 02-TF-1462 RCT: 29H RCT: [illegible]

LOCATION	electra	RCT ID	PROBE	ITEM #	DATE	CT TIME	dpm/100cm2
U-4 7-19	5607	7868	5608	1	9/5/02	60	760
U-4 12-18	5607	7868	5608	2	9/5/02	60	619
U-4 17-19	5607	7868	5608	3	9/5/02	60	828
U-4 6-13	5607	7868	5608	4	9/5/02	60	672
U-4 13-13	5607	7868	5608	5	9/5/02	60	755
U-4 3-9	5607	7868	5608	6	9/5/02	60	960
U-4 7-2	5607	7868	5608	7	9/5/02	60	604
U-4 17-4	5607	7868	5608	8	9/5/02	60	726
U-4 18-4	5607	7868	5608	9	9/5/02	60	448
U-4 1-2	5607	7868	5608	10	9/5/02	60	750
U4QC 13-13	5607	6178	5608	1	9/9/02	60	875
BETA BACKGROUND FOR 9-5-2002 WAS 860 dpm/ 100cm2							
BETA BACKGROUND FOR 9-9-2002 WAS 886 dpm/ 100cm2							

Alpha/Beta Analysis

Batch ID:	Smear Unit 1 - 200209051410	**Count Date:**	9/5/2002
Group:	H	**Count Minutes:**	1.5
Serial Number:	78218-1	**Count Mode:**	Simultaneous
Batch ID:	02-TF-1462 RADLEY(10) BSB	**Operating Volts:**	1410
Selected Geometry:	Swipe/Smear	**Cal Due Dates:**	6/19/2004

	Efficiency (%)				Spillover (%)			
Alpha:	34.73	±	0.13		**Alpha to Beta:**	11.39	±	0.00
Beta:	46.13	±	0.13		**Beta to Alpha:**	0.07	±	0.00

Sample ID	Carrier ID	Alpha (dpm)	σ	Beta (dpm)	σ
1	42	0.00	0.00	5.48	2.89
2	51	0.00	0.00	4.11	2.50
3	47	0.00	0.00	6.85	3.23
4	73	2.18	1.92	8.06	3.54
5	61	2.18	1.92	2.58	2.05
6	7	0.00	0.00	2.74	2.04
7	50	2.18	1.92	3.95	2.51
8	26	0.00	0.00	1.37	1.45
9	41	8.74	3.84	3.49	2.52
10	71	4.37	2.72	1.06	1.46

Avg H Avg H

JBrown

Batch ID: 02-TF-1462 RADLEY(10) BSB

Time: 2.00
Data Mode: DPM Nuclide: SMGLS02 Quench Set: SMGLS0
Background Subtract: 1st Vial

	LL	UL	LCR	2S%	BKG
Region A:	0.5	- 18.6	0	0.0	7.08
Region B:	2.0	- 18.6	0	0.0	6.95
Region C:	40.0	- 2000	0	0.0	10.10

Quench Indicator: tSIE/AEC
Ext Std Terminator: Count
02-TF-1462 RADLEY(10) BSB
Luminescence Correction On
Coincidence Time(ns): 18
Delay Before Burst(ns): Normal
Protocol Data Filename: C:\DATA\PROT5.dat
Count Data Filename: C:\DATA\SDATA5.DAT

S#	TIME	CPMA	CPMB	CPMC	tSIE	LUM	FLAG	DPM1	2SIGMA
-1	10.00	7.08	6.95	10.10	626.94	0	B		0.00
0	2.00	486.16	470.17	2.40	502.61	0		1043.76	101.97
1	2.00	3.57	3.20	9.68	647.67	0		6.82	9.39
2	2.00	0.42	0.35	1.90	557.01	0		0.85	8.59
3	2.00	0.00	0.00	2.90	653.56	0		0.00	0.00
4	2.00	0.92	1.05	0.90	601.63	0		1.81	8.55
5	2.00	2.07	1.80	3.90	558.64	0		4.21	9.35
6	2.00	2.91	3.04	0.46	667.46	0		5.49	9.03
7	2.00	7.42	7.05	0.00	645.86	0		14.17	10.83
8	2.00	4.07	3.84	1.90	647.67	0		7.77	9.59
9	2.00	0.92	1.05	0.00	629.59	0		1.77	8.38
10	2.00	0.92	0.45	1.40	501.83	0		1.97	9.33

29 #

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RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) 94 / 1 & 2	SURVEY NO. 02-TF-~~1461~~
PURPOSE: CHARACTERIZATION SURVEY I.A.W. SURVEY PLAN 94-01	RWP NO. N/A 1459
	DATE: 8-29-02 9-16-0
	TIME: 1530

MAP/DRAWING

NOTE:
THIS SURVEY IS OF UNIT 3, ROOMS 1 & 2
GRID POINTS DETERMINED FROM SURVEY
PLAN 94-01, ATTACHMENT 2. INTEGRATED
ALPHA & BETA AT EACH POINT, PLUS SMEARS.
SEE ATTACHED FOR MAPS AND RESULTS.

COPY

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

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
ELECTRA	5607/5608	5-19-03
2350	5673/5676/5143	8/13/03
	N/A	

[redacted]

7868 / 178	Date: 9-5-02
HP #	Date:
ED	
HP # 7707	Date: 9-5-02

ML-9620 (2-98)

Reviewed KM Oblenta [illegible] 9-11-02

Survey No. 02-TF-~~1461~~ 1459

RADIOLOGICAL SURVEY DATA SHEET (cont.)

DJA 9-16-02

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

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comme
			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 re 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.

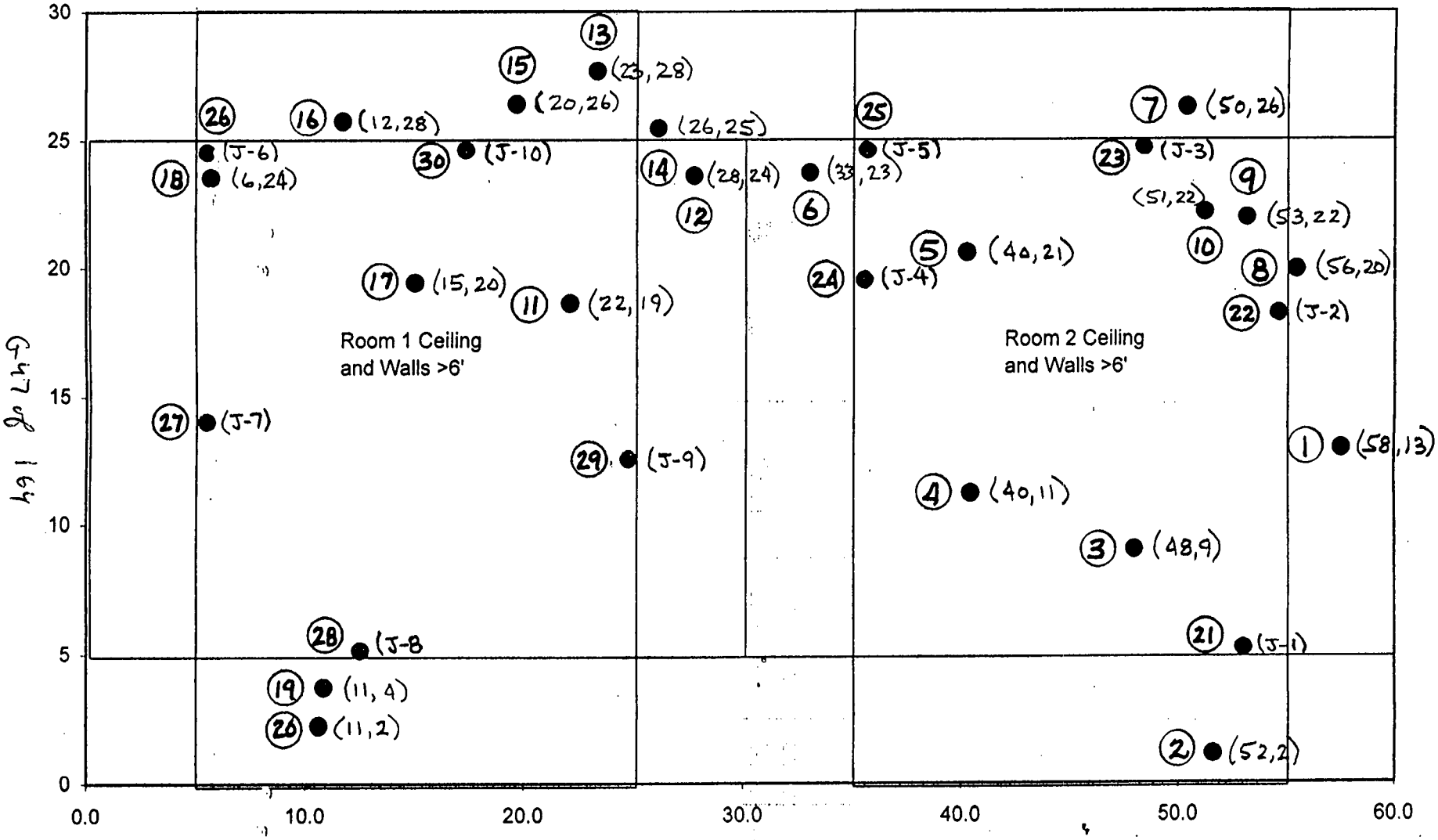
ML-9620A (4-98)

02-TF-1459

Pg. 3 of 8

DqA

Survey Unit 3 Room 1&2, Ceilings & Walls > 6'



Pg 7 of 16

94-BLDG CHARACT[redacted]ATION SURVEY

RSDS# 02-TF-1459 RCT: [redacted] RCT: DJH

43-20 BKG:	0	EFF:	0.172	PROBE AREA:	181	cm2	Surface Eff:		0.5	Detector # :	2
43-37 BKG:	0	EFF:	0.212	PROBE AREA:	584	cm2	Surface Eff:		0.5	Detector # :	3
LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2	
SRCBKG	5673	6178	5676	3		8/29/02	8:10	39	300	13	
SRCCHECK	5673	6178	5676	3		8/29/02	8:12	2113	60	3413	
SRCCHECK	5673	6178	5676	3		8/29/02	8:14	2175	60	3514	
SRCCHECK	5673	6178	5676	3		8/29/02	8:15	2255	60	3643	
SRCCHECK	5673	6178	5676	3		8/29/02	8:17	2156	60	3483	
SRCCHECK	5673	6178	5676	3		8/29/02	8:19	2238	60	3615	
SRCCHECK	5673	6178	5676	3		8/29/02	8:20	2170	60	3505	
SRCBKG	5673	6178	5143	2		8/29/02	8:27	2	300	3	
SRCCHECK	5673	6178	5143	2		8/29/02	8:30	2169	60	13934	
SRCCHECK	5673	6178	5143	2		8/29/02	8:31	2207	60	14178	
SRCCHECK	5673	6178	5143	2		8/29/02	8:33	2149	60	13806	
SRCCHECK	5673	6178	5143	2		8/29/02	8:34	2157	60	13857	
U-3 58-13	5673	6178	5143	2	1	8/29/02	10:11	4	60	26	
U-3 52-2	5673	6178	5143	2	2	8/29/02	10:17	2	60	13	
U-3 -48-9	5673	6178	5143	2	3	8/29/02	10:23	0	60	0	
U-3 40-11	5673	6178	5143	2	4	8/29/02	10:28	1	60	6	
U-3 40-21	5673	6178	5143	2	5	8/29/02	10:34	2	60	13	
U-3 33-23	5673	6178	5143	2	6	8/29/02	12:56	5	60	32	
SCAN 33-23	5673	6178	5143	2	7	8/29/02	12:57	0	30	0	
SCAN 33-23	5673	6178	5143	2	8	8/29/02	12:59	4	30	51	
U-3 50-26	5673	6178	5143	2	9	8/29/02	13:06	3	60	19	
U-3 56-20	5673	6178	5143	2	10	8/29/02	13:16	2	60	13	
U-3 53-22	5673	6178	5143	2	11	8/29/02	13:18	2	60	13	
U-3 51-22	5673	6178	5143	2	12	8/29/02	13:21	1	60	6	
U-3 22-19	5673	6178	5143	2	13	8/29/02	13:30	2	60	13	
U-3 28-24	5673	6178	5143	2	14	8/29/02	13:41	5	60	32	
SCAN 28-24	5673	6178	5143	2	15	8/29/02	13:44	0	30	0	
U-3 23-28	5673	6178	5143	2	16	8/29/02	13:46	0	60	0	
U-3 26-25	5673	6178	5143	2	17	8/29/02	13:50	3	60	19	
U-3 20-26	5673	6178	5143	2	18	8/29/02	13:55	1	60	6	
U-3 12-26	5673	6178	5143	2	19	8/29/02	14:00	0	60	0	
U-3 15-20	5673	6178	5143	2	20	8/29/02	14:03	3	60	19	
U-3 6-24	5673	6178	5143	2	21	8/29/02	14:11	1	60	6	
U-3 11-4	5673	6178	5143	2	22	8/29/02	14:17	1	60	6	
U-3 11-2	5673	6178	5143	2	23	8/29/02	14:19	2	60	13	

94-BLDG CHARACTERIZATION SURVEY

RSDS# 02-TF-1459 RCT: [redacted]/7868 RCT: DGH

LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
JUDGE 01	5673	6178	5143	2	24	8/29/02	14:28	2	60	13
JUDGE 02	5673	6178	5143	2	25	8/29/02	14:32	2	60	13
JUDGE 03	5673	6178	5143	2	26	8/29/02	14:35	1	60	6
JUDGE 04	5673	6178	5143	2	27	8/29/02	14:40	2	60	13
JUDGE 05	5673	6178	5143	2	28	8/29/02	14:43	4	60	26
JUDGE 06	5673	6178	5143	2	29	8/29/02	14:48	0	60	0
JUDGE 07	5673	6178	5143	2	30	8/29/02	14:51	2	60	13
JUDGE 08	5673	6178	5143	2	31	8/29/02	14:55	6	60	39
JUDGE 09	5673	6178	5143	2	32	8/29/02	14:58	1	60	6
JUDGE 10	5673	6178	5143	2	33	8/29/02	15:00	4	60	26
U3QC 28-24	5673	7868	5143	2	1	9/4/02	9:20	6	60	39
U3QC 40-11	5673	7868	5143	2	2	9/4/02	9:25	3	60	19
QCJ-4	5673	7868	5143	2	3	9/4/02	9:29	3	60	19

94-BLDG CHARACTERIZATION BETA SURVEY

RSDS# 02-TF-1459 RCT [redacted] /7868 RCT: 29H

LOCATION	electra	RCT ID	PROBE	ITEM #	DATE	CT TIME	dpm/100cm2
U-3 58-13	5607	7868	5608	1	8/29/02	60	-28.3
U-3 52-2	5607	7868	5608	2	8/29/02	60	-38.0
U-3 -48-9	5607	7868	5608	3	8/29/02	60	133.0
U-3 40-11	5607	7868	5608	4	8/29/02	60	35.1
U-3 40-21	5607	7868	5608	5	8/29/02	60	88.8
U-3 33-23	5607	7868	5608	6	8/29/02	60	-3.9
U-3 50-26	5607	7868	5608	7	8/29/02	60	-91.7
U-3 56-20	5607	7868	5608	8	8/29/02	60	-126.0
U-3 53-22	5607	7868	5608	9	8/29/02	60	69.5
U-3 51-22	5607	7868	5608	10	8/29/02	60	45.1
U-3 22-19	5607	7868	5608	11	8/29/02	60	93.9
U-3 28-24	5607	7868	5608	12	8/29/02	60	-67.1
U-3 23-28	5607	7868	5608	13	8/29/02	60	-155.0
U-3 26-25	5607	7868	5608	14	8/29/02	60	-116.0
U-3 20-26	5607	7868	5608	15	8/29/02	60	-160.0
U-3 12-26	5607	7868	5608	16	8/29/02	60	-135.0
U-3 15-20	5607	7868	5608	17	8/29/02	60	93.9
U-3 6-24	5607	7868	5608	18	8/29/02	60	45.1
U-3 11-4	5607	7868	5608	19	8/29/02	60	-106.0
U-3 11-2	5607	7868	5608	20	8/29/02	60	-96.3
JUDGE 01	5607	7868	5608	1	8/29/02	60	98.8
JUDGE 02	5607	7868	5608	2	8/29/02	60	20.7
JUDGE 03	5607	7868	5608	3	8/29/02	60	59.8
JUDGE 04	5607	7868	5608	4	8/29/02	60	-21.3
JUDGE 05	5607	7868	5608	5	8/29/02	60	93.9
JUDGE 06	5607	7868	5608	6	8/29/02	60	45.1
JUDGE 07	5607	7868	5608	7	8/29/02	60	128.0
JUDGE 08	5607	7868	5608	8	8/29/02	60	64.6
JUDGE 09	5607	7868	5608	9	8/29/02	60	-321.0
JUDGE 10	5607	7868	5608	10	8/29/02	60	98.8
U3QC 28-24	5607	6178	5608	1	9/4/02	60	116.0
U3QC 40-11	5607	6178	5608	2	9/4/02	60	301.0
QCJ-4	5607	6178	5608	3	9/4/02	60	-186.0
BETA BACKGROUND FOR 8-29-2002 WAS 901 dpm/ 100cm2							
BETA BACKGROUND FOR 9-4-2002 WAS 869 dpm/ 100cm2							

Alpha/Beta Analysis

Batch ID:	Smear Unit 1 - 200209031000	Count Date:	9/3/2002
Group:	E	Count Minutes:	1.5
Serial Number:	78218-1	Count Mode:	Simultaneous
Batch ID:	02-TF-1459 RADLEY(30) BSB	Operating Volts:	1410
Selected Geometry:	Swipe/Smear	Cal Due Date:	6/19/2004

Efficiency (%)				Spillover (%)			
Alpha:	34.73	±	0.13	Alpha to Beta:	11.39	±	0.00
Beta:	46.13	±	0.13	Beta to Alpha:	0.07	±	0.00

Sample ID	Carrier ID	Alpha (dpm)	σ	Beta (dpm)	σ
1	14	2.18	1.92	2.58	2.05
2	68	0.00	0.00	2.74	2.04
3	39	0.00	0.00	4.11	2.50
4	58	0.00	0.00	2.74	2.04
5	40	0.00	0.00	0.00	0.00
6	97	0.00	0.00	2.74	2.04
7	44	0.00	0.00	5.48	2.89
8	8	0.00	0.00	2.74	2.04
9	59	0.00	0.00	0.00	0.00
10	31	0.00	0.00	2.74	2.04
11	56	2.18	1.92	2.58	2.05
12	23	2.18	1.92	2.58	2.05
13	81	0.00	0.00	1.37	1.45
14	54	2.19	1.92	0.00	0.16
15	28	0.00	0.00	0.00	0.00
16	90	2.19	1.92	1.21	1.45
17	77	0.00	0.00	2.74	2.04
18	16	2.18	1.92	5.32	2.90
19	15	0.00	0.00	1.37	1.45
20	35	0.00	0.00	2.74	2.04
21	70	2.19	1.92	1.21	1.45
22	57	2.18	1.92	3.95	2.51
23	44	2.19	1.92	1.21	1.45
24	93	0.00	0.00	9.59	3.82
25	75	2.18	1.92	5.32	2.90
26	32	0.00	0.00	2.74	2.04
27	62	2.19	1.92	1.21	1.45
28	96	0.00	0.00	2.74	2.04
29	67	2.18	1.92	2.58	2.05
30	41	0.00	0.00	1.37	1.45

✓ PGR ✓ PGR

B L Brown

Batch ID: 02-TF-1459 RADLEY(30) BSB

~~Page 1 of 1~~

03 Sep 2002 15:17 ALPHA/BETA - 1.09 Page #1
Protocol #: 6 PW H3 #403727 User : 528

Time: 2.00
Data Mode: DPM Nuclide: SMGLS02 Quench Set: SMGLS02
Background Subtract: 1st Vial

	LL	UL	LCR	2S%	BKG
Region A:	0.5 -	18.6	0	0.0	6.90
Region B:	2.0 -	18.6	0	0.0	6.53
Region C:	40.0 -	2000	0	0.0	13.00

Quench Indicator: tSIE/AEC
Ext Std Terminator: Count
~~02-WH-1800-DAVIS(15) BSB~~ 02-97-1459 Radley (30) bsb
Luminescence Correction On
Coincidence Time(ns): 18
Delay Before Burst(ns): Normal
Protocol Data Filename: C:\DATA\PROT6.dat
Count Data Filename: C:\DATA\SDATA6.DAT

B J Brown

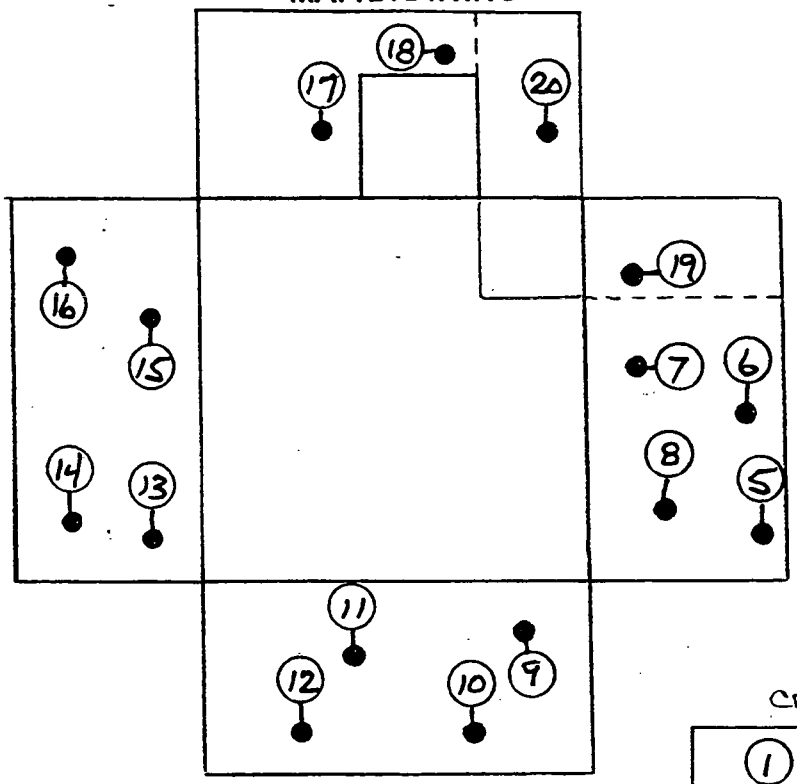
S#	TIME	CPMA	CPMB	CPMC	tSIE	LUM	FLAG	DPM1	2SIGMA
-1	10.00	6.90	6.53	13.00	701.13	3	B		0.00
0	2.00	764.47	727.39	0.00	543.95	0		1570.18	140.47
1	2.00	2.10	2.09	0.00	655.86	0		3.99	8.67
2	2.00	1.10	1.47	0.00	652.02	0		2.10	8.25
3	2.00	1.68	2.04	0.00	672.66	0		3.16	8.41
4	2.00	1.10	0.89	0.00	608.55	0		2.16	8.49
5	2.00	2.10	2.47	0.00	650.50	0		4.00	8.69
6	2.00	5.70	6.06	0.00	673.71	0		10.73	9.99
7	2.00	0.00	0.00	0.00	672.23	0		0.00	0.00
8	2.00	0.00	0.00	0.00	420.77	0		0.00	0.00
9	2.00	0.00	0.00	0.00	657.63	0		0.00	0.00
10	2.00	0.00	0.00	0.00	654.19	0		0.00	0.00
11	2.00	2.94	1.94	0.00	688.43	0		5.51	8.87
12	2.00	5.90	5.84	0.00	686.06	0		11.05	10.00
13	2.00	1.38	1.23	0.00	645.83	0		2.65	8.40
14	2.00	0.00	0.00	0.00	658.30	0		0.00	0.00
15	2.00	0.60	0.97	0.00	617.19	0		1.17	8.21
16	2.00	1.60	1.97	0.00	635.11	0		3.08	8.56
17	2.00	1.10	1.47	0.00	640.59	0		2.11	8.30
18	2.00	2.94	2.87	0.00	688.02	0		5.49	8.87
19	2.00	2.60	2.97	0.00	652.60	0		4.95	8.89
20	2.00	0.00	0.00	0.00	681.26	0		0.00	0.00
21	2.00	0.19	0.52	0.00	465.23	0		0.42	9.26
22	2.00	1.10	0.94	0.00	463.06	0		2.48	9.78
23	2.00	3.10	3.22	0.00	583.13	0		6.19	9.53
24	2.00	0.00	0.00	0.00	544.42	0		0.00	0.00
25	2.00	2.10	2.47	0.50	569.97	0		4.23	9.19
26	2.00	0.00	0.00	0.00	330.90	0		0.00	0.00
27	2.00	0.00	0.00	1.00	228.52	0		0.00	0.00
28	2.00	0.00	0.00	0.00	450.86	0		0.00	0.00
29	2.00	0.00	0.00	0.00	483.07	0		0.00	0.00
30	2.00	2.10	2.47	0.00	579.33	0		4.20	9.12

✓ PGR

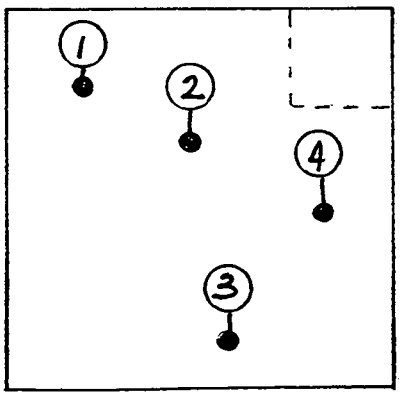
RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) 9A / Rm. #3	SURVEY NO. 02-TF-1457
PURPOSE: CHARACTERIZATION SURVEY I.A.W SURVEY PLAN 94-01 - UNIT #4 WALLS & CEILING	RWP NO. N/A
	DATE: 8/27/02
	TIME: 1500

MAP/DRAWING



CEILING



LEGEND: # = mrem/hr (γ) whole body

= mrem/hr (β+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
ELECTRA	5607 / 5608	5-19-03
2350	5673 / 5143	8-13-03
	N	
	A	

[redacted] HP # 7868 / 6178 Date: 10-8-02

HP # Date:

ED

HP # 7707 Date: 10/8/02

ML-9620 (2-98)

Survey No. 02-JF-1457

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1	SEE ATTACHED			CEILING
2				
3				
4				
5				WALLS
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
		N		
			A	

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comm
		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 r 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:	Smear Unit 1 - 200208291255	**Count Date:**	8/29/2002
Group:	I	**Count Minutes:**	1.5
Serial Number:	78218-1	**Count Mode:**	Simultaneous
Batch ID:	02-TF-1457 HARVEY(20) BSB	**Operating Volts:**	1410
Selected Geometry:	Swipe/Smear	**Cal Due Dates:**	6/19/2004

Efficiency (%)				Spillover (%)			
Alpha:	34.73	±	0.13	**Alpha to Beta:**	11.39	±	0.00
Beta:	46.13	±	0.13	**Beta to Alpha:**	0.07	±	0.00

Sample ID	Carrier ID	Alpha (dpm)	σ	Beta (dpm)	σ
1	52	2.18	1.92	2.58	2.05
2	69	0.00	0.00	0.00	0.00
3	17	2.19	1.92	1.21	1.45
4	61	0.00	0.00	0.00	0.00
5	21	0.00	0.00	1.37	1.45
6	64	0.00	0.00	2.74	2.04
7	41	0.00	0.00	4.11	2.50
8	4	0.00	0.00	5.48	2.89
9	78	0.00	0.00	0.00	0.00
10	3	0.00	0.00	4.11	2.50
11	63	0.00	0.00	0.00	0.00
12	43	0.00	0.00	2.74	2.04
13	15	0.00	0.00	1.37	1.45
14	9	0.00	0.00	1.37	1.45
15	64	0.00	0.00	1.37	1.45
16	28	0.00	0.00	0.00	0.00
17	38	0.00	0.00	2.74	2.04
18	13	0.00	0.00	2.74	2.04
19	50	0.00	0.00	2.74	2.04
20	34	0.00	0.00	0.00	0.00

PGR ✓ PGR ✓

B S Brown

Time: 2.00
Data Mode: DPM Nuclide: SMGLS02 Quench Set: SMGLS02
Background Subtract: 1st Vial

	LL	UL	LCR	2S%	BKG
Region A:	0.5	- 18.6	0	0.0	4.36
Region B:	2.0	- 18.6	0	0.0	4.29
Region C:	40.0	- 2000	0	0.0	10.86

Quench Indicator: tSIE/AEC
Ext Std Terminator: Count
02-TF-1457 HARVEY(20) BSB
Luminescence Correction On
Coincidence Time(ns): 18
Delay Before Burst(ns): Normal
Protocol Data Filename: C:\DATA\PROT4.dat
Count Data Filename: C:\DATA\SDATA4.DAT

B J Brown

S#	TIME	CPMA	CPMB	CPMC	tSIE	LUM	FLAG	DPM1	2SIGMA
-1	10.00	4.36	4.29	10.86	536.32	0	B		0.00
0	2.00	314.50	308.27	1.64	486.91	0		688.58	74.87
1	2.00	4.07	3.86	0.00	604.89	0		8.01	8.50
2	2.00	3.10	3.17	1.64	636.09	0		5.97	7.86
3	2.00	5.14	5.21	2.14	650.64	0		9.80	8.71
4	2.00	2.64	2.71	0.00	585.64	0		5.27	7.91
5	2.00	3.14	3.21	0.00	610.96	0		6.15	8.02
6	2.00	1.64	1.21	0.00	640.23	0		3.15	7.11
7	2.00	5.14	4.86	0.00	641.32	0		9.85	8.75
8	2.00	0.00	0.00	0.00	655.37	0		0.00	0.00
9	2.00	5.99	6.05	0.64	678.32	0		11.26	8.94
10	2.00	1.17	1.23	0.00	610.48	0		2.29	7.00
11	2.00	0.00	0.00	3.64	627.73	0		0.00	0.00
12	2.00	1.64	1.71	0.00	667.67	0		3.11	7.01
13	2.00	3.64	3.29	5.14	677.64	0		6.85	7.93
14	2.00	0.79	0.85	0.00	676.48	0		1.48	6.52
15	2.00	5.12	5.18	1.64	696.00	0		9.53	8.50
16	2.00	2.64	2.25	1.14	699.10	0		4.92	7.39
17	2.00	4.55	4.12	0.00	633.24	0		8.77	8.55
18	2.00	1.85	1.91	3.13	703.71	0		3.43	6.98
19	2.00	1.64	1.32	0.00	662.22	0		3.11	7.03
20	2.00	2.90	2.47	0.00	683.29	0		5.44	7.57

PGR ✓

94-BLDG CHARACTERIZATION SURVEY

RSDS# 02-TF-1457 RCT: [illegible] RCT: [illegible]

43-20 BKG:	0	EFF:	0.172	PROBE AREA:	181	cm2	Surface Eff:		0.5	Detector # :	2
43-37 BKG:	0	EFF:	0.212	PROBE AREA:	584	cm2	Surface Eff:		0.5	Detector # :	3
LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2	
SRCBKG	5673	6178	5143	2		8/27/02	8:27	2	300	3	
SRCCHECK	5673	6178	5143	2		8/27/02	8:30	2192	60	14082	
SRCCHECK	5673	6178	5143	2		8/27/02	8:31	2101	60	13497	
SRCCHECK	5673	6178	5143	2		8/27/02	8:32	2005	60	12881	
SRCCHECK	5673	6178	5143	2		8/27/02	8:34	2159	60	13870	
RM3WC 01	5673	6178	5143	2	1	8/27/02	8:40	1	60	6	
RM3WC 02	5673	6178	5143	2	2	8/27/02	8:46	6	60	39	
RM3WC 03	5673	6178	5143	2	3	8/27/02	8:52	2	60	13	
RM3WC 04	5673	6178	5143	2	4	8/27/02	8:56	3	60	19	
RM3WC 05	5673	6178	5143	2	5	8/27/02	9:04	0	60	0	
RM3WC 06	5673	6178	5143	2	6	8/27/02	9:06	4	60	26	
RM3WC 07	5673	6178	5143	2	7	8/27/02	9:10	3	60	19	
RM3WC 08	5673	6178	5143	2	8	8/27/02	9:12	7	60	45	
RM3WC 09	5673	6178	5143	2	9	8/27/02	9:14	2	60	13	
RM3WC 10	5673	6178	5143	2	10	8/27/02	9:17	1	60	6	
RM3WC 11	5673	6178	5143	2	11	8/27/02	9:20	2	60	13	
RM3WC 12	5673	6178	5143	2	12	8/27/02	9:22	2	60	13	
RM3WC 13	5673	6178	5143	2	13	8/27/02	9:24	3	60	19	
RM3WC 14	5673	6178	5143	2	14	8/27/02	9:26	1	60	6	
RM3WC 15	5673	6178	5143	2	15	8/27/02	9:29	5	60	32	
RM3WC 16	5673	6178	5143	2	16	8/27/02	9:31	0	60	0	
RM3WC 17	5673	6178	5143	2	17	8/27/02	9:34	1	60	6	
RM3WC 18	5673	6178	5143	2	18	8/27/02	9:36	2	60	13	
RM3WC 19	5673	6178	5143	2	19	8/27/02	9:40	5	60	32	
RM3WC 20	5673	6178	5143	2	20	8/27/02	9:42	5	60	32	
QC 15	5673	7868	5143	2	1	8/29/02	8:39	1	60	6	
QC 03	5673	7868	5143	2	2	8/29/02	8:41	1	60	6	

94-BLDG CHARACTERIZATION BETA SURVEY

RSDS# 02-TF-1457 RCT: [illegible] RCT: [illegible]

LOCATION	electra	RCT ID	PROBE	ITEM #	DATE	CT TIME	dpm/100cm2
RM3WC 01	5607	7868	5608	1	8/27/02	60	264.0
RM3WC 02	5607	7868	5608	2	8/27/02	60	250.0
RM3WC 03	5607	7868	5608	3	8/27/02	60	177.0
RM3WC 04	5607	7868	5608	4	8/27/02	60	240.0
RM3WC 05	5607	7868	5608	5	8/27/02	60	-1.6
RM3WC 06	5607	7868	5608	6	8/27/02	60	133.0
RM3WC 07	5607	7868	5608	7	8/27/02	60	5.9
RM3WC 08	5607	7868	5608	8	8/27/02	60	49.8
RM3WC 09	5607	7868	5608	9	8/27/02	60	108.0
RM3WC 10	5607	7868	5608	10	8/27/02	60	-42.9
RM3WC 11	5607	7868	5608	11	8/27/02	60	30.2
RM3WC 12	5607	7868	5608	12	8/27/02	60	108.0
RM3WC 13	5607	7868	5608	13	8/27/02	60	59.5
RM3WC 14	5607	7868	5608	14	8/27/02	60	1.0
RM3WC 15	5607	7868	5608	15	8/27/02	60	1.0
RM3WC 16	5607	7868	5608	16	8/27/02	60	30.2
RM3WC 17	5607	7868	5608	17	8/27/02	60	-33.2
RM3WC 18	5607	7868	5608	18	8/27/02	60	-3.9
RM3WC 19	5607	7868	5608	19	8/27/02	60	44.9
RM3WC 20	5607	7868	5608	20	8/27/02	60	377.0
QC 15	5607	6178	5608	1	8/29/02	60	-8.8
QC 03	5607	6178	5608	2	8/29/02	60	133.0
BETA BACKGROUND FOR 8-27-2002 WAS 872 dpm/ 100cm2							
BETA BACKGROUND FOR 8-29-2002 WAS 901 dpm/ 100cm2							

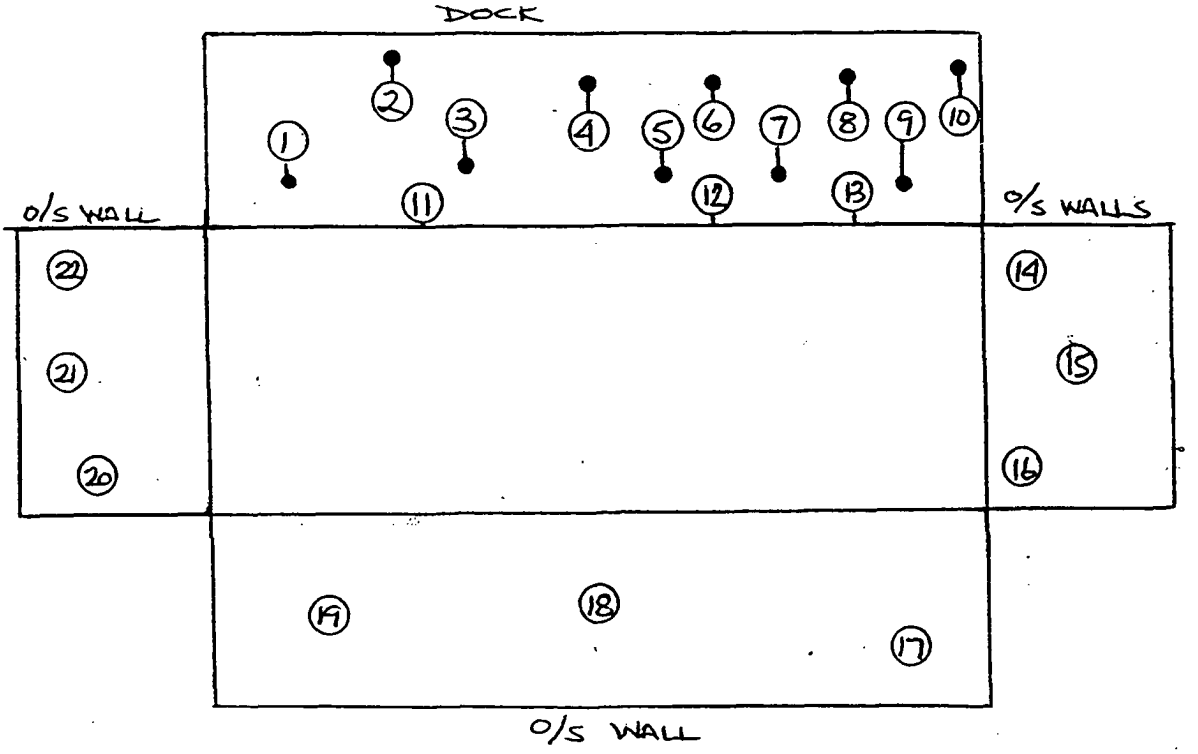
RADIOLOGICAL SURVEY DATA SHEET

Pg. 1 of 6

LOCATION: (BLDG./AREA/ROOM) 94 / O/S DOCK & WALLS	SURVEY NO. 02-TF-1465
PURPOSE: MARSSIMS O/S DOCK & WALL SCAN	RWP NO. N/A
	DATE: 9-9-02
	TIME: 1500

MAP/DRAWING

SURVEYED I.A.W. SURVEY PLAN 94-01



COPY

LEGEND: # = mrem/hr (γ) whole body
[illegible] = mrem/hr (β+γ) Extremity Off Contact
# = mrem/hr neutron
# = air sample number
# = swipe number
or/β = direct cont. measurement in dpm/100cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
ELECTRA	5607/5608	5-9-02
2350	5673/5143	8-13-~~02~~ 03
	N	
	A	9-16-02

[redacted] HP # 7868 6178	Date: 9-9-02
[redacted]	
HP #	Date:
CHED	
HP # 7707	Date: 9-12-02
[redacted]	

ML-9620 (2-98)

Survey No. 02-TF-1465

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1	SEE ATTACHED			O/S DOCK
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				WALLS
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
		N/A		

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

94-BLDG CHARACTERIZATION SURVEY

RSDS# 02-TF-1465 RCT: HR RCT: DGH

43-20 BKG:	0	EFF:	0.172	PROBE AREA:	181	cm2	Surface Eff:		0.5	Detector # :	2
43-37 BKG:	0	EFF:	0.212	PROBE AREA:	584	cm2	Surface Eff:		0.5	Detector # :	3
LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2	
SRCBKG	5673	6178	5143	2		9/9/02	8:25	15	300	19	
SRCCHECK	5673	6178	5143	2		9/9/02	8:27	2120	60	13619	
SRCCHECK	5673	6178	5143	2		9/9/02	8:29	2113	60	13574	
SRCCHECK	5673	6178	5143	2		9/9/02	8:30	2081	60	13369	
SRCCHECK	5673	6178	5143	2		9/9/02	8:32	2259	60	14512	
DOCK 01	5673	6178	5143	2	1	9/9/02	14:05	40	60	257	
DOCK 02	5673	6178	5143	2	2	9/9/02	14:07	5	60	32	
DOCK 03	5673	6178	5143	2	3	9/9/02	14:08	45	60	289	
DOCK 04	5673	6178	5143	2	4	9/9/02	14:10	8	60	51	
DOCK 05	5673	6178	5143	2	5	9/9/02	14:11	8	60	51	
DOCK 06	5673	6178	5143	2	6	9/9/02	14:12	11	60	71	
DOCK 07	5673	6178	5143	2	7	9/9/02	14:14	21	60	135	
DOCK 08	5673	6178	5143	2	8	9/9/02	14:15	15	60	96	
DOCK 09	5673	6178	5143	2	9	9/9/02	14:17	10	60	64	
DOCK 10	5673	6178	5143	2	10	9/9/02	14:18	15	60	96	
EXT 01	5673	6178	5143	2	1	9/9/02	14:20	6	60	39	
EXT 02	5673	6178	5143	2	2	9/9/02	14:22	6	60	39	
EXT 03	5673	6178	5143	2	3	9/9/02	14:24	2	60	13	
EXT 04	5673	6178	5143	2	4	9/9/02	14:25	4	60	26	
EXT 05	5673	6178	5143	2	5	9/9/02	14:50	4	60	26	
EXT 06	5673	6178	5143	2	6	9/9/02	14:51	3	60	19	
EXT 07	5673	6178	5143	2	7	9/9/02	14:54	3	60	19	
EXT 08	5673	6178	5143	2	8	9/9/02	14:55	6	60	39	
EXT 09	5673	6178	5143	2	9	9/9/02	14:57	4	60	26	
EXT 10	5673	6178	5143	2	10	9/9/02	14:59	4	60	26	
EXT 11	5673	6178	5143	2	11	9/9/02	15:00	8	60	51	
EXT 12	5673	6178	5143	2	12	9/9/02	15:02	8	60	51	
DKQC 09	5673	7868	5143	2	1	9/10/02	8:16	8	60	51	
EXTQC 04	5673	7868	5143	2	2	9/10/02	8:18	2	60	13	

94-BLDG MARSSIM BETA SURVEY

RSDS# 02-TF-1465 RCT: PJK RCT: DGH

LOCATION	electra	RCT ID	PROBE	ITEM #	DATE	CT TIME	dpm/100cm2
DOCK 01	5607	7868	5608	1	9/9/02	60	680
DOCK 02	5607	7868	5608	2	9/9/02	60	665
DOCK 03	5607	7868	5608	3	9/9/02	60	821
DOCK 04	5607	7868	5608	4	9/9/02	60	519
DOCK 05	5607	7868	5608	5	9/9/02	60	553
DOCK 06	5607	7868	5608	6	9/9/02	60	617
DOCK 07	5607	7868	5608	7	9/9/02	60	592
DOCK 08	5607	7868	5608	8	9/9/02	60	675
DOCK 09	5607	7868	5608	9	9/9/02	60	563
DOCK 10	5607	7868	5608	10	9/9/02	60	519
EXT 01	5607	7868	5608	1	9/9/02	60	75
EXT 02	5607	7868	5608	2	9/9/02	60	-76
EXT 03	5607	7868	5608	3	9/9/02	60	-140
EXT 04	5607	7868	5608	4	9/9/02	60	-57
EXT 05	5607	7868	5608	5	9/9/02	60	-115
EXT 06	5607	7868	5608	6	9/9/02	60	-144
EXT 07	5607	7868	5608	7	9/9/02	60	7
EXT 08	5607	7868	5608	8	9/9/02	60	-27
EXT 09	5607	7868	5608	9	9/9/02	60	-105
EXT 10	5607	7868	5608	10	9/9/02	60	-71
EXT 11	5607	7868	5608	11	9/9/02	60	-52
EXT 12	5607	7868	5608	12	9/9/02	60	-96
DKQC 09	5607	6178	5608	1	9/10/02	60	848
EXTQC 04	5607	6178	5608	2	9/10/02	60	121
BETA BACKGROUND FOR 9-9-2002 WAS 886 dpm/ 100cm2							
BETA BACKGROUND FOR 9-10-2002 WAS 850 dpm/ 100cm2							

Alpha/Beta Analysis

Batch ID:	Smear Unit 1 - 200209101254	Count Date:	9/10/2002
Group:	H	Count Minutes:	1.5
Serial Number:	78218-1	Count Mode:	Simultaneous
Batch ID:	02-TF-1465 RADLEY(22) BSB	Operating Volts:	1410
Selected Geometry:	Swipe/Smear	Cal Due Dates:	6/19/2004

Efficiency (%)				Spillover (%)			
Alpha:	34.73	±	0.13	Alpha to Beta:	11.39	±	0.00
Beta:	46.13	±	0.13	Beta to Alpha:	0.07	±	0.00

Sample ID	Carrier ID	Alpha (dpm)	σ	Beta (dpm)	σ
1	12	2.18	1.92	3.95	2.51
2	62	2.18	1.92	2.58	2.05
3	65	2.18	1.92	5.32	2.90
4	66	4.37	2.72	5.17	2.90
5	37	2.18	1.92	2.58	2.05
6	94	0.00	0.00	5.48	2.89
7	11	0.00	0.00	5.48	2.89
8	48	2.18	1.92	3.95	2.51
9	22	0.00	0.00	2.74	2.04
10	87	2.18	1.92	2.58	2.05
11	12	2.18	1.92	3.95	2.51
12	39	2.19	1.92	1.21	1.45
13	42	0.00	0.00	0.00	0.00
14	51	0.00	0.00	1.37	1.45
15	47	0.00	0.00	1.37	1.45
16	73	0.00	0.00	1.37	1.45
17	61	0.00	0.00	1.37	1.45
18	7	4.37	2.72	3.80	2.51
19	26	0.00	0.00	5.48	2.89
20	41	4.37	2.72	0.00	0.23
21	71	0.00	0.00	2.74	2.04
22	14	2.18	1.92	3.95	2.51

PGR PGR

B S Brown

Batch ID: 02-TF-1465 RADLEY(22) BSB

5 of 6

G-63 of 164

10 Sep 2002 14:16 ALPHA/BETA - 1.09 Page #1
Protocol #: 3 PW 3 403727 User : 528

Time: 2.00
Data Mode: DPM Nuclide: SMGLSO2 Quench Set: SMGLSO2
Background Subtract: 1st Vial

	LL	UL	LCR	2S%	BKG
Region A:	0.5 -	18.6	0	0.0	8.30
Region B:	2.0 -	18.6	0	0.0	8.17
Region C:	40.0 -	2000	0	0.0	14.90

Quench Indicator: tSIE/AEC
~~Ext Std Terminator: Count~~
02-TF-1465 RADLEY(22) BSB
~~Luminescence Correction On~~
Coincidence Time(ns): 18
Delay Before Burst(ns): Normal
Protocol Data Filename: C:\DATA\PROT3.dat
Count Data Filename: C:\DATA\SDATA3.DAT

B.A. Brown

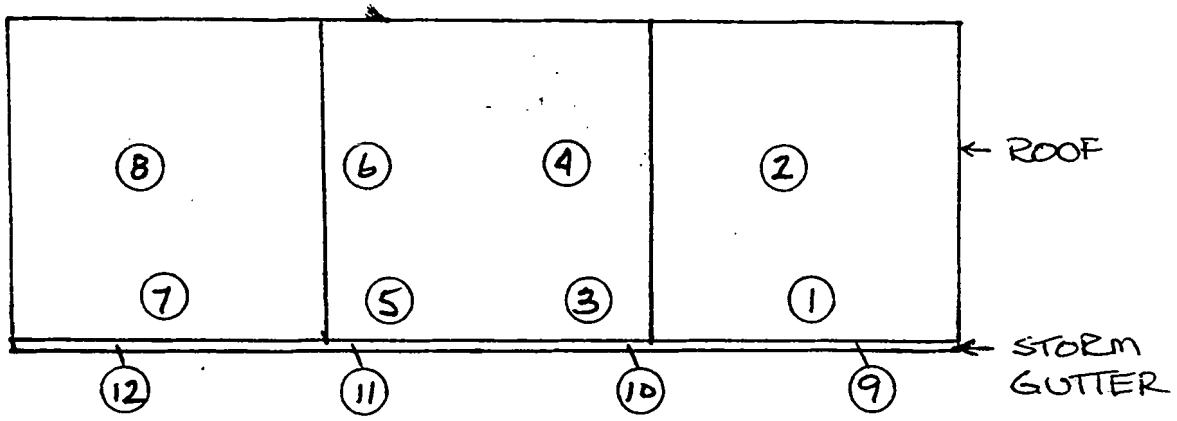
S#	TIME	CPMA	CPMB	CPMC	tSIE	LUM	FLAG	DPM1	2SIGMA
-1	10.00	8.30	8.17	14.90	489.32	2	B		0.00
0	2.00	260.09	253.48	0.00	482.77	0		572.46	86.12
1	2.00	7.65	6.92	21.80	605.62	0		15.02	11.71
2	2.00	4.55	4.41	4.60	600.05	0		8.98	10.64
3	2.00	9.40	9.20	5.60	629.55	0		18.16	12.09
4	2.00	9.20	7.14	0.60	682.29	0		17.26	11.68
5	2.00	12.58	10.96	4.60	690.95	0		23.51	12.66
6	2.00	7.70	7.18	0.00	629.64	0		14.88	11.53
7	2.00	4.70	3.71	0.00	655.91	0		8.94	10.31
8	2.00	2.70	2.55	5.10	604.61	0		5.32	9.90
9	2.00	8.20	7.71	0.00	620.48	0		15.95	11.77
10	2.00	5.20	4.83	0.00	654.31	0		9.90	10.50
11	2.00	2.70	1.93	0.00	669.23	0		5.11	9.51
12	2.00	7.22	5.97	0.00	639.43	0		13.85	11.29
13	2.00	3.20	2.66	0.00	635.92	0		6.16	9.88
14	2.00	4.07	3.70	0.00	660.19	0		7.72	10.06
15	2.00	3.20	2.57	0.00	595.35	0		6.34	10.16
16	2.00	9.70	7.74	0.00	668.56	0		18.33	11.92
17	2.00	8.40	7.58	0.00	620.42	0		16.32	11.84
18	2.00	7.70	7.50	0.00	632.38	0		14.85	11.51
19	2.00	14.70	13.30	0.00	618.54	0		28.62	13.83
20	2.00	6.01	5.31	0.00	626.87	0		11.62	10.97
21	2.00	8.70	7.94	0.00	613.95	0		17.00	11.98
22	2.00	11.82	11.15	2.60	615.89	0		23.05	12.98

PGR

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) 94 / ROOF & STORM GUTTER	SURVEY NO. 02-TF-1474
PURPOSE: CHARACTERIZATION FOR SURVEY UNIT #6 I.A.W. SURVEY PLAN 94-01	RWP NO. N/A
	DATE: 9-25-02
	TIME: 1350

MAP/DRAWING



COPY

LEGEND: # = mrem/hr (γ) whole body

= mrem/hr neutron

= swipe number

= air sample number

or/β = direct cont. measurement in dpm/100cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
2350	5671/5148	9-11-03
2360	5775/5720	9-25-03
	N	
	A	

[redacted]

HP # 7868 6178	Date: 10-8-02
HP #	Date:
HP # 7707	Date: 10/14/02

ML-9620 (2-98)

Survey No. 02-TF-1474

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1	SEE ATTACHED			ROOF
2	↓	↓	↓	↓
3				
4				
5				
6				
7				
8				↓
9				STORM GUTTER
10				↓
11				
12	↓	↓	↓	↓
			N/A	

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

02-TF-1474

Batch ID:	Smear Unit 1 - 200209250809	**Count Date:**	9/25/2002
Group:	D	**Count Minutes:**	1.5
Serial Number:	78218-1 1474	**Count Mode:**	Simultaneous
Batch ID:	02-TF-~~1472~~ RADLEY-1 BSB 9/25/02 bsb	**Operating Volts:**	1410
Selected Geometry:	Swipe/Smear	**Cal Due Dates:**	6/19/2004

Efficiency (%)				Spillover (%)			
Alpha:	34.73	±	0.13	**Alpha to Beta:**	11.39	±	0.00
Beta:	46.13	±	0.13	**Beta to Alpha:**	0.07	±	0.00

Sample ID	Carrier ID	Alpha (dpm)	σ	Beta (dpm)	σ
1	32	2.18	1.92	8.06	3.54
2	2	0.00	0.00	2.74	2.04
3	6	2.10	1.92	83.42	11.29
4	100	2.18	1.92	3.95	2.51
5	48	4.36	2.72	7.91	3.55
6	21	6.55	3.33	7.75	3.55
7	93	2.18	1.92	3.95	2.51
8	68	0.00	0.00	5.48	2.89
		PGR		PGR	

BBBrown

Batch ID: 02-TF-1472 RADLEY-1 BSB

Time: 2.00
Data Mode: DPM Nuclide: SMGLS02 Quench Set: SMGLS0
Background Subtract: 1st Vial

	LL	UL	LCR	2S%	BKG
Region A:	0.5	- 18.6	0	0.0	6.69
Region B:	2.0	- 18.6	0	0.0	6.57
Region C:	40.0	- 2000	0	0.0	9.80

Quench Indicator: tSIE/AEC
Ext Std Terminator: Count
02-TF-1474 RADLEY(8) BSB
Luminescence Correction On
Coincidence Time(ns): 18
Delay Before Burst(ns): Normal
Protocol Data Filename: C:\DATA\PROT4.dat
Count Data Filename: C:\DATA\SDATA4.DAT

S#	TIME	CPMA	CPMB	CPMC	tSIE	LUM	FLAG	DPM1	2SIGMA
-1	10.00	6.69	6.57	9.80	532.54	0	B		0.00
0	2.00	320.66	314.58	5.70	487.49	0		701.58	76.05
1	2.00	4.41	4.39	4.20	525.40	0		9.21	10.44
2	2.00	0.31	0.16	3.70	600.32	0		0.62	8.05
3	2.00	2.88	3.00	0.20	613.04	0		5.63	9.14
4	2.00	0.00	0.00	2.70	589.12	0		0.00	0.00
5	2.00	2.51	2.13	4.70	495.57	0		5.44	9.95
6	2.00	2.81	2.86	7.20	491.85	0		6.12	10.14
7	2.00	0.00	0.00	6.70	325.49	0		0.00	0.00
8	2.00	7.62	6.97	5.70	597.33	0		15.05	11.11

PGR

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: SMEAR004
Batch Ended: 9/25/02 14:36
Cal. Due Date: 4/25/03
Serial Number: 26966-3

Batch ID: 02-TF-1474 HARVEY(4) BSB

Detector ID	Sample ID	Alpha Activity DPM	Alpha Activity σ	Alpha Activity flags	Beta Activity DPM	Beta Activity σ	Beta Activity flags
A1	~~1~~ 9	1.44	2.07		1.33	2.21	
A2	~~2~~ 10	3.51	2.76		2.51	2.40	
A3	~~3~~ 11	1.68	2.19		5.25	3.05	
A4	~~4~~ 12	0.00	2.09		8.60	3.56	

PGR 10-8-02

PGR ✓

PGR ✓

B. Barron

Protocol #: 7 Pw H3 405828 User : 526

Time: 2.00
Data Mode: DPM Nuclide: SMGLS02 Quench Set: SMGLS02
Background Subtract: 1st Vial

	LL	UL	LCR	2S%	BKG
Region A:	0.5	- 18.6	0	0.0	5.30
Region B:	2.0	- 18.6	0	0.0	5.08
Region C:	40.0	- 2000	0	0.0	11.44

Quench Indicator: tSIE/AEC
Ext Std Terminator: Count
02-TF-1474 RADLEY(4) 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
Spectrum Data Drive & Path: c:\data

	S#	TIME	CPMA	CPMB	LUM	FLAG	tSIE	DPM1	2Sigma	CPMC
	-1	10.00	5.30	5.08	0	B	598.03		0.00	11.44
	0	2.00	772.99	721.51	0		509.90	1639.39	150.12	2.56
9	~~1~~	2.00	6.70	6.27	0		627.82	12.83	9.83	0.00
10	~~2~~	2.00	6.58	6.70	0		500.98	14.07	10.93	6.15
11	~~3~~	2.00	5.20	5.42	0		488.44	11.28	10.46	0.06
12	~~4~~	2.00	0.00	0.00	0		487.00	0.00	0.00	5.56

PGR
10-8-02

PGR ✓

94-BLDG CHARACTERIZATION SURVEY

RSDS# 02-TF-1474 RCT: DJH RCT: [illegible]

43-20 BKG:	0	EFF:	0.188	PROBE AREA:	181	cm2	Surface Eff:		0.5	Detector # :	3
43-37 BKG:	0	EFF:	0.199	PROBE AREA:	584	cm2	Surface Eff:		0.5	Detector # :	4
LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2	
SRCBKG	5671	6178	5148	3		9/24/02	8:47	10	300	12	
SRCCHECK	5671	6178	5148	3		9/24/02	9:01	2163	60	12713	
SRCCHECK	5671	6178	5148	3		9/24/02	9:02	2143	60	12596	
SRCCHECK	5671	6178	5148	3		9/24/02	9:04	2045	60	12020	
SRCCHECK	5671	6178	5148	3		9/24/02	9:06	2059	60	12102	
ROOF 01	5671	6178	5148	3	1	9/24/02	12:39	24	60	141	
ROOF 02	5671	6178	5148	3	2	9/24/02	12:42	10	60	59	
ROOF 03	5671	6178	5148	3	3	9/24/02	12:45	11	60	65	
ROOF 04	5671	6178	5148	3	4	9/24/02	12:46	17	60	100	
ROOF 05	5671	6178	5148	3	5	9/24/02	12:51	25	60	147	
ROOF 06	5671	6178	5148	3	6	9/24/02	12:53	9	60	53	
ROOF 07	5671	6178	5148	3	7	9/24/02	12:57	7	60	41	
ROOF 08	5671	6178	5148	3	8	9/24/02	12:59	17	60	100	

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94-BLDG MARSSIM BETA SURVEY ROOF

RSDS# 02-TF-1474 RCT: KDR RCT: DGH

LOCATION	2360	RCT ID	PROBE	ITEM #	DATE	gross count	CT TIME	dpm/100cm2
94 ROOF 01	5775	6178	5720	1	9/25/02	207	60	128
94 ROOF 02	5775	6178	5720	2	9/25/02	200	60	100
94 ROOF 03	5775	6178	5720	3	9/25/02	176	60	4
94 ROOF 04	5775	6178	5720	4	9/25/02	173	60	-8
94 ROOF 05	5775	6178	5720	5	9/25/02	187	60	48
94 ROOF 06	5775	6178	5720	6	9/25/02	184	60	36
94 ROOF 07	5775	6178	5720	7	9/25/02	158	60	-68
94 ROOF 08	5775	6178	5720	8	9/25/02	203	60	112
BETA BACKGROUNG FOR 9-25--2002 WAS---------->								175

G226 164

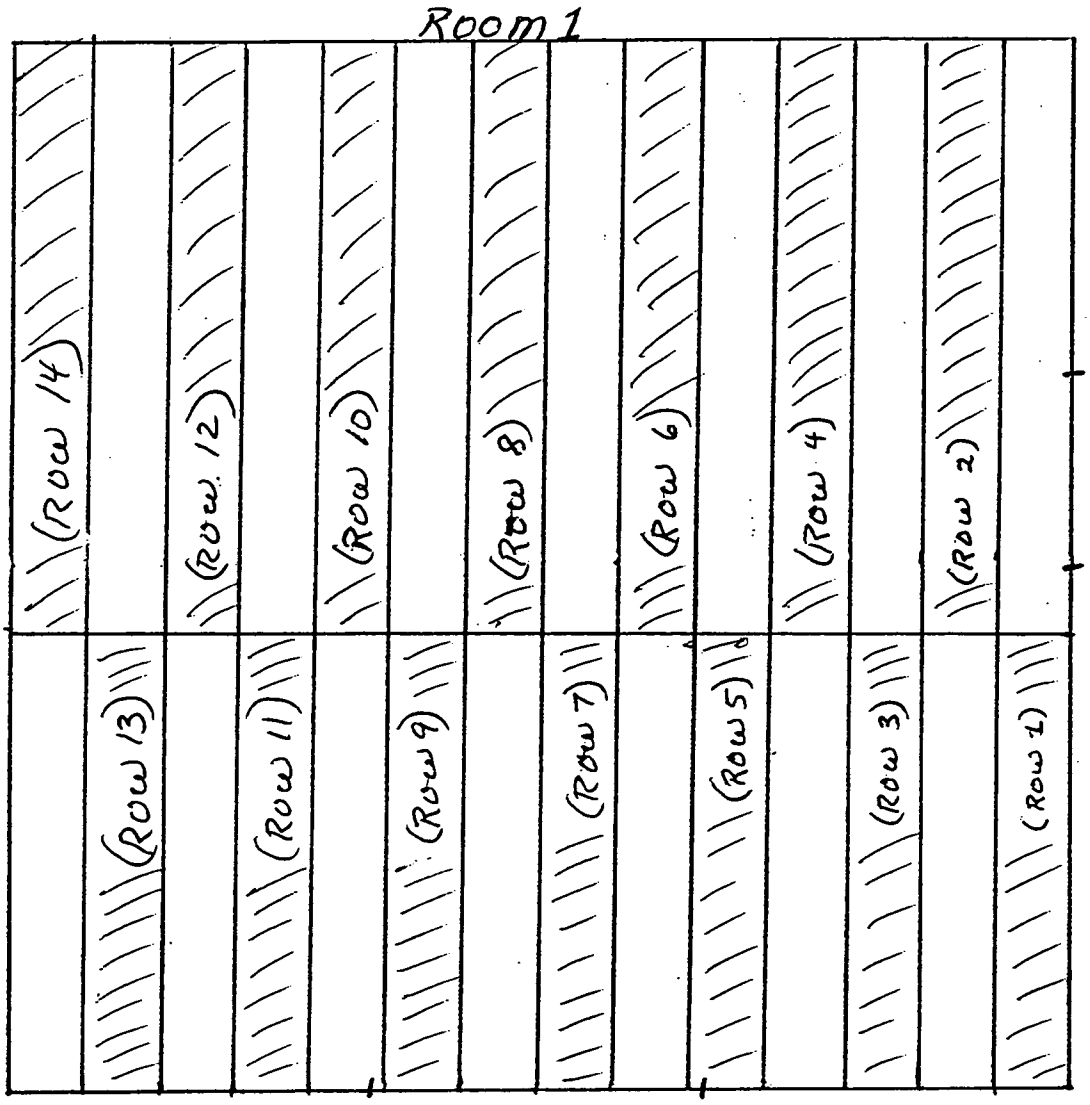
RADIOLOGICAL SURVEY DATA SHEET

1 of 12

LOCATION: (BLDG./AREA/ROOM) 94 -ROOM 1	SURVEY NO. 02-TF-1466
PURPOSE: FLOOR SCAN UNIT 1/ROOM 1	RWP NO. N/A
	DATE: 9-10-02
	TIME: 1600

SHADED AREA IS ~~SCANNED~~ SCANNED AREA SJH 9-12-02
RESULTS ATTACHED

MAP/DRAWING SURVEYED IAW SURVEY PLAN 94-01



COPY

LEGEND: # = mrem/hr (γ) whole body
... (β+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
LUDLUM 2350	5673/5676	8-13-03
	N/A	

[redacted]

HP # 6178 7868	Date: 9-12-02
HP #	Date:
HP # 7707	Date: 9-12-02

ML-9620 (2-98)

G736 164

RADIOLOGICAL SURVEY DATA SHEET (cont.)

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

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

N/A

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 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)

94-BLDG CHARACTERIZATION SURVEY SCANNING

RSDS# 02-TF-1466 RCT: DJH RCT: [illegible]

43-20 BKG:	0	EFF:	0.172	PROBE AREA:	181	cm2	Surface Eff:		0.5	Detector # :	2
43-37 BKG:	0	EFF:	0.212	PROBE AREA:	584	cm2	Surface Eff:		0.5	Detector # :	3
LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2	
SRCBKG	5673	6178	5143	2		9/10/02	7:48	4	300	5	
SRCCHECK	5673	6178	5143	2		9/10/02	7:51	2188	60	14056	
SRCCHECK	5673	6178	5143	2		9/10/02	7:52	2250	60	14455	
SRCCHECK	5673	6178	5143	2		9/10/02	7:53	1991	60	12791	
SRCCHECK	5673	6178	5143	2		9/10/02	7:55	2034	60	13067	
SRCBKG	5673	6178	5676	3		9/10/02	8:01	27	300	9	
SRCCHECK	5673	6178	5676	3		9/10/02	8:03	2208	60	3567	
SRCCHECK	5673	6178	5676	3		9/10/02	8:05	2195	60	3546	
SRCCHECK	5673	6178	5676	3		9/10/02	8:06	2292	60	3703	
SRCCHECK	5673	6178	5676	3		9/10/02	8:08	2107	60	3404	
SRCCHECK	5673	6178	5676	3		9/10/02	8:10	2112	60	3412	
SRCCHECK	5673	6178	5676	3		9/10/02	8:11	2213	60	3575	
U1FS U1R1	5673	6178	5676	3	1	9/10/02	9:42	9	30	29	
U1FS U1R1	5673	6178	5676	3	2	9/10/02	9:42	11	30	36	
U1FS U1R1	5673	6178	5676	3	3	9/10/02	9:43	13	30	42	
U1FS U1R1	5673	6178	5676	3	4	9/10/02	9:43	13	30	42	
U1FS U1R1	5673	6178	5676	3	5	9/10/02	9:44	11	30	36	
U1FS U1R1	5673	6178	5676	3	6	9/10/02	9:45	13	30	42	
U1FS U1R1	5673	6178	5676	3	7	9/10/02	9:45	8	30	26	
U1FS U1R1	5673	6178	5676	3	8	9/10/02	9:46	10	30	32	
U1FS U1R1	5673	6178	5676	3	9	9/10/02	9:46	13	30	42	
U1FS U1R1	5673	6178	5676	3	10	9/10/02	9:47	10	30	32	
U1FS U1R1	5673	6178	5676	3	11	9/10/02	9:48	6	30	19	
U1FS U1R1	5673	6178	5676	3	12	9/10/02	9:48	15	30	48	
U1FS U1R1	5673	6178	5676	3	13	9/10/02	9:49	8	30	26	
U1FS U1R1	5673	6178	5676	3	14	9/10/02	9:50	13	30	42	
U1FS U1R1	5673	6178	5676	3	15	9/10/02	9:50	8	30	26	
U1FS U1R1	5673	6178	5676	3	16	9/10/02	9:51	10	30	32	
U1FS U1R1	5673	6178	5676	3	17	9/10/02	9:51	14	30	45	
U1FS U1R1	5673	6178	5676	3	18	9/10/02	9:52	9	30	29	
U1FS U1R1	5673	6178	5676	3	19	9/10/02	9:53	15	30	48	
U1FS U1R1	5673	6178	5676	3	20	9/10/02	9:53	5	30	16	
U1FS U1R1	5673	6178	5676	3	21	9/10/02	9:54	13	30	42	

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94-BLDG CHARACTERIZATION SURVEY SCANNING

RSDS# 02-TF-1466 RCT: [illegible] RCT: [illegible]

LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
U1FS U1R3	5673	6178	5676	3	1	9/10/02	9:56	15	30	48
U1FS U1R3	5673	6178	5676	3	2	9/10/02	9:57	12	30	39
U1FS U1R3	5673	6178	5676	3	3	9/10/02	9:58	14	30	45
U1FS U1R3	5673	6178	5676	3	4	9/10/02	9:58	9	30	29
U1FS U1R3	5673	6178	5676	3	5	9/10/02	9:59	8	30	26
U1FS U1R3	5673	6178	5676	3	6	9/10/02	9:59	5	30	16
U1FS U1R3	5673	6178	5676	3	7	9/10/02	10:00	10	30	32
U1FS U1R3	5673	6178	5676	3	8	9/10/02	10:01	10	30	32
U1FS U1R3	5673	6178	5676	3	9	9/10/02	10:01	11	30	36
U1FS U1R3	5673	6178	5676	3	10	9/10/02	10:02	8	30	26
U1FS U1R3	5673	6178	5676	3	11	9/10/02	10:02	12	30	39
U1FS U1R3	5673	6178	5676	3	12	9/10/02	10:03	15	30	48
U1FS U1R3	5673	6178	5676	3	13	9/10/02	10:04	9	30	29
U1FS U1R3	5673	6178	5676	3	14	9/10/02	10:04	10	30	32
U1FS U1R3	5673	6178	5676	3	15	9/10/02	10:05	13	30	42
U1FS U1R3	5673	6178	5676	3	16	9/10/02	10:06	14	30	45
U1FS U1R3	5673	6178	5676	3	17	9/10/02	10:06	17	30	55
U1FS U1R3	5673	6178	5676	3	18	9/10/02	10:07	9	30	29
U1FS U1R3	5673	6178	5676	3	19	9/10/02	10:07	14	30	45
U1FS U1R3	5673	6178	5676	3	20	9/10/02	10:08	6	30	19
U1FS U1R3	5673	6178	5676	3	21	9/10/02	10:09	16	30	52
U1FS U1R5	5673	6178	5676	3	1	9/10/02	10:10	9	30	29
U1FS U1R5	5673	6178	5676	3	2	9/10/02	10:11	6	30	19
U1FS U1R5	5673	6178	5676	3	3	9/10/02	10:11	9	30	29
U1FS U1R5	5673	6178	5676	3	4	9/10/02	10:12	12	30	39
U1FS U1R5	5673	6178	5676	3	5	9/10/02	10:13	10	30	32
U1FS U1R5	5673	6178	5676	3	6	9/10/02	10:13	11	30	36
U1FS U1R5	5673	6178	5676	3	7	9/10/02	10:14	13	30	42
U1FS U1R5	5673	6178	5676	3	8	9/10/02	10:14	11	30	36
U1FS U1R5	5673	6178	5676	3	9	9/10/02	10:15	13	30	42
U1FS U1R5	5673	6178	5676	3	10	9/10/02	10:16	12	30	39
U1FS U1R5	5673	6178	5676	3	11	9/10/02	10:16	15	30	48
U1FS U1R5	5673	6178	5676	3	12	9/10/02	10:17	10	30	32
U1FS U1R5	5673	6178	5676	3	13	9/10/02	10:18	2	30	6
U1FS U1R5	5673	6178	5676	3	14	9/10/02	10:18	10	30	32
U1FS U1R5	5673	6178	5676	3	15	9/10/02	10:19	14	30	45
U1FS U1R5	5673	6178	5676	3	16	9/10/02	10:19	11	30	36

94-BLDG CHARACTERIZATION SURVEY SCANNING

RSDS# 02-TF-1466 RCT: DJA RCT: MAR

LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
U1FS U1R5	5673	6178	5676	3	17	9/10/02	10:20	3	30	10
U1FS U1R5	5673	6178	5676	3	18	9/10/02	10:21	11	30	36
U1FS U1R5	5673	6178	5676	3	19	9/10/02	10:21	11	30	36
U1FS U1R5	5673	6178	5676	3	20	9/10/02	10:22	10	30	32
U1FS U1R5	5673	6178	5676	3	21	9/10/02	10:22	13	30	42
U1FS U1R7	5673	6178	5676	3	1	9/10/02	12:24	6	30	19
U1FS U1R7	5673	6178	5676	3	2	9/10/02	12:25	5	30	16
U1FS U1R7	5673	6178	5676	3	3	9/10/02	12:26	3	30	10
U1FS U1R7	5673	6178	5676	3	4	9/10/02	12:26	3	30	10
U1FS U1R7	5673	6178	5676	3	5	9/10/02	12:27	8	30	26
U1FS U1R7	5673	6178	5676	3	6	9/10/02	12:28	3	30	10
U1FS U1R7	5673	6178	5676	3	7	9/10/02	12:28	3	30	10
U1FS U1R7	5673	6178	5676	3	8	9/10/02	12:29	7	30	23
U1FS U1R7	5673	6178	5676	3	9	9/10/02	12:29	3	30	10
U1FS U1R7	5673	6178	5676	3	10	9/10/02	12:30	5	30	16
U1FS U1R7	5673	6178	5676	3	11	9/10/02	12:31	9	30	29
U1FS U1R7	5673	6178	5676	3	12	9/10/02	12:31	6	30	19
U1FS U1R7	5673	6178	5676	3	13	9/10/02	12:32	12	30	39
U1FS U1R7	5673	6178	5676	3	14	9/10/02	12:32	12	30	39
U1FS U1R7	5673	6178	5676	3	15	9/10/02	12:33	5	30	16
U1FS U1R7	5673	6178	5676	3	16	9/10/02	12:34	8	30	26
U1FS U1R7	5673	6178	5676	3	17	9/10/02	12:34	7	30	23
U1FS U1R7	5673	6178	5676	3	18	9/10/02	12:35	13	30	42
U1FS U1R7	5673	6178	5676	3	19	9/10/02	12:36	14	30	45
U1FS U1R7	5673	6178	5676	3	20	9/10/02	12:36	9	30	29
U1FS U1R7	5673	6178	5676	3	21	9/10/02	12:37	5	30	16
U1FS U1R9	5673	6178	5676	3	1	9/10/02	12:38	4	30	13
U1FS U1R9	5673	6178	5676	3	2	9/10/02	12:39	11	30	36
U1FS U1R9	5673	6178	5676	3	3	9/10/02	12:39	9	30	29
U1FS U1R9	5673	6178	5676	3	4	9/10/02	12:40	4	30	13
U1FS U1R9	5673	6178	5676	3	5	9/10/02	12:41	9	30	29
U1FS U1R9	5673	6178	5676	3	6	9/10/02	12:41	15	30	48
U1FS U1R9	5673	6178	5676	3	7	9/10/02	12:42	7	30	23
U1FS U1R9	5673	6178	5676	3	8	9/10/02	12:43	5	30	16
U1FS U1R9	5673	6178	5676	3	9	9/10/02	12:43	7	30	23
U1FS U1R9	5673	6178	5676	3	10	9/10/02	12:44	4	30	13

94-BLDG CHARACTERIZATION SURVEY SCANNING

RSDS# 02-TF-1466 RCT: 29H RCT: HSR

LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
U1FS U1R9	5673	6178	5676	3	11	9/10/02	12:44	7	30	23
U1FS U1R9	5673	6178	5676	3	12	9/10/02	12:45	5	30	16
U1FS U1R9	5673	6178	5676	3	13	9/10/02	12:46	6	30	19
U1FS U1R9	5673	6178	5676	3	14	9/10/02	12:46	7	30	23
U1FS U1R9	5673	6178	5676	3	15	9/10/02	12:47	3	30	10
U1FS U1R9	5673	6178	5676	3	16	9/10/02	12:47	6	30	19
U1FS U1R9	5673	6178	5676	3	17	9/10/02	12:48	4	30	13
U1FS U1R9	5673	6178	5676	3	18	9/10/02	12:49	9	30	29
U1FS U1R9	5673	6178	5676	3	19	9/10/02	12:49	7	30	23
U1FS U1R9	5673	6178	5676	3	20	9/10/02	12:50	8	30	26
U1FS U1R9	5673	6178	5676	3	21	9/10/02	12:51	11	30	36
U1FS U1R11	5673	6178	5676	3	1	9/10/02	12:52	6	30	19
U1FS U1R11	5673	6178	5676	3	2	9/10/02	12:52	3	30	10
U1FS U1R11	5673	6178	5676	3	3	9/10/02	12:53	7	30	23
U1FS U1R11	5673	6178	5676	3	4	9/10/02	12:54	9	30	29
U1FS U1R11	5673	6178	5676	3	5	9/10/02	12:54	6	30	19
U1FS U1R11	5673	6178	5676	3	6	9/10/02	12:55	8	30	26
U1FS U1R11	5673	6178	5676	3	7	9/10/02	12:56	6	30	19
U1FS U1R11	5673	6178	5676	3	8	9/10/02	12:56	4	30	13
U1FS U1R11	5673	6178	5676	3	9	9/10/02	12:57	13	30	42
U1FS U1R11	5673	6178	5676	3	10	9/10/02	12:57	12	30	39
U1FS U1R11	5673	6178	5676	3	11	9/10/02	12:58	9	30	29
U1FS U1R11	5673	6178	5676	3	12	9/10/02	12:59	6	30	19
U1FS U1R11	5673	6178	5676	3	13	9/10/02	12:59	7	30	23
U1FS U1R11	5673	6178	5676	3	14	9/10/02	13:00	8	30	26
U1FS U1R11	5673	6178	5676	3	15	9/10/02	13:00	8	30	26
U1FS U1R11	5673	6178	5676	3	16	9/10/02	13:01	9	30	29
U1FS U1R11	5673	6178	5676	3	17	9/10/02	13:02	8	30	26
U1FS U1R11	5673	6178	5676	3	18	9/10/02	13:02	3	30	10
U1FS U1R11	5673	6178	5676	3	19	9/10/02	13:03	3	30	10
U1FS U1R11	5673	6178	5676	3	20	9/10/02	13:04	14	30	45
U1FS U1R11	5673	6178	5676	3	21	9/10/02	13:04	10	30	32
U1FS U1R13	5673	6178	5676	3	1	9/10/02	13:06	5	30	16
U1FS U1R13	5673	6178	5676	3	2	9/10/02	13:06	8	30	26
U1FS U1R13	5673	6178	5676	3	3	9/10/02	13:07	7	30	23
U1FS U1R13	5673	6178	5676	3	4	9/10/02	13:07	4	30	13

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94-BLDG CHARACTERIZATION SURVEY SCANNING

RSDS# 02-TF-1466 RCT: DJH RCT: MRK

LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
U1FS U1R13	5673	6178	5676	3	5	9/10/02	13:08	11	30	36
U1FS U1R13	5673	6178	5676	3	6	9/10/02	13:09	6	30	19
U1FS U1R13	5673	6178	5676	3	7	9/10/02	13:09	8	30	26
U1FS U1R13	5673	6178	5676	3	8	9/10/02	13:10	11	30	36
U1FS U1R13	5673	6178	5676	3	9	9/10/02	13:10	9	30	29
U1FS U1R13	5673	6178	5676	3	10	9/10/02	13:11	7	30	23
U1FS U1R13	5673	6178	5676	3	11	9/10/02	13:12	9	30	29
U1FS U1R13	5673	6178	5676	3	12	9/10/02	13:12	10	30	32
U1FS U1R13	5673	6178	5676	3	13	9/10/02	13:13	2	30	6
U1FS U1R13	5673	6178	5676	3	14	9/10/02	13:14	4	30	13
U1FS U1R13	5673	6178	5676	3	15	9/10/02	13:14	13	30	42
U1FS U1R13	5673	6178	5676	3	16	9/10/02	13:15	6	30	19
U1FS U1R13	5673	6178	5676	3	17	9/10/02	13:15	2	30	6
U1FS U1R13	5673	6178	5676	3	18	9/10/02	13:16	5	30	16
U1FS U1R13	5673	6178	5676	3	19	9/10/02	13:17	6	30	19
U1FS U1R13	5673	6178	5676	3	20	9/10/02	13:17	8	30	26
U1FS U1R13	5673	6178	5676	3	21	9/10/02	13:18	11	30	36
U1FS U1R2	5673	6178	5676	3	1	9/10/02	13:19	6	30	19
U1FS U1R2	5673	6178	5676	3	2	9/10/02	13:21	2	30	6
U1FS U1R2	5673	6178	5676	3	3	9/10/02	13:21	5	30	16
U1FS U1R2	5673	6178	5676	3	4	9/10/02	13:22	7	30	23
U1FS U1R2	5673	6178	5676	3	5	9/10/02	13:23	6	30	19
U1FS U1R2	5673	6178	5676	3	6	9/10/02	13:23	5	30	16
U1FS U1R2	5673	6178	5676	3	7	9/10/02	13:24	6	30	19
U1FS U1R2	5673	6178	5676	3	8	9/10/02	13:24	10	30	32
U1FS U1R2	5673	6178	5676	3	9	9/10/02	13:25	7	30	23
U1FS U1R2	5673	6178	5676	3	10	9/10/02	13:26	6	30	19
U1FS U1R2	5673	6178	5676	3	11	9/10/02	13:26	6	30	19
U1FS U1R2	5673	6178	5676	3	12	9/10/02	13:27	2	30	6
U1FS U1R2	5673	6178	5676	3	13	9/10/02	13:28	8	30	26
U1FS U1R2	5673	6178	5676	3	14	9/10/02	13:28	5	30	16
U1FS U1R2	5673	6178	5676	3	15	9/10/02	13:29	8	30	26
U1FS U1R2	5673	6178	5676	3	16	9/10/02	13:29	6	30	19
U1FS U1R2	5673	6178	5676	3	17	9/10/02	13:30	9	30	29
U1FS U1R2	5673	6178	5676	3	18	9/10/02	13:31	12	30	39
U1FS U1R2	5673	6178	5676	3	19	9/10/02	13:31	5	30	16
U1FS U1R2	5673	6178	5676	3	20	9/10/02	13:32	9	30	29

94-BLDG CHARACTERIZATION SURVEY SCANNING

RSDS# 02-TF-1466 RCT: DJA RCT: PBL

LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
U1FS U1R2	5673	6178	5676	3	21	9/10/02	13:32	3	30	10
U1FS U1R2	5673	6178	5676	3	22	9/10/02	13:33	4	30	13
U1FS U1R2	5673	6178	5676	3	23	9/10/02	13:34	8	30	26
U1FS U1R2	5673	6178	5676	3	24	9/10/02	13:34	2	30	6
U1FS U1R2	5673	6178	5676	3	25	9/10/02	13:35	6	30	19
U1FS U1R2	5673	6178	5676	3	26	9/10/02	13:36	7	30	23
U1FS U1R4	5673	6178	5676	3	1	9/10/02	13:36	8	30	26
U1FS U1R4	5673	6178	5676	3	2	9/10/02	13:37	7	30	23
U1FS U1R4	5673	6178	5676	3	3	9/10/02	13:37	3	30	10
U1FS U1R4	5673	6178	5676	3	4	9/10/02	13:38	3	30	10
U1FS U1R4	5673	6178	5676	3	5	9/10/02	13:39	5	30	16
U1FS U1R4	5673	6178	5676	3	6	9/10/02	13:39	12	30	39
U1FS U1R4	5673	6178	5676	3	7	9/10/02	13:40	3	30	10
U1FS U1R4	5673	6178	5676	3	8	9/10/02	13:41	2	30	6
U1FS U1R4	5673	6178	5676	3	9	9/10/02	13:41	6	30	19
U1FS U1R4	5673	6178	5676	3	10	9/10/02	13:42	4	30	13
U1FS U1R4	5673	6178	5676	3	11	9/10/02	13:42	8	30	26
U1FS U1R4	5673	6178	5676	3	12	9/10/02	13:43	7	30	23
U1FS U1R4	5673	6178	5676	3	13	9/10/02	13:44	5	30	16
U1FS U1R4	5673	6178	5676	3	14	9/10/02	13:44	7	30	23
U1FS U1R4	5673	6178	5676	3	15	9/10/02	13:45	9	30	29
U1FS U1R4	5673	6178	5676	3	16	9/10/02	13:45	14	30	45
U1FS U1R4	5673	6178	5676	3	17	9/10/02	13:46	9	30	29
U1FS U1R4	5673	6178	5676	3	18	9/10/02	13:47	4	30	13
U1FS U1R4	5673	6178	5676	3	19	9/10/02	13:47	6	30	19
U1FS U1R4	5673	6178	5676	3	20	9/10/02	13:48	5	30	16
U1FS U1R4	5673	6178	5676	3	21	9/10/02	13:49	4	30	13
U1FS U1R4	5673	6178	5676	3	22	9/10/02	13:49	5	30	16
U1FS U1R4	5673	6178	5676	3	23	9/10/02	13:50	2	30	6
U1FS U1R4	5673	6178	5676	3	24	9/10/02	13:50	1	30	3
U1FS U1R4	5673	6178	5676	3	25	9/10/02	13:51	7	30	23
U1FS U1R4	5673	6178	5676	3	26	9/10/02	13:52	5	30	16
U1FS U1R6	5673	6178	5676	3	1	9/10/02	13:52	8	30	26
U1FS U1R6	5673	6178	5676	3	2	9/10/02	13:54	6	30	19
U1FS U1R6	5673	6178	5676	3	3	9/10/02	13:54	3	30	10
U1FS U1R6	5673	6178	5676	3	4	9/10/02	13:55	7	30	23

94-BLDG CHARACTERIZATION SURVEY SCANNING

RSDS# 02-TF-1466 RCT: DJA RCT: [illegible]

LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
U1FS U1R6	5673	6178	5676	3	5	9/10/02	13:56	12	30	39
U1FS U1R6	5673	6178	5676	3	6	9/10/02	13:56	8	30	26
U1FS U1R6	5673	6178	5676	3	7	9/10/02	13:57	7	30	23
U1FS U1R6	5673	6178	5676	3	8	9/10/02	13:57	4	30	13
U1FS U1R6	5673	6178	5676	3	9	9/10/02	13:58	5	30	16
U1FS U1R6	5673	6178	5676	3	10	9/10/02	13:59	4	30	13
U1FS U1R6	5673	6178	5676	3	11	9/10/02	13:59	6	30	19
U1FS U1R6	5673	6178	5676	3	12	9/10/02	14:00	8	30	26
U1FS U1R6	5673	6178	5676	3	13	9/10/02	14:01	9	30	29
U1FS U1R6	5673	6178	5676	3	14	9/10/02	14:01	1	30	3
U1FS U1R6	5673	6178	5676	3	15	9/10/02	14:02	3	30	10
U1FS U1R6	5673	6178	5676	3	16	9/10/02	14:02	4	30	13
U1FS U1R6	5673	6178	5676	3	17	9/10/02	14:03	5	30	16
U1FS U1R6	5673	6178	5676	3	18	9/10/02	14:04	2	30	6
U1FS U1R6	5673	6178	5676	3	19	9/10/02	14:04	4	30	13
U1FS U1R6	5673	6178	5676	3	20	9/10/02	14:05	5	30	16
U1FS U1R6	5673	6178	5676	3	21	9/10/02	14:05	6	30	19
U1FS U1R6	5673	6178	5676	3	22	9/10/02	14:06	6	30	19
U1FS U1R6	5673	6178	5676	3	23	9/10/02	14:07	7	30	23
U1FS U1R6	5673	6178	5676	3	24	9/10/02	14:07	8	30	26
U1FS U1R6	5673	6178	5676	3	25	9/10/02	14:08	8	30	26
U1FS U1R6	5673	6178	5676	3	26	9/10/02	14:09	4	30	13
U1FS U1R8	5673	6178	5676	3	1	9/10/02	14:09	7	30	23
U1FS U1R8	5673	6178	5676	3	2	9/10/02	14:13	6	30	19
U1FS U1R8	5673	6178	5676	3	3	9/10/02	14:13	5	30	16
U1FS U1R8	5673	6178	5676	3	4	9/10/02	14:14	5	30	16
U1FS U1R8	5673	6178	5676	3	5	9/10/02	14:15	4	30	13
U1FS U1R8	5673	6178	5676	3	6	9/10/02	14:15	7	30	23
U1FS U1R8	5673	6178	5676	3	7	9/10/02	14:16	3	30	10
U1FS U1R8	5673	6178	5676	3	8	9/10/02	14:16	6	30	19
U1FS U1R8	5673	6178	5676	3	9	9/10/02	14:17	1	30	3
U1FS U1R8	5673	6178	5676	3	10	9/10/02	14:18	5	30	16
U1FS U1R8	5673	6178	5676	3	11	9/10/02	14:18	4	30	13
U1FS U1R8	5673	6178	5676	3	12	9/10/02	14:19	3	30	10
U1FS U1R8	5673	6178	5676	3	13	9/10/02	14:19	5	30	16
U1FS U1R8	5673	6178	5676	3	14	9/10/02	14:20	5	30	16
U1FS U1R8	5673	6178	5676	3	15	9/10/02	14:21	5	30	16

94-BLDG CHARACTERIZATION SURVEY SCANNING

RSDS# 02-TF-1466 RCT: DGA RCT: PGK

LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
U1FS U1R8	5673	6178	5676	3	16	9/10/02	14:21	11	30	36
U1FS U1R8	5673	6178	5676	3	17	9/10/02	14:22	9	30	29
U1FS U1R8	5673	6178	5676	3	18	9/10/02	14:23	9	30	29
U1FS U1R8	5673	6178	5676	3	19	9/10/02	14:23	7	30	23
U1FS U1R8	5673	6178	5676	3	20	9/10/02	14:24	11	30	36
U1FS U1R8	5673	6178	5676	3	21	9/10/02	14:24	2	30	6
U1FS U1R8	5673	6178	5676	3	22	9/10/02	14:25	5	30	16
U1FS U1R8	5673	6178	5676	3	23	9/10/02	14:26	8	30	26
U1FS U1R8	5673	6178	5676	3	24	9/10/02	14:26	3	30	10
U1FS U1R8	5673	6178	5676	3	25	9/10/02	14:27	14	30	45
U1FS U1R8	5673	6178	5676	3	26	9/10/02	14:27	5	30	16
U1FS U1R10	5673	6178	5676	3	1	9/10/02	14:28	9	30	29
U1FS U1R10	5673	6178	5676	3	2	9/10/02	14:30	3	30	10
U1FS U1R10	5673	6178	5676	3	3	9/10/02	14:31	5	30	16
U1FS U1R10	5673	6178	5676	3	4	9/10/02	14:31	8	30	26
U1FS U1R10	5673	6178	5676	3	5	9/10/02	14:32	7	30	23
U1FS U1R10	5673	6178	5676	3	6	9/10/02	14:32	2	30	6
U1FS U1R10	5673	6178	5676	3	7	9/10/02	14:33	3	30	10
U1FS U1R10	5673	6178	5676	3	8	9/10/02	14:34	2	30	6
U1FS U1R10	5673	6178	5676	3	9	9/10/02	14:34	5	30	16
U1FS U1R10	5673	6178	5676	3	10	9/10/02	14:35	6	30	19
U1FS U1R10	5673	6178	5676	3	11	9/10/02	14:35	5	30	16
U1FS U1R10	5673	6178	5676	3	12	9/10/02	14:36	9	30	29
U1FS U1R10	5673	6178	5676	3	13	9/10/02	14:37	8	30	26
U1FS U1R10	5673	6178	5676	3	14	9/10/02	14:37	4	30	13
U1FS U1R10	5673	6178	5676	3	15	9/10/02	14:38	3	30	10
U1FS U1R10	5673	6178	5676	3	16	9/10/02	14:39	8	30	26
U1FS U1R10	5673	6178	5676	3	17	9/10/02	14:39	5	30	16
U1FS U1R10	5673	6178	5676	3	18	9/10/02	14:40	5	30	16
U1FS U1R10	5673	6178	5676	3	19	9/10/02	14:40	0	30	0
U1FS U1R10	5673	6178	5676	3	20	9/10/02	14:41	7	30	23
U1FS U1R10	5673	6178	5676	3	21	9/10/02	14:42	5	30	16
U1FS U1R10	5673	6178	5676	3	22	9/10/02	14:42	9	30	29
U1FS U1R10	5673	6178	5676	3	23	9/10/02	14:43	5	30	16
U1FS U1R10	5673	6178	5676	3	24	9/10/02	14:44	5	30	16
U1FS U1R10	5673	6178	5676	3	25	9/10/02	14:44	3	30	10
U1FS U1R10	5673	6178	5676	3	26	9/10/02	14:45	8	30	26

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94-BLDG CHARACTERIZATION SURVEY SCANNING

RSDS# 02-TF-1466 RCT: [illegible] RCT: [illegible]

LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
U1FS U1R12	5673	6178	5676	3	1	9/10/02	14:45	7	30	23
U1FS U1R12	5673	6178	5676	3	2	9/10/02	14:47	7	30	23
U1FS U1R12	5673	6178	5676	3	3	9/10/02	14:48	7	30	23
U1FS U1R12	5673	6178	5676	3	4	9/10/02	14:48	4	30	13
U1FS U1R12	5673	6178	5676	3	5	9/10/02	14:49	1	30	3
U1FS U1R12	5673	6178	5676	3	6	9/10/02	14:49	7	30	23
U1FS U1R12	5673	6178	5676	3	7	9/10/02	14:50	2	30	6
U1FS U1R12	5673	6178	5676	3	8	9/10/02	14:51	7	30	23
U1FS U1R12	5673	6178	5676	3	9	9/10/02	14:51	9	30	29
U1FS U1R12	5673	6178	5676	3	10	9/10/02	14:52	3	30	10
U1FS U1R12	5673	6178	5676	3	11	9/10/02	14:53	9	30	29
U1FS U1R12	5673	6178	5676	3	12	9/10/02	14:53	3	30	10
U1FS U1R12	5673	6178	5676	3	13	9/10/02	14:54	4	30	13
U1FS U1R12	5673	6178	5676	3	14	9/10/02	14:54	6	30	19
U1FS U1R12	5673	6178	5676	3	15	9/10/02	14:55	8	30	26
U1FS U1R12	5673	6178	5676	3	16	9/10/02	14:56	6	30	19
U1FS U1R12	5673	6178	5676	3	17	9/10/02	14:56	4	30	13
U1FS U1R12	5673	6178	5676	3	18	9/10/02	14:57	5	30	16
U1FS U1R12	5673	6178	5676	3	19	9/10/02	14:57	3	30	10
U1FS U1R12	5673	6178	5676	3	20	9/10/02	14:58	4	30	13
U1FS U1R12	5673	6178	5676	3	21	9/10/02	14:59	10	30	32
U1FS U1R12	5673	6178	5676	3	22	9/10/02	14:59	3	30	10
U1FS U1R12	5673	6178	5676	3	23	9/10/02	15:00	10	30	32
U1FS U1R12	5673	6178	5676	3	24	9/10/02	15:01	6	30	19
U1FS U1R12	5673	6178	5676	3	25	9/10/02	15:01	2	30	6
U1FS U1R12	5673	6178	5676	3	26	9/10/02	15:02	10	30	32
U1FS U1R12	5673	6178	5676	3	1	9/10/02	15:02	6	30	19
U1FS U1R14	5673	6178	5676	3	2	9/10/02	15:04	7	30	23
U1FS U1R14	5673	6178	5676	3	3	9/10/02	15:05	7	30	23
U1FS U1R14	5673	6178	5676	3	4	9/10/02	15:05	6	30	19
U1FS U1R14	5673	6178	5676	3	5	9/10/02	15:06	6	30	19
U1FS U1R14	5673	6178	5676	3	6	9/10/02	15:07	2	30	6
U1FS U1R14	5673	6178	5676	3	7	9/10/02	15:07	4	30	13
U1FS U1R14	5673	6178	5676	3	8	9/10/02	15:08	4	30	13
U1FS U1R14	5673	6178	5676	3	9	9/10/02	15:08	2	30	6
U1FS U1R14	5673	6178	5676	3	10	9/10/02	15:09	9	30	29

94-BLDG CHARACTERIZATION SURVEY SCANNING

RSDS# 02-TF-1466 RCT: DJH RCT: PJK

LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
U1FS U1R14	5673	6178	5676	3	11	9/10/02	15:10	8	30	26
U1FS U1R14	5673	6178	5676	3	12	9/10/02	15:10	9	30	29
U1FS U1R14	5673	6178	5676	3	13	9/10/02	15:11	5	30	16
U1FS U1R14	5673	6178	5676	3	14	9/10/02	15:11	5	30	16
U1FS U1R14	5673	6178	5676	3	15	9/10/02	15:12	7	30	23
U1FS U1R14	5673	6178	5676	3	16	9/10/02	15:13	3	30	10
U1FS U1R14	5673	6178	5676	3	17	9/10/02	15:13	7	30	23
U1FS U1R14	5673	6178	5676	3	18	9/10/02	15:14	5	30	16
U1FS U1R14	5673	6178	5676	3	19	9/10/02	15:15	5	30	16
U1FS U1R14	5673	6178	5676	3	20	9/10/02	15:15	2	30	6
U1FS U1R14	5673	6178	5676	3	21	9/10/02	15:16	5	30	16
U1FS U1R14	5673	6178	5676	3	22	9/10/02	15:16	2	30	6
U1FS U1R14	5673	6178	5676	3	23	9/10/02	15:17	2	30	6
U1FS U1R14	5673	6178	5676	3	24	9/10/02	15:18	11	30	36
U1FS U1R14	5673	6178	5676	3	25	9/10/02	15:18	3	30	10
U1FS U1R14	5673	6178	5676	3	26	9/10/02	15:19	9	30	29

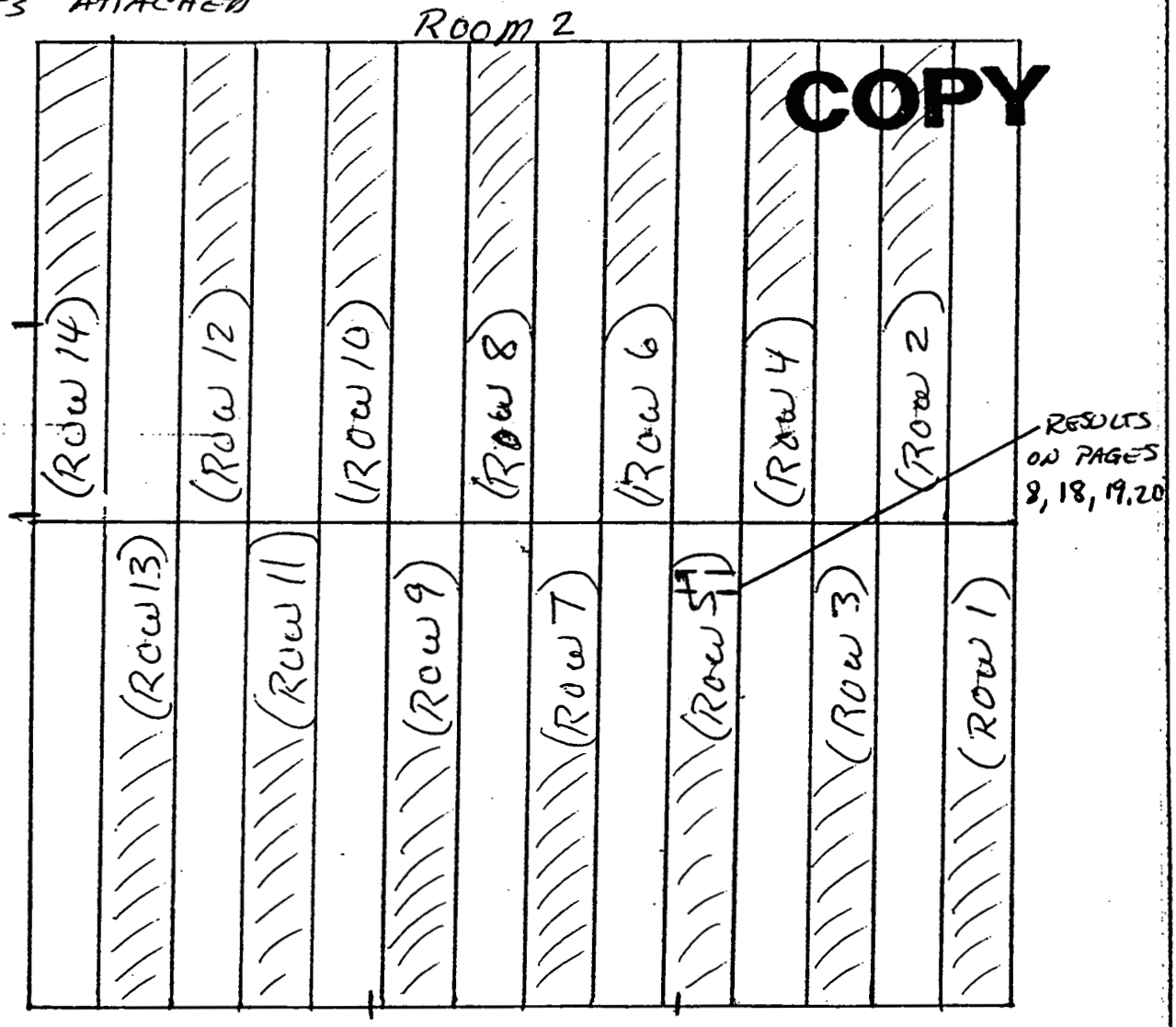
RADIOLOGICAL SURVEY DATA SHEET

1 of 20

LOCATION: (BLDG/AREA/ROOM) 94 - ROOM 2 AND 3	SURVEY NO. 02-TF-1467
PURPOSE: FLOOR SCAN UNIT 2 - ROOM 2 UNIT 4 - ROOM 3	RWP NO. N/A
	DATE: 9-11-02
	TIME: 1500

SHADED AREA IS AREA SCANNED
RESULTS ATTACHED

MAP/DRAWING SURVEYED IAW SURVEY PLAN 94-01



COPY

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

[redacted]

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
LUDLUM 2350	5673/5676	8-13-03
	N/A	

HP # 6678 7868	Date: 9-12-02
HP #	Date:
HP # 7707	Date: 9-18-02

ML-9620 (2-98)

2 of 20

Survey No. 02-TF-1467

RADIOLOGICAL SURVEY DATA SHEET (cont.)

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

N/A

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 res 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.

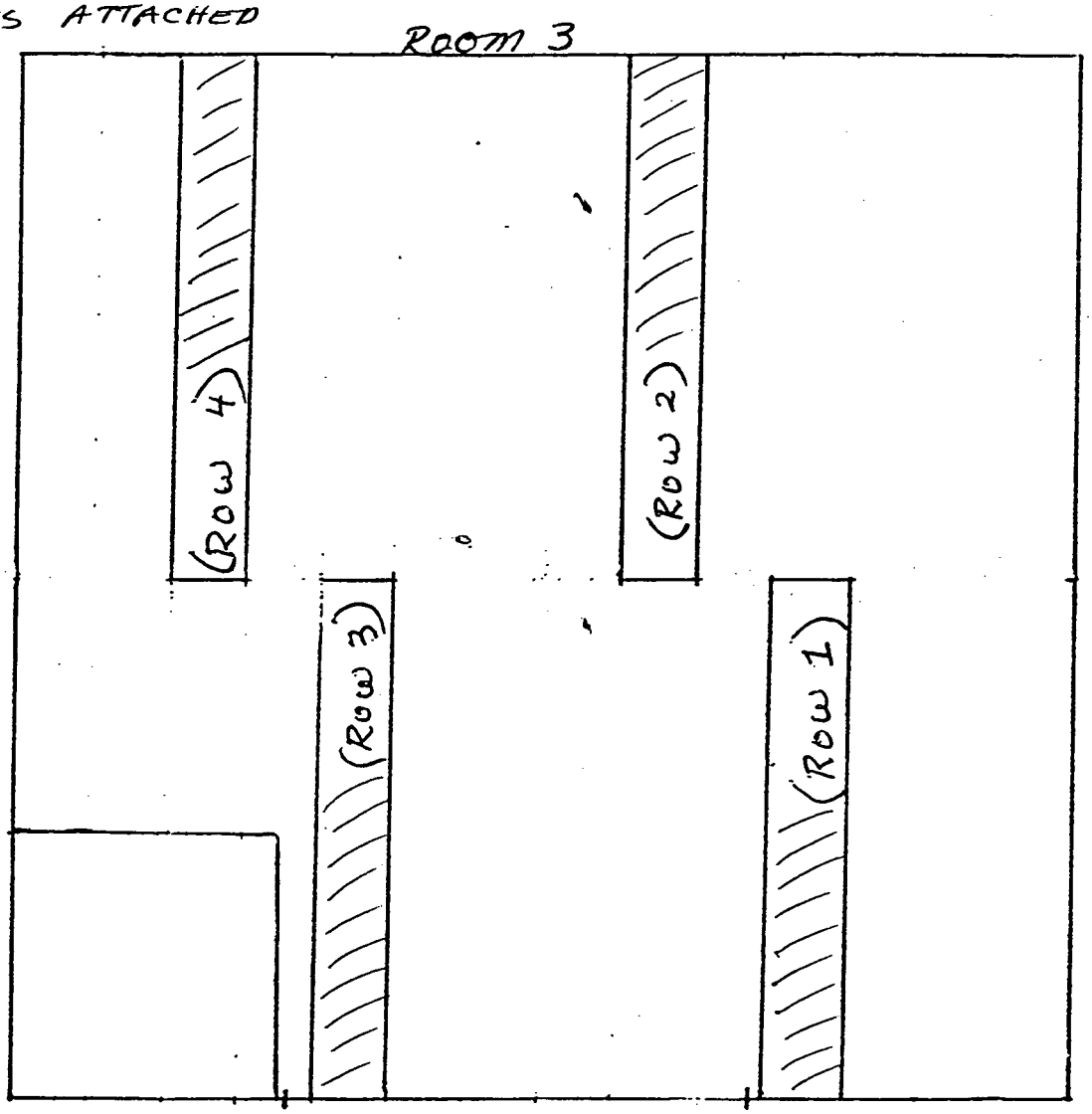
ML-9620A (4-98)

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) 94 - ROOM 2 AND 3	SURVEY NO. 02-TF-1467
PURPOSE: FLOOR SCAN UNIT 2 - ROOM 2 UNIT 4 - ROOM 3	RWP NO. N/A
	DATE: 9-11-02
	TIME: 1500

SHADED AREA IS AREA SCANNED
RESULTS ATTACHED

MAP/DRAWING SURVEYED IAW SURVEY PLAN 94-01



LEGEND: # = mrem/hr (γ) whole body
[illegible] (β+γ) exiting off 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
	SEE PAGE 1	

Completed by: (Signature)	HP #	Date:
Completed by: (Print Name)		
Counted by: (Signature)	HP #	Date:
Counted by: (Print Name)		
Reviewed/Approved by: (Signature)	HP #	Date:
Reviewed/Approved by: (Print Name)		

SEE PAGE 1

ML-9620 (2-98)

Survey No. 02-TF-1467

RADIOLOGICAL SURVEY DATA SHEET (cont.)

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

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

N A

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 resu 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)

94-BLDG CHARACTERIZATION SURVEY SCANNING

RSDS# 02-TF-1467 RCT: [illegible] RCT: [illegible]

43-20 BKG:	0	EFF:	0.172	PROBE AREA:	181	cm2	Surface Eff:		0.5	Detector # :	2
43-37 BKG:	0	EFF:	0.212	PROBE AREA:	584	cm2	Surface Eff:		0.5	Detector # :	3
LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2	
SRCBKG	5673	6178	5676	3		9/11/02	7:52	19	300	6	
SRCCHECK	5673	6178	5676	3		9/11/02	7:55	2136	60	3451	
SRCCHECK	5673	6178	5676	3		9/11/02	7:57	2217	60	3581	
SRCCHECK	5673	6178	5676	3		9/11/02	7:59	2201	60	3556	
SRCCHECK	5673	6178	5676	3		9/11/02	8:00	2173	60	3510	
SRCCHECK	5673	6178	5676	3		9/11/02	8:02	2198	60	3551	
SRCCHECK	5673	6178	5676	3		9/11/02	8:03	2206	60	3564	
U2FS U2R1	5673	6178	5676	3	1	9/11/02	8:07	5	30	16	
U2FS U2R1	5673	6178	5676	3	2	9/11/02	8:08	8	30	26	
U2FS U2R1	5673	6178	5676	3	3	9/11/02	8:09	7	30	23	
U2FS U2R1	5673	6178	5676	3	4	9/11/02	8:09	6	30	19	
U2FS U2R1	5673	6178	5676	3	5	9/11/02	8:10	9	30	29	
U2FS U2R1	5673	6178	5676	3	6	9/11/02	8:10	2	30	6	
U2FS U2R1	5673	6178	5676	3	7	9/11/02	8:11	9	30	29	
U2FS U2R1	5673	6178	5676	3	8	9/11/02	8:12	9	30	29	
U2FS U2R1	5673	6178	5676	3	9	9/11/02	8:12	4	30	13	
U2FS U2R1	5673	6178	5676	3	10	9/11/02	8:13	7	30	23	
U2FS U2R1	5673	6178	5676	3	11	9/11/02	8:14	8	30	26	
U2FS U2R1	5673	6178	5676	3	12	9/11/02	8:14	7	30	23	
U2FS U2R1	5673	6178	5676	3	13	9/11/02	8:15	6	30	19	
U2FS U2R1	5673	6178	5676	3	14	9/11/02	8:15	11	30	36	
U2FS U2R1	5673	6178	5676	3	15	9/11/02	8:16	7	30	23	
U2FS U2R1	5673	6178	5676	3	16	9/11/02	8:17	10	30	32	
U2FS U2R1	5673	6178	5676	3	17	9/11/02	8:17	5	30	16	
U2FS U2R1	5673	6178	5676	3	18	9/11/02	8:18	7	30	23	
U2FS U2R1	5673	6178	5676	3	19	9/11/02	8:18	7	30	23	
U2FS U2R1	5673	6178	5676	3	20	9/11/02	8:19	2	30	6	
U2FS U2R1	5673	6178	5676	3	21	9/11/02	8:20	2	30	6	
U2FS U2R1	5673	6178	5676	3	22	9/11/02	8:20	8	30	26	
U2FS U2R1	5673	6178	5676	3	23	9/11/02	8:21	7	30	23	
U2FS U2R1	5673	6178	5676	3	24	9/11/02	8:22	1	30	3	
U2FS U2R2	5673	6178	5676	3	1	9/11/02	8:23	4	30	13	
U2FS U2R2	5673	6178	5676	3	2	9/11/02	8:23	4	30	13	

94-BLDG CHARACTERIZATION SURVEY SCANNING

RSDS# 02-TF-1467 RCT: DJH RCT: MR

LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
U2FS U2R2	5673	6178	5676	3	3	9/11/02	8:24	4	30	13
U2FS U2R2	5673	6178	5676	3	4	9/11/02	8:25	12	30	39
U2FS U2R2	5673	6178	5676	3	5	9/11/02	8:25	7	30	23
U2FS U2R2	5673	6178	5676	3	6	9/11/02	8:26	8	30	26
U2FS U2R2	5673	6178	5676	3	7	9/11/02	8:26	13	30	42
U2FS U2R2	5673	6178	5676	3	8	9/11/02	8:27	7	30	23
U2FS U2R2	5673	6178	5676	3	9	9/11/02	8:28	6	30	19
U2FS U2R2	5673	6178	5676	3	10	9/11/02	8:28	4	30	13
U2FS U2R2	5673	6178	5676	3	11	9/11/02	8:29	10	30	32
U2FS U2R2	5673	6178	5676	3	12	9/11/02	8:29	3	30	10
U2FS U2R2	5673	6178	5676	3	13	9/11/02	8:30	7	30	23
U2FS U2R2	5673	6178	5676	3	14	9/11/02	8:31	13	30	42
U2FS U2R2	5673	6178	5676	3	15	9/11/02	8:31	6	30	19
U2FS U2R2	5673	6178	5676	3	16	9/11/02	8:32	6	30	19
U2FS U2R2	5673	6178	5676	3	17	9/11/02	8:33	5	30	16
U2FS U2R2	5673	6178	5676	3	18	9/11/02	8:33	10	30	32
U2FS U2R2	5673	6178	5676	3	19	9/11/02	8:34	6	30	19
U2FS U2R2	5673	6178	5676	3	20	9/11/02	8:34	10	30	32
U2FS U2R2	5673	6178	5676	3	21	9/11/02	8:35	7	30	23
U2FS U2R2	5673	6178	5676	3	22	9/11/02	8:36	9	30	29
U2FS U2R2	5673	6178	5676	3	23	9/11/02	8:36	3	30	10
U2FS U2R2	5673	6178	5676	3	24	9/11/02	8:37	3	30	10
U2FS U2R3	5673	6178	5676	3	1	9/11/02	8:38	6	30	19
U2FS U2R3	5673	6178	5676	3	2	9/11/02	8:39	5	30	16
U2FS U2R3	5673	6178	5676	3	3	9/11/02	8:39	6	30	19
U2FS U2R3	5673	6178	5676	3	4	9/11/02	8:40	2	30	6
U2FS U2R3	5673	6178	5676	3	5	9/11/02	8:41	8	30	26
U2FS U2R3	5673	6178	5676	3	6	9/11/02	8:41	8	30	26
U2FS U2R3	5673	6178	5676	3	7	9/11/02	8:42	6	30	19
U2FS U2R3	5673	6178	5676	3	8	9/11/02	8:42	7	30	23
U2FS U2R3	5673	6178	5676	3	9	9/11/02	8:43	9	30	29
U2FS U2R3	5673	6178	5676	3	10	9/11/02	8:44	7	30	23
U2FS U2R3	5673	6178	5676	3	11	9/11/02	8:44	7	30	23
U2FS U2R3	5673	6178	5676	3	12	9/11/02	8:45	11	30	36
U2FS U2R3	5673	6178	5676	3	13	9/11/02	8:46	8	30	26
U2FS U2R3	5673	6178	5676	3	14	9/11/02	8:46	7	30	23
U2FS U2R3	5673	6178	5676	3	15	9/11/02	8:47	1	30	3

94-BLDG CHARACTERIZATION SURVEY SCANNING

RSDS# 02-TF-1467 RCT: DJH RCT: MJR

LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
U2FS U2R3	5673	6178	5676	3	16	9/11/02	8:47	3	30	10
U2FS U2R3	5673	6178	5676	3	17	9/11/02	8:48	12	30	39
U2FS U2R3	5673	6178	5676	3	18	9/11/02	8:49	7	30	23
U2FS U2R3	5673	6178	5676	3	19	9/11/02	8:49	4	30	13
U2FS U2R3	5673	6178	5676	3	20	9/11/02	8:50	3	30	10
U2FS U2R3	5673	6178	5676	3	21	9/11/02	8:50	18	30	58
U2FS U2R3	5673	6178	5676	3	22	9/11/02	8:51	5	30	16
U2FS U2R3	5673	6178	5676	3	23	9/11/02	8:52	4	30	13
U2FS U2R3	5673	6178	5676	3	24	9/11/02	8:52	6	30	19
U2FS U2R4	5673	6178	5676	3	1	9/11/02	8:54	8	30	26
U2FS U2R4	5673	6178	5676	3	2	9/11/02	8:55	6	30	19
U2FS U2R4	5673	6178	5676	3	3	9/11/02	8:56	5	30	16
U2FS U2R4	5673	6178	5676	3	4	9/11/02	8:56	7	30	23
U2FS U2R4	5673	6178	5676	3	5	9/11/02	8:57	6	30	19
U2FS U2R4	5673	6178	5676	3	6	9/11/02	8:57	4	30	13
U2FS U2R4	5673	6178	5676	3	7	9/11/02	8:58	6	30	19
U2FS U2R4	5673	6178	5676	3	8	9/11/02	8:59	10	30	32
U2FS U2R4	5673	6178	5676	3	9	9/11/02	8:59	7	30	23
U2FS U2R4	5673	6178	5676	3	10	9/11/02	9:00	2	30	6
U2FS U2R4	5673	6178	5676	3	11	9/11/02	9:00	3	30	10
U2FS U2R4	5673	6178	5676	3	12	9/11/02	9:01	3	30	10
U2FS U2R4	5673	6178	5676	3	13	9/11/02	9:02	7	30	23
U2FS U2R4	5673	6178	5676	3	14	9/11/02	9:02	6	30	19
U2FS U2R4	5673	6178	5676	3	15	9/11/02	9:03	5	30	16
U2FS U2R4	5673	6178	5676	3	16	9/11/02	9:04	2	30	6
U2FS U2R4	5673	6178	5676	3	17	9/11/02	9:04	6	30	19
U2FS U2R4	5673	6178	5676	3	18	9/11/02	9:05	3	30	10
U2FS U2R4	5673	6178	5676	3	19	9/11/02	9:05	4	30	13
U2FS U2R4	5673	6178	5676	3	20	9/11/02	9:06	8	30	26
U2FS U2R4	5673	6178	5676	3	21	9/11/02	9:07	5	30	16
U2FS U2R4	5673	6178	5676	3	22	9/11/02	9:07	8	30	26
U2FS U2R4	5673	6178	5676	3	23	9/11/02	9:08	4	30	13
U2FS U2R4	5673	6178	5676	3	24	9/11/02	9:08	4	30	13
U2FS U2R5	5673	6178	5676	3	1	9/11/02	9:10	10	30	32
U2FS U2R5	5673	6178	5676	3	2	9/11/02	9:11	8	30	26
U2FS U2R5	5673	6178	5676	3	3	9/11/02	9:11	10	30	32

94-BLDG CHARACTERIZATION SURVEY, SCANNING

RSDS# 02-TF-1467 RCT: DJH RCT: [illegible]

LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
U2FS U2R5	5673	6178	5676	3	4	9/11/02	9:12	43	30	139
U2FS U2R5	5673	6178	5676	3	5	9/11/02	9:12	9	30	29
U2FS U2R5	5673	6178	5676	3	6	9/11/02	9:13	6	30	19
U2FS U2R5	5673	6178	5676	3	7	9/11/02	9:14	8	30	26
U2FS U2R5	5673	6178	5676	3	8	9/11/02	9:14	9	30	29
U2FS U2R5	5673	6178	5676	3	9	9/11/02	9:15	4	30	13
U2FS U2R5	5673	6178	5676	3	10	9/11/02	9:16	11	30	36
U2FS U2R5	5673	6178	5676	3	11	9/11/02	9:16	14	30	45
U2FS U2R5	5673	6178	5676	3	12	9/11/02	9:17	5	30	16
U2FS U2R5	5673	6178	5676	3	13	9/11/02	9:17	12	30	39
U2FS U2R5	5673	6178	5676	3	14	9/11/02	9:18	4	30	13
U2FS U2R5	5673	6178	5676	3	15	9/11/02	9:19	3	30	10
U2FS U2R5	5673	6178	5676	3	16	9/11/02	9:19	5	30	16
U2FS U2R5	5673	6178	5676	3	17	9/11/02	9:20	7	30	23
U2FS U2R5	5673	6178	5676	3	18	9/11/02	9:20	9	30	29
U2FS U2R5	5673	6178	5676	3	19	9/11/02	9:21	5	30	16
U2FS U2R5	5673	6178	5676	3	20	9/11/02	9:22	3	30	10
U2FS U2R5	5673	6178	5676	3	21	9/11/02	9:22	8	30	26
U2FS U2R5	5673	6178	5676	3	22	9/11/02	9:23	8	30	26
U2FS U2R5	5673	6178	5676	3	23	9/11/02	9:24	10	30	32
U2FS U2R5	5673	6178	5676	3	24	9/11/02	9:24	4	30	13
U2FS U2R6	5673	6178	5676	3	1	9/11/02	9:26	4	30	13
U2FS U2R6	5673	6178	5676	3	2	9/11/02	9:26	7	30	23
U2FS U2R6	5673	6178	5676	3	3	9/11/02	9:27	6	30	19
U2FS U2R6	5673	6178	5676	3	4	9/11/02	9:28	8	30	26
U2FS U2R6	5673	6178	5676	3	5	9/11/02	9:28	7	30	23
U2FS U2R6	5673	6178	5676	3	6	9/11/02	9:29	5	30	16
U2FS U2R6	5673	6178	5676	3	7	9/11/02	9:29	5	30	16
U2FS U2R6	5673	6178	5676	3	8	9/11/02	9:30	5	30	16
U2FS U2R6	5673	6178	5676	3	9	9/11/02	9:31	4	30	13
U2FS U2R6	5673	6178	5676	3	10	9/11/02	9:31	5	30	16
U2FS U2R6	5673	6178	5676	3	11	9/11/02	9:32	5	30	16
U2FS U2R6	5673	6178	5676	3	12	9/11/02	9:32	6	30	19
U2FS U2R6	5673	6178	5676	3	13	9/11/02	9:33	4	30	13
U2FS U2R6	5673	6178	5676	3	14	9/11/02	9:34	12	30	39
U2FS U2R6	5673	6178	5676	3	15	9/11/02	9:34	12	30	39
U2FS U2R6	5673	6178	5676	3	16	9/11/02	9:35	6	30	19

94-BLDG CHARACTERIZATION SURVEY SCANNING

RSDS# 02-TF-1467 RCT: DJH RCT: [illegible]

LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
U2FS U2R6	5673	6178	5676	3	17	9/11/02	9:36	7	30	23
U2FS U2R6	5673	6178	5676	3	18	9/11/02	9:36	4	30	13
U2FS U2R6	5673	6178	5676	3	19	9/11/02	9:37	8	30	26
U2FS U2R6	5673	6178	5676	3	20	9/11/02	9:37	4	30	13
U2FS U2R6	5673	6178	5676	3	21	9/11/02	9:38	9	30	29
U2FS U2R6	5673	6178	5676	3	22	9/11/02	9:39	7	30	23
U2FS U2R6	5673	6178	5676	3	23	9/11/02	9:39	6	30	19
U2FS U2R6	5673	6178	5676	3	24	9/11/02	9:40	8	30	26
U2FS U2R7	5673	6178	5676	3	1	9/11/02	9:42	4	30	13
U2FS U2R7	5673	6178	5676	3	2	9/11/02	9:43	2	30	6
U2FS U2R7	5673	6178	5676	3	3	9/11/02	9:44	9	30	29
U2FS U2R7	5673	6178	5676	3	4	9/11/02	9:44	8	30	26
U2FS U2R7	5673	6178	5676	3	5	9/11/02	9:45	7	30	23
U2FS U2R7	5673	6178	5676	3	6	9/11/02	9:46	4	30	13
U2FS U2R7	5673	6178	5676	3	7	9/11/02	9:46	7	30	23
U2FS U2R7	5673	6178	5676	3	8	9/11/02	9:47	7	30	23
U2FS U2R7	5673	6178	5676	3	9	9/11/02	9:47	7	30	23
U2FS U2R7	5673	6178	5676	3	10	9/11/02	9:48	13	30	42
U2FS U2R7	5673	6178	5676	3	11	9/11/02	9:49	2	30	6
U2FS U2R7	5673	6178	5676	3	12	9/11/02	9:49	7	30	23
U2FS U2R7	5673	6178	5676	3	13	9/11/02	9:50	5	30	16
U2FS U2R7	5673	6178	5676	3	14	9/11/02	9:50	6	30	19
U2FS U2R7	5673	6178	5676	3	15	9/11/02	9:51	8	30	26
U2FS U2R7	5673	6178	5676	3	16	9/11/02	9:52	8	30	26
U2FS U2R7	5673	6178	5676	3	17	9/11/02	9:52	8	30	26
U2FS U2R7	5673	6178	5676	3	18	9/11/02	9:53	8	30	26
U2FS U2R7	5673	6178	5676	3	19	9/11/02	9:54	9	30	29
U2FS U2R7	5673	6178	5676	3	20	9/11/02	9:54	6	30	19
U2FS U2R7	5673	6178	5676	3	21	9/11/02	9:55	11	30	36
U2FS U2R7	5673	6178	5676	3	22	9/11/02	9:55	4	30	13
U2FS U2R7	5673	6178	5676	3	23	9/11/02	9:56	10	30	32
U2FS U2R7	5673	6178	5676	3	24	9/11/02	9:57	9	30	29
U2FS U2R8	5673	6178	5676	3	1	9/11/02	9:58	7	30	23
U2FS U2R8	5673	6178	5676	3	2	9/11/02	9:58	7	30	23
U2FS U2R8	5673	6178	5676	3	3	9/11/02	9:59	5	30	16
U2FS U2R8	5673	6178	5676	3	4	9/11/02	10:00	5	30	16

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94-BLDG CHARACTERIZATION SURVEY, SCANNING

RSDS# 02-TF-1467 RCT: DJH RCT: MJK

LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
U2FS U2R8	5673	6178	5676	3	5	9/11/02	10:00	6	30	19
U2FS U2R8	5673	6178	5676	3	6	9/11/02	10:01	9	30	29
U2FS U2R8	5673	6178	5676	3	7	9/11/02	10:02	11	30	36
U2FS U2R8	5673	6178	5676	3	8	9/11/02	10:02	3	30	10
U2FS U2R8	5673	6178	5676	3	9	9/11/02	10:03	8	30	26
U2FS U2R8	5673	6178	5676	3	10	9/11/02	10:03	6	30	19
U2FS U2R8	5673	6178	5676	3	11	9/11/02	10:04	3	30	10
U2FS U2R8	5673	6178	5676	3	12	9/11/02	10:05	8	30	26
U2FS U2R8	5673	6178	5676	3	13	9/11/02	10:05	8	30	26
U2FS U2R8	5673	6178	5676	3	14	9/11/02	10:06	5	30	16
U2FS U2R8	5673	6178	5676	3	15	9/11/02	10:06	9	30	29
U2FS U2R8	5673	6178	5676	3	16	9/11/02	10:07	6	30	19
U2FS U2R8	5673	6178	5676	3	17	9/11/02	10:08	7	30	23
U2FS U2R8	5673	6178	5676	3	18	9/11/02	10:08	4	30	13
U2FS U2R8	5673	6178	5676	3	19	9/11/02	10:09	7	30	23
U2FS U2R8	5673	6178	5676	3	20	9/11/02	10:10	6	30	19
U2FS U2R8	5673	6178	5676	3	21	9/11/02	10:10	5	30	16
U2FS U2R8	5673	6178	5676	3	22	9/11/02	10:11	4	30	13
U2FS U2R8	5673	6178	5676	3	23	9/11/02	10:11	7	30	23
U2FS U2R8	5673	6178	5676	3	24	9/11/02	10:12	9	30	29
U2FS U2R9	5673	6178	5676	3	1	9/11/02	10:13	3	30	10
U2FS U2R9	5673	6178	5676	3	2	9/11/02	10:14	10	30	32
U2FS U2R9	5673	6178	5676	3	3	9/11/02	10:14	8	30	26
U2FS U2R9	5673	6178	5676	3	4	9/11/02	10:15	9	30	29
U2FS U2R9	5673	6178	5676	3	5	9/11/02	10:16	4	30	13
U2FS U2R9	5673	6178	5676	3	6	9/11/02	10:16	6	30	19
U2FS U2R9	5673	6178	5676	3	7	9/11/02	10:17	5	30	16
U2FS U2R9	5673	6178	5676	3	8	9/11/02	10:17	11	30	36
U2FS U2R9	5673	6178	5676	3	9	9/11/02	10:18	7	30	23
U2FS U2R9	5673	6178	5676	3	10	9/11/02	10:19	3	30	10
U2FS U2R9	5673	6178	5676	3	11	9/11/02	10:19	1	30	3
U2FS U2R9	5673	6178	5676	3	12	9/11/02	10:20	3	30	10
U2FS U2R9	5673	6178	5676	3	13	9/11/02	10:20	8	30	26
U2FS U2R9	5673	6178	5676	3	14	9/11/02	10:21	5	30	16
U2FS U2R9	5673	6178	5676	3	15	9/11/02	10:22	8	30	26
U2FS U2R9	5673	6178	5676	3	16	9/11/02	10:22	6	30	19
U2FS U2R9	5673	6178	5676	3	17	9/11/02	10:23	9	30	29

94-BLDG CHARACTERIZATION SURVEY, SCANNING

RSDS# 02-TF-1467 RCT: DJH RCT: [illegible]

LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
U2FS U2R9	5673	6178	5676	3	18	9/11/02	10:24	11	30	36
U2FS U2R9	5673	6178	5676	3	19	9/11/02	10:24	3	30	10
U2FS U2R9	5673	6178	5676	3	20	9/11/02	10:25	10	30	32
U2FS U2R9	5673	6178	5676	3	21	9/11/02	10:25	7	30	23
U2FS U2R9	5673	6178	5676	3	22	9/11/02	10:26	5	30	16
U2FS U2R9	5673	6178	5676	3	23	9/11/02	10:27	5	30	16
U2FS U2R9	5673	6178	5676	3	24	9/11/02	10:27	2	30	6
U2FS U2R10	5673	6178	5676	3	1	9/11/02	12:14	6	30	19
U2FS U2R10	5673	6178	5676	3	2	9/11/02	12:15	5	30	16
U2FS U2R10	5673	6178	5676	3	3	9/11/02	12:15	7	30	23
U2FS U2R10	5673	6178	5676	3	4	9/11/02	12:16	7	30	23
U2FS U2R10	5673	6178	5676	3	5	9/11/02	12:16	3	30	10
U2FS U2R10	5673	6178	5676	3	6	9/11/02	12:17	6	30	19
U2FS U2R10	5673	6178	5676	3	7	9/11/02	12:18	10	30	32
U2FS U2R10	5673	6178	5676	3	8	9/11/02	12:18	8	30	26
U2FS U2R10	5673	6178	5676	3	9	9/11/02	12:19	3	30	10
U2FS U2R10	5673	6178	5676	3	10	9/11/02	12:19	10	30	32
U2FS U2R10	5673	6178	5676	3	11	9/11/02	12:20	7	30	23
U2FS U2R10	5673	6178	5676	3	12	9/11/02	12:21	9	30	29
U2FS U2R10	5673	6178	5676	3	13	9/11/02	12:21	9	30	29
U2FS U2R10	5673	6178	5676	3	14	9/11/02	12:22	11	30	36
U2FS U2R10	5673	6178	5676	3	15	9/11/02	12:23	12	30	39
U2FS U2R10	5673	6178	5676	3	16	9/11/02	12:23	5	30	16
U2FS U2R10	5673	6178	5676	3	17	9/11/02	12:24	5	30	16
U2FS U2R10	5673	6178	5676	3	18	9/11/02	12:24	8	30	26
U2FS U2R10	5673	6178	5676	3	19	9/11/02	12:25	11	30	36
U2FS U2R10	5673	6178	5676	3	20	9/11/02	12:26	3	30	10
U2FS U2R10	5673	6178	5676	3	21	9/11/02	12:26	6	30	19
U2FS U2R10	5673	6178	5676	3	22	9/11/02	12:27	6	30	19
U2FS U2R10	5673	6178	5676	3	23	9/11/02	12:27	4	30	13
U2FS U2R10	5673	6178	5676	3	24	9/11/02	12:28	6	30	19
U2FS U2R11	5673	6178	5676	3	1	9/11/02	12:30	2	30	6
U2FS U2R11	5673	6178	5676	3	2	9/11/02	12:30	6	30	19
U2FS U2R11	5673	6178	5676	3	3	9/11/02	12:31	2	30	6
U2FS U2R11	5673	6178	5676	3	4	9/11/02	12:31	7	30	23
U2FS U2R11	5673	6178	5676	3	5	9/11/02	12:32	5	30	16

94-BLDG CHARACTERIZATION SURVEY SCANNING

RSDS# 02-TF-1467 RCT: DJH RCT: MK

LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
U2FS U2R11	5673	6178	5676	3	6	9/11/02	12:33	4	30	13
U2FS U2R11	5673	6178	5676	3	7	9/11/02	12:33	9	30	29
U2FS U2R11	5673	6178	5676	3	8	9/11/02	12:34	6	30	19
U2FS U2R11	5673	6178	5676	3	9	9/11/02	12:34	3	30	10
U2FS U2R11	5673	6178	5676	3	10	9/11/02	12:35	6	30	19
U2FS U2R11	5673	6178	5676	3	11	9/11/02	12:36	9	30	29
U2FS U2R11	5673	6178	5676	3	12	9/11/02	12:36	3	30	10
U2FS U2R11	5673	6178	5676	3	13	9/11/02	12:37	9	30	29
U2FS U2R11	5673	6178	5676	3	14	9/11/02	12:38	4	30	13
U2FS U2R11	5673	6178	5676	3	15	9/11/02	12:38	10	30	32
U2FS U2R11	5673	6178	5676	3	16	9/11/02	12:39	5	30	16
U2FS U2R11	5673	6178	5676	3	17	9/11/02	12:39	4	30	13
U2FS U2R11	5673	6178	5676	3	18	9/11/02	12:40	7	30	23
U2FS U2R11	5673	6178	5676	3	19	9/11/02	12:41	6	30	19
U2FS U2R11	5673	6178	5676	3	20	9/11/02	12:41	5	30	16
U2FS U2R11	5673	6178	5676	3	21	9/11/02	12:42	9	30	29
U2FS U2R11	5673	6178	5676	3	22	9/11/02	12:42	3	30	10
U2FS U2R11	5673	6178	5676	3	23	9/11/02	12:43	0	30	0
U2FS U2R11	5673	6178	5676	3	24	9/11/02	12:44	7	30	23
U2FS U2R12	5673	6178	5676	3	1	9/11/02	12:45	7	30	23
U2FS U2R12	5673	6178	5676	3	2	9/11/02	12:46	5	30	16
U2FS U2R12	5673	6178	5676	3	3	9/11/02	12:46	6	30	19
U2FS U2R12	5673	6178	5676	3	4	9/11/02	12:47	6	30	19
U2FS U2R12	5673	6178	5676	3	5	9/11/02	12:48	3	30	10
U2FS U2R12	5673	6178	5676	3	6	9/11/02	12:48	4	30	13
U2FS U2R12	5673	6178	5676	3	7	9/11/02	12:49	6	30	19
U2FS U2R12	5673	6178	5676	3	8	9/11/02	12:49	11	30	36
U2FS U2R12	5673	6178	5676	3	9	9/11/02	12:50	7	30	23
U2FS U2R12	5673	6178	5676	3	10	9/11/02	12:51	10	30	32
U2FS U2R12	5673	6178	5676	3	11	9/11/02	12:51	7	30	23
U2FS U2R12	5673	6178	5676	3	12	9/11/02	12:52	8	30	26
U2FS U2R12	5673	6178	5676	3	13	9/11/02	12:52	7	30	23
U2FS U2R12	5673	6178	5676	3	14	9/11/02	12:53	19	30	61
U2FS U2R12	5673	6178	5676	3	15	9/11/02	12:54	4	30	13
U2FS U2R12	5673	6178	5676	3	16	9/11/02	12:54	2	30	6
U2FS U2R12	5673	6178	5676	3	17	9/11/02	12:55	2	30	6
U2FS U2R12	5673	6178	5676	3	18	9/11/02	12:56	5	30	16

94-BLDG CHARACTERIZATION SURVEY SCANNING

RSDS# 02-TF-1467 RCT: DGA RCT: [illegible]

LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
U2FS U2R12	5673	6178	5676	3	19	9/11/02	12:56	3	30	10
U2FS U2R12	5673	6178	5676	3	20	9/11/02	12:57	4	30	13
U2FS U2R12	5673	6178	5676	3	21	9/11/02	12:57	7	30	23
U2FS U2R12	5673	6178	5676	3	22	9/11/02	12:58	5	30	16
U2FS U2R12	5673	6178	5676	3	23	9/11/02	12:59	6	30	19
U2FS U2R12	5673	6178	5676	3	24	9/11/02	12:59	6	30	19
U2FS U2R13	5673	6178	5676	3	1	9/11/02	13:00	6	30	19
U2FS U2R13	5673	6178	5676	3	2	9/11/02	13:01	5	30	16
U2FS U2R13	5673	6178	5676	3	3	9/11/02	13:02	6	30	19
U2FS U2R13	5673	6178	5676	3	4	9/11/02	13:02	5	30	16
U2FS U2R13	5673	6178	5676	3	5	9/11/02	13:03	2	30	6
U2FS U2R13	5673	6178	5676	3	6	9/11/02	13:04	4	30	13
U2FS U2R13	5673	6178	5676	3	7	9/11/02	13:04	4	30	13
U2FS U2R13	5673	6178	5676	3	8	9/11/02	13:05	6	30	19
U2FS U2R13	5673	6178	5676	3	9	9/11/02	13:05	8	30	26
U2FS U2R13	5673	6178	5676	3	10	9/11/02	13:06	9	30	29
U2FS U2R13	5673	6178	5676	3	11	9/11/02	13:07	3	30	10
U2FS U2R13	5673	6178	5676	3	12	9/11/02	13:07	0	30	0
U2FS U2R13	5673	6178	5676	3	13	9/11/02	13:08	3	30	10
U2FS U2R13	5673	6178	5676	3	14	9/11/02	13:08	5	30	16
U2FS U2R13	5673	6178	5676	3	15	9/11/02	13:09	3	30	10
U2FS U2R13	5673	6178	5676	3	16	9/11/02	13:10	4	30	13
U2FS U2R13	5673	6178	5676	3	17	9/11/02	13:10	2	30	6
U2FS U2R13	5673	6178	5676	3	18	9/11/02	13:11	5	30	16
U2FS U2R13	5673	6178	5676	3	19	9/11/02	13:12	2	30	6
U2FS U2R13	5673	6178	5676	3	20	9/11/02	13:12	6	30	19
U2FS U2R13	5673	6178	5676	3	21	9/11/02	13:13	7	30	23
U2FS U2R13	5673	6178	5676	3	22	9/11/02	13:13	5	30	16
U2FS U2R13	5673	6178	5676	3	23	9/11/02	13:14	9	30	29
U2FS U2R13	5673	6178	5676	3	24	9/11/02	13:15	5	30	16
U2FS U2R14	5673	6178	5676	3	1	9/11/02	13:17	11	30	36
U2FS U2R14	5673	6178	5676	3	2	9/11/02	13:17	5	30	16
U2FS U2R14	5673	6178	5676	3	3	9/11/02	13:18	4	30	13
U2FS U2R14	5673	6178	5676	3	4	9/11/02	13:19	5	30	16
U2FS U2R14	5673	6178	5676	3	5	9/11/02	13:19	6	30	19
U2FS U2R14	5673	6178	5676	3	6	9/11/02	13:20	3	30	10

94-BLDG CHARACTERIZATION SURVEY SCANNING

RSDS# 02-TF-1467 RCT: DGH RCT: [illegible]

LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
U2FS U2R14	5673	6178	5676	3	7	9/11/02	13:20	3	30	10
U2FS U2R14	5673	6178	5676	3	8	9/11/02	13:21	1	30	3
U2FS U2R14	5673	6178	5676	3	9	9/11/02	13:22	4	30	13
U2FS U2R14	5673	6178	5676	3	10	9/11/02	13:22	9	30	29
U2FS U2R14	5673	6178	5676	3	11	9/11/02	13:23	4	30	13
U2FS U2R14	5673	6178	5676	3	12	9/11/02	13:23	7	30	23
U2FS U2R14	5673	6178	5676	3	13	9/11/02	13:24	11	30	36
U2FS U2R14	5673	6178	5676	3	14	9/11/02	13:25	12	30	39
U2FS U2R14	5673	6178	5676	3	15	9/11/02	13:25	5	30	16
U2FS U2R14	5673	6178	5676	3	16	9/11/02	13:26	3	30	10
U2FS U2R14	5673	6178	5676	3	17	9/11/02	13:27	4	30	13
U2FS U2R14	5673	6178	5676	3	18	9/11/02	13:27	2	30	6
U2FS U2R14	5673	6178	5676	3	19	9/11/02	13:28	3	30	10
U2FS U2R14	5673	6178	5676	3	20	9/11/02	13:28	4	30	13
U2FS U2R14	5673	6178	5676	3	21	9/11/02	13:29	5	30	16
U2FS U2R14	5673	6178	5676	3	22	9/11/02	13:30	7	30	23
U2FS U2R14	5673	6178	5676	3	23	9/11/02	13:30	6	30	19
U2FS U2R14	5673	6178	5676	3	24	9/11/02	13:31	5	30	16
U4FS U4R1	5673	6178	5676	3	1	9/11/02	13:37	8	30	26
U4FS U4R1	5673	6178	5676	3	2	9/11/02	13:38	8	30	26
U4FS U4R1	5673	6178	5676	3	3	9/11/02	13:38	4	30	13
U4FS U4R1	5673	6178	5676	3	4	9/11/02	13:39	2	30	6
U4FS U4R1	5673	6178	5676	3	5	9/11/02	13:40	3	30	10
U4FS U4R1	5673	6178	5676	3	6	9/11/02	13:40	6	30	19
U4FS U4R1	5673	6178	5676	3	7	9/11/02	13:41	3	30	10
U4FS U4R1	5673	6178	5676	3	8	9/11/02	13:42	4	30	13
U4FS U4R1	5673	6178	5676	3	9	9/11/02	13:42	4	30	13
U4FS U4R1	5673	6178	5676	3	10	9/11/02	13:43	5	30	16
U4FS U4R1	5673	6178	5676	3	11	9/11/02	13:43	4	30	13
U4FS U4R1	5673	6178	5676	3	12	9/11/02	13:44	7	30	23
U4FS U4R1	5673	6178	5676	3	13	9/11/02	13:45	8	30	26
U4FS U4R1	5673	6178	5676	3	14	9/11/02	13:45	4	30	13
U4FS U4R1	5673	6178	5676	3	15	9/11/02	13:46	3	30	10
U4FS U4R1	5673	6178	5676	3	16	9/11/02	13:46	7	30	23
U4FS U4R1	5673	6178	5676	3	17	9/11/02	13:47	5	30	16
U4FS U4R1	5673	6178	5676	3	18	9/11/02	13:48	8	30	26
U4FS U4R1	5673	6178	5676	3	19	9/11/02	13:48	5	30	16

 G-986 164

94-BLDG CHARACTERIZATION SURVEY SCANNING

RSDS# 02-TF-1467 RCT: DJH RCT: PGK

LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
U4FS U4R1	5673	6178	5676	3	20	9/11/02	13:49	7	30	23
U4FS U4R1	5673	6178	5676	3	21	9/11/02	13:50	6	30	19
U4FS U4R1	5673	6178	5676	3	22	9/11/02	13:50	4	30	13
U4FS U4R1	5673	6178	5676	3	23	9/11/02	13:51	6	30	19
U4FS U4R1	5673	6178	5676	3	24	9/11/02	13:51	9	30	29
U4FS U4R2	5673	6178	5676	3	1	9/11/02	13:52	7	30	23
U4FS U4R2	5673	6178	5676	3	2	9/11/02	13:53	9	30	29
U4FS U4R2	5673	6178	5676	3	3	9/11/02	13:54	8	30	26
U4FS U4R2	5673	6178	5676	3	4	9/11/02	13:54	3	30	10
U4FS U4R2	5673	6178	5676	3	5	9/11/02	13:55	8	30	26
U4FS U4R2	5673	6178	5676	3	6	9/11/02	13:56	3	30	10
U4FS U4R2	5673	6178	5676	3	7	9/11/02	13:56	1	30	3
U4FS U4R2	5673	6178	5676	3	8	9/11/02	13:57	3	30	10
U4FS U4R2	5673	6178	5676	3	9	9/11/02	13:57	7	30	23
U4FS U4R2	5673	6178	5676	3	10	9/11/02	13:58	6	30	19
U4FS U4R2	5673	6178	5676	3	11	9/11/02	13:59	7	30	23
U4FS U4R2	5673	6178	5676	3	12	9/11/02	13:59	3	30	10
U4FS U4R2	5673	6178	5676	3	13	9/11/02	14:00	8	30	26
U4FS U4R2	5673	6178	5676	3	14	9/11/02	14:00	7	30	23
U4FS U4R2	5673	6178	5676	3	15	9/11/02	14:01	3	30	10
U4FS U4R2	5673	6178	5676	3	16	9/11/02	14:02	5	30	16
U4FS U4R2	5673	6178	5676	3	17	9/11/02	14:02	4	30	13
U4FS U4R2	5673	6178	5676	3	18	9/11/02	14:03	3	30	10
U4FS U4R2	5673	6178	5676	3	19	9/11/02	14:04	4	30	13
U4FS U4R2	5673	6178	5676	3	20	9/11/02	14:04	8	30	26
U4FS U4R2	5673	6178	5676	3	21	9/11/02	14:05	8	30	26
U4FS U4R2	5673	6178	5676	3	22	9/11/02	14:05	5	30	16
U4FS U4R2	5673	6178	5676	3	23	9/11/02	14:06	4	30	13
U4FS U4R2	5673	6178	5676	3	24	9/11/02	14:07	4	30	13
U4FS U4R3	5673	6178	5676	3	1	9/11/02	14:08	8	30	26
U4FS U4R3	5673	6178	5676	3	2	9/11/02	14:09	2	30	6
U4FS U4R3	5673	6178	5676	3	3	9/11/02	14:09	6	30	19
U4FS U4R3	5673	6178	5676	3	4	9/11/02	14:10	6	30	19
U4FS U4R3	5673	6178	5676	3	5	9/11/02	14:11	8	30	26
U4FS U4R3	5673	6178	5676	3	6	9/11/02	14:11	4	30	13
U4FS U4R3	5673	6178	5676	3	7	9/11/02	14:12	13	30	42

94-BLDG CHARACTERIZATION SURVEY SCANNING

RSDS# 02-TF-1467 RCT: DJH RCT: MK

LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
U4FS U4R3	5673	6178	5676	3	8	9/11/02	14:12	4	30	13
U4FS U4R3	5673	6178	5676	3	9	9/11/02	14:13	10	30	32
U4FS U4R3	5673	6178	5676	3	10	9/11/02	14:14	5	30	16
U4FS U4R3	5673	6178	5676	3	11	9/11/02	14:14	4	30	13
U4FS U4R3	5673	6178	5676	3	12	9/11/02	14:15	4	30	13
U4FS U4R3	5673	6178	5676	3	13	9/11/02	14:16	7	30	23
U4FS U4R3	5673	6178	5676	3	14	9/11/02	14:16	7	30	23
U4FS U4R3	5673	6178	5676	3	15	9/11/02	14:17	6	30	19
U4FS U4R3	5673	6178	5676	3	16	9/11/02	14:17	12	30	39
U4FS U4R3	5673	6178	5676	3	17	9/11/02	14:18	7	30	23
U4FS U4R3	5673	6178	5676	3	18	9/11/02	14:19	11	30	36
U4FS U4R3	5673	6178	5676	3	19	9/11/02	14:19	13	30	42
U4FS U4R3	5673	6178	5676	3	20	9/11/02	14:20	9	30	29
U4FS U4R3	5673	6178	5676	3	21	9/11/02	14:20	7	30	23
U4FS U4R3	5673	6178	5676	3	22	9/11/02	14:21	6	30	19
U4FS U4R3	5673	6178	5676	3	23	9/11/02	14:22	6	30	19
U4FS U4R3	5673	6178	5676	3	24	9/11/02	14:22	7	30	23
U4FS U4R4	5673	6178	5676	3	1	9/11/02	14:24	9	30	29
U4FS U4R4	5673	6178	5676	3	2	9/11/02	14:25	9	30	29
U4FS U4R4	5673	6178	5676	3	3	9/11/02	14:25	7	30	23
U4FS U4R4	5673	6178	5676	3	4	9/11/02	14:26	6	30	19
U4FS U4R4	5673	6178	5676	3	5	9/11/02	14:27	6	30	19
U4FS U4R4	5673	6178	5676	3	6	9/11/02	14:27	7	30	23
U4FS U4R4	5673	6178	5676	3	7	9/11/02	14:28	7	30	23
U4FS U4R4	5673	6178	5676	3	8	9/11/02	14:28	7	30	23
U4FS U4R4	5673	6178	5676	3	9	9/11/02	14:29	8	30	26
U4FS U4R4	5673	6178	5676	3	10	9/11/02	14:30	5	30	16
U4FS U4R4	5673	6178	5676	3	11	9/11/02	14:30	7	30	23
U4FS U4R4	5673	6178	5676	3	12	9/11/02	14:31	3	30	10
U4FS U4R4	5673	6178	5676	3	13	9/11/02	14:32	12	30	39
U4FS U4R4	5673	6178	5676	3	14	9/11/02	14:32	8	30	26
U4FS U4R4	5673	6178	5676	3	15	9/11/02	14:33	7	30	23
U4FS U4R4	5673	6178	5676	3	16	9/11/02	14:33	10	30	32
U4FS U4R4	5673	6178	5676	3	17	9/11/02	14:34	7	30	23
U4FS U4R4	5673	6178	5676	3	18	9/11/02	14:35	6	30	19
U4FS U4R4	5673	6178	5676	3	19	9/11/02	14:35	3	30	10
U4FS U4R4	5673	6178	5676	3	20	9/11/02	14:36	2	30	6

94-BLDG CHARACTERIZATION SURVEY SCANNING

RSDS# 02-TF-1467 RCT: DGH RCT: MBK

LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
U4FS U4R4	5673	6178	5676	3	21	9/11/02	14:36	7	30	23
U4FS U4R4	5673	6178	5676	3	22	9/11/02	14:37	2	30	6
U4FS U4R4	5673	6178	5676	3	23	9/11/02	14:38	3	30	10
U4FS U4R4	5673	6178	5676	3	24	9/11/02	14:38	4	30	13

94-BLDG CHARACTERIZATION SURVEY SCANNING RE-CHECK

RSDS# 02-TF-1467 RCT: DJH RCT: PMR

43-20 BKG:	0	EFF:	0.172	PROBE AREA:	181	cm2	Surface Eff:		0.5	Detector # :
43-37 BKG:	0	EFF:	0.212	PROBE AREA:	584	cm2	Surface Eff:		0.5	Detector # :
LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
SRCBKG	5673	6178	5676	3	0	9/13/02	12:15	30	300	10
SRCCHECK	5673	6178	5676	3	1	9/13/02	12:17	2134	60	3447
SRCCHECK	5673	6178	5676	3	2	9/13/02	12:19	2193	60	3543
SRCCHECK	5673	6178	5676	3	3	9/13/02	12:20	2140	60	3457
SRCCHECK	5673	6178	5676	3	4	9/13/02	12:22	2208	60	3567
SRCCHECK	5673	6178	5676	3	5	9/13/02	12:23	2097	60	3388
SRCCHECK	5673	6178	5676	3	6	9/13/02	12:24	2245	60	3627
ROW 5	5673	6178	5676	3	7	9/13/02	12:28	8	30	26
ROW 5	5673	6178	5676	3	8	9/13/02	12:28	35	30	113
ROW 5	5673	6178	5676	3	9	9/13/02	12:29	8	30	26
ROW 5	5673	6178	5676	3	10	9/13/02	12:29	7	30	23
ROW 5	5673	6178	5676	3	11	9/13/02	12:30	8	30	26
ROW 4	5673	6178	5676	3	12	9/13/02	12:31	7	30	23
ROW 4	5673	6178	5676	3	13	9/13/02	12:32	6	30	19
ROW 4	5673	6178	5676	3	14	9/13/02	12:32	7	30	23
ROW 4	5673	6178	5676	3	15	9/13/02	12:33	7	30	23
ROW 4	5673	6178	5676	3	16	9/13/02	12:33	4	30	13
ROW 6	5673	6178	5676	3	17	9/13/02	12:35	5	30	16
ROW 6	5673	6178	5676	3	18	9/13/02	12:36	4	30	13
ROW 6	5673	6178	5676	3	19	9/13/02	12:37	3	30	10
ROW 6	5673	6178	5676	3	20	9/13/02	12:37	8	30	26
ROW 6	5673	6178	5676	3	21	9/13/02	12:38	4	30	13
RE-CHECK	5673	6178	5676	3	22	9/13/02	12:39	34	30	110
SRCBKG	5673	6178	5143	2	23	9/13/02	12:50	9	300	12
SRCCHECK	5673	6178	5143	2	24	9/13/02	12:52	2200	60	14133
SRCCHECK	5673	6178	5143	2	25	9/13/02	12:54	2266	60	14557
SRCCHECK	5673	6178	5143	2	26	9/13/02	12:55	2112	60	13568
SRCCHECK	5673	6178	5143	2	27	9/13/02	12:56	2013	60	12932
RE-RE-CHECK	5673	6178	5143	2	28	9/13/02	12:58	97	60	623

NOTE: Probe #3 → Floor probe
Probe #2 → Hand Probe

Protocol #: 1 Name:PW H3 #87267 13-Sep-2002 14:36
Region A: LL-UL= 0.5-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL= 2.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=40.0-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 2.00 QIP = tSIE/AEC ES Terminator = Count
02-TF-1467 RADLEY (1) AG
Conventional DPM
Nuclide 1 = 843
Luminescence Correction On

S#	TIME	LUM	FLAG	CPMA	CPMB	CPMC	tSIE	DPM1	2Sigma
-1	10.00	4	B	11.40	10.40	6.00	646.		0.00
0	2.00	0		985.60	929.10	0.00	568.	2016.00	176.72
1	2.00	0		0.00	0.00	1.50	513.	0.00	0.00

Carol L Robinson

DJH

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Red
Data file name: SMEAR011
Batch Ended: 9/13/02 13:40

Crosstalk correction performed.

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

Batch ID: 02-TF-1467 RADLEY ALPHA/BETA (1) AG

Detector ID	Sample ID	Alpha Activity			Beta Activity		
		DPM	σ	flags	DPM	σ	flags
D1	1	0.0	2.3		0.7	1.9	

DGH

DGH Carol G Robinson

20 of 20
G-104 of 164

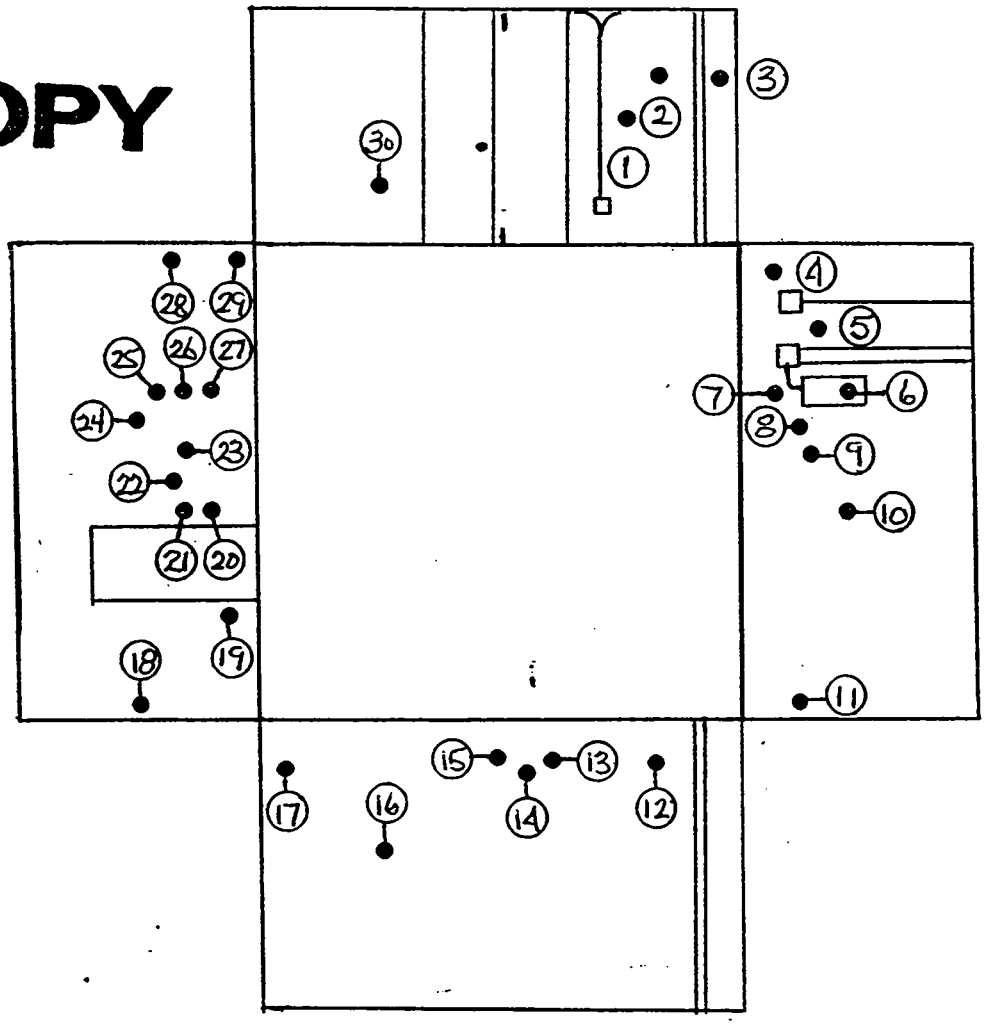
RADIOLOGICAL SURVEY DATA SHEET

1 of 3

LOCATION: (BLDG./AREA/ROOM) 94 / ~~0/1~~ DG# 9-12-02 Room 1	SURVEY NO. 02-TF-1463
PURPOSE: Wall Scan - UNIT-1	RWP NO. N/A
	DATE: 9-5-02
	TIME: ~~1400~~ 1600 PGR 9-5-02

MAP/DRAWING

COPY



IAW SURVEY PLAN 94-01

LEGEND: # = mrem/hr (γ) whole body

= mrem/hr neutron

= swipe number

= air sample number

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

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
ELECTRA	5607/5608	5-9-03
2350	5673/5143	8-13-03
	A	
	A	

[redacted]

# 7868 6178	Date: 9-5-02
HP #	Date:
ed	
HP # 7707	Date: 9-12-02

ML-9620 (2-98)

2 of 3

Survey No. 02-TF-1462

RADIOLOGICAL SURVEY DATA SHEET (cont.)

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

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

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 re 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)

94-BLDG CHARACTERIZATION SURVEY SCANNING

RSDS# 02-TF-1463 RCT: 29A RCT: [illegible]

43-20 BKG:	0	EFF:	0.172	PROBE AREA:	181	cm2	Surface Eff:		0.5	Detector # :	2
43-37 BKG:	0	EFF:	0.212	PROBE AREA:	584	cm2	Surface Eff:		0.5	Detector # :	3
LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2	
SRCBKG	5673	6178	5143	2		9/5/02	12:26	5	300	6	
SRCCHECK	5673	6178	5143	2		9/5/02	12:31	2102	60	13504	
SRCCHECK	5673	6178	5143	2		9/5/02	12:32	2286	60	14686	
SRCCHECK	5673	6178	5143	2		9/5/02	12:34	1950	60	12527	
SRCCHECK	5673	6178	5143	2		9/5/02	12:35	2027	60	13022	
U1WS 01	5673	6178	5143	2	1	9/5/02	12:56	1	30	13	
U1WS 02	5673	6178	5143	2	2	9/5/02	13:00	0	30	0	
U1WS 03	5673	6178	5143	2	3	9/5/02	13:08	2	30	26	
U1WS 04	5673	6178	5143	2	4	9/5/02	13:11	1	30	13	
U1WS 05	5673	6178	5143	2	5	9/5/02	13:15	0	30	0	
U1WS 06	5673	6178	5143	2	6	9/5/02	13:18	2	30	26	
U1WS 07	5673	6178	5143	2	7	9/5/02	13:19	1	30	13	
U1WS 08	5673	6178	5143	2	8	9/5/02	13:22	0	30	0	
U1WS 09	5673	6178	5143	2	9	9/5/02	13:32	0	30	0	
U1WS 10	5673	6178	5143	2	10	9/5/02	13:38	1	30	13	
U1WS 11	5673	6178	5143	2	11	9/5/02	13:50	1	30	13	
U1WS 12	5673	6178	5143	2	12	9/5/02	14:38	2	30	26	
U1WS 13	5673	6178	5143	2	13	9/5/02	14:44	6	30	77	
U1WS 14	5673	6178	5143	2	14	9/5/02	14:48	0	30	0	
U1WS 15	5673	6178	5143	2	15	9/5/02	14:50	2	30	26	
U1WS 16	5673	6178	5143	2	16	9/5/02	14:55	1	30	13	
U1WS 17	5673	6178	5143	2	17	9/5/02	15:01	1	30	13	
U1WS 18	5673	6178	5143	2	18	9/5/02	15:03	0	30	0	
U1WS 19	5673	6178	5143	2	19	9/5/02	15:07	3	30	39	
U1WS 20	5673	6178	5143	2	20	9/5/02	15:10	3	30	39	
U1WS 21	5673	6178	5143	2	21	9/5/02	15:11	2	30	26	
U1WS 22	5673	6178	5143	2	22	9/5/02	15:13	3	30	39	
U1WS 23	5673	6178	5143	2	23	9/5/02	15:15	0	30	0	
U1WS 24	5673	6178	5143	2	24	9/5/02	15:17	2	30	26	
U1WS 25	5673	6178	5143	2	25	9/5/02	15:19	0	30	0	
U1WS 26	5673	6178	5143	2	26	9/5/02	15:20	2	30	26	
U1WS 27	5673	6178	5143	2	27	9/5/02	15:21	3	30	39	
U1WS 28	5673	6178	5143	2	28	9/5/02	15:26	2	30	26	
U1WS 29	5673	6178	5143	2	29	9/5/02	15:27	1	30	13	
U1WS 30	5673	6178	5143	2	30	9/5/02	15:33	1	30	13	

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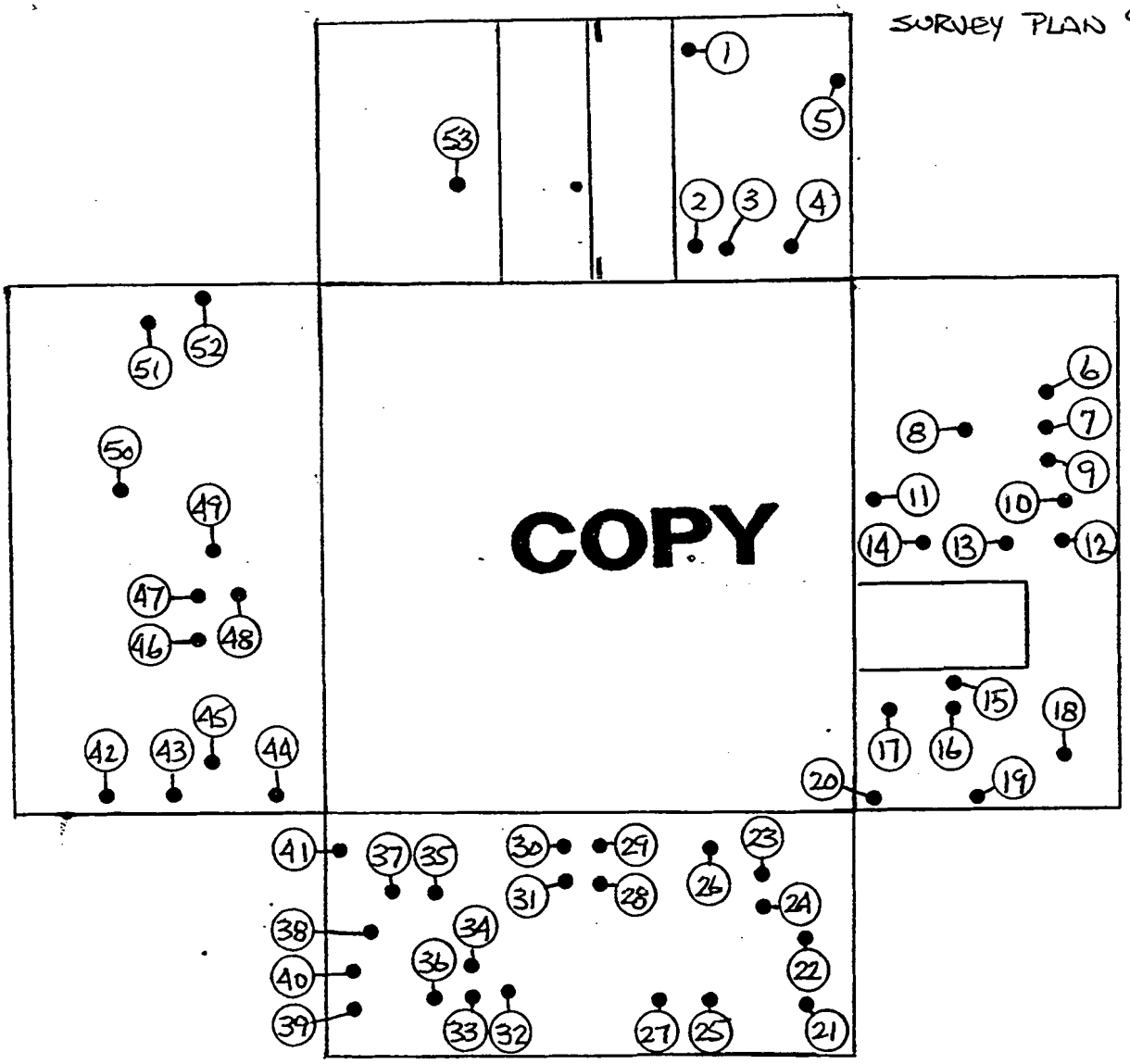
RADIOLOGICAL SURVEY DATA SHEET

Pg 1 of 4 1464

LOCATION: (BLDG./AREA/ROOM) 94 / U/2	SURVEY NO. 02-TF-~~1465~~ 1464
PURPOSE: MARSSIMS WALL SCAN	RWP NO. N/A
	DATE: 9-9-02
	TIME: 1300

MAP/DRAWING

SURVEYED I.A.W. SURVEY PLAN 94-01



LEGEND: # = mrem/hr (γ) whole body

(#) = mrem/hr (β) extending 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
ELECTRA	5607/5608	5-9-02
2350	5673/5143	8-13-~~02~~ 03
	N	PAR
	A	9-16-02

[redacted]

HP # ~~7868~~ 6178	Date: 9-9-02
HP #	Date:
HP # 7707	Date: 9-12-02

ML-9620 (2-98)

Survey No. 02-TF-1465

RADIOLOGICAL SURVEY DATA SHEET (cont.)

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

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

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 re 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)

94-BLDG CHARACTERIZATION SURVEY SCANNING

RSDS# 02-TF-1464 RCT: Pok RCT: DJH

43-20 BKG:	0	EFF:	0.172	PROBE AREA:	181	cm2	Surface Eff:		0.5	Detector # :	2
43-37 BKG:	0	EFF:	0.212	PROBE AREA:	584	cm2	Surface Eff:		0.5	Detector # :	3
LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2	
SRCBKG	5673	6178	5143	2		9/9/02	8:25	15	300	19	
SRCCHECK	5673	6178	5143	2		9/9/02	8:27	2120	60	13619	
SRCCHECK	5673	6178	5143	2		9/9/02	8:29	2113	60	13574	
SRCCHECK	5673	6178	5143	2		9/9/02	8:30	2081	60	13369	
SRCCHECK	5673	6178	5143	2		9/9/02	8:32	2259	60	14512	
U2WS 01	5673	6178	5143	2	1	9/9/02	8:41	1	30	13	
U2WS 02	5673	6178	5143	2	2	9/9/02	8:43	2	30	26	
U2WS 03	5673	6178	5143	2	3	9/9/02	8:44	1	30	13	
U2WS 04	5673	6178	5143	2	4	9/9/02	8:48	1	30	13	
U2WS 05	5673	6178	5143	2	5	9/9/02	8:51	1	30	13	
U2WS 06	5673	6178	5143	2	6	9/9/02	8:54	3	30	39	
U2WS 07	5673	6178	5143	2	7	9/9/02	8:56	3	30	39	
U2WS 08	5673	6178	5143	2	8	9/9/02	8:57	0	30	0	
U2WS 09	5673	6178	5143	2	9	9/9/02	8:59	4	30	51	
U2WS 10	5673	6178	5143	2	10	9/9/02	9:02	4	30	51	
U2WS 11	5673	6178	5143	2	11	9/9/02	9:04	2	30	26	
U2WS 12	5673	6178	5143	2	12	9/9/02	9:05	1	30	13	
U2WS 13	5673	6178	5143	2	13	9/9/02	9:06	3	30	39	
U2WS 14	5673	6178	5143	2	14	9/9/02	9:07	1	30	13	
U2WS 15	5673	6178	5143	2	15	9/9/02	9:09	2	30	26	
U2WS 16	5673	6178	5143	2	16	9/9/02	9:11	1	30	13	
U2WS 17	5673	6178	5143	2	17	9/9/02	9:12	4	30	51	
U2WS 18	5673	6178	5143	2	18	9/9/02	9:13	1	30	13	
U2WS 19	5673	6178	5143	2	19	9/9/02	9:16	2	30	26	
U2WS 20	5673	6178	5143	2	20	9/9/02	9:17	6	30	77	
U2WS 21	5673	6178	5143	2	21	9/9/02	9:19	3	30	39	
U2WS 22	5673	6178	5143	2	22	9/9/02	9:20	2	30	26	
U2WS 23	5673	6178	5143	2	23	9/9/02	9:22	4	30	51	
U2WS 24	5673	6178	5143	2	24	9/9/02	9:23	3	30	39	
U2WS 25	5673	6178	5143	2	25	9/9/02	9:24	3	30	39	
U2WS 26	5673	6178	5143	2	26	9/9/02	9:26	1	30	13	
U2WS 27	5673	6178	5143	2	27	9/9/02	9:40	2	30	26	
U2WS 28	5673	6178	5143	2	28	9/9/02	9:44	2	30	26	
U2WS 29	5673	6178	5143	2	29	9/9/02	9:45	2	30	26	

94-BLDG CHARACTERIZATION SURVEY SCANNING

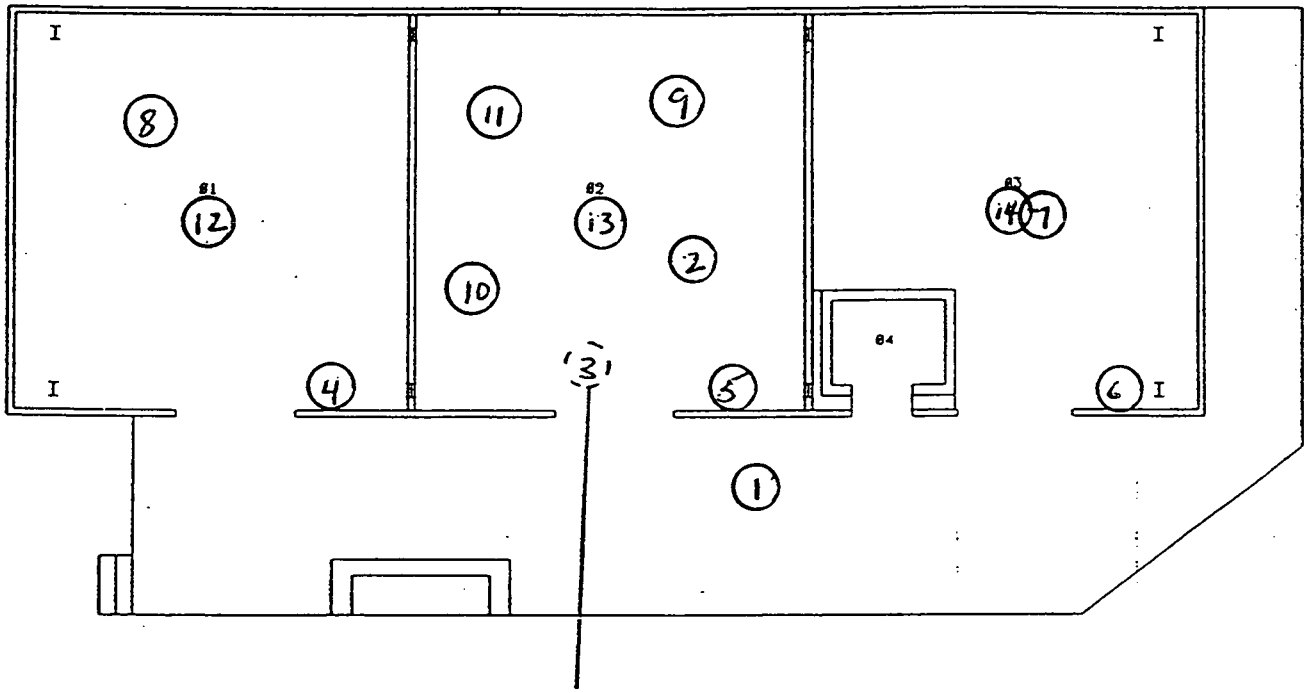
RSDS# 02-TF-1464 RCT: [illegible] RCT: [illegible]

LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
U2WS 30	5673	6178	5143	2	30	9/9/02	9:46	2	30	26
U2WS 31	5673	6178	5143	2	31	9/9/02	9:47	2	30	26
U2WS 32	5673	6178	5143	2	32	9/9/02	9:51	0	30	0
U2WS 33	5673	6178	5143	2	33	9/9/02	9:52	1	30	13
U2WS 34	5673	6178	5143	2	34	9/9/02	9:53	7	30	90
U2WS 35	5673	6178	5143	2	35	9/9/02	9:55	4	30	51
U2WS 36	5673	6178	5143	2	36	9/9/02	9:56	6	30	77
U2WS 37	5673	6178	5143	2	37	9/9/02	9:58	5	30	64
U2WS 38	5673	6178	5143	2	38	9/9/02	10:00	0	30	0
U2WS 39	5673	6178	5143	2	39	9/9/02	10:01	5	30	64
U2WS 40	5673	6178	5143	2	40	9/9/02	10:02	5	30	64
U2WS 41	5673	6178	5143	2	41	9/9/02	10:05	2	30	26
U2WS 42	5673	6178	5143	2	42	9/9/02	10:08	4	30	51
U2WS 43	5673	6178	5143	2	43	9/9/02	10:09	3	30	39
U2WS 44	5673	6178	5143	2	44	9/9/02	10:11	2	30	26
U2WS 45	5673	6178	5143	2	45	9/9/02	10:12	3	30	39
U2WS 46	5673	6178	5143	2	46	9/9/02	12:23	1	30	13
U2WS 47	5673	6178	5143	2	47	9/9/02	12:26	6	30	77
U2WS 48	5673	6178	5143	2	48	9/9/02	12:27	3	30	39
U2WS 49	5673	6178	5143	2	49	9/9/02	12:29	1	30	13
U2WS 50	5673	6178	5143	2	50	9/9/02	12:30	2	30	26
U2WS 51	5673	6178	5143	2	51	9/9/02	12:35	1	30	13
U2WS 52	5673	6178	5143	2	52	9/9/02	12:37	0	30	0
U2WS 53	5673	6178	5143	2	53	9/9/02	12:42	2	30	26

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) 94 / ALL & O/S	SURVEY NO. 02-TF-148
PURPOSE: FIELD SAMPLING DATA	RWP NO. N/A
	DATE: 9-23-02 to 10-29-
	TIME: 1600

MAP/DRAWING



#3
ON THE ROOF

COPY

LEGEND: # = mrem/hr (γ) whole body

= mrem/hr neutron

= swipe number

= air sample number

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

[redacted]

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
2360	5711/5811	9-30-03
	N/A	

HP # 7868 6178	Date: ~~10-8-0~~ 11-4-0
HP #	Date:
ACHED	
HP # 7707	Date: 11-4-02

ML-9620 (2-98)

Survey No. 02-TF-1489

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RADIOLOGICAL SURVEY DATA SHEET (cont.)

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

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

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 o 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)

Field Sample Data Collection Sheet

Sheet ___ of ___

Attachment 1

Sample Number	Sample Date	Sample Time	Sample Volume /Weight	Sample Description	Sampled By	Chain of Custody Relinquished to Lab			
						Date	Time	Initials	Rec'd By
94-01- 001	9-23-02	1400	N/A	ACID ETCH - O/S DOCK	[redacted] 6178	9-23-02	1405	DGH	HOP
94-01- 002	9-23-02	1430	N/A	ACID ETCH - I/S Rm #2	[redacted] 6178	9-23-02	1435	DGH	HOP
94-01- 003	10-2-02	1315	N/A	ACID ETCH - ROOF	[redacted] 6178	10-2-02	1320	DGH	HOP
94-01- 008	10-14-02	0900	N/A	ACID ETCH ROOM #1 STD	[redacted] 6178	10-14-02	0900	DGH	HOP
94-01- 009	10-14-02	0915	N/A	ACID ETCH ROOM #2 STD	[redacted] 6178	10-14-02	0915	DGH	HOP
94-01- 010	10-14-02	0925	N/A	ACID ETCH ROOM #2 - ROW #11 #8 + #9	6178 [redacted]	10-14-02	0925	DGH	HOP
94-01- 011	10-14-02	0937	N/A	ACID ETCH ROOM #2 ROW #12 #14	[redacted]	10-14-02	0937	DGH	HOP
94-01- 012	10-29-02	1400	N/A	SMEAR DRAIN ROOM 1	[redacted] 7868	10-29-02	1500	DGH	[illegible]
94-01- 013	10-29-02	1405	N/A	SMEAR DRAIN ROOM 2	[redacted] 7868	10-29-02	1500	DGH	[illegible]
94-01- 014	10-29-02	1410	N/A	SMEAR DRAIN ROOM 3	[redacted]	10-29-02	1500	DGH	[illegible]
94-01-									
94-01-				NO FURTHER ENTRIES THIS PAGE					
94-01-									

02-TF-1489

DGH

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Guard 164

02-TF-1489

Laboratory ID#:	**0211498-0211499**
Project/function:	**Main Hill**
Submitted:	**Sep 23, 2002**
Submitted by:	**D. Harvey**
Point of Contact:	**D. Harvey x3153**
RSDS#:	**N/A**
Date:	**Sep 30, 2002**

Lab ID 0211498
Sample Location Bldg. 94 #3 94-01-001

Isotope	dpm/sample	Uncertainty +/-	LDL
Pu-238	1.03	0.30	0.50
Pu-239/240	0.36	0.16	0.20
Po-210	270.19	22.31	1.58
Th-232	4.29	0.65	0.48
Th-230	14.20	1.50	0.48
Th-228	4.22	0.64	0.19
Th-227	<LDL	<LDL	0.61
U-238	18.29	2.83	0.61
U-235	<LDL	<LDL	2.27
U-233/234	14.90	2.44	0.61

Lab ID 0211499
Sample Location Bldg. 94 #U2-R5 94-01-002

Isotope	dpm/sample	Uncertainty +/-	LDL
Pu-238	1.06	0.31	0.22
Pu-239/240	61.23	5.47	0.56
Po-210	7.95	1.46	0.60
Th-232	2.95	0.50	0.55
Th-230	9.56	1.08	0.44
Th-228	2.81	0.48	0.44
Th-227	<LDL	<LDL	0.63
U-238	40.43	4.52	1.01
U-235	<LDL	<LDL	1.01
U-233/234	14.13	1.97	1.27

[redacted]

1585 — HP # — 10-1-02 — Date

6185 — HP # — 10/1/02 — Date

02-TF-1489

Laboratory ID#: 0211832
Project/function: TFV
Submitted: Oct 2, 2002
Submitted by: L. Hopkins
Point of Contact: D. Harvey x3153
RSDS#: N/A
Date: Oct 16, 2002

Lab ID 0211832
Sample Location 94 - Roof 94-01-003

Isotope	dpm/sample	Uncertainty +/-	LDL
Pu-238	0.77	0.26	0.23
Pu-239/240	<LDL	<LDL	0.79
Po-210	14.61	3.03	2.60
Th-232	<LDL	<LDL	0.44
Th-230	0.36	0.15	0.16
Th-228	<LDL	<LDL	0.44
Th-227	<LDL	<LDL	0.16
U-238	<LDL	<LDL	5.32
U-235	<LDL	<LDL	6.71
U-233/234	<LDL	<LDL	5.32

D9A

[redacted]

1585 10-16-02
HP # Date

5768 10/16/02
HP # Date

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Laboratory ID#:	**0212381-0212384**
Project/function:	**TFV**
Submitted:	**Oct 14, 2002**
Submitted by:	**L. Hopkins**
Point of Contact:	**D. Harvey** **x3153**
RSDS#:	**N/A**
Date:	**Oct 16, 2002**

02-TF-1489

Lab ID 0212381
Sample Location Bldg. 94 - RM 1 STD 94-01-008

Isotope	dpm/sample	Uncertainty +/-	LDL
Pu-238	0.98	0.36	0.33
Pu-239/240	<LDL	<LDL	0.33
Th-232	0.71	0.21	0.15
Th-230	4.39	0.59	0.15
Th-228	1.15	0.29	0.51
Th-227	1.04	0.25	0.15
U-238	6.02	0.84	0.21
U-235	0.40	0.18	0.21
U-233/234	4.67	0.71	0.21

Lab ID 0212382
Sample Location Bldg. 94 -RM 2 STD 94-01-009

Isotope	dpm/sample	Uncertainty +/-	LDL
Pu-238	1.82	0.44	0.25
Pu-239/240	<LDL	<LDL	0.85
Th-232	1.05	0.25	0.15
Th-230	4.21	0.58	0.15
Th-228	0.94	0.29	0.67
Th-227	0.44	0.18	0.41
U-238	6.51	0.76	0.14
U-235	0.68	0.20	0.14
U-233/234	6.09	0.73	0.39

#9

Lab ID 0212383
Sample Location Bldg. 94 -Row 11 #8+#9 94-01-010

Isotope	dpm/sample	Uncertainty +/-	LDL
Pu-238	162.91	13.00	0.46
Pu-239/240	7.55	0.90	0.17
Th-232	1.39	0.31	0.43
Th-230	4.99	0.66	0.16
Th-228	2.55	0.44	0.43
Th-227	1.57	0.32	0.16
U-238	5.20	0.66	0.15
U-235	<LDL	<LDL	0.40
U-233/234	5.47	0.68	0.15

Lab ID	0212384
Sample Location	Bldg. 94 -Row 12

#14 94-01-011

Isotope	dpm/sample	Uncertainty +/-	LDL
Pu-238	20.24	2.14	0.24
Pu-239/240	0.79	0.30	0.65
Th-232	2.28	0.39	0.14
Th-230	7.70	0.86	0.39
Th-228	1.54	0.33	0.49
Th-227	1.27	0.28	0.14
U-238	8.79	0.96	0.41
U-235	<LDL	<LDL	0.60
U-233/234	8.40	0.93	0.15

02-TF-1489

DqA

[redacted]

1585 — HP #
10-16-02 — Date

5768 — HP #
10/16/02 — Date

Alpha/Beta Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: SMEAR012
Batch Ended: 10/29/2002 15:36
Recalibration Date: 7/8/2004
Serial Number: 64575

Batch ID: 02-TF-1489 RADLEY (3) BSB

Detector ID	Sample ID		Alpha Activity DPM	Alpha Activity σ	Alpha Activity flags	Beta Activity DPM	Beta Activity σ	Beta Activity flags
A1	1	94-01-012	0.0	2.0		2.6	2.3	
A2	2	94-01-013	0.0	2.0		0.9	1.9	
A3	3	94-01-014	0.0	1.9		1.8	2.1	

DQH DQH

BSBrown

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Protocol #: 4 Name:PW H3 #401388 29-Oct-2002 15:20
Region A: LL-UL= 0.5-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL= 2.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=40.0-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 2.00 QIP = tSIE/AEC ES Terminator = Count
02-T-1489 RADLEY (3) BSB
Conventional DPM
Nuclide 1 = 1
Luminescence Correction On
Data/Application Drive & Path = c:\data

SAMP	TIME	CPMA	CPMB	CPMC	FLAG	LUM	tSIE	DPM1	A:2S%
-1	10.00	12.94	11.85	5.21	B	8	514.		17.59
0	2.00	435.48	421.89	1.79	L	2	478.	960.57	7.01
1-01-0121	2.00	5.06	5.27	5.79	L	0	477.	11.20	126.7
1-01-0132	2.00	0.00	0.00	2.29	L	8	534.	0.00	0.00
4-01-0143	2.00	0.00	0.00	3.29	L	0	437.	0.00	0.00

DJH

BSBrown

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Field Sample Data Collection Sheet

Sheet ___ of ___

Attachment 1 02-TF-1489

Sample Number	Sample Date	Sample Time	Sample Volume /Weight	Sample Description	Sampled By	Chain of Custody Relinquished to Lab Date	Time	Initials	Rec'd By
94-01- 0040	10-7-02	1310		Rm #1 INTAKE FILTER	7868 [redacted]	10-7-02	1540	PGR	[illegible]
94-01- 0050 2	10-7-02	1320		Rm #2 INTAKE FILTER	7868 [redacted]	10-7-02	1540	PGR	[illegible]
94-01- 0060 3	10-7-02	1330		Rm #3 INTAKE FILTER	7868 [redacted]	10-7-02	1540	PGR	[illegible]
94-01- 0070 4 PGR 10-8-02	10-7-02	1300	50ml	Rm #3 - H20 FROM DRAIN	7868 [redacted]	10-7-02	1530	PGR	[illegible]
94-01-									
94-01-									
94-01-									
94-01-									
94-01-									
94-01-									
94-01-									
94-01-									
94-01-									

NO FURTHER ENTRIES THIS PAGE

DJH

10 A 14

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GAMMA ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: ML14867
File ID: MG301042.s0
Priority: No

Description\Location
Building #94 Filter Pieces Rm #1
94-01-004

Collector: 7868
Date Received: 10/ 8/02
Date Collected: 10/ 7/02

Radionuclide	Activity ( )	MDA

Comments
No Isotopes were identified above background levels.

02-TF-1489
DGH

11 of 14

Date: 10/ 8/02 Counted By: 5801 Analyzed By: 5801 Initials [redacted]

GAMMA ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: ML14868
File ID: MG301042.s0
Priority: No

Description\Location
Building #94 Filter Pieces Rm #2
94-01-005

Collector: 7868
Date Received: 10/ 8/02
Date Collected: 10/ 7/02

Radionuclide	Activity (_____)	MDA

Comments
No Isotopes were identified above background levels.

02-TF-1489
Dq#

12 of 14

Date: 10/ 8/02 Counted By: 5801 Analyzed By: 5801 Initials [redacted]

GAMMA ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: ML14869
File ID: MG301042.s0
Priority: No

Description\Location
Building #94 Filter Pieces Rm #3
94-01-006

Collector: 7868
Date Received: 10/ 8/02
Date Collected: 10/ 7/02

Radionuclide	Activity ( )	MDA

Comments
No Isotopes were identified above background levels.

02-TF-1489

DJH

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Date: 10/ 8/02 Counted By: 5801 Analyzed By: 5801 Initials [redacted]

G12506 164

BWXT of Ohio, Inc.

ANALYTICAL SERVICES REQUEST FOR ANALYSIS

DATE SUBMITTED:	SAMPLE TYPE:	COLLECTED BY:	NUMBER OF SAMPLES
10-7-02	Drain Water	PG Radley	1
PROJECT/FUNCTION:	**PRIMARY CONTACT/PHONE NO.:**		**MAIL STOP:**
SMDP-TFV	3163		
CHARGE NUMBER:	**DATE(S) COLLECTED:**	**RSDS# (if applicable):**	**ATTACHMENTS (list):**
	10-7-02	N/A	

ANALYSES REQUESTED (check):

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

ADDITIONAL INFORMATION:

ID # 94-01-007

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

LAB IDENTIFICATION	SAMPLE LOCATION	SAMPLE NUMBER	RESULTS
0212134	Bldg 94		1.64 nCi/L 3H
			<1.95 dpm/mL α
			02-TF-1489

COMMENTS:

14 of 14 DJH

ANALYZED BY: Bradley D Jenkins

DATE: 11/4/02

ML-5222 (1-80)

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SURVEY PLAN FORM

SP NUMBER	94-002	DATE OF REQUEST	September 25, 2002
TYPE OF SP	☐ FSS ☐ CHARACTERIZATION ☐ REFERENCE ☒ OTHER: Post Remediation		
AREA/LOCATION	Building 94		
PURPOSE	Measure residual activity following remediation of floor in Room 2		
SURVEY UNIT # 7	Room 2 Floor	SURVEY UNIT	
SURVEY UNIT		SURVEY UNIT	
SURVEY UNIT		SURVEY UNIT	

SAMPLE TYPE

☐ SURFACE SOIL SAMPLE:

☐ SUB-SURFACE SOIL SAMPLE:

☐ SEDIMENT SAMPLE:

☐ Rubbelized Material:

☐ OTHER:

SURVEY TYPE

SURFACE SCAN	☐ BETA ☐ GAMMA ☒ ALPHA	INST. TYPE	L-2350	SCAN RATE & DETECTOR DISTANCE FROM SURFACE	Scan surface at a rate of 1" per second at a distance of not more than ¼" from surface
		PROBE TYPE	43-37 Floor Monitor		
STATIC MEASURE-MENT	☐ BETA ☐ GAMMA ☒ ALPHA	INST. TYPE	L-2350	SCAN RATE & DETECTOR DISTANCE FROM SURFACE	Perform 1 minute counts at specified locations not more than ¼" from surface
		PROBE TYPE	43-20 Hand Probe		
STATIC MEASURE-MENT	☐ BETA ☐ GAMMA ☐ ALPHA	INST. TYPE		COUNT TIME & DETECTOR DISTANCE FROM SURFACE	
		PROBE TYPE			
DOSE RATE MEASURE-MENT	☐ BETA ☐ GAMMA ☐ ALPHA	INST. TYPE		DETECTOR DISTANCE FROM SURFACE	
		PROBE TYPE			
OTHER SURVEY TYPES OR COMMENTS	All surveys shall be performed and documented in accordance with Mound Radiological Control procedures.				

SP NUMBER	94-002	DATE OF REQUEST	September 25, 2002

SPECIFIC SAMPLING / SURVEY INSTRUCTIONS

Data Point Location

1. Locate the data points in the survey unit using the coordinates shown in Attachment 1.
2. Mark each data point with tape or other non-permanent marking.
3. Document locations on the appropriate RSDS Map.

Surface Scan Using a Ludlum 2350-1 with a 43-37 Floor Monitor

1. Set the Ludlum 2350-1 datalogger to alarm at 50dpm/100cm^2 in the ratemeter mode. (1)
2. Scan 100% of the floor in the survey unit at a slow rate not to exceed 1" per second.
3. Perform a 30 second integrated count at every location where an alarm is obtained. In addition, obtain a 30 second integrated count at any point where an audible or visual indication of elevated activity is observed at twice the background rate.
4. Record location and results of each integrated count on RSDS map in accordance with Mound Rad Con procedures.

Static Measurements Using L 2350 With a 43-20 alpha probe

1. Perform twenty (20) 1 minute integrated alpha measurements at each data point.
2. Record location and results on RSDS map in accordance with Mound Rad Con procedures.
3. Document gross activity for each location (No "<" values). Record instrument background at survey location.

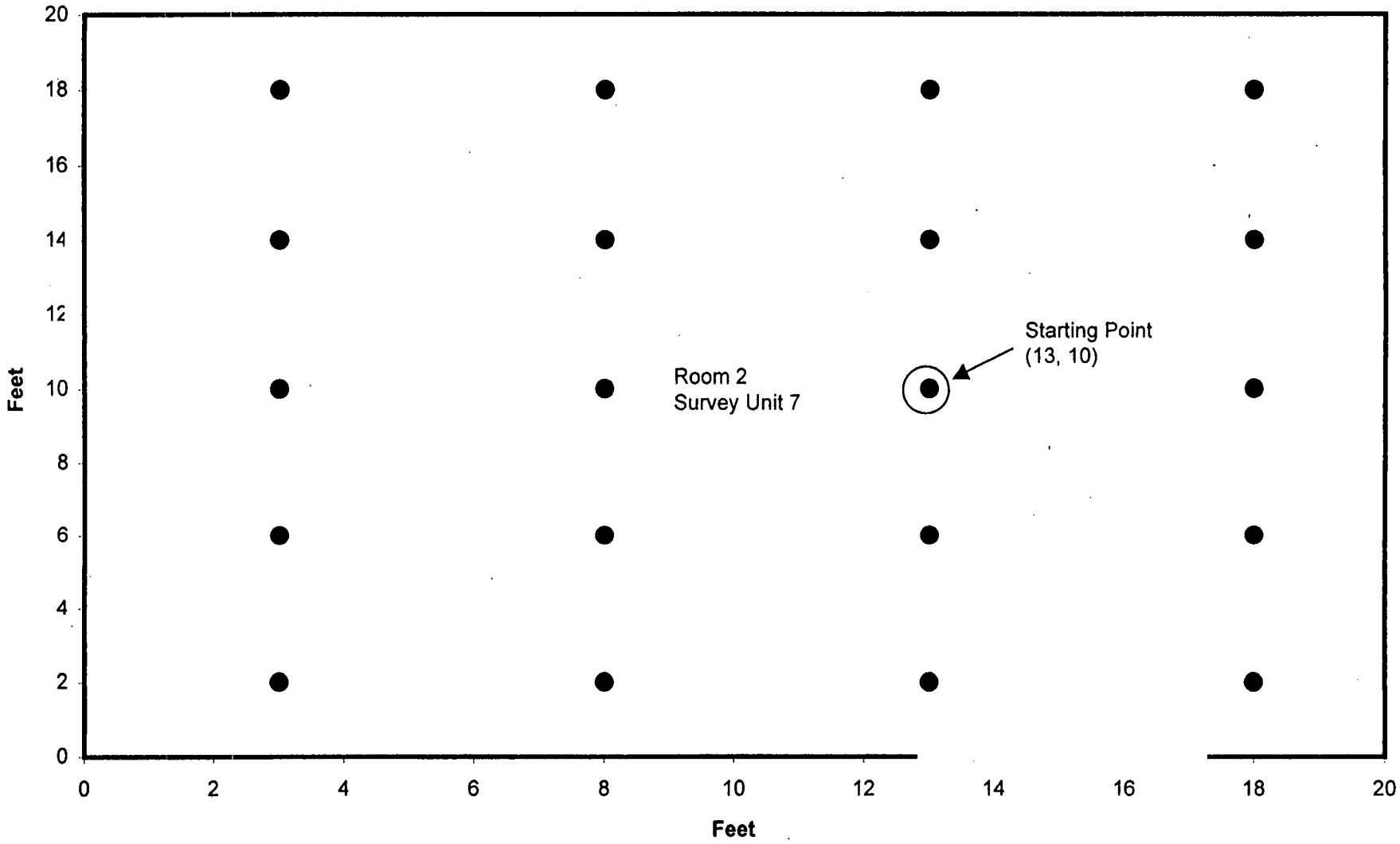
APPROVAL SIGNATURES			
MARISSM Engineer	R. Case	DATE	September 25, 2002
Technical Reviewer	G. Tomlinson	DATE	September 25, 2002
Rad Con Manager	S. Collas	DATE	September 25, 2002

SP CLOSE-OUT SIGNATURES			
MARISSM Engineer	R. CASE	DATE	11-4-02
Technical Reviewer	J GUIDO	DATE	11-11-02
Rad Con Manager	D. RILEY	DATE	11-12-02

COMMENTS

(1) 10/7/02 ALARM SETPOINT INCREASED TO 75dpm/100cm^2 due to INCREASED Background. R. CASE

Survey Unit 7 Room 2 Floor



Room 2 Data Point Coordinates

Survey Unit 7

X	Y
3	2
8	2
13	2
18	2
3	6
8	6
13	6
18	6
3	10
8	10
13	10
18	10
3	14
8	14
13	14
18	14
3	18
8	18
13	18
18	18

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) 94 / Rm #2 FLOOR	SURVEY NO. 02-TF-1487
PURPOSE: REMEDIATION OF FLOOR IN RM. #2 I.A.W. SURVEY PLAN #94-002	RWP NO. N/A
	DATE: 10/3/02
	TIME: 1610

MAP/DRAWING

SEE ATTACHED MAP - Pg. 3 of 5

COPY

LEGEND: # = mrem/hr (γ) whole body

= mrem/hr neutron

= swipe number

or/β = direct cont. measurement in dpm/100cm²

[redacted]

10-8-02

HP #	Date:
6178	10-8-02
7868	10-8-02
HP #	Date:
HED	
HP # 7707	Date: 10/14/02

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
2350	5673/5143	8-13-03
	N	
	A	

ML-9620 (2-98)

Survey No. 02-TF-1487

RADIOLOGICAL SURVEY DATA SHEET (cont.)

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

COMMENTS: N/A

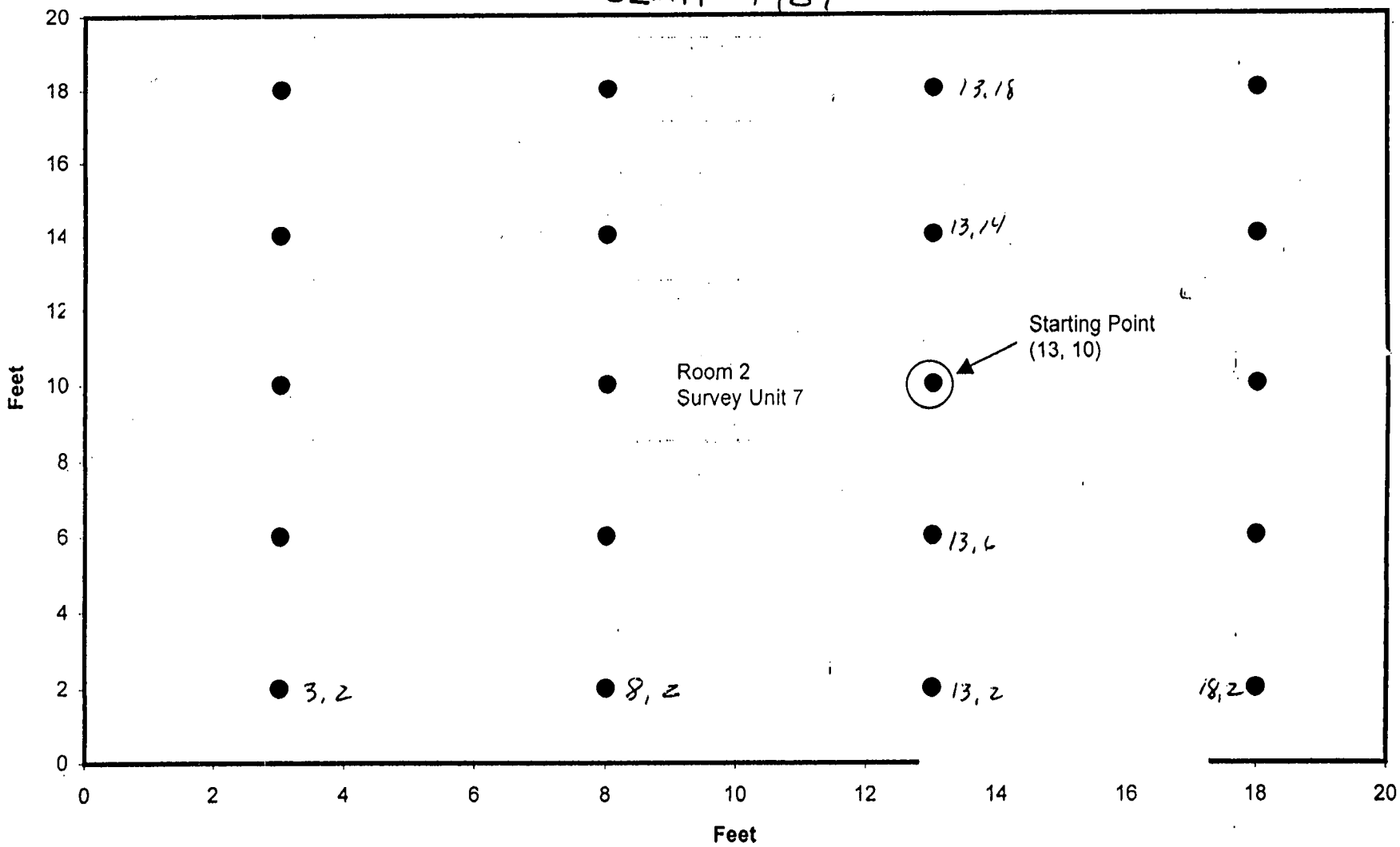
NOTES:

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 re 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)

Survey Unit 7 Room 2 Floor

02-TF-1487



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PGR
10-8-02

94-BLDG POST REMEDIATION SURVEY DATA POINTS

RSDS# 02-TF-1487 RCT: DGH RCT: [illegible]

43-20 BKG:	0	EFF:	0.172	PROBE AREA:	181	cm2	Surface Eff:		0.5	Detector # :	2
43-37 BKG:	0	EFF:	0.212	PROBE AREA:	584	cm2	Surface Eff:		0.5	Detector # :	3
LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2	
SRC BKG	5673	6178	5676	3		10/3/02	8:43	34	300	11	
SRC CHECK	5673	6178	5676	3		10/3/02	8:50	2102	60	3396	
SRC CHECK	5673	6178	5676	3		10/3/02	8:51	2093	60	3381	
SRC CHECK	5673	6178	5676	3		10/3/02	8:53	2211	60	3572	
SRC CHECK	5673	6178	5676	3		10/3/02	8:55	2053	60	3316	
SRC CHECK	5673	6178	5676	3		10/3/02	8:56	2062	60	3331	
SRC CHECK	5673	6178	5676	3		10/3/02	8:58	2193	60	3543	
SRC BKG	5673	6178	5143	2		10/3/02	9:05	4	300	5	
SRC CHECK	5673	6178	5143	2		10/3/02	9:07	2019	60	12971	
SRC CHECK	5673	6178	5143	2		10/3/02	9:09	2227	60	14307	
SRC CHECK	5673	6178	5143	2		10/3/02	9:10	1940	60	12463	
SRC CHECK	5673	6178	5143	2		10/3/02	9:11	1997	60	12829	
U-7 3-2	5673	6178	5143	2	1	10/3/02	13:31	4	60	26	
U-7 3-6	5673	6178	5143	2	2	10/3/02	13:33	2	60	13	
U-7 3-10	5673	6178	5143	2	3	10/3/02	13:35	1	60	6	
U-7 3-14	5673	6178	5143	2	4	10/3/02	13:37	8	60	51	
U-7 3-18	5673	6178	5143	2	5	10/3/02	13:38	6	60	39	
U-7 8-18	5673	6178	5143	2	6	10/3/02	13:40	3	60	19	
U-7 8-14	5673	6178	5143	2	7	10/3/02	13:42	0	60	0	
U-7 8-10	5673	6178	5143	2	8	10/3/02	13:44	10	60	64	
U-7 8-6	5673	6178	5143	2	9	10/3/02	13:46	7	60	45	
U-7 8-2	5673	6178	5143	2	10	10/3/02	13:48	2	60	13	
U-7 13-2	5673	6178	5143	2	11	10/3/02	13:49	7	60	45	
U-7 13-6	5673	6178	5143	2	12	10/3/02	13:51	3	60	19	
U-7 13-10	5673	6178	5143	2	13	10/3/02	13:52	6	60	39	
U-7 13-14	5673	6178	5143	2	14	10/3/02	13:53	2	60	13	
U-7 13-18	5673	6178	5143	2	15	10/3/02	13:55	4	60	26	
U-7 18-18	5673	6178	5143	2	16	10/3/02	13:56	6	60	39	
U-7 18-14	5673	6178	5143	2	17	10/3/02	13:57	5	60	32	
U-7 18-10	5673	6178	5143	2	18	10/3/02	13:59	4	60	26	
U-7 18-6	5673	6178	5143	2	19	10/3/02	14:00	3	60	19	
U-7 18-2	5673	6178	5143	2	20	10/3/02	14:02	5	60	32	

94-BLDG POST REMEDIATION SURVEY DATA POINTS

RSDS# 02-TF-1487 RCT: [illegible] RCT: [illegible]

LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
U-7QC 3-10	5673	6178	5143	2	1	10/7/02	10:16	4	60	26
U-7QC 8-10	5673	6178	5143	2	2	10/7/02	10:18	1	60	6

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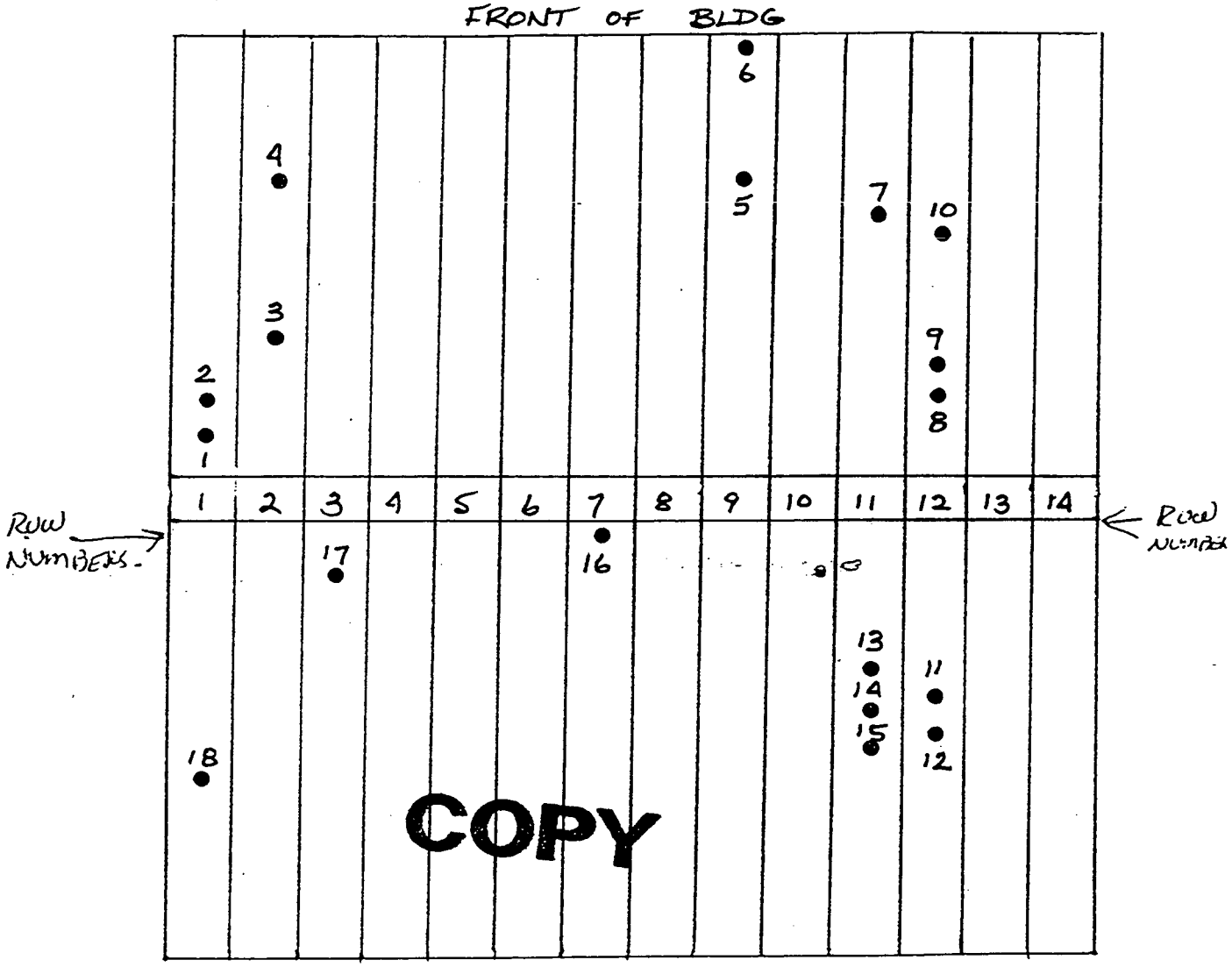
RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) 94 / ROOM 2 UNIT-7	SURVEY NO. 02-TF-1488
PURPOSE: POST REMEDIATION SCANNING IAW SURVEY PLAN 94-02	RWP NO. N/A
	DATE: 10-7-02
	TIME: 1500

MAP/DRAWING



LEGEND: # = mrem/hr (γ) whole body

= mrem/hr neutron

= swipe number

= air sample number

α/β = direct cont. measurement in dpm/100cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
2350	5673/5676	8-13-03
	N	
	A	

[redacted] #6178 6175 Date: 10-7-02

[redacted]

HP # Date:

[redacted]

HP # 7707 Date: 10/22/02

[redacted]

ML-9620 (2-98)

2 of

02-TF-1488

RADIOLOGICAL SURVEY DATA SHEET (cont.)

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

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

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 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)

94-BLDG POST REMEDIATION SURVEY SCANNING

RSDS# 02-TF-1488 RCT: Dgtl RCT: N/A

43-20 BKG:	0	EFF:	0.172	PROBE AREA:	181	cm2	Surface Eff:		0.5	Detector # :	2
43-37 BKG:	0	EFF:	0.212	PROBE AREA:	584	cm2	Surface Eff:		0.5	Detector # :	3
LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2	
SRC BKG	5673	6178	5676	3		10/7/02	9:39	27	300	9	
SRC CHECK	5673	6178	5676	3		10/7/02	9:42	2035	60	3287	
SRC CHECK	5673	6178	5676	3		10/7/02	9:46	2033	60	3284	
SRC CHECK	5673	6178	5676	3		10/7/02	9:48	2024	60	3270	
SRC CHECK	5673	6178	5676	3		10/7/02	9:50	1951	60	3152	
SRC CHECK	5673	6178	5676	3		10/7/02	9:51	2068	60	3341	
SRC CHECK	5673	6178	5676	3		10/7/02	9:53	2214	60	3577	
SRC BKG	5673	6178	5143	2		10/7/02	10:01	4	300	5	
SRC CHECK	5673	6178	5143	2		10/7/02	10:03	2046	60	13144	
SRC CHECK	5673	6178	5143	2		10/7/02	10:05	2177	60	13986	
SRC CHECK	5673	6178	5143	2		10/7/02	10:07	2119	60	13613	
SRC CHECK	5673	6178	5143	2		10/7/02	10:10	2078	60	13350	
U-7 01	5673	6178	5676	3	1	10/7/02	12:32	7	30	23	
U-7 02	5673	6178	5676	3	2	10/7/02	12:33	7	30	23	
U-7 03	5673	6178	5676	3	3	10/7/02	12:46	6	30	19	
U-7 04	5673	6178	5676	3	4	10/7/02	12:48	9	30	29	
U-7 05	5673	6178	5676	3	5	10/7/02	13:03	9	30	29	
U-7 06	5673	6178	5676	3	6	10/7/02	13:05	5	30	16	
U-7 07	5673	6178	5676	3	7	10/7/02	13:10	2	30	6	
U-7 08	5673	6178	5676	3	8	10/7/02	13:13	200	30	646	*
U-7 09	5673	6178	5676	3	9	10/7/02	13:16	177	30	572	*
U-7 10	5673	6178	5676	3	10	10/7/02	13:19	7	30	23	
U-7 11	5673	6178	5676	3	11	10/7/02	13:32	9	30	29	
U-7 12	5673	6178	5676	3	12	10/7/02	13:33	13	30	42	
U-7 13	5673	6178	5676	3	13	10/7/02	13:37	10	30	32	
U-7 14	5673	6178	5676	3	14	10/7/02	13:39	28	30	90	*
U-7 15	5673	6178	5676	3	15	10/7/02	13:40	8	30	26	
U-7 16	5673	6178	5676	3	16	10/7/02	13:48	8	30	26	
U-7 17	5673	6178	5676	3	17	10/7/02	13:58	9	30	29	
U-7 18	5673	6178	5676	3	18	10/7/02	14:05	3	30	10	

* NOTE: ACID ETCH'S TAKEN AT LOCATIONS THAT ARE HIGHLIGHTED RESULTS ARE ATTACHED TO RSDS # 02-TF-1489

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SURVEY PLAN FORM

SP NUMBER	94-03	DATE OF REQUEST	October 8, 2002
TYPE OF SP	☐ FSS ☐ CHARACTERIZATION ☐ REFERENCE ☒ OTHER: Post Remediation		
AREA/LOCATION	Building 94		
PURPOSE	Measure residual activity following remediation of floor in Room 2. Perform resurvey of floor in Room 1		
SURVEY UNIT # 7	Room 2 Floor	SURVEY UNIT	
SURVEY UNIT #1	Room 1 Floor	SURVEY UNIT	
SURVEY UNIT		SURVEY UNIT	

SAMPLE TYPE

☐ SURFACE SOIL SAMPLE:

☐ SUB-SURFACE SOIL SAMPLE:

☐ SEDIMENT SAMPLE:

☐ Rubbelized Material:

☐ OTHER:

SURVEY TYPE

SURFACE SCAN	☐ BETA ☐ GAMMA ☒ ALPHA	INST. TYPE	L-2350	SCAN RATE & DETECTOR DISTANCE FROM SURFACE	Scan surface at a rate of 1" per second at a distance of not more than ¼" from surface
		PROBE TYPE	43-37 Floor Monitor		
STATIC MEASURE-MENT	☐ BETA ☐ GAMMA ☐ ALPHA	INST. TYPE		SCAN RATE & DETECTOR DISTANCE FROM SURFACE	
		PROBE TYPE			
STATIC MEASURE-MENT	☐ BETA ☐ GAMMA ☐ ALPHA	INST. TYPE		COUNT TIME & DETECTOR DISTANCE FROM SURFACE	
		PROBE TYPE			
DOSE RATE MEASURE-MENT	☐ BETA ☐ GAMMA ☐ ALPHA	INST. TYPE		DETECTOR DISTANCE FROM SURFACE	
		PROBE TYPE			
OTHER SURVEY TYPES OR COMMENTS	All surveys shall be performed and documented in accordance with Mound Radiological Control procedures.				

SP NUMBER	94-03	DATE OF REQUEST	October 8, 2002

SPECIFIC SAMPLING / SURVEY INSTRUCTIONS

Surface Scan Using a Ludlum 2350-1 with a 43-37 Floor Monitor

1. Set the Ludlum 2350-1 datalogger to alarm at 75dpm/100cm^2 in the ratemeter mode.
2. Scan 100% of the floor in the survey unit at a slow rate not to exceed 1" per second.
3. Perform a 30 second integrated count at every location where an alarm is obtained. In addition, obtain a 30 second integrated count at any point where an audible or visual indication of elevated activity is observed at approximately twice the background count rate.
4. Record location and results of each integrated count on RSDS map in accordance with Mound Rad Con procedures.

APPROVAL SIGNATURES

MARISSM Engineer	R. Case	DATE	October 8, 2002
Technical Reviewer	G. Tomlinson	DATE	October 8, 2002
Rad Con Manager	S. Collas	DATE	October 8, 2002

SP CLOSE-OUT SIGNATURES

MARISSM Engineer	R. CASE	DATE	11-7-02
Technical Reviewer	J Guido	DATE	11-11-02
Rad Con Manager	D. RILEY	DATE	11-12-02

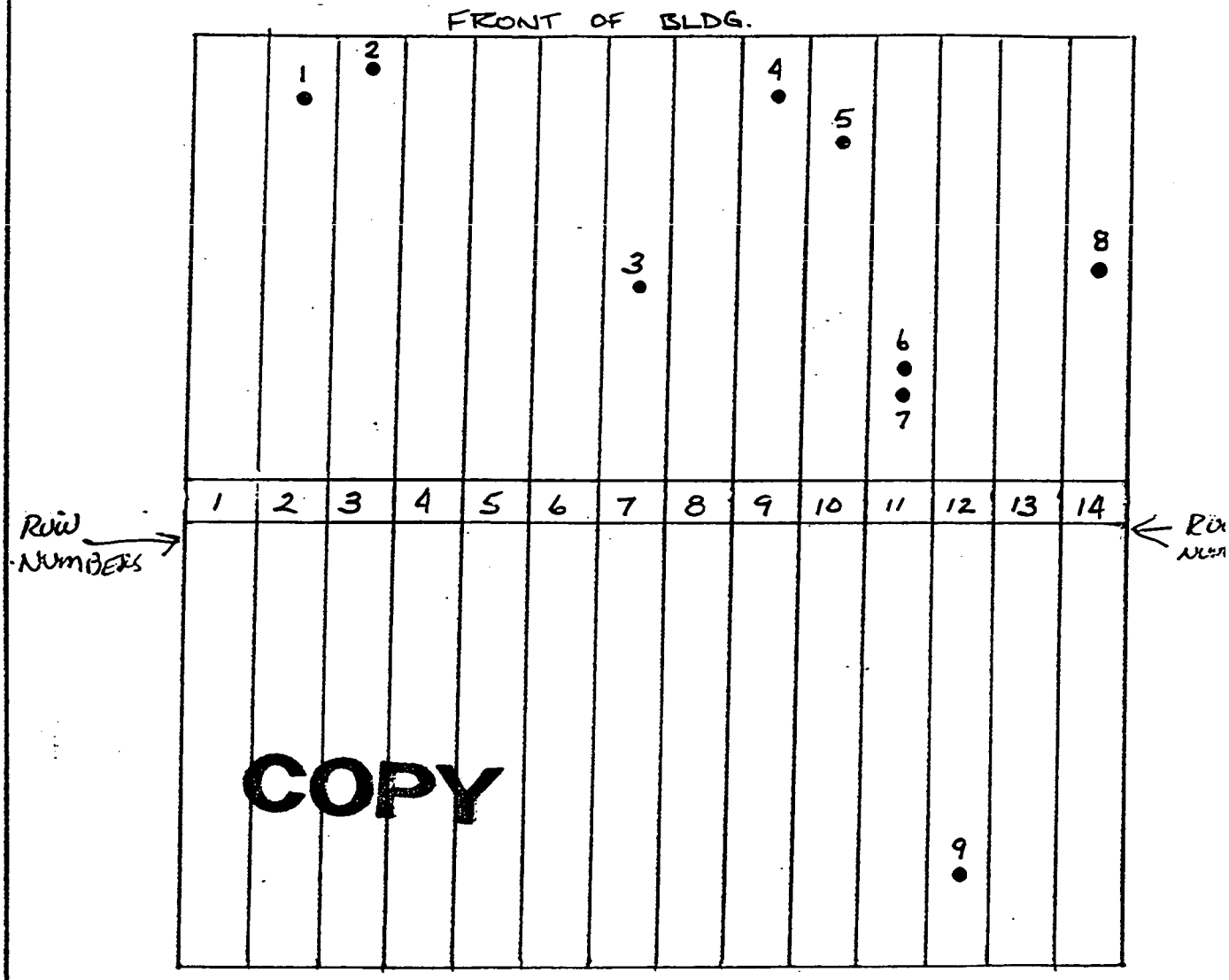
COMMENTS

G-14206 164

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) 94 / ROOM 1	SURVEY NO. 02-TF-149
PURPOSE: POST REMEDIATION SCANNING IAW SURVEY PLAN 94-03	RWP NO. N/A
	DATE: 10-14-02
	TIME: 1500

MAP/DRAWING



LEGEND: # = mrem/hr (γ) whole body

= mrem/hr neutron

= swipe number

= air sample number

α/β = direct cont. measurement in dpm/100cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
2350	5673/5676	8-13-03
	N/A	

[redacted]

HP # 6178 7868	Date: 10-14-0
HP #	Date:
HP # 7707	Date: 10/22/02

ML-9620 (2-98)

RADIOLOGICAL SURVEY DATA SHEET (cont.)

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

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

N/A

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 prin 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.

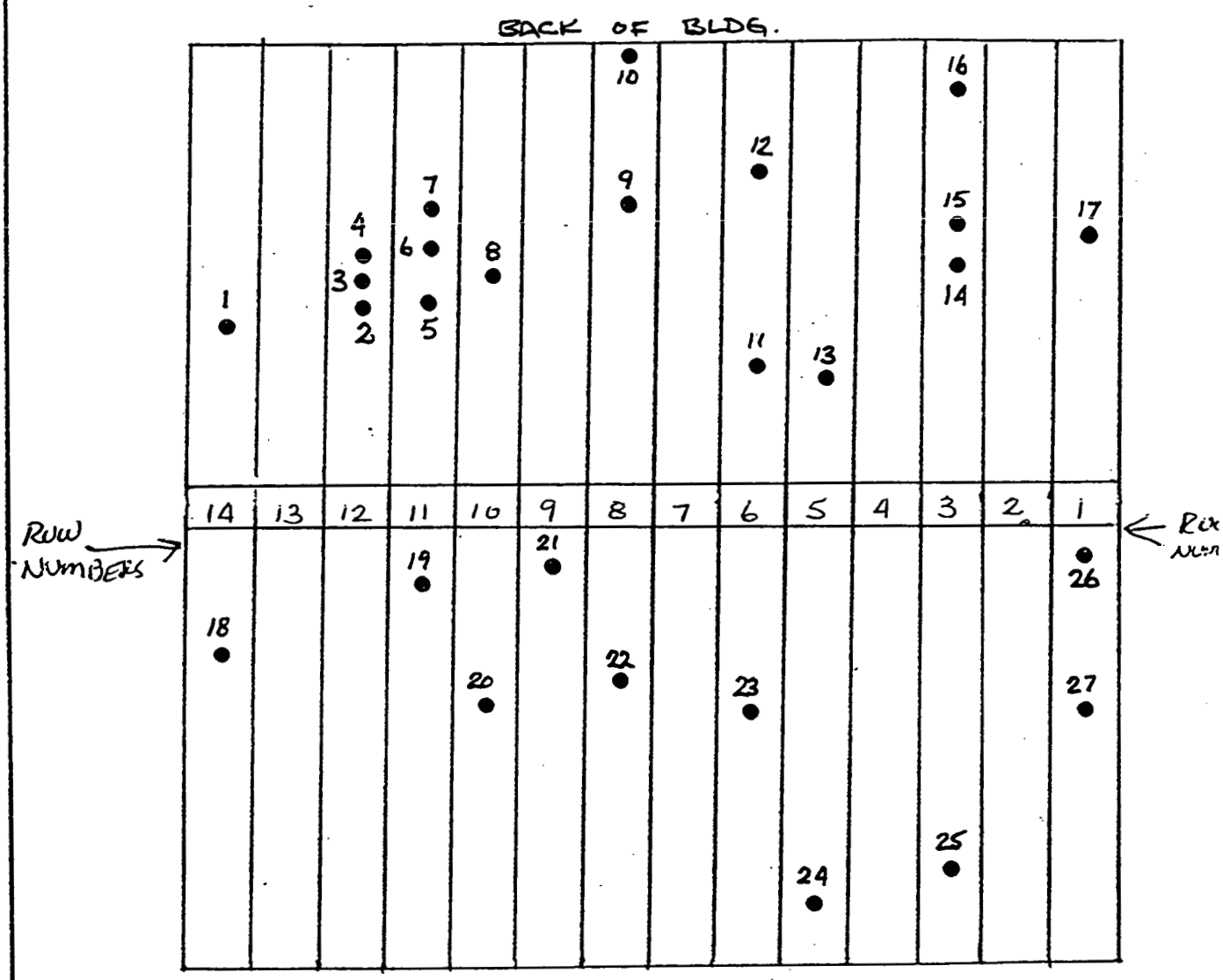
ML-9620A (4-98)

RADIOLOGICAL SURVEY DATA SHEET

DGH 7 of 5 of 6

LOCATION: (BLDG./AREA/ROOM) 94/ROOM 2	SURVEY NO. 02-TF-1492
PURPOSE: POST REMEDIATION SCANNING IAW SURVEY PLAN 94-03	RWP NO. N/A
	DATE: 10-15-02
	TIME: 1300

MAP/DRAWING



LEGEND: # = mrem/hr (γ) whole body

= mrem/hr neutron

= swipe number

= air sample number

α/β = direct cont. measurement in dpm/100cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
2350	5673/5676	8-13-03

[redacted]

	HP # 6178 7868	Date: 10-15-0
Counted by: (Signature) SEE	HP #	Date:
Counted by: (Print Name) ATTACHED		
Reviewed/Approved by: (Signature)	HP #	Date:
Reviewed/Approved by: (Print Name)		

ML-9620 (2-98)

G-14 of 164

7 of 6

RADIOLOGICAL SURVEY DATA SHEET (cont.)

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

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

N/A

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 printo 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-0620A (4-88)

94-BLDG POST REMEDIATION SURVEY/SCANNING

RSDS# 02-TF-1492 RCT: DJH RCT: [illegible]

43-20 BKG:	0	EFF:	0.172	PROBE AREA:	181	cm2	Surface Eff:		0.5	Detector # :	2
43-37 BKG:	0	EFF:	0.212	PROBE AREA:	584	cm2	Surface Eff:		0.5	Detector # :	3
LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2	
SRC BKG	5673	6178	5676	3		10/14/02	10:30	46	300	15	
SRC CHECK	5673	6178	5676	3		10/14/02	10:33	2104	60	3399	
SRC CHECK	5673	6178	5676	3		10/14/02	10:36	1971	60	3184	
SRC CHECK	5673	6178	5676	3		10/14/02	10:37	2139	60	3455	
SRC CHECK	5673	6178	5676	3		10/14/02	10:39	2049	60	3310	
SRC CHECK	5673	6178	5676	3		10/14/02	10:40	1986	60	3208	
SRC CHECK	5673	6178	5676	3		10/14/02	10:42	2217	60	3581	
RM-1 01	5673	6178	5676	3	1	10/14/02	0:39	18	30	58	
RM-1 02	5673	6178	5676	3	2	10/14/02	12:43	9	30	29	
RM-1 03	5673	6178	5676	3	3	10/14/02	12:54	4	30	13	
RM-1 04	5673	6178	5676	3	4	10/14/02	13:02	9	30	29	
RM-1 05	5673	6178	5676	3	5	10/14/02	13:07	7	30	23	
RM-1 06	5673	6178	5676	3	6	10/14/02	13:10	27	30	87	
RM-1 07	5673	6178	5676	3	7	10/14/02	13:12	31	30	100	
RM-1 08	5673	6178	5676	3	8	10/14/02	13:29	18	30	58	
RM-1 09	5673	6178	5676	3	9	10/14/02	13:43	9	30	29	

94-BLDG POST REMEDIATION SURVEY, SCANNING

RSDS# 02-TF-1492 RCT: DJH RCT: PBK

43-20 BKG:	0	EFF:	0.172	PROBE AREA:	181	cm2	Surface Eff:		0.5	Detector # :
43-37 BKG:	0	EFF:	0.212	PROBE AREA:	584	cm2	Surface Eff:		0.5	Detector # :
LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
SRC BKG	5673	6178	5676	3		10/15/02	8:41	23	300	7
SRC CHECK	5673	6178	5676	3		10/15/02	8:43	1908	60	3082
SRC CHECK	5673	6178	5676	3		10/15/02	8:45	2081	60	3362
SRC CHECK	5673	6178	5676	3		10/15/02	8:47	2120	60	3425
SRC CHECK	5673	6178	5676	3		10/15/02	8:49	1927	60	3113
SRC CHECK	5673	6178	5676	3		10/15/02	8:50	2098	60	3389
SRC CHECK	5673	6178	5676	3		10/15/02	8:52	2180	60	3522
RM-2 01	5673	6178	5676	3	1	10/15/02	8:56	9	30	29
RM-2 02	5673	6178	5676	3	2	10/15/02	9:02	21	30	68
RM-2 03	5673	6178	5676	3	3	10/15/02	9:04	14	30	45
RM-2 04	5673	6178	5676	3	4	10/15/02	9:05	24	30	78
RM-2 05	5673	6178	5676	3	5	10/15/02	9:08	15	30	48
RM-2 06	5673	6178	5676	3	6	10/15/02	9:10	17	30	55
RM-2 07	5673	6178	5676	3	7	10/15/02	9:12	10	30	32
RM-2 08	5673	6178	5676	3	8	10/15/02	9:14	7	30	23
RM-2 09	5673	6178	5676	3	9	10/15/02	9:20	19	30	61
RM-2 10	5673	6178	5676	3	10	10/15/02	9:22	5	30	16
RM-2 11	5673	6178	5676	3	11	10/15/02	9:26	9	30	29
RM-2 12	5673	6178	5676	3	12	10/15/02	9:28	10	30	32
RM-2 13	5673	6178	5676	3	13	10/15/02	9:31	7	30	23
RM-2 14	5673	6178	5676	3	14	10/15/02	9:40	22	30	71
RM-2 15	5673	6178	5676	3	15	10/15/02	9:42	14	30	45
RM-2 16	5673	6178	5676	3	16	10/15/02	9:44	3	30	10
RM-2 17	5673	6178	5676	3	17	10/15/02	9:50	7	30	23
RM-2 18	5673	6178	5676	3	18	10/15/02	9:55	6	30	19
RM-2 19	5673	6178	5676	3	19	10/15/02	10:03	8	30	26
RM-2 20	5673	6178	5676	3	20	10/15/02	10:07	12	30	39
RM-2 21	5673	6178	5676	3	21	10/15/02	10:10	16	30	52
RM-2 22	5673	6178	5676	3	22	10/15/02	10:13	9	30	29
RM-2 23	5673	6178	5676	3	23	10/15/02	10:20	9	30	29
RM-2 24	5673	6178	5676	3	24	10/15/02	10:25	4	30	13
RM-2 25	5673	6178	5676	3	25	10/15/02	12:24	12	30	39
RM-2 26	5673	6178	5676	3	26	10/15/02	12:29	8	30	26
RM-2 27	5673	6178	5676	3	27	10/15/02	12:30	26	30	84

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Survey Data Building 94

replicate Max Use links to locate data

Loc		Smear #	REMOVABLE DPM α	DPM β	H3	FIXED Loc #	dpm α	Net β
U-1	3-4	1	0	0	12.16	1	13	82
	3-17	2	4	3.6	12.2	2	13	0
	3-30	3	0	3.84	8.04	3	19	0
	11-30	4	0	2.56	8.16	4	19	52.7
	19-30	5	0	1.28	8.55	5	13	253
	26-30	6	0	2.56	0	6	19	13.7
	24-30	7	1.99	2.44	3.48	7	45	111
	26-16	8	0	2.56	0	8	26	189
	30-10	9	0	2.56	0.23	9	19	145
	26-4	10	1.99	2.44	0	10	13	121
	21-4	11	0	1.28	0	11	26	0
	11-4	12	0	2.56	5.57	12	26	0
	7-10	13	0	0	1.82	13	19	623
	15-10	14	0	1.28	0	14	51	838
	23-10	15	0	2.56	2.91	15	45	726
	11-17	16	0	3.84	6.87	16	39	833
	19-17	17	0	0	5.2	17	64	711
	7-24	18	0	0	10.21	18	26	809
	15-24	19	0	2.56	4.88	19	26	726
	23-24	20	2.02	0	0	20	45	623
U-2	3-	21	1.99	2.44	0	21	13	0
	3-16	22	0	5.12	1.76	22	26	23.4
	3-30	23	0	1.28	5.62	23	26	101
	11-30	24	0	0	3.41	24	19	13.7
	19-30	25	1.97	3.72	0	25	32	0
	26-30	26	0	6.4	0.66	26	32	42.9
	30-24	27	0	1.28	2.81	27	19	228
	26-17	28	0	2.56	0	28	19	136
	30-10	29	0	5.12	4.19	29	19	160
	20-4	30	0	1.28	0	30	6	47.8
	26-4	31	0	0	0	31	13	0
	11-4	32	0	0	3.89	32	6	13.7
	7-10	33	0	2.56	0	33	39	799
	15-10	34	0	1.28	0	34	19	623
	23-10	35	0	2.56	0	35	19	658
	11-17	36	0	1.28	0	36	51	716
	19-17	37	0	2.56	0	37	45	677
	7-24	38	0	2.56	0	38	39	667
	15-24	39	0	1.28	0	39	45	628
	23-24	40	0	0	0	40	26	633
U4	7-1	1	0	5.48	6.82	1	19	760
	12-18	2	0	4.11	0.85	2	32	619

Building 94 Survey Data Worksheets

	Loc	Smear #	DPM α	DPM β	H3	Loc #	dpm α	Net β
	17-19	3	0	6.85	0	3	26	828
	6-13	4	2.18	8.06	1.81	4	19	672
	13-13	5	2.18	2.58	4.21	5	26	755
	3-9	6	0	2.74	5.49	6	26	960
	7-2	7	2.18	3.95	14.17	7	32	604
	17-4	8	0	1.37	7.77	8	13	726
	18-4	9	8.74	3.49	1.77	9	19	448
	1-2	10	4.37	1.06	1.97	10	45	750
U3	58-1	1	2.18	2.58	3.99	1	26	0
	52-2	2	0	2.74	2.1	2	13	0
	48-9	3	0	4.11	3.16	3	0	133
	40-11	4	0	2.74	2.16	4	6	35.1
	40-21	5	0	0	4	5	13	88.8
	33-23	6	0	2.74	10.73	6	32	0
S3	3-23					7	0	0
S3	3-23					8	51	0
	50-26	7	0	5.48	0	9	19	0
	56-20	8	0	2.74	0	10	13	0
	53-22	9	0	0	0	11	13	69.5
	51-22	10	0	2.74	0	12	6	45.1
	22-19	11	2.18	2.58	5.51	13	13	93.9
	28-24	12	2.18	2.58	11.05	14	32	0
S2	8-24					15	0	0
	23-28	13	0	1.37	2.65	16	0	0
	26-25	14	2.19	0	0	17	19	0
	20-26	15	0	0	1.17	18	6	0
	12-26	16	2.19	1.21	3.08	19	0	0
	15-20	17	0	2.74	2.11	20	19	93.9
	6-24	18	2.18	5.32	5.49	21	6	45.1
	11-4	19	0	1.37	4.95	22	6	0
	11-2	20	0	2.74	0	23	13	0
J01		21	2.19	1.21	0.42	24	13	98.8
J02		22	2.18	3.95	2.48	25	13	20.7
J03		23	2.19	1.21	8.19	26	6	59.8
J04		24	0	9.59	0	27	13	0
J05		25	2.18	5.32	4.23	28	26	93.9
J06		26	0	2.74	0	29	0	45.1
J07		27	2.19	1.21	0	30	13	128
J08		28	0	2.74	0	31	39	64.6
J09		29	2.18	2.58	0	32	6	0
J10		30	0	1.37	4.2	33	26	98.8
RM3WC		1	2.18	2.58	8.01	1	6	264
RM3WC		2	0	0	5.97	2	39	250
RM3WC		3	2.19	1.21	9.8	3	13	177
RM3WC		4	0	0	5.27	4	19	240
RM3WC		5	0	1.37	6.15	5	0	0
RM3WC		6	0	2.74	3.15	6	26	133
RM3WC		7	0	4.11	9.85	7	19	5.9

Building 94 Survey Data Worksheets

Loc	Smear #	DPM α	DPM β	H3	Loc #	dpm α	Net β
RM3WC	8	0	5.48	0	8	45	49.8
RM3WC	9	0	0	11.26	9	13	108
RM3WC	10	0	4.11	2.29	10	6	0
RM3WC	11	0	0	0	11	13	30.2
RM3WC	12	0	2.74	3.11	12	13	108
RM3WC	13	0	1.37	6.85	13	19	59.5
RM3WC	14	0	1.37	1.48	14	6	1
RM3WC	15	0	1.37	9.53	15	32	1
RM3WC	16	0	0	4.92	16	0	30.2
RM3WC	17	0	2.74	8.77	17	6	0
RM3WC	18	0	2.74	6.43	18	13	0
RM3WC	19	0	2.74	3.11	19	32	44.9
RM3WC	20	0	0	5.44	20	32	377
U2QC	3-4				3-4	0	3.9
U2QC	11-17				11-17	32	785
U1QC	11-4				11-4	13	0
U3QC	28-24				28-24	39	116
U3QC	40-11				40-11	19	301
QC	J-4				J-4	19	0
RM3QC	15				15	6	0
RM3QC	3				3	6	133
Rm2EMC1					U2FSR5	113	
Rm2EMC2					U2FSR5	110	
Rm2EMC3					U2FSR5	623	
Dock	1	2.18	3.95	15.02	U501	257	680
Dock	2	2.18	2.58	8.98	U502	32	665
Dock	3	2.18	5.32	18.16	U503	289	821
Dock	4	4.37	5.17	17.26	U504	51	519
Dock	5	2.18	2.58	23.51	U505	51	553
Dock	6	0	5.48	14.88	U506	71	617
Dock	7	0	5.48	8.94	U507	135	592
Dock	8	2.18	3.95	5.32	U508	96	675
Dock	9	0	2.74	15.95	U509	64	563
Dock	10	2.18	2.58	9.9	U5010	96	519
ExWall	11	2.18	3.95	5.11	U601	39	75
ExWall	12	2.19	1.21	13.85	U602	39	0
ExWall	13	0	0	6.16	U603	13	0
ExWall	14	0	1.37	7.7	U604	26	0
ExWall	15	0	1.37	6.34	U605	26	0
ExWall	16	0	1.37	18.33	U606	19	0
ExWall	17	0	1.37	16.32	U607	19	7
ExWall	18	4.37	3.8	14.85	U608	39	0
ExWall	19	0	5.48	28.62	U609	26	0
ExWall	20	4.37	0	11.62	U610	26	0
ExWall	21	0	2.74	17	U611	51	0
ExWall	22	2.18	3.95	23.05	U612	51	0
Roof	1	2.18	8.06	9.21	U6R1	141	128
Roof	2	0	2.75	0.62	U6R2	59	100

Loc	Smear #	DPM α	DPM β	H3	Loc #	dpm α	Net β
Roof	3	2.1	83.42	5.63	U6R3	65	4
Roof	4	2.18	3.95	0	U6R4	100	0
Loc	Smear #	DPM α	DPM β	H3	Loc #	dpm α	Net β
Roof	5	4.36	7.91	5.44	U6R5	147	48
Roof	6	6.55	7.75	6.12	U6R6	53	36
Roof	7	2.18	3.95	0	U6R7	41	0
Roof	8	0	5.48	15.05	U6R8	100	112
DKQC	9				9	51	848
EXTQC	4				4	13	121
S7 3-2	1				1	26	
3-6	2				2	13	
3-10	3				3	6	
3-14	4				4	51	
3-18	5				5	39	
8-18	6				6	19	
8-14	7				7	0	
8-10	8				8	64	
8-6	9				9	45	
8-2	10				10	13	
13-2	11				11	45	
13-6	12				12	19	
13-10	13				13	39	
13-14	14				14	13	
13-18	15				15	26	
18-18	16				16	39	
18-14	17				17	32	
18-10	18				18	26	
18-6	19				19	19	
18-2	20				20	32	
Ave		0.90	3.25	5.31		36.72	222.72
Max		8.74	83.42	28.62		623	960
				± 5.784633			

RSDS #s			Date
02	-TF-	1457	8/29/02 ✓
02	-TF-	1459	8/29/02 ✓
02	-TF-	1461	9/4/02 ✓
02	-TF-	1462	9/5/02 ✓
02	-TF-	1463	9/5/02 ✓
02	-TF-	1464	9/9/02 ✓
02	-TF-	1465	9/9/02 ✓
02	-TF-	1466	9/10/02 ✓
02	-TF-	1467	9/11/02 ✓
02	-TF-	1492	10/14/02 ✓
02	-TF-	1474	9/25/02 ✓
02	-TF-	1487	10/3/02 ✓
02	-TF-	1488	10/7/02 ✓
02	-TF-	1489	

Survey Data Parameters

Survey Unit 1

	Smears α	Smears β	H3		Fixed α	Fixed β
N	20	20	20	N	20	20
Mean	0.5	1.9	4.5	Mean	28.3	342.8
SD	1.1	1.3	4.3	SD	14.8	339.8
Var	1.2	1.8	18.5	Var	217.7	115444.2
Max	4.0	3.8	12.2	Max	64.0	838.0

Survey Unit 2

	Smears α	Smears β	H3		Fixed α	Fixed β
N	20	20	20	N	20	20
Mean	0.20	2.16	1.12	Mean	25.65	308.38
SD	0.61	1.81	1.81	SD	12.95	314.55
Var	0.37	3.27	3.28	Var	167.71	98940.39
Max	1.99	6.40	5.62	Max	51.00	799.00

Survey Unit 3

	Smears α	Smears β	H3		Fixed α	Fixed β
N	20	20	20	N	23	20
Mean	0.66	2.29	3.11	Mean	13.30	26.28
SD	1.03	1.59	3.26	SD	12.67	41.26
Var	1.05	2.54	10.65	Var	160.49	1702.57
Max	2.19	5.48	11.05	Max	51.00	133.00

Survey Unit 4

	Smears α	Smears β	H3		Fixed α	Fixed β
N	10	10	10	N	10	10
Mean	1.97	3.97	4.49	Mean	25.70	712.20
SD	2.81	2.27	4.29	SD	9.12	138.39
Var	7.90	5.14	18.37	Var	83.12	19151.29
Max	8.74	8.06	14.17	Max	45.00	960.00

Room 3 Walls/Ceiling

	Smears α	Smears β	H3		Fixed α	Fixed β
N	20	20	20	N	20	20
Mean	0.22	1.83	5.57	Mean	17.60	93.98
SD	0.67	1.62	3.34	SD	12.92	111.81
Var	0.45	2.62	11.12	Var	166.88	12502.22
Max	2.19	5.48	11.26	Max	45.00	377.00

Max/Max	4	6.4	12.2	51	838

Judgemental SU 3

	Smears α	Smears β	H3		Fixed α	Fixed β
N	10	10	10	N	10	10
Mean	1.31	3.19	1.95	Mean	15.50	60.97
SD	1.13	2.62	2.81	SD	11.64	44.43
Var	1.27	6.88	7.87	Var	135.39	1973.60
Max	2.19	9.59	8.19	Max	39.00	128.00

Alpha Scan data Unit 1dpm/100cm2

#	Loc	Act	LocCode	Act	LocCode	Act	LocCode	Act
1	U1WS	13	U1FSR1	29	U1FSR3	48	U1FSR5	29
2	U1WS	0	U1FSR1	36	U1FSR3	39	U1FSR5	19
3	U1WS	26	U1FSR1	42	U1FSR3	45	U1FSR5	29
4	U1WS	13	U1FSR1	42	U1FSR3	29	U1FSR5	39
5	U1WS	0	U1FSR1	36	U1FSR3	26	U1FSR5	32
6	U1WS	26	U1FSR1	42	U1FSR3	16	U1FSR5	36
7	U1WS	13	U1FSR1	26	U1FSR3	32	U1FSR5	42
8	U1WS	0	U1FSR1	32	U1FSR3	32	U1FSR5	36
9	U1WS	0	U1FSR1	42	U1FSR3	36	U1FSR5	42
10	U1WS	13	U1FSR1	32	U1FSR3	26	U1FSR5	39
11	U1WS	13	U1FSR1	19	U1FSR3	39	U1FSR5	48
12	U1WS	26	U1FSR1	48	U1FSR3	48	U1FSR5	32
13	U1WS	77	U1FSR1	26	U1FSR3	29	U1FSR5	6
14	U1WS	0	U1FSR1	42	U1FSR3	32	U1FSR5	32
15	U1WS	26	U1FSR1	26	U1FSR3	42	U1FSR5	45
16	U1WS	13	U1FSR1	32	U1FSR3	45	U1FSR5	36
17	U1WS	13	U1FSR1	45	U1FSR3	55	U1FSR5	10
18	U1WS	0	U1FSR1	29	U1FSR3	29	U1FSR5	36
19	U1WS	39	U1FSR1	48	U1FSR3	45	U1FSR5	36
20	U1WS	39	U1FSR1	16	U1FSR3	19	U1FSR5	32
21	U1WS	26	U1FSR1	42	U1FSR3	52	U1FSR5	42
22	U1WS	39	Avg	34.85714		36.38095		33.238095
23	U1WS	0	Max	48		55		48
24	U1WS	26	Var	84.62857		114.1476		110.89048
25	U1WS	0						
26	U1WS	26						
27	U1WS	39		U1FS	Bkg	5.0		
28	U1WS	26		U1FS	NetAvg	18.3		
29	U1WS	13		U1FS	NetMax	50.0		
30	U1WS	13		U1FS	Var	125.6		
U1WS	bkg	6.0		U1FS	StDev	11.2		
U1WS	NetAvg	12.6			#	303		
U1WS	NetMax	71.0						
U1WS	Var	295.3						
U1WS	StDev	17.2						
	#	30						

Alpha Scan data Unit 2 dpm/100cm2

#	LocCode	Act	LocCode	Act	LocCode	Act	LocCode	Act
1	U2WS	13	U2FSR1	16	U2FSR3	19	U2FSR5	32
2	U2WS	26	U2FSR1	26	U2FSR3	16	U2FSR5	26
3	U2WS	13	U2FSR1	23	U2FSR3	19	U2FSR5	32
4	U2WS	13	U2FSR1	19	U2FSR3	6	U2FSR5	139
5	U2WS	13	U2FSR1	29	U2FSR3	26	U2FSR5	29
6	U2WS	39	U2FSR1	6	U2FSR3	26	U2FSR5	19
7	U2WS	39	U2FSR1	29	U2FSR3	19	U2FSR5	26
8	U2WS	0	U2FSR1	29	U2FSR3	23	U2FSR5	29
9	U2WS	51	U2FSR1	13	U2FSR3	29	U2FSR5	13
10	U2WS	51	U2FSR1	23	U2FSR3	23	U2FSR5	36
11	U2WS	26	U2FSR1	26	U2FSR3	23	U2FSR5	45
12	U2WS	13	U2FSR1	23	U2FSR3	36	U2FSR5	16
13	U2WS	39	U2FSR1	19	U2FSR3	26	U2FSR5	39
14	U2WS	13	U2FSR1	36	U2FSR3	23	U2FSR5	13
15	U2WS	26	U2FSR1	23	U2FSR3	3	U2FSR5	10
16	U2WS	13	U2FSR1	32	U2FSR3	10	U2FSR5	16
17	U2WS	51	U2FSR1	16	U2FSR3	39	U2FSR5	23
18	U2WS	13	U2FSR1	23	U2FSR3	23	U2FSR5	29
19	U2WS	26	U2FSR1	23	U2FSR3	13	U2FSR5	16
20	U2WS	77	U2FSR1	6	U2FSR3	10	U2FSR5	10
21	U2WS	39	U2FSR1	6	U2FSR3	58	U2FSR5	26
22	U2WS	26	U2FSR1	26	U2FSR3	16	U2FSR5	26
23	U2WS	51	U2FSR1	23	U2FSR3	13	U2FSR5	32
24	U2WS	39	U2FSR1	3	U2FSR3	19	U2FSR5	13
25	U2WS	39	U2FSR2	13	U2FSR4	26	U2FSR6	13
26	U2WS	13	U2FSR2	13	U2FSR4	19	U2FSR6	23
27	U2WS	26	U2FSR2	13	U2FSR4	16	U2FSR6	19
28	U2WS	26	U2FSR2	39	U2FSR4	23	U2FSR6	26
29	U2WS	26	U2FSR2	23	U2FSR4	19	U2FSR6	23
30	U2WS	26	U2FSR2	26	U2FSR4	13	U2FSR6	16
31	U2WS	26	U2FSR2	42	U2FSR4	19	U2FSR6	16
32	U2WS	0	U2FSR2	23	U2FSR4	32	U2FSR6	16
33	U2WS	13	U2FSR2	19	U2FSR4	23	U2FSR6	13
34	U2WS	90	U2FSR2	13	U2FSR4	6	U2FSR6	16
35	U2WS	51	U2FSR2	32	U2FSR4	10	U2FSR6	16
36	U2WS	77	U2FSR2	10	U2FSR4	10	U2FSR6	19
37	U2WS	64	U2FSR2	23	U2FSR4	23	U2FSR6	13
38	U2WS	0	U2FSR2	42	U2FSR4	19	U2FSR6	39
39	U2WS	64	U2FSR2	19	U2FSR4	16	U2FSR6	39
40	U2WS	64	U2FSR2	19	U2FSR4	6	U2FSR6	19
41	U2WS	26	U2FSR2	16	U2FSR4	19	U2FSR6	23
42	U2WS	51	U2FSR2	32	U2FSR4	10	U2FSR6	13
43	U2WS	39	U2FSR2	19	U2FSR4	13	U2FSR6	26
44	U2WS	26	U2FSR2	32	U2FSR4	26	U2FSR6	13

#		LocCode	Act	LocCode	Act	LocCode	Act	LocCode	Act
	45	U2WS	39	U2FSR2	23	U2FSR4	16	U2FSR6	29
	46	U2WS	13	U2FSR2	29	U2FSR4	26	U2FSR6	23
	47	U2WS	77	U2FSR2	10	U2FSR4	13	U2FSR6	19
	48	U2WS	39	U2FSR2	10	U2FSR4	13	U2FSR6	26
	49	U2WS	13	Avg	21.625		19.45833		24.854167
	50	U2WS	26	Max	42		58		139
	51	U2WS	13	Var	94.29504		122.4606		627.98798
	52	U2WS	0						
	53	U2WS	26						
		bkg	19						
						StDev	11.34		
U2WS		NetAvg	13.13	U2FS		NetAvg	14.23		
U2WS		NetMax	71	U2FS		NetMax	133		
		StDev	21.67			StDev	11.34		
		#	53			#	312		

Code	
U =	Survey Unit
F =	Floor
S =	Scan
W =	Wall
R =	Row
RM =	Room
C =	Contact
DK =	Dock
EXT =	External Surface
QC =	Replicate
EMC =	Elavated Measureme
J =	Judgmental

Replicate Fixed Point QC

		alpha (dpm/100cm2)			beta (dpm/100cm2)		
Location #		initial	2σ	replicate 1	initial	2σ	replicate
U2QC	3-4	13	7.21	0	-40	12.65	3.9
U2QC	11-17	51	14.28	32	716	53.52	785
U1QC	11-4	26	10.20	13	-1	2.00	-30
U3QC	28-24	32	11.31	39	-67.1	16.38	116
U3QC	40-11	6	4.90	19	35.1	11.85	301
QC	J-4	13	7.21	19	-21.3	9.23	-186
RM3QC	15	32	11.31	6	1	2.00	-8.8
RM3QC	3	13	7.21	6	177	26.61	133
DKQC	9	64	16.00	51	563	47.46	848
EXTQC	4	26	10.20	13	-57	15.10	121
Variance (S2) =		302.47		269.27	105597.4		147744.3
Ratio				1.1			0.7
Agreement				Yes			Yes

Graph Data

	SU1	SU2	SU3	SU4	SU 5	SU6
Alpha	28.3	25.65	13.30	25.70	19.98	6.34
Beta	342.8	308.38	26.28	712.20	620.40	25.50

Avg Scan U1&U2

U1Floor	U2Floor	U1Wall	U2Wall
18.3	14.23	12.6	13.13

Scan Comp

	SU1	SU2
Scan	15.4	27.36
Contact	28.3	25.65

Survey Unit 5 (Dock)

	Smears α	Smears β	H3		Fixed α	Adj Po210	Fixed β
N	10	10	10	N	10	10	10
Mean	1.75	3.98	13.79	Mean	[redacted]	19.98	620.40
SD	1.38	1.30	5.44	SD	88.93	15.56	93.08
Var	1.91	1.68	29.61	Var	7908.18	242.03	8664.71
Max	4.37	5.48	23.51	Max	289.00	51	821.00

Survey Unit 6 (Roof & Walls)

	Smears α	Smears β	H3		Fixed α	Adj Po210	Fixed β
N	20	20	20	N	20	8	20
Mean	1.74	7.49	10.55	Mean	54.00	6.34	25.50
SD	1.95	18.04	7.73	SD	38.88	2.89	43.05
Var	3.81	325.49	59.82	Var	1511.89	8.38	1853.32
Max	6.55	83.42	28.62	Max	147.00	11	128.00

Alpha Scan data Unit 1dpm/100cm2

#	LocCode	Act	LocCode	Act	LocCode	Act	LocCode	Act
1	U1FSR7	19	U1FSR9	13	U1FSR11	19	U1FSR13	16
2	U1FSR7	16	U1FSR9	36	U1FSR11	10	U1FSR13	26
3	U1FSR7	10	U1FSR9	29	U1FSR11	23	U1FSR13	23
4	U1FSR7	10	U1FSR9	13	U1FSR11	29	U1FSR13	13
5	U1FSR7	26	U1FSR9	29	U1FSR11	19	U1FSR13	36
6	U1FSR7	10	U1FSR9	48	U1FSR11	26	U1FSR13	19
7	U1FSR7	10	U1FSR9	23	U1FSR11	19	U1FSR13	26
8	U1FSR7	23	U1FSR9	16	U1FSR11	13	U1FSR13	36
9	U1FSR7	10	U1FSR9	23	U1FSR11	42	U1FSR13	29
10	U1FSR7	16	U1FSR9	13	U1FSR11	39	U1FSR13	23
11	U1FSR7	29	U1FSR9	23	U1FSR11	29	U1FSR13	29
12	U1FSR7	19	U1FSR9	16	U1FSR11	19	U1FSR13	32
13	U1FSR7	39	U1FSR9	19	U1FSR11	23	U1FSR13	6
14	U1FSR7	39	U1FSR9	23	U1FSR11	26	U1FSR13	13
15	U1FSR7	16	U1FSR9	10	U1FSR11	26	U1FSR13	42
16	U1FSR7	26	U1FSR9	19	U1FSR11	29	U1FSR13	19
17	U1FSR7	23	U1FSR9	13	U1FSR11	26	U1FSR13	6
18	U1FSR7	42	U1FSR9	29	U1FSR11	10	U1FSR13	16
19	U1FSR7	45	U1FSR9	23	U1FSR11	10	U1FSR13	19
20	U1FSR7	29	U1FSR9	26	U1FSR11	45	U1FSR13	26
21	U1FSR7	16	U1FSR9	36	U1FSR11	32	U1FSR13	36
	Avg	22.52381		22.85714		24.47619		23.38095
	Max	45		48		45		42
	Var	125.7619		88.92857		97.5619		98.44762

Survey Unit 7 (Room 2 Floor)

	Fixed α
N	20
Mean	28.3
SD	16.21
Var	262.85
Max	64

Alpha Scan data Unit 2 dpm/100cm2

LocCode	Act	LocCode	Act	LocCode	Act	LocCode	Act
U2FSR8	23	U2FSR10	19	U2FSR12	23	U2FSR14	36
U2FSR8	23	U2FSR10	16	U2FSR12	16	U2FSR14	16
U2FSR8	16	U2FSR10	23	U2FSR12	19	U2FSR14	13
U2FSR8	16	U2FSR10	23	U2FSR12	19	U2FSR14	16
U2FSR8	19	U2FSR10	10	U2FSR12	10	U2FSR14	19
U2FSR8	29	U2FSR10	19	U2FSR12	13	U2FSR14	10
U2FSR8	36	U2FSR10	32	U2FSR12	19	U2FSR14	10
U2FSR8	10	U2FSR10	26	U2FSR12	36	U2FSR14	3
U2FSR8	26	U2FSR10	10	U2FSR12	23	U2FSR14	13
U2FSR8	19	U2FSR10	32	U2FSR12	32	U2FSR14	29
U2FSR8	10	U2FSR10	23	U2FSR12	23	U2FSR14	13
U2FSR8	26	U2FSR10	29	U2FSR12	26	U2FSR14	23
U2FSR8	26	U2FSR10	29	U2FSR12	23	U2FSR14	36
U2FSR8	16	U2FSR10	36	U2FSR12	61	U2FSR14	39
U2FSR8	29	U2FSR10	39	U2FSR12	13	U2FSR14	16
U2FSR8	19	U2FSR10	16	U2FSR12	6	U2FSR14	10
U2FSR8	23	U2FSR10	16	U2FSR12	6	U2FSR14	13
U2FSR8	13	U2FSR10	26	U2FSR12	16	U2FSR14	6
U2FSR8	23	U2FSR10	36	U2FSR12	10	U2FSR14	10
U2FSR8	19	U2FSR10	10	U2FSR12	13	U2FSR14	13
U2FSR8	16	U2FSR10	19	U2FSR12	23	U2FSR14	16
U2FSR8	13	U2FSR10	19	U2FSR12	16	U2FSR14	23
U2FSR8	23	U2FSR10	13	U2FSR12	19	U2FSR14	19
U2FSR8	29	U2FSR10	19	U2FSR12	19	U2FSR14	16
U2FSR9	10	U2FSR11	6	U2FSR13	19	bkg	6
U2FSR9	32	U2FSR11	19	U2FSR13	16		
U2FSR9	26	U2FSR11	6	U2FSR13	19		
U2FSR9	29	U2FSR11	23	U2FSR13	16		
U2FSR9	13	U2FSR11	16	U2FSR13	6		
U2FSR9	19	U2FSR11	13	U2FSR13	13		
U2FSR9	16	U2FSR11	29	U2FSR13	13		
U2FSR9	36	U2FSR11	19	U2FSR13	19		
U2FSR9	23	U2FSR11	10	U2FSR13	26		
U2FSR9	10	U2FSR11	19	U2FSR13	29		
U2FSR9	3	U2FSR11	29	U2FSR13	10		
U2FSR9	10	U2FSR11	10	U2FSR13	0		
U2FSR9	26	U2FSR11	29	U2FSR13	10		
U2FSR9	16	U2FSR11	13	U2FSR13	16		
U2FSR9	26	U2FSR11	32	U2FSR13	10		
U2FSR9	19	U2FSR11	16	U2FSR13	13		
U2FSR9	29	U2FSR11	13	U2FSR13	6		
U2FSR9	36	U2FSR11	23	U2FSR13	16		
U2FSR9	10	U2FSR11	19	U2FSR13	6		
U2FSR9	32	U2FSR11	16	U2FSR13	19		

LocCode	Act	LocCode	Act	LocCode	Act	LocCode	Act
U2FSR9	23	U2FSR11	29	U2FSR13	23		
U2FSR9	16	U2FSR11	10	U2FSR13	16		
U2FSR9	16	U2FSR11	0	U2FSR13	29		
U2FSR9	6	U2FSR11	23	U2FSR13	16		
	20.5		-20.04167		17.70833		17.41667
	36		39		61		39
	70.62666		83.82709		133.0706		94.61278

Unit 4 Floor Scan Alpha Scan data dpm/100cm2

#	LocCode	Act	LocCode	Act	LocCode	Act	LocCode	Act
1	U4FSR1	26	U4FSR2	23	U4FSR3	26	U4FSR4	29
2	U4FSR1	26	U4FSR2	29	U4FSR3	6	U4FSR4	29
3	U4FSR1	13	U4FSR2	26	U4FSR3	19	U4FSR4	23
4	U4FSR1	6	U4FSR2	10	U4FSR3	19	U4FSR4	19
5	U4FSR1	10	U4FSR2	26	U4FSR3	26	U4FSR4	19
6	U4FSR1	19	U4FSR2	10	U4FSR3	13	U4FSR4	23
7	U4FSR1	10	U4FSR2	3	U4FSR3	42	U4FSR4	23
8	U4FSR1	13	U4FSR2	10	U4FSR3	13	U4FSR4	23
9	U4FSR1	13	U4FSR2	23	U4FSR3	32	U4FSR4	26
10	U4FSR1	16	U4FSR2	19	U4FSR3	16	U4FSR4	16
11	U4FSR1	13	U4FSR2	23	U4FSR3	13	U4FSR4	23
12	U4FSR1	23	U4FSR2	10	U4FSR3	13	U4FSR4	10
13	U4FSR1	26	U4FSR2	26	U4FSR3	23	U4FSR4	39
14	U4FSR1	13	U4FSR2	23	U4FSR3	23	U4FSR4	26
15	U4FSR1	10	U4FSR2	10	U4FSR3	19	U4FSR4	23
16	U4FSR1	23	U4FSR2	16	U4FSR3	39	U4FSR4	32
17	U4FSR1	16	U4FSR2	13	U4FSR3	23	U4FSR4	23
18	U4FSR1	26	U4FSR2	10	U4FSR3	36	U4FSR4	19
19	U4FSR1	16	U4FSR2	13	U4FSR3	42	U4FSR4	10
20	U4FSR1	23	U4FSR2	26	U4FSR3	29	U4FSR4	6
21	U4FSR1	19	U4FSR2	26	U4FSR3	23	U4FSR4	23
22	U4FSR1	13	U4FSR2	16	U4FSR3	19	U4FSR4	6
23	U4FSR1	19	U4FSR2	13	U4FSR3	19	U4FSR4	10
24	U4FSR1	29	U4FSR2	13	U4FSR3	23	U4FSR4	13
Bkg		6						

Net Avg	13.66
NetMax	36
StDev	8.21
#	96

Sample Data

		dpm/sample	%	Dock 3 alpha dpm	Corr for Po210	
Dock -3	Pu-238	1.03	0	257	45	
	Pu-239/240	0.36	0	32	6	
	Po-210	270.19	83	289	51	
	Th-232	4.29	1	51	9	
	Th-230	14.2	4	51	9	
	Th-228	4.22	1	71	12	
	Th-227		0	135	24	
	U-238	18.29	6	96	17	
	U-235		0	64	11	
	U-233/234	14.9	5	96	17	
		327.48	100		19.98	Ave
					15.6	StDev

		dpm/sample	%	R-11	%	C1	C2
U2-R5	Pu-238	1.06	1	162.91	85	0.98	1.82
	Pu-239/240	61.23	44	7.55	4		
	Po-210	7.95	6		0		
	Th-232	2.92	2	1.39	1	0.71	1.05
	Th-230	9.56	7	4.99	3	4.39	4.21
	Th-228	2.81	2	2.55	1	1.15	0.94
	Th-227		0	1.57	1	1.04	0.44
	U-238	40.43	29	5.2	3	6.02	6.51
	U-235		0		0	0.4	0.68
	U-233/234	14.13	10	5.47	3	4.67	6.09
	Total	140.09	100	191.63	100	19.36	21.74
					dpm/100	10.70	12.01

Roof Sediment smears dpm/smear

#	alpha	beta	H3	
9	1.44	1.33	12.83	
10	3.51	2.51	14.07	
11	1.68	5.25	11.28	
12	0	8.60	0	0.552486

Roof		dpm/sample	%	Roof alpha dpm	Corr for Po210	
	Pu-238	0.77	5	141	10	
	Pu-239/240		0	59	4	
	Po-210	14.61	93			
	Th-232		0	65	5	
	Th-230	0.36	2	100	7	
	Th-228		0			
	Th-227		0	147	11	
	U-238		0	53	4	
	U-235		0	41	3	
	U-233/234		0	100	7	
		15.74	100		6.34	Ave
					2.9	StDev

Floor Drain Sediment Smears dpm/smear

1	0	2.6
2	0	0.9
3	0	1.8

Water Sample Drain #3

alpha	-	H3
<1.95dpm/ml		1.64nCi/L

Alpha Scan data Unit 1dpm/100cm2

#	LocCode	Act	LocCode	Act	LocCode	Act	LocCode	Act
1	U1FSR2	19	U1FSR4	26	U1FSR6	26	U1FSR8	23
2	U1FSR2	6	U1FSR4	23	U1FSR6	19	U1FSR8	19
3	U1FSR2	16	U1FSR4	10	U1FSR6	10	U1FSR8	16
4	U1FSR2	23	U1FSR4	10	U1FSR6	23	U1FSR8	16
5	U1FSR2	19	U1FSR4	16	U1FSR6	39	U1FSR8	13
6	U1FSR2	16	U1FSR4	39	U1FSR6	26	U1FSR8	23
7	U1FSR2	19	U1FSR4	10	U1FSR6	23	U1FSR8	10
8	U1FSR2	32	U1FSR4	6	U1FSR6	13	U1FSR8	19
9	U1FSR2	23	U1FSR4	19	U1FSR6	16	U1FSR8	3
10	U1FSR2	19	U1FSR4	13	U1FSR6	13	U1FSR8	16
11	U1FSR2	19	U1FSR4	26	U1FSR6	19	U1FSR8	13
12	U1FSR2	6	U1FSR4	23	U1FSR6	26	U1FSR8	10
13	U1FSR2	26	U1FSR4	16	U1FSR6	29	U1FSR8	16
14	U1FSR2	16	U1FSR4	23	U1FSR6	3	U1FSR8	16
15	U1FSR2	26	U1FSR4	29	U1FSR6	10	U1FSR8	16
16	U1FSR2	19	U1FSR4	45	U1FSR6	13	U1FSR8	36
17	U1FSR2	29	U1FSR4	29	U1FSR6	16	U1FSR8	29
18	U1FSR2	39	U1FSR4	13	U1FSR6	6	U1FSR8	29
19	U1FSR2	16	U1FSR4	19	U1FSR6	13	U1FSR8	26
20	U1FSR2	29	U1FSR4	16	U1FSR6	16	U1FSR8	36
21	U1FSR2	10	U1FSR4	13	U1FSR6	19	U1FSR8	6
22	U1FSR2	13	U1FSR4	16	U1FSR6	19	U1FSR8	16
23	U1FSR2	26	U1FSR4	6	U1FSR6	23	U1FSR8	26
24	U1FSR2	6	U1FSR4	3	U1FSR6	26	U1FSR8	10
25	U1FSR2	19	U1FSR4	23	U1FSR6	26	U1FSR8	45
26	U1FSR2	23	U1FSR4	16	U1FSR6	13	U1FSR8	16
	Avg	19.7692308		18.76923		18.65385		19.38462
	Max	39		45		39		45
	Var	65.8333333		96.9619		70.8		78.44762

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Aplha Scan Summary				
SU#	Max	Avg	SD	#
U1WS	71.0	12.6	17.2	30
U1FS	50.0	18.3	11.2	303
U2WS	71	13.13	21.67	53
U2FS	133	14.23	11.34	312
U4FS	36	13.66	8.21	96
U7FS1	637	83.78	189.04	18
U7FS2	77	31.67	20.12	27
U1FS2	85	32.33	30.32	9

Survey Unit 7
1st Remediation
Alpha Scan data dpm/100cm2

LocCode	Act
U7FS-1	23
U7FS-2	23
U7FS-3	19
U7FS-4	29
U7FS-5	29
U7FS-6	16
U7FS-7	6
U7FS-8	646
U7FS-9	572
U7FS-10	23
U7FS-11	29
U7FS-12	42
U7FS-13	32
U7FS-14	90
U7FS-15	26
U7FS-16	26
U7FS-17	29
U7FS-18	10
Bkg	9
StDev	189.04
NetAvg	83.78
NetMax	637
#	18

Survey Unit 7
2nd Remediation
dpm/100cm2

LocCode	Act
RM-2 01	29
RM-2 02	68
RM-2 03	45
RM-2 04	78
RM-2 05	48
RM-2 06	55
RM-2 07	32
RM-2 08	23
RM-2 09	61
RM-2 10	16
RM-2 11	29
RM-2 12	32
RM-2 13	23
RM-2 14	71
RM-2 15	45
RM-2 16	10
RM-2 17	23
RM-2 18	19
RM-2 19	26
RM-2 20	39
RM-2 21	52
RM-2 22	29
RM-2 23	29
RM-2 24	13
RM-2 25	39
RM-2 26	26
RM-2 27	84
Bkg	7
StDev	20.12
NetAvg	31.67
NetMax	77
#	27

Room 1
Rescan 100%

LocCode	Act
RM-1 01	58
RM-1 02	29
RM-1 03	13
RM-1 04	29
RM-1 05	23
RM-1 06	87
RM-1 07	100
RM-1 08	58
RM-1 09	29
Bkg	15
StDev	30.32
NetAvg	32.33
NetMax	85
#	9

Alpha Scan data Unit 1dpm/100cm2

	LocCode	Act	LocCode	
1	U1FSR10	29	U1FSR12	19
2	U1FSR10	10	U1FSR12	23
3	U1FSR10	16	U1FSR12	23
4	U1FSR10	26	U1FSR12	19
5	U1FSR10	23	U1FSR12	19
6	U1FSR10	6	U1FSR12	6
7	U1FSR10	10	U1FSR12	13
8	U1FSR10	6	U1FSR12	13
9	U1FSR10	16	U1FSR12	6
10	U1FSR10	19	U1FSR12	29
11	U1FSR10	16	U1FSR12	26
12	U1FSR10	29	U1FSR12	29
13	U1FSR10	26	U1FSR12	16
14	U1FSR10	13	U1FSR12	16
15	U1FSR10	10	U1FSR12	23
16	U1FSR10	26	U1FSR12	10
17	U1FSR10	16	U1FSR12	23
18	U1FSR10	16	U1FSR12	16
19	U1FSR10	0	U1FSR12	16
20	U1FSR10	23	U1FSR12	6
21	U1FSR10	16	U1FSR12	16
22	U1FSR10	29	U1FSR12	6
23	U1FSR10	16	U1FSR12	6
24	U1FSR10	16	U1FSR12	36
25	U1FSR10	10	U1FSR12	10
26	U1FSR10	26	U1FSR12	29
Avg		17.269231		17.46154
Max		29		36
Var		65.290476		48.4619

Appendix H

Radon Information

UNC Geotech

UNC Geotech
2597 B 3/4 Road
P.O. Box 14000
Grand Junction, Colorado 81502-5504
303/242-8621

April 12, 1990

Dennis Murphy
EG&G Mound Applied Technonogies
P.O. Box 3000
Mound Road
Miamisburg, OH 45343-3000

Dear Mr. Murphy:

I have enclosed the results ~~of the~~ radon measurements made at your site as part of the DOE Indoor Radon Study. A copy of these results can be provided in electronic ~~format if desired~~. The results will be forwarded to the study sponsor, the DOE Office of Projects and Facilities Management, by the end of April.

Please contact me at FTS 326-6293 or commercial (303) 248-6293 if you have any questions.

Sincerely yours,

Mark D. Pearson

Mark D. Pearson
Project Manager
UNC Geotech

cc: DOE Points of Contact

[illegible]	[illegible]	[illegible]	pCi/l	pCi/l	Rsnid	Dupid	Date	Date	Comments
21		ABOVE AIR SAMPLER	161.1	125.8	1678055	1666782	12/14/89	2/16/90	MET - OLD THORIUM STORAGE
21		ABOVE AIR SAMPLERS	116.7		1668588		12/14/89	2/16/90	MET - OLD THORIUM STORAGE
	SW	19 MID EAST WALL	4.8		1661547		12/12/89	2/19/90	HISTORY OF ELEVATED READIN
48		114 B CLOSET ON SPRINKLER PIPE	3.2		1671292		12/12/89	2/19/90	
19		ROOM 1	2.6		1678051		12/12/89	2/19/90	
	OLD SO BLDG	BASEMENT RIGHT CABINET	2.4		1681595		12/14/89	2/19/90	
55		1 BELOW THERMOSTAT ON E WALL	2.1		1661515		12/18/89	2/19/90	
57		ROOM 1	1.8		1681565		12/12/89	2/19/90	
87		143	1.5		1681563		12/13/89	2/19/90	
898	FIRE STATION	ROOM 802 EQUIPMENT ROOM WITH SUMP	1.4		1654460		12/12/89	2/19/90	
24		ROOM 1 PLANT NORTH WALL	1.3		1672087		12/12/89	2/19/90	
	PAINT SHOP	PS 4	1.2		1661516		12/12/89	2/16/90	
30		ROOM 3 EAST	1.1		1671262		12/12/89	2/16/90	
100		103 MIDDLE OF NORTH WALL	1.0		1678060		12/12/89	2/19/90	
37		6 NORTH WALL	1.0		1678046		12/12/89	2/19/90	
34		34 A WEST WALL	.9	.6	1672062	1672042	12/12/89	2/19/90	MET
102		123	.9		1681577		12/14/89	2/19/90	
61		RM 221 MIDDLE OF NORTH WALL	.9		1681585		12/13/89	2/19/90	
67		101 N	.9		1678020		12/12/89	2/19/90	
G-13	LOG	G-514 WEST WALL	.9		1661544		12/12/89	2/16/90	
	T	CORRIDOR 28	.9		1678039		1/15/90	2/19/90	
	T	153	.9		1678067		1/15/90	2/19/90	
	T	78	.9		1678077		1/15/90	2/19/90	
	T	38	.9		1681586		1/15/90	2/19/90	
105	PARTS MACHINING BUILDING	STAIRWELL NEXT TO ROOM 127	.8		1681564		12/12/89	2/19/90	
25	ARAC	3 ON BOOK CASE MIDDLE	.8		1671314		12/15/89	2/19/90	
60		1 ON DOOR TO ROOM 3	.8		1678049		12/12/89	2/19/90	
	A	153C CENTER CUBICLE WEST WALL	.8		1672056		12/14/89	2/16/90	
	C BUILDING OLD CAFETERIA	NORTHEAST SECTION INTERNAL WALL RM2	.8		1672052		12/12/89	2/16/90	
	R BUILDING	68 NORTH WALL	.8		1678058		12/13/89	2/16/90	
	SW	8 WEST WALL AT OLD RECOVERY	.8		1672057		12/11/89	2/16/90	
	WD BLDG	WD 8	.8		1678045		12/18/89	2/16/90	
87		124	.8		1678032		12/12/89	2/19/90	
88		ROOM 116 ON NORHT WALL RIGHT OF CEN	.7	.5	1661524	1661535	12/12/89	2/19/90	
89		101 NEAR BACK CORNER BY ROOF DRAIN	.7	.5	1666783	1668532	12/15/89	2/19/90	
22		RM 1 EAST CORRIDOR ON STORAGE RACK	.7		1678070		12/12/89	2/19/90	
56	FIRE PUMP HOUSE	ROOM 1 THERE IS ONLY 1 ROOM	.7		1678066		12/12/89	2/19/90	
	E ANNEX	E 225 EAST WALL	.7		1681552		12/18/89	2/16/90	
	POWER HOUSE PH-1	REPAIR SHOP NORTH EAST CORNER	.7		1678040		12/12/89	2/19/90	
	M BLDG	M-135	.7		1681553		12/12/89	2/16/90	
26		ROOM 84 SOUTH WEST WALL	.6	.8	1672048	1667159	12/13/89	2/16/90	
69		RM 7 ON NORTH WALL	.6	.4	1672044	1672077	12/12/89	2/19/90	
26		ROOM 84 SOUTH WEST WALL	.6		1671278		12/13/89	2/16/90	
35		RM 7	.6		1654459		12/14/89	2/19/90	
38	PP BLDG	PP CORR 136	.6		1678016		12/14/89	2/19/90	
72		ON OVERHEAD DOOR BEAM	.6		1672069		1/03/90	2/19/90	
93		HALLWAY 107 (MIDWAY)	.6		1681629		12/13/89	2/20/90	
98	FIRE STATION	ROOM 114 DORM	.6		1661507		12/12/89	2/19/90	
	COS	NW STAIRWELL AT BASEMENT LEVEL	.6		1672086		12/14/89	2/19/90	
	OSW	120 C	.6		1681573		12/12/89	2/16/90	
	SW	150 WEST END GAS BOX	.6		1678043		12/11/89	2/16/90	
	A	34 EAST WALL	.5	.7	1672075	1672051	12/14/89	2/16/90	
47		102 MIDDLE OF EAST WALL	.5	.5	1658110	1666819	12/12/89	2/16/90	

Bldg	Bldg Description	Room	Avg Radon pCi/l	Duplicate Radon pCi/l	Monid	Dupid	Monitor Install Date	Monitor Retrieve Date	Comments
45		WORK STATION AREA	.4		1681568		12/14/89	2/19/90	
46		81 EAST WALL	.4		1672070		12/12/89	2/19/90	
49		HALL OUTSIDE RM 125	.4		1678020		12/14/89	2/19/90	
51		107 TOP OF FUME HOOD	.4		1681575		12/12/89	2/19/90	
63		ROOM 134	.4		1672059		12/13/89	2/20/90	
63W		RM 4	.4		1678078		12/14/89	2/19/90	
65		ROOM 10 CONFERANCE ROOM	.4		1671284		12/14/89	2/19/90	
66		OFFICE AREA	.4		1681554		12/12/89	2/19/90	
68		EAST WALL CENTER BEAM	.4		1681555		12/14/89	2/19/90	
69		RM 10A	.4		1681576		12/12/89	2/19/90	
70		17D MEETING ROOM CENTER WALL	.4		1678041		12/12/89	2/19/90	
88		ROOM 116	.4		1671295		12/12/89	2/19/90	
95	SR/PP	95- BLD-ROOM81	.4		1661531		12/12/89	2/20/90	
	DS BUILDING	CORRIDOR 2 - 6 FT. ABOVE FLOOR	.4		1678071		12/13/89	2/19/90	
	I	I HALLWAY	.4		1667194		12/12/89	2/19/90	
	N BUILDING	N 21 WEST WALL	.4		1678057		12/15/89	2/20/90	
	POWER HOUSE PH-1	OFFICE SUPERVISOR	.4		1678035		12/12/89	2/19/90	
	R BUILDING	12 SOUTH WALL	.4		1681566		12/13/89	2/19/90	
34		BURN ROOM			1654481		12/12/89		BURNT (NOT AVAILABLE)
61		RM 151			1681567		12/13/89		MISSING

Bldg	Bldg Description	Room	Avg Radon pCi/l	Duplicate Radon pCi/l	Monid	Dupid	Monitor Install Date	Monitor Retrieve Date	Comments
	R BUILDING	143 NEXT TO NORTH WALL	.5	.5	1666533	1666816	12/12/89	2/16/90	
101		ROOM 5 ON SOUTH WEST WALL IN OFFSET	.6		1671288		12/12/89	2/19/90	
	"B" 175	175 WEST WALL	.5		1678048		12/12/89	2/16/90	
.6		ELECTRICAL PANEL RM IN ELECTRONICS	.5		1678062		12/12/89	2/19/90	
40		100	.5		1654488		12/13/89	2/16/90	
43		1 EAST WALL OVER WATER DISPENSER	.5		1678076		12/12/89	2/20/90	
44		ON BULLETIN BOARD	.5		1678047		12/12/89	2/16/90	
47		102 MIDDLE OF EAST WALL	.5		1678050		12/12/89	2/16/90	
50		CELL 113	.5		1681582		12/13/89	2/19/90	
79		CENTRAL HALLWAY WEST OF DOOR TO RM7	.5		1681605		12/18/89	2/16/90	
89		101 NEAR BACK CORNER BY ROOF DRAIN	.5		1678079		12/15/89	2/19/90	
91		1ST FLOOR	.5		1661525		12/15/89	2/16/90	
91		2ND FLOOR OUTSIDE RM215	.5		1681593		12/15/89	2/16/90	
92		HALLWAY RIGHT OFF ROOM 8	.5		1661509		12/12/89	2/19/90	
94		BAY 2 NORTH WALL	.5		1654477		12/12/89	2/19/90	
	A	215 WEST WALL	.5		1681572		12/14/89	2/16/90	
	A	1080 WEST WALL	.5		1681580		12/14/89	2/16/90	
	COS	119 N WALL NEAR PUNCH PRESS	.5		1654456		12/12/89	2/19/90	
	COS	319 WALL CABINET TO RIGHT OF SINK	.5		1681590		12/12/89	2/19/90	
	E BUILDING	159 WEST WALL	.5		1678033		12/14/89	2/16/90	
	E BUILDING	103 WEST WALL	.5		1678072		12/14/89	2/16/90	
	E ANNEX	E 212 NORTH WALL	.5		1681587		12/18/89	2/16/90	
	GH BUILDING	ROOM 2	.5		1678065		12/12/89	2/16/90	
	GP 81	1A MIDDLE OF WEST WALL	.6		1678054		12/12/89	2/19/90	
	H BLDG	ROOM 127	.5		1681571		12/12/89	2/16/90	
	HH	HH-8	.5		1671269		12/18/89	2/19/90	
	I BUILDING	BASEMENT LEFT CRAWL SPACE DOOR	.5		1671260		12/12/89	2/19/90	
	N BUILDING	N 108	.5		1678056		12/15/89	2/19/90	
	OSE	CORRIDOR 437	.5		1661536		12/15/89	2/16/90	
	OSE	CORRIDOR 301 ACROSS FROM WATER FOUN	.5		1672064		12/15/89	2/16/90	
	OSM	4HT FLOOR	.5		1678028		12/12/89	2/16/90	
	OSE	CORR 212 SOUTH WALL NEAR 218 DOOR	.5		1678036		12/15/89	2/16/90	
	OSM	319	.5		1678069		12/13/89	2/16/90	
	OSM	2ND FLOOR	.5		1681611		12/12/89	2/16/90	
	POWER HOUSE PH-1	STATIONARY BOARD CORNER	.5		1678073		12/12/89	2/19/90	
	R BUILDING	145 WEST WALL ABOVE BALANCE	.5		1654538		12/14/89	2/16/90	
	SW/R TRITIUM COMPLEX	128 OVER LARGE METAL FLOOR DISC	.5		1678019		12/12/89	2/16/90	
	W BLDG	W135 WEST CENTRAL WALL	.5		1671293		12/12/89	2/16/90	
	WO BLDG	WOA 110	.5		1671301		12/18/89	2/16/90	
	"B" 124	EAST WALL	.5		1667189		12/12/89	2/16/90	
	OSE	113 BULLETIN BOARD OPPOSITE ELEVATO	.5		1678027		12/15/89	2/16/90	
TF-2		114 EAST WALL CENTER OF ROOM	.4		1678064		12/12/89	2/19/90	
	HH	HH-24	.4		1667187		12/14/89	2/19/90	
	OS BUILDING	CORRIDOR 7 NEXT TO ROOM 216	.4		1661614		12/13/89	2/19/90	
	GP 81	1A MIDDLE OF WEST WALL	.4	.5	1672135	1661542	12/12/89	2/19/90	
105	PARTS MACHINING BUILDING	136 QC OFFICE	.4		1678017		12/12/89	2/19/90	
27		CELL 8 - WALL	.4		1681583		12/12/89	2/19/90	
28	CERAMIC PRODUCTION	101	.4		1672061		12/12/89	2/19/90	
29		HALLWAY	.4		1672105		12/14/89	2/19/90	
	TEST FIRE BUILDING 3	3-315	.4		1672036		12/12/89	2/19/90	
38	PP BLDG	PP CORR 16/BAY 2 WALL	.4		1681570		12/14/89	2/19/90	
39		BREAK RM	.4		1678050		12/14/89	2/19/90	
42		101 B EAST WALL	.4		1678031		12/13/89	2/19/90	

Appendix I

Asbestos Information

From: Christopher Ahlquist
To: Darnell, Val
Date: 10/31/02 4:31PM
Subject: Building 94

Val -

I performed a walk-through survey of Building 94 for lead paint and asbestos concerns. The following is provided for your use:

Lead

No previous lead surveys or sampling data could be found for Building 94. The paint coatings in a few areas within the building exhibited some damage due to impact damage. Representative samples of the damaged paint were analyzed in the field using a Niton Model XL-309 XRF lead detector. The sampled paints were found not to contain any amount of lead within the instrument's limit of detection. A copy of the Niton's lead sample readout will be forwarded for your use.

No lead paint hazards currently exist within the building, and no further action would be necessary unless any of the untested coatings were to be disturbed by close worker contact (sanded, grinded, scraped, torch cut, etc.). These determinations were made by Mr. Christopher Ahlquist who is an Ohio Department of Health Licensed Lead Risk Assessor.

Asbestos

An asbestos survey was conducted in accordance with EPA NESHAP requirements prior to demolition. No asbestos-containing materials were identified. A copy of the survey report will be forwarded for your use.

Let me know if I can be of further assistance.

Chris Ahlquist
SMPP/TFV Safety & Health

CC: Koehmstedt, Lee

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BWXT of Ohio, Inc.

Interoffice Correspondence

Date: October 31, 2002

From: Christopher Ahlquist
Industrial Hygienist, SMPP/TFV

To: Lee Koehmstedt
Engineer, SMPP/TFV

Re: Building 94: Asbestos-Containing Materials

During the month of October 2002, Mr. Christopher A. Ahlquist, an Industrial Hygienist with BWXT of Ohio, Inc. (BWXTO), conducted a survey of Building 94 at the Mound site in Miamisburg, Ohio for purpose of identifying asbestos-containing materials contained therein. Mr. Ahlquist is an Ohio Department of Health Certified Asbestos Hazard Evaluation Specialist as required by Ohio Department of Health regulations. During the course of the survey, Mr. Ahlquist reviewed previous survey reports and sampling data to determine the asbestos content of suspect materials. A room-by-room inspection of all accessible spaces was then conducted in order to prepare an inventory of the location and approximate quantities of identified asbestos-containing materials. None of the suspect materials (drywall wall systems) within Building 94 were found to contain any asbestos content.

Sample Method

During BWXTO's survey, bulk samples were collected utilizing sampling methods and protocol specified in the EPA's Asbestos Hazard Emergency Response Act (AHERA). Each sample was collected and placed in a clean, sealable hard-shell container and labeled with a unique sample identification number. Pertinent information was recorded on a Bulk Sample Data Sheet including sample identification number, date of inspection, name of inspector, building name, a brief description and location of the sample, and the type of material sampled (e.g., preformed-block pipe insulation, aircell-paper pipe insulation, etc.).

Analysis of Samples

The samples were submitted to DataChem Laboratories of Cincinnati, Ohio and analyzed for asbestos content by PLM and dispersion staining (Method Reference: 40 CFR Part 763, Volume 47, No. 103, May 27, 1982 pg. 23376). This analytical method, which the EPA currently recommends for the determination of asbestos in bulk samples of suspect materials, can be used for qualitative identification of six morphologically different types of asbestos fibers: chrysotile, amosite, crocidolite, anthophyllite, tremolite, and actinolite asbestos. The method specifies that the asbestos content in a bulk sample shall be

P.O. Box 3030 • Miamisburg, OH 45343-3030 • (937) 865-4020

estimated and reported as a finite percentage (rounded to the nearest percentage) within the range of 0 to 100. The result of the bulk sample analysis is reported in a standard written laboratory report. This report includes the client name, the project number, the laboratory identification number, the sample number assigned to the bulk sample upon receipt at the laboratory, and the field number assigned to the bulk sample upon collection at the site. If the bulk sample contains more than one distinct layer of material, each layer is analyzed separately. The composition of the bulk sample is reported in percentages of asbestos (i.e., cellulose, fiberglass, or other) components. The results of the sample analyses can be found on the laboratory reports.

DataChem Laboratories is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP Lab Code #101917-0). NVLAP is the agency sponsored by the National Institute of Standards and Technology providing EPA accreditation of laboratories analyzing bulk samples for asbestos content.

Conclusions

No asbestos-containing materials were identified in or on Building 94.

Since the building is scheduled for demolition, the EPA will have to be notified in writing on the proper form before demolition can occur.

Respectfully,

Christopher Ahlquist
Industrial Hygienist

Appendix J

Lead Information

From: Christopher Ahlquist
To: Darnell, Val
Date: 10/31/02 4:31PM
Subject: Building 94

Val -

I performed a walk-through survey of Building 94 for lead paint and asbestos concerns. The following is provided for your use:

Lead

No previous lead surveys or sampling data could be found for Building 94. The paint coatings in a few areas within the building exhibited some damage due to impact damage. Representative samples of the damaged paint were analyzed in the field using a Niton Model XL-309 XRF lead detector. The sampled paints were found not to contain any amount of lead within the instrument's limit of detection. A copy of the Niton's lead sample readout will be forwarded for your use.

No lead paint hazards currently exist within the building, and no further action would be necessary unless any of the untested coatings were to be disturbed by close worker contact (sanded, grinded, scraped, torch cut, etc.). These determinations were made by Mr. Christopher Ahlquist who is an Ohio Department of Health Licensed Lead Risk Assessor.

Asbestos

An asbestos survey was conducted in accordance with EPA NESHAP requirements prior to demolition. No asbestos-containing materials were identified. A copy of the survey report will be forwarded for your use.

Let me know if I can be of further assistance.

Chris Ahlquist
SMPP/TFV Safety & Health

CC: Koehmstedt, Lee

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Serial #XL309-U1059NR1794 Site: Mound Building 94 Date: 9/26/2002

No	XLNo	Site	Insp	Flr	Side	Room	Strc	Sub	Feat	Cnd	Clr	Note	Ssec	Date/Time	Cycle	DI	Res	Pbl ± Prec	Pbk ± Prec	Pbc ± Prec
1	1					Shutter Cal 1							52.9	9/26/2002 16:05:24	1 of 1	0.0	...	NA	NA	NA
2	**2**	**94**	**CAA**	**Surface**	**Lead**	**Calibration**							**18.5**	**9/26/2002 16:13:24**	**1 of 1**	**1.0**	**POS**	**1.06 ± 0.07**	**-0.15 ± 0.64**	**1.06 ± 0.07**
3	**3**	**94**	**CAA**	**Buried**	**Lead**	**Calibration**							**16.6**	**9/26/2002 16:14:25**	**1 of 1**	**2.5**	**POS**	**1.63 ± 0.31**	**0.16 ± 0.67**	**1.63 ± 0.31**
4	4	94	CAA			03	Wall - S	Drywall	Impact	Damage	White		24.2	9/26/2002 16:46:19	1 of 1	1.0	NEG	0.00 ± 0.00	-0.41 ± 0.45	0.00 ± 0.00
5	5	94	CAA			03	Wall - S	Drywall	Impact	Damage	White		28.7	9/26/2002 16:47:31	1 of 1	1.0	NEG	0.00 ± 0.00	-0.46 ± 0.42	0.00 ± 0.00
6	6	94	CAA			03	Wall - E	Concrete	Block	Damage	White		22.0	9/26/2002 16:48:58	1 of 1	1.0	NEG	0.00 ± 0.00	-0.24 ± 0.66	0.00 ± 0.00
7	7	94	CAA			03	Wall - S	Concrete	Block	Damage	White		14.9	9/26/2002 16:50:10	1 of 1	1.0	NEG	0.00 ± 0.00	-0.28 ± 0.85	0.00 ± 0.00
8	8	94	CAA			04	Wall - S	Wood		Intact	White		14.6	9/26/2002 16:51:58	1 of 1	1.0	NEG	0.00 ± 0.00	-0.06 ± 0.66	0.00 ± 0.00

J3 of 4

Serial #XL309-U1059NR1794 Site: Mound Building 94 Date: 10/2/2002

No	XLNo	Site	Insp	Flr	Side	Room	Strc	Sub	Feat	Cnd	Clr	Note	Ssec	Date/Time	Cycle	DI	Res	Pbl ± Prec	Pbk ± Prec	Pbc ± Prec
1	21	94	CAA			02	Wall - N	Drywall	Impact	Damage	White		17.3	10/2/2002 16:43:54	1 of 1	1.0	NEG	0.00 ± 0.00	-0.14 ± 0.55	0.00 ± 0.00
2	22	94	CAA			02	Wall - S	Drywall	Impact	Damage	White		29.0	10/2/2002 16:44:54	1 of 1	1.0	NEG	0.00 ± 0.00	0.16 ± 0.43	0.00 ± 0.00
3	23	94	CAA			01	Wall - N	Drywall	Impact	Damage	White		26.5	10/2/2002 16:46:20	1 of 1	1.0	NEG	0.00 ± 0.00	0.21 ± 0.43	0.00 ± 0.00

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Appendix K

Chemical Information

Chemicals previously in Building 94

Associated with the Pilot Test Program

EDTA (ethylenediaminetetraacetic acid)
EDTA, 2 Na (ethylenediaminetetraacetic acid, disodium salt)
Sodium hydroxide (NaOH)
Nitric acid (HNO_3)
Sodium bicarbonate ($NaHCO_3$)
Hydrogen peroxide solution (H_2O_2) 3 wt.%
Soil contaminated with plutonium-238 and -239
(two batches site soil, two batches spiked soil)
Soil contaminated with thorium (two batches)

Non-weapons related

adhesive
break free
caulk
cutting oil
diesel fuel conditioner
engine starter
gasoline
lacquer thinner
paint
propane
rust reformer
tap magic
touch-n-foam
wire dryer

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BWXT of Ohio, Inc.

CY2001 Emergency and Hazardous Chemical Inventory Report
(excludes Appendix A containing Official Use Only building maps*)

March 2002

MOUND
is operated for the
U.S. Department of Energy
under contract No. DE-AC24-97OH20044

**Contact the Department of Energy Miamisburg Environmental Management Project for a copy of Appendix A if needed for the performance of official duties.*

K 3 of 4

Ohio State Emergency Response Commission
c/o Ohio EPA, Lazarus Government Center
P. O. Box 1049, 122 South Front St.
Columbus, OH 43216-1049

STAPLE

Emergency and Hazardous Chemical Inventory Form

4.1 Facility Name: U. S. DOE - MOUND PLANT
City: MIAMISBURG
County: MONTGOMERY
Exact Street Location (no Box #'s): 1 MOUND ROAD
Zip Code: 45342

4.2 For Filing Date: 03/01/02
4.3 [ ] Check here if form and FACILITY MAP are Confidential and print "CONFIDENTIAL FORM" here:
4.4 [ ] Check if Revision
4.5 [x] I Have Attached a Facility Map

5.0	Chemical Description										Hazard Class					Location of Chemicals						Amount			
	CAS REGISTRY NO.	SPECIFIC CHEMICAL NAME	PURE	MIXTURE	COMPONENTS	EHS CHEMICAL	SOLID	LIQUID	GAS	TRADE SECRET	ACUTE	CHRONIC	FIRE	REACTIVE	RELEASE OF PRESSURE	B, T, OR A BUILDING, TANK OR AREA NO.	DIVISION OR ROOM LETTER	FLOOR	STORAGE TYPE CODE	PRESSURE & TEMPERATURE CONDITIONS	LOCATION-CONFIDENTIAL	MAXIMUM	AVERAGE	UNITS	NO. OF DAYS ON SITE
1	8006-61-9	gasoline	X					X			X	X	X			T15			A	1,4		6000	4000	G	365
2	8006-61-9	gasoline	X					X			X	X	X			B-94	3	1	F	1,4		01	01	C	365
3	8006-61-9	gasoline	X					X			X	X	X			B-GW	dock	1	F	1,4		02	01	C	365
4	8006-61-9	gasoline	X					X			X	X	X			B-SD	dock	1	F	1,4		01	01	C	365
5	8006-61-9	gasoline		X				X			X	X	X			B-TR1		1	F	1,4		02	01	C	365

CERTIFICATION *(READ AND SIGN AFTER COMPLETING ALL SECTIONS)*

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED IN PAGES ONE THROUGH 27, AND THAT BASED ON MY INQUIRY OF THOSE RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THAT THE INFORMATION IS TRUE, ACCURATE, AND COMPLETE.

Richard Provencher, Director, USDOE, MEMP
NAME AND OFFICIAL TITLE OF OWNER OR OWNERS AUTHORIZED REPRESENTATIVE

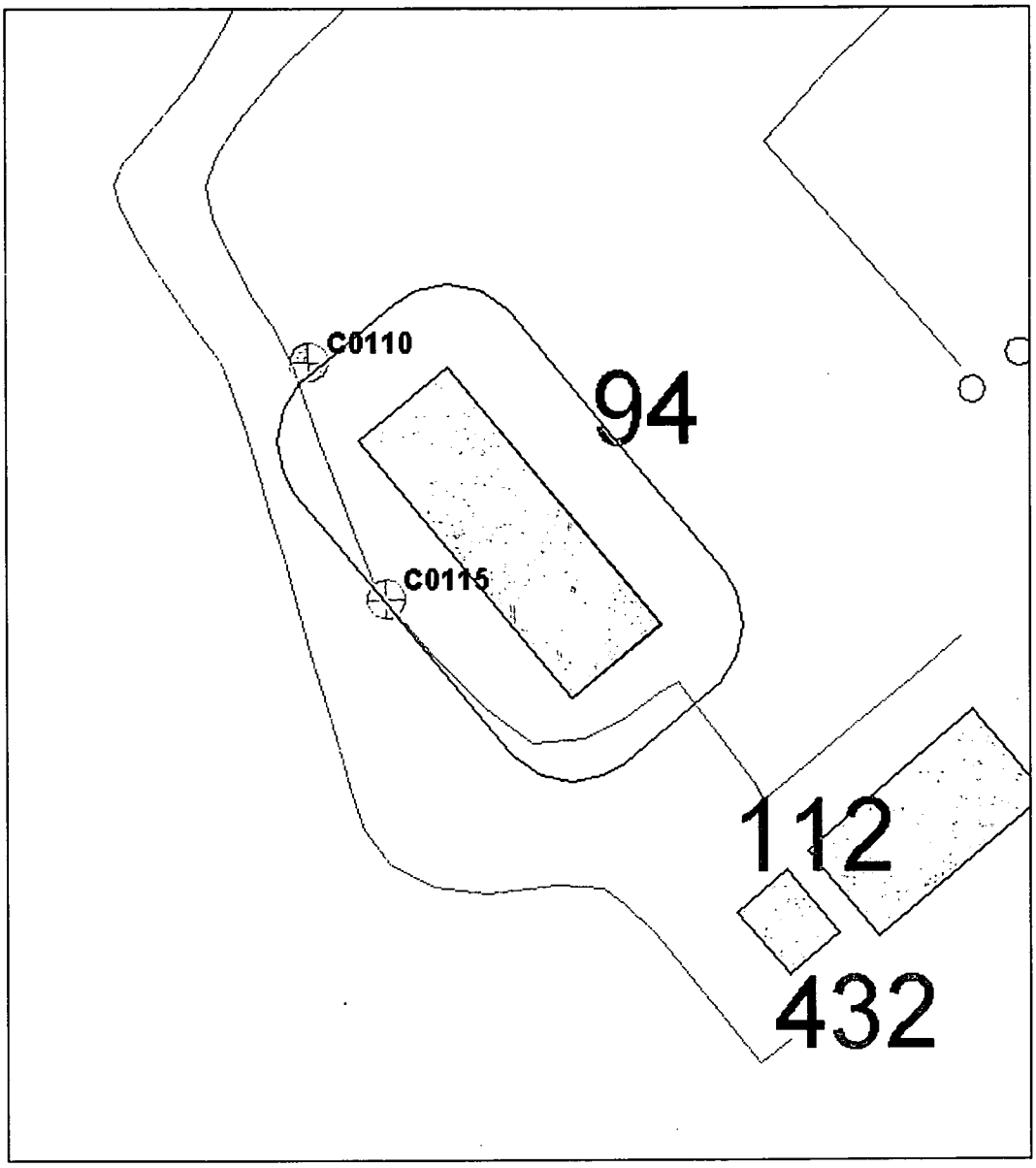
SIGNATURE

2/27/02
DATE SIGNED

Appendix L

Soil Sampling, Vicinity

Building 94 Sample Locations within 15 feet



Sample Detect

10 0 10 20 30 40 50 Feet

N

MOUND

Environmental Restoration Geographic Information System

04-15-02

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Building 94 Detects

Location	Sample ID	Sample Date	Analyte	Result	Unit	MDA	Class	Start	End	LQ	DQ	Project	Media	Comments
C0115	1644	19830401	Plutonium-238	1.46	PCI/G	0.01	RAD	1.5	1.5			RSS	Soil	2
C0110	1628	19830401	Plutonium-238	0.48	PCI/G	0.01	RAD	1.5	1.5			RSS	Soil	2
C0115	1646	19830401	Plutonium-238	0.31	PCI/G	0.01	RAD	3.0	3.0			RSS	Soil	2
C0110	1629	19830401	Plutonium-238	0.14	PCI/G	0.01	RAD	3.0	3.0			RSS	Soil	2
C0115	1644	19830401	Thorium-232	3.56	PCI/G	2.00	RAD	1.5	1.5			RSS	Soil	1 2 3

Comments
1 Exceeds the 10-6 Risk-Based Guide Value
2 Exceeds the OU9 Soil Background Value
3 Exceeds screening level
4 Exceeds MCL

Lab and data qualifiers are defined on the pages immediately following the non-detects table in this appendix.
Comparison values for results with comments are provided on the "Comparisons for Soil Analytical Results" table at the end of this appendix.

MDA: minimum detectable activity
LQ: lab qualifier
DQ: data qualifier
RSS: Rad Site Survey

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Building 94 Non-Detects

Location	Sample ID	Sample Date	Analyte	Result	Unit	MDA	Class	Start	End	LQ	DQ	Project	Collection method	Comments
C0110	1629	19830401	Thorium-232	2.0000	PCI/G	2.0000	RAD	3.0	3.0	U		RSS	Not Applicable	
C0110	1628	19830401	Thorium-232	2.0000	PCI/G	2.0000	RAD	1.5	1.5	U		RSS	Not Applicable	
C0115	1646	19830401	Thorium-232	2.0000	PCI/G	2.0000	RAD	3.0	3.0	U		RSS	Not Applicable	

Comments
1 Exceeds the 10-6 Risk-Based Guide Value
2 Exceeds the OU9 Soil Background Value
3 Exceeds screening level
4 Exceeds MCL

Lab and data qualifiers are defined on the pages immediately following the non-detects table in this appendix.
Comparison values for results with comments are provided on the "Comparisons for Soil Analytical Results" table at the end of this appendix.

MDA: minimum detectable activity
LQ: lab qualifier
DQ: data qualifier
RSS: Rad Site Survey

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LABORATORY DATA QUALIFIERS (LABQUAL)

The following qualifiers will be applied to the organic analysis results by the laboratory in accordance with CLP SOW direction:

ORGANICS

U	Indicates compound was analyzed for but not detected. The associated sample quantitation limit will be the CRQL, corrected for dilution and for percent moisture.
J	Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) assuming a 1:1 response, 2) when the qualitative data indicated the presence of a compound that meets the volatile, semivolatile, and pesticide/Aroclor identification criteria, and the result is less than the CRQL but greater than zero.
N	Indicates presumptive evidence of a compound. This flag is used only for tentatively identified compounds, where identification is based on a mass spectral library search.
P	Used for pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns.
C	Applies to pesticide results where the identification has been confirmed by GC/MS.
B	Used when the analyte is found in the associated blank as well as in the sample. This flag must be used for a TIC as well as for a positively identified target compound.
E	Identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis.
D	Identifies all compounds identified in an analysis at a secondary dilution factor.
A	Indicates that a TIC is a suspected aldol-condensation product.

INORGANICS

B	Indicates that the reported value was obtained from a reading that was less than the CRDL but greater than or equal to the Instrument Detection Limit (IDL).
U	Indicates that the analyte was analyzed for but not detected.
E	Indicates the reported value is estimated because of the presence of interferences.
M	Duplicate injection precision was not met.
N	Spiked sample recovery not within control limits.
S	Reported value was determined by the Method of Standard Additions (MSA).
W	Post-digestion spike for Furnace AA analysis is out of control limits, while sample absorbency is less than 50% of spike absorbency.
*	Duplicate analysis not within control limits.
+	Correlation coefficient for the MSA is less than 0.995.

DATA QUALIFIER CODES (DATAQUAL)

ORGANICS AND INORGANICS

U	The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation limit.
J	The associated numerical value is an estimated quantity.
R	The data are unusable (compound may or may not be present). Resampling and reanalysis is necessary for verification.
N	Presumptive evidence of the presence of the material.
NJ	Presumptive evidence of the presence of the material at an estimated quantity.
UJ	The material was analyzed for, but was not detected. The sample quantitation limit is an estimated quantity.

SUB-QUALIFIER CODES

ORGANICS

D	Duplicates
B	Qualified due to blank
C	Qualified due to calibration
H	Holding time exceeded
K	Qualified due to surrogate recovery
L	Qualified due to Laboratory Control Sample
S	Qualified due to matrix spike recovery
I	Qualified due to internal standard
N	Tentative identification (only for TICs)
P	Pesticide/PCB results have >25 percent difference on two different columns
+	Positive bias (added after subqualifier)
-	Negative bias (added after subqualifier)

INORGANICS

D	Duplicates
B	Qualified due to blank
C	Qualified due to calibration
H	Holding time exceeded
L	Qualified due to Laboratory Control Sample
S	Qualified due to matrix spike recovery
I	Qualified due to interference
+	Positive bias (added after subqualifier)
-	Negative bias (added after subqualifier)
Examples of final qualification might be J-C, UJ-S(+), UJ-BC(-), etc.	

The subqualifiers have been included to clarify any reports you may use. The subqualifiers have been captured when it was included in the electronic data submitted by the contractor. Most of the data in MEIMS does not include them.

The above data was extracted from the OU9 Site Wide Quality Assurance Project Plan, pages 9-16 and Appendix H page 3-1. It was updated from the Methods Compendium.

Comparisons for Soil Analytical Results

10-6 Risk-Based Guideline Values			
107-06-2	1,2-Dichloroethane	3.20E+00	MG/KG
118-96-7	2,4,6-Trinitrotoluene	1.91E+02	MG/KG
72-55-9	4,4'-DDE	9.00E+00	MG/KG
50-29-3	4,4'-DDT	9.00E+00	MG/KG
309-00-2	Aldrin	1.80E-01	MG/KG
5103-71-9	Alpha Chlordane	8.50E+00	MG/KG
12672-29-6	Aroclor-1248	3.85E-01	MG/KG
11096-82-5	Aroclor-1260	3.85E-01	MG/KG
7440-38-2	Arsenic	1.20E+03	MG/KG
71-43-2	Benzene	8.90E+00	MG/KG
56-55-3	Benzo(a)anthracene	4.10E+00	MG/KG
50-32-8	Benzo(a)pyrene	4.10E-01	MG/KG
205-99-2	Benzo(b)fluoranthene	4.10E+00	MG/KG
207-08-9	Benzo(k)fluoranthene	4.10E+01	MG/KG
7440-41-7	Beryllium	7.00E-01	MG/KG
319-85-7	Beta-BHC	1.65E+00	MG/KG
117-81-7	Bis(2-ethylhexyl)phthalate	2.15E+02	MG/KG
75-27-4	Bromodichloromethane	4.80E+01	MG/KG
75-25-2	Bromoform	3.75E+02	MG/KG
7440-43-9	Cadmium	1.00E+04	MG/KG
56-23-5	Carbon Tetrachloride	4.60E+00	MG/KG
67-66-3	Chloroform	3.10E+00	MG/KG
7440-47-3	Chromium	1.50E+03	MG/KG
218-01-9	Chrysene	4.10E+02	MG/KG
53-70-3	Dibenz(a,h)anthracene	4.10E-01	MG/KG
124-48-1	Dibromochloromethane	3.55E+01	MG/KG
75-09-2	Dichloromethane	3.95E+02	MG/KG
60-57-1	Dieldrin	1.85E-01	MG/KG
5103-74-2	Gamma Chlordane	8.50E+00	MG/KG
58-89-9	Gamma-BHC (Lindane)	2.30E+00	MG/KG
76-44-8	Heptachlor	0.66	MG/KG
1024-57-3	Heptachlor Epoxide	0.33	MG/KG
193-39-5	Indeno(1,2,3-cd)pyrene	4.10E+00	MG/KG
78-59-1	Isophorone	3.15E+03	MG/KG
86-30-6	N-Nitrosodiphenylamine	6.00E+02	MG/KG
87-86-5	Pentachlorophenol	2.50E+01	MG/KG
121-82-4	RDX	2.70E+01	MG/KG
79-01-6	Trichloroethene (or trichloroethylene)	5.09E+00	MG/KG
7440-41-7	1,1,1,2-Tetrachloroethane	1.10E-02	MG/L
7440-38-2	1,1,2,2-Tetrachloroethane	1.40E-03	MG/L
7440-34-8	Actinium-227	4.50E-01	PCI/G
14596-10-2	Americium-241	6.30E+00	PCI/G
13982-38-2	Bismuth-207	1.60E-01	PCI/G
10045-97-3	Cesium-137	3.40E-01	PCI/G
10198-40-0	Cobalt-60	7.00E-02	PCI/G
14255-04-0	Lead-210	6.20E-01	PCI/G

13981-16-3	Plutonium-238	6.10E+00	PCI/G
15117-48-3	Plutonium-239	5.50E+00	PCI/G
PU239/240	Plutonium-240	6.10E+00	PCI/G
13966-00-2	Potassium-40	1.42E+00	PCI/G
14331-85-2	Protactinium-231	3.90E-01	PCI/G
13982-63-3	Radium-226	9.00E-02	PCI/G
10098-97-2	Strontium-90	9.40E+00	PCI/G
14274-82-9	Thorium-228	1.10E-01	PCI/G
14269-63-7	Thorium-230	9.00E-02	PCI/G
7440-29-1	Thorium-232	7.00E-02	PCI/G
10028-17-8	Tritium	2.35E+04	PCI/G
13968-55-3	Uranium-233	9.68E-01	PCI/G
13966-29-5	Uranium-234	1.05E+01	PCI/G
15117-96-1	Uranium-235	1.60E+00	PCI/G
24678-82-8	Uranium-238	1.00E-01	PCI/G
14596-10-2	Americium-241	4.90E-01	PCI/L
14331-79-4	Bismuth-210	2.20E+01	PCI/L
15262-20-1	Radium-228	3.30E-01	PCI/L
13967-73-2	Strontium-85	1.10E+02	PCI/L
10098-97-2	Strontium-90	3.90E+00	PCI/L
15623-47-9	Thorium-227	4.00E+00	PCI/L
14274-82-9	Thorium-228	6.90E-01	PCI/L
14269-63-7	Thorium-230	1.20E-01	PCI/L
7440-29-1	Thorium-232	3.10E-01	PCI/L
24678-82-8	Uranium-238+D	2.02E-01	PCI/L
	OU9 Soil Background Values		
72-54-8	4,4'-DDD	4.2	MG/KG
72-55-9	4,4'-DDE	4.3	MG/KG
50-29-3	4,4'-DDT	13	MG/KG
309-00-2	Aldrin	ND	MG/KG
5103-71-9	Alpha Chlordane	ND	MG/KG
319-84-6	Alpha-BHC	ND	MG/KG
7429-90-5	Aluminum	19000	MG/KG
14596-10-2	Americium-241	ND	MG/KG
12672-29-6	Aroclor-1248	ND	MG/KG
11097-69-1	Aroclor-1254	58	MG/KG
11096-82-5	Aroclor-1260	ND	MG/KG
7440-38-2	Arsenic	8.6	MG/KG
7440-39-3	Barium	180	MG/KG
7440-41-7	Beryllium	1.3	MG/KG
319-85-7	Beta-BHC	ND	MG/KG
7440-69-9	Bismuth	ND	MG/KG
13982-38-2	Bismuth-207	ND	MG/KG
14331-79-4	Bismuth-210m	ND	MG/KG
7440-43-9	Cadmium	2.1	MG/KG
7440-70-2	Calcium	310000	MG/KG
7440-47-3	Chromium	20	MG/KG
7440-48-4	Cobalt	19	MG/KG

7440-50-8	Copper	26 MG/KG
57-12-5	Cyanide	ND MG/KG
60-57-1	Dieldrin	ND MG/KG
959-98-8	Endosulfan I	ND MG/KG
1031-07-8	Endosulfan Sulfate	ND MG/KG
72-20-8	Endrin	ND MG/KG
7421-93-4	Endrin Aldehyde	ND MG/KG
53494-70-5	Endrin Ketone	ND MG/KG
5103-74-2	Gamma Chlordane	ND MG/KG
58-89-9	Gamma-BHC (Lindane)	ND MG/KG
76-44-8	Heptachlor	ND MG/KG
1024-57-3	Heptachlor Epoxide	ND MG/KG
77-47-4	Hexachlorocyclopentadiene	ND MG/KG
7439-89-6	Iron	35000 MG/KG
7439-92-1	Lead	48 MG/KG
7439-93-2	Lithium	26 MG/KG
7439-95-4	Magnesium	40000 MG/KG
7439-96-5	Manganese	1400 MG/KG
7439-97-6	Mercury	ND MG/KG
72-43-5	Methoxychlor	30 MG/KG
7439-98-7	Molybdenum	27 MG/KG
7440-02-0	Nickel	32 MG/KG
7440-09-7	Potassium	1900 MG/KG
7782-49-2	Selenium	ND MG/KG
7440-22-4	Silver	1.7 MG/KG
7440-23-5	Sodium	240 MG/KG
7440-28-0	Thallium	0.46 MG/KG
7440-31-5	Tin	20 MG/KG
7440-62-2	Vanadium	25 MG/KG
7440-66-6	Zinc	140 MG/KG
7440-34-8	Actinium-227	1.10E-01 PCI/G
10045-97-3	Cesium-137	0.42 PCI/G
14255-04-0	Lead-210	1.20E+00 PCI/G
13981-16-3	Plutonium-238	0.13 PCI/G
15117-48-3	Plutonium-239	1.80E-01 PCI/G
PU239/240	Plutonium-240	1.80E-01 PCI/G
13966-00-2	Potassium-40	37 PCI/G
14331-85-2	Protactinium-231	1.10E-01 PCI/G
13982-63-3	Radium-226	2 PCI/G
10098-97-2	Strontium-90	0.72 PCI/G
14274-82-9	Thorium-228	1.5 PCI/G
14269-63-7	Thorium-230	1.9 PCI/G
7440-29-1	Thorium-232	1.4 PCI/G
10028-17-8	Tritium	1.6 PCI/G
13966-29-5	Uranium-234	1.1 PCI/G
15117-96-1	Uranium-235	0.11 PCI/G
24678-82-8	Uranium-238	1.2 PCI/G

Core Team Determined Screening Levels			
7439-92-1	Lead	400	MG/KG
7440-34-8	Actinium-227	5.60E-01	PCI/G
14596-10-2	Americium-241	6.3	PCI/G
13982-38-2	Bismuth-207	0.175	PCI/G
10045-97-3	Cesium-137	0.76	PCI/G
10198-40-0	Cobalt-60	7.00E-02	PCI/G
14255-04-0	Lead-210	1.80E+00	PCI/G
13981-16-3	Plutonium-238	55	PCI/G
14331-85-2	Protactinium-231	4.00E+00	PCI/G
13982-63-3	Radium-226	2.1	PCI/G
14274-82-9	Thorium-228	1.61	PCI/G
14269-63-7	Thorium-230	2	PCI/G
7440-29-1	Thorium-232	1.47	PCI/G
15117-96-1	Uranium-235	1.7	PCI/G
24678-82-8	Uranium-238+D	1.3	PCI/G
	Maximum Contaminant Level for Drinking Water		
71-55-6	1,1,1-Trichloroethane	0.2	MG/L
79-00-5	1,1,2-Trichloroethane	0.005	MG/L
75-35-4	1,1-Dichloroethene	0.007	MG/L
120-82-1	1,2,4-Trichlorobenzene	0.07	MG/L
156-59-2	1,2-cis-Dichloroethene	0.07	MG/L
106-93-4	1,2-Dibromoethane	0.00005	MG/L
95-50-1	1,2-Dichlorobenzene	0.6	MG/L
107-06-2	1,2-Dichloroethane	0.005	MG/L
78-87-5	1,2-Dichloropropane	0.005	MG/L
156-60-5	1,2-trans-Dichloroethene	0.01	MG/L
106-46-7	1,4-Dichlorobenzene	0.075	MG/L
95-95-4	2,4,5-Trichlorophenol	0.05	MG/L
94-75-7	2,4-D	0.07	MG/L
7440-36-0	Antimony	0.0006	MG/L
7440-38-2	Arsenic	0.05	MG/L
7440-39-3	Barium	2	MG/L
71-43-2	Benzene	0.005	MG/L
50-32-8	Benzo(a)pyrene	0.002	MG/L
7440-41-7	Beryllium	0.004	MG/L
117-81-7	bis(2-ethylhexyl)phthalate	0.006	MG/L
75-27-4	Bromodichloromethane	0.008	MG/L
75-25-2	Bromoform	0.008	MG/L
7440-43-9	Cadmium	0.005	MG/L
56-23-5	Carbon Tetrachloride	0.005	MG/L
57-74-9	Chlordane	0.002	MG/L
108-90-7	Chlorobenzene	0.1	MG/L
67-66-3	Chloroform	0.008	MG/L
7440-47-3	Chromium	0.1	MG/L
7440-50-8	Copper	1.3	MG/L
57-12-5	Cyanide	0.2	MG/L
96-12-8	Dibromochloropropane	0.0002	MG/L

75-09-2	Dichloromethane (Methylene Chloride)	0.005	MG/L
88-85-7	Dinoseb	0.007	MG/L
1746-01-6	Dioxin	0.00000003	MG/L
72-20-8	Endrin	0.002	MG/L
100-41-4	Ethylbenzene	0.07	MG/L
16984-48-8	Flouride	4	MG/L
58-89-9	Gamma-BHC (Lindane)	0.0002	MG/L
76-44-8	Heptachlor	0.0004	MG/L
1024-57-3	Heptachlor Epoxide	0.0002	MG/L
118-74-1	Hexachlorobenzene	0.001	MG/L
77-47-4	Hexachlorocyclopentadiene	0.05	MG/L
7439-92-1	Lead	0.015	MG/L
7439-97-6	Mercury	0.002	MG/L
72-43-5	Methoxychlor	0.04	MG/L
7440-02-0	Nickel	0.1	MG/L
NO3	Nitrate	10	MG/L
14797-65-0	Nitrite	1	MG/L
87-86-5	Pentachlorophenol	0.001	MG/L
7782-49-2	Selenium	0.05	MG/L
100-42-5	Styrene	0.1	MG/L
127-18-4	Tetrachloroethene	0.005	MG/L
7440-28-0	Thallium	0.002	MG/L
108-88-3	Toluene	1	MG/L
8001-35-2	Toxaphene	0.003	MG/L
79-01-6	Trichloroethene	0.005	MG/L
75-01-4	Vinyl Chloride	0.002	MG/L
1330-20-7	Xylenes, Total	10	MG/L
7440-34-8	Actinium-227	0.4	PCI/L
14596-10-2	Americium-241	1.2	PCI/L
13982-38-2	Bismuth-207	1200	PCI/L
10045-97-3	Cesium-137	120	PCI/L
10198-40-0	Cobalt-60	400	PCI/L
13981-16-3	Plutonium-238	1.6	PCI/L
13982-63-3	Radium-226	4	PCI/L
10098-97-2	Strontium-90	40	PCI/L
14274-82-9	Thorium-228	16	PCI/L
14269-63-7	Thorium-230	12	PCI/L
7440-29-1	Thorium-232	2	PCI/L
10028-17-8	Tritium	20000	PCI/L
13968-55-3	Uranium-233	20	PCI/L
13966-29-5	Uranium-234	20	PCI/L
15117-96-1	Uranium-235	24	PCI/L
24678-82-8	Uranium-238	24	PCI/L
	Guideline Values based on the Hazard Index		
76-13-1	1,1,2-Trichloro-1,2,2triflouroethane	7.00E+04	MG/KG
75-34-3	1,1-Dichloroethane	7.80E+00	MG/KG
120-82-1	1,2,4-Trichlorobenzene	2.04E+04	MG/KG
156-59-2	1,2-cis-Dichloroethene	2.13E+03	MG/KG

156-60-5	1,2-trans-Dichloroethene	4.30E+03 MG/KG
99-65-0	1,3-Dinitrobenzene	2.00E+02 MG/KG
118-96-7	2,4,6-Trinitrotoluene	1.00E+03 MG/KG
78-93-3	2-Butanone	9.30E+03 MG/KG
95-57-8	2-Chlorophenol	1.06E+03 MG/KG
108-10-1	2-Methyl-4-pentanone	7.00E+02 MG/KG
50-29-3	4,4'-DDT	1.10E+02 MG/KG
106-44-5	4-Methylphenol	1.10E+03 MG/KG
67-64-1	Acetone	2.10E+04 MG/KG
309-00-2	Aldrin	6.4 MG/KG
5103-71-9	Alpha Chlordane	110 MG/KG
7429-90-5	Aluminum	210000 MG/KG
120-12-7	Anthracene	6.40E+04 MG/KG
7440-36-0	Antimony	8.50E+01 MG/KG
11097-69-1	Aroclor-1254	4.30E+00 MG/KG
7440-38-2	Arsenic	6.40E+01 MG/KG
7440-39-3	Barium	1.50E+04 MG/KG
65-85-0	Benzoic Acid	8.50E+05 MG/KG
7440-41-7	Beryllium	1.10E+03 MG/KG
117-81-7	Bis(2-ethylhexyl)phthalate	4.30E+03 MG/KG
75-27-4	Bromodichloromethane	4.30E+03 MG/KG
75-25-2	Bromoform	4.30E+03 MG/KG
85-68-7	Butyl Benzyl Phthalate	4.30E+04 MG/KG
7440-43-9	Cadmium	2.10E+02 MG/KG
75-15-0	Carbon Disulfide	2.80E+02 MG/KG
56-23-5	Carbon Tetrachloride	1.50E+02 MG/KG
75-00-3	Chloroethane	1.60E+02 MG/KG
67-66-3	Chloroform	2.10E+03 MG/KG
7440-47-3	Chromium	1.10E+03 MG/KG
18540-29-9	Chromium-VI	6.39E+02 MG/KG
7440-50-8	Copper	7.90E+03 MG/KG
57-12-5	Cyanide	4.30E+03 MG/KG
53-70-3	Dibenz(a,h)anthracene	4.08E-02 MG/KG
124-48-1	Dibromochloromethane	4.30E+03 MG/KG
75-09-2	Dichloromethane	1.00E+03 MG/KG
60-57-1	Dieldrin	1.10E+01 MG/KG
84-74-2	Di-n-butyl Phthalate	2.10E+04 MG/KG
117-84-0	Di-n-octyl Phthalate	4.30E+03 MG/KG
959-98-8	Endosulfan I	1300 MG/KG
33213-65-9	Endosulfan II	1300 MG/KG
100-41-4	Ethylbenzene	4.80E-01 MG/KG
86-73-7	Flourene	8.50E+03 MG/KG
206-44-0	Fluoranthene	8.50E+03 MG/KG
5103-74-2	Gamma Chlordane	110 MG/KG
58-89-9	Gamma-BHC (Lindane)	64 MG/KG
76-44-8	Heptachlor	110 MG/KG
1024-57-3	Heptachlor Epoxide	2.8 MG/KG
110-54-3	Hexane	9.10E+01 MG/KG
193-39-5	Indeno(1,2,3-cd)pyrene	4.08E-01 MG/KG

78-59-1	Isophorone	4.30E+04	MG/KG
7439-96-5	Manganese	2.70E+04	MG/KG
7439-97-6	Mercury	6.40E+01	MG/KG
72-43-5	Methoxychlor	1100	MG/KG
7440-02-0	Nickel	4.30E+03	MG/KG
87-86-5	Pentachlorophenol	6.40E+03	MG/KG
108-95-2	Phenol	1.30E+05	MG/KG
129-00-0	Pyrene	6.40E+03	MG/KG
7782-49-2	Selenium	1100	MG/KG
7440-22-4	Silver	1.10E+03	MG/KG
127-18-4	Tetrachloroethene	2.10E+03	MG/KG
7440-28-0	Thallium	17	MG/KG
7440-31-5	Tin	130000	MG/KG
108-88-3	Toluene	2.50E+02	MG/KG
75-69-4	Trichlorofluoromethane	7.30E+02	MG/KG
7440-62-2	Vanadium	1.50E+03	MG/KG
1330-20-7	Xylenes, Total	4.30E+05	MG/KG
7440-66-6	Zinc	6.40E+04	MG/KG
7440-41-7	1,1,1,2-Tetrachloroethane	2.90E-01	MG/L
7440-38-2	1,1,2,2-Tetrachloroethane	2.50E-01	MG/L
71-55-6	1,1,1-Trichloroethane	1.80E+00	MG/L
76-13-1	1,1,2-Trichloro-1,2,2triflouroethane	2.50E+03	MG/L
7429-90-5	Aluminum	100	MG/L
7440-42-8	Boron	9.00E+00	MG/L
18540-29-9	Chromium-VI	3.00E-01	MG/L
7440-48-4	Cobalt	6	MG/L
7440-50-8	Copper	4.00E+00	MG/L
7439-98-7	Molybdenum	0.5	MG/L
7782-49-2	Selenium	0.5	MG/L
7440-28-0	Thallium	0.008	MG/L
7440-31-5	Tin	60	MG/L
2691-41-0	HMX	1.10E+04	UG/KG
121-82-4	RDX	6.40E+04	UG/KG

Appendix M

Occurrence Reports

A search of the occurrence reporting system revealed one report:

- Contaminated Wrench Found in Building 94

OH-MB-BWO-BWO04-1999-0004 Final Report

Occurrence Report

Sites and Grounds
(Name of Facility)

Balance-of-Plant
(Facility Function)

Mound Plant Babcock and Wilcox of Ohio, Inc.
(Laboratory, Site, or Organization)

Name: WEIDENBACH, GARY L
Title: BUILDING MANAGER **Telephone No.:** (937) 865-3241
(Facility Manager/Designee)

Name: WEIDENBACH, GARY L
Title: BUILDING MANAGER **Telephone No.:** (937) 865-3241
(Originator/Transmitter)

Name: Don Dixon **Date:** 02/16/2000
(Authorized Classifier (AC))

1. Occurrence Report Number: OH-MB-BWO-BWO04-1999-0004

Contaminated Wrench Found in Building 94

2. Report Type and Date: Final

	Date	Time
Notification:	03/02/1999	11:17 (MTZ)
Initial Update:	03/18/1999	13:52 (MTZ)
Latest Update:	02/16/2000	07:59 (MTZ)
Final:	02/17/2000	13:59 (MTZ)

3. Occurrence Category: Off-Normal

4. Number of Occurrences: 5 **Original OR:**

5. Division or Project: Babcock and Wilcox of Ohio

6. Secretarial Office: EM - Environmental Management

7. System, Bldg., or Equipment: Building 94, Room 3

8. UCNI?: No

9. Plant Area: Test Fire Valley

10. Date and Time Discovered: 03/01/1999 12:00 (ETZ)

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11. Date and Time Categorized: 03/01/1999 12:30 (ETZ)

12. DOE Notification:

Date	Time	Person Notified	Organization
03/01/1999	12:15 (ETZ)	Fred Holbrook	DOE/MEMP

13. Other Notifications:

Date	Time	Person Notified	Organization
03/01/1999	12:10 (ETZ)	Chris White	DOE/MEMP
03/01/1999	12:20 (ETZ)	Ron Berry	DOE/MEMP

14. Subject or Title of Occurrence:

Contaminated Wrench Found in Building 94

---

15. Nature of Occurrence:

01) Facility Condition
D. Loss of Control of Radioactive Material/Spread of Radioactive Contamination

---

16. Description of Occurrence:

Update/Roll-Up Report

Occurrence #1

On Monday, March 1, 1999 at 12:00 a.m. a hand tool was found in Building 94 room 3 to be contaminated. A pipe wrench was found to be contaminated to levels of 3700dpm/100cm2 direct alpha and 190dpm/100cm2 removable alpha. Three wipes were submitted for isotopic analysis. The wrench was not located within a posted area.

On Tuesday, March 2, 1999 the 3 wipes were analyzed simultaneously by alpha spectroscopy and revealed 450 dpm of Pu-238. This exceeds the reporting criteria of Table 2-2 of the RADCON manual.

Occurrence #2

Isotopic analysis received on March 18, 1999 determined that contaminated isotopes levels were greater than 10 times the contamination values in table 2-2 of the Radiological Control Manual for a controlled area.

During a tool box survey of W Building on March 12, & 13, 1999 the following items were found in a posted controlled area.

In W Building's Carpenter Shop chisel bits were found to be contaminated to levels of 1350 dpm/100cm2 direct alpha Pu-238.

In W Building's Pipe Fitter Shop a tool box was found to be contaminated with fixed alpha at 15000 dpm/100cm2 of Pu-238.

M2-6

In W Building room 125 a drill and drill box revealed levels of 8820 dpm/100cm2 and 6500 dpm/100cm2 fixed contamination with removal contamination of 450 dpm of Pu-238.

Occurrence #3

On Thursday, April 15, 1999, two boxes filled with material going to auction were identified as having fixed contamination on them at levels of 200 dpm/100cm2 and 4000 dpm/100cm2. The samples were sent to gamma spec for isotope identification and results found to be
Pu-238 and Am-241. Surveys of the reminder of the boxes and material contained within were identified resulting with no other contamination present.

On Thursday, April 15, 1999, contamination was found in Building 61 during surveying of excess equipment. A screen off the back of a piece of electronic equipment (Tenelec counting module) was found to be contaminated. The screen read 2000 dpm/100 cm2 direct contamination without any removable contamination. Two covers from over separate power supplies for the Tenelec module housing and Tenelec amplifier housing were found to be contaminated. One of the covers read 1500 dpm/100 cm2 direct and the other cover was 500 dpm/100 cm2 direct. The power cord for the unit was at 500 dpm/100 cm2 direct. No removable contamination was present on either power supply cover or power cord. The equipment was found in a non-radiological area.

The screen, covers, and power cord were sent to gamma spec for isotope identification and results found to be Pu-238 and Am-241.

Occurrence #4

As a result of the discovery of previously unidentified and uncontrolled contamination in SW-5 and subsequent discovery of contaminated tools in Buildings 94 & 301 it was determined to be necessary to perform surveys of the tools used by the site trades organization. These surveys were performed to determine if any of the tools had been radioactively contamined during past use. These surveys have been completed for the main tool storage area on plant site (W-Building) and this report provides the results of those surveys. During the surveys of the approximately 309 toolboxes and cabinets located in W-Building 36 items were discovered to be contaminated above todays's release criteria. Four of the items had removable contamination. The maximum direct contamination found was 44,000 dpm/100 cm2 alpha on a tool box drawer. The maximum removable contamination found was 4,400 dpm/100 cm2 removable alpha contamination on a toolbox and 57,210 dpm/100cm2 removable tritium on screwdrivers. The predominant isotope identified during these surveys was Pu-238.

A table is available from the Facility Manager, Site and Grounds, that identifies the specific items found to be contaminated and provides a summary of the type and amount of contamination found.

Occurrence #5

Two additional items that were not reported under occurrence #4 are listed as follows:

Box in drawer of Pipe Shop (W Building) with 1373 dpm/100cm2 tritium.

DOP test units - 650 dpm/100cm2 direct alpha contamination Pu-238.

17. Operating Conditions of Facility at Time of Occurrence:

Normal Operations

18. Activity Category:

03 - Normal Operations

19. Immediate Actions Taken and Results:

Occurrence #1

The pipe wrench was disassembled using proper Personnel Protection Equipment (PPE)for sending to the lab for isotopic analysis. In the process of disassembling the 190dpm/100cm2 removable alpha was found. The entire area (room 3 of Building 94) was posted as an Radiological Material Management Area (RMMA).

Occurrence #2

Each item was secured in a Radioactive Material Area (RMA). Radiological surveys continue on the balance of the W Building tool storage area and other plant areas.

Occurrence #3

Each item listed under occurrence #3 was secured in a Radioactive Material Area (RMA) and will be disposed of properly.

Occurrences #4 and #5

Each item listed was secured in a Radioacive Material Area (RMA) and will be disposed of properly.

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20. Direct Cause:

6) Management Problem
A. Inadequate Administrative Control

21. Contributing Cause(s):

22. Root Cause:

6) Management Problem
A. Inadequate Administrative Control

---

23. Description of Cause:

Inadequacy of Managerial Administrative Controls have contributed to the spread of radiological contamination such as the events identified in this report. Tools or equipment radiologically contaminated must be kept within radiologically controlled areas and not permitted to leave those areas improperly. The removal of tools and equipment from areas without the approval of Radiological Control technicians must be emphasized and enforced by management. Radiological Control technicians and count room technicians must be thorough in their monitoring and release of tools and equipment from radiological areas.

The Corrective Action of evaluating controls on material and equipment addressed the above concerns related to removal and release of tools and equipment from radiological areas.
The Corrective Action of defining existing tool storage areas allowed for the inventorying and surveying of these tools across the site.
The Corrective Action to develop controls for tool storage areas resulted in the identification by color coding tools used and to be kept within radiological areas for control.

---

24. Evaluation (by Facility Manager/Designee):

The event of finding radiologically contaminated tools outside of radiological control areas prompted the survey of tools across the plant site. Tools used within radiological areas will be identified by color coding and are to remain in those areas only.
The finding of radiologically contaminated equipment outside of radiological control areas has increased the emphasis of controls of material movement within the plant and the release of equipment from off the plant site.

---

25. Is Further Evaluation Required?: No

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26. Corrective Actions

(* = Date added/revised since final report was approved.)

1. Evaluate controls on material/equipment in other similar buildings. Surveys will be performed on the remaining equipment in the buildings posted as RMMAs.

Target Completion Date: 08/01/1999	**Completion Date:** 07/30/1999

2. Develop a list of existing tool storage areas for surveying.

Target Completion Date: 06/30/1999	**Completion Date:** 06/30/1999

3. Develop controls for tool storage area.

Target Completion Date: 08/01/1999	**Completion Date:** 07/30/1999

27. Impact on Environment, Safety and Health:

There were no personnel injuries, no environmental or human health concerns, no impacts to the safety systems or production, no press release is planned, and no congressional inquiries are likely.

28. Programmatic Impact:

None

29. Impact on Codes and Standards:

None

30. Lessons Learned:

Controls are needed for tools within radiological areas and those tools being removed from radiological areas.
Keeping tools within these areas and identifying them by color coding is an effective way of control.

The down posting of Radiological Areas requires detailed and rigorous characterization surveys to assure that contamination and radiation levels are below those specified in 10CFR835. When tools and equipment are used on work in these areas they should not leave these areas without proper characterization.

31. Similar Occurrence Report Numbers:

1. None

32. User-defined Field #1:

33. User-defined Field #2:

34. DOE Facility Representative Input:

35. DOE Program Manager Input:

36. Approvals:

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Approved by: WEIDENBACH, GARY L, Facility Manager/Designee
Date: 02/16/2000
Telephone No.: (937) 865-3241

Approved by: WHITE, CHRISTOPHER A, Facility Representative/Designee
Date: 02/17/2000
Telephone No.: (937) 865-4396

Approved by: Approval delegated to FR
Date: 02/17/2000
Telephone No.:

---

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Appendix N

PRS Information

Recommendation pages are not generated for PRSs that require Further Assessment (FA) or that have been unbinned. Accordingly, there are no recommendation pages included for PRSs 7, 41, 54, or 56.

MOUND PLANT
PRS 356
SOIL CONTAMINATION

RECOMMENDATION:

This area was identified as a potential release site in June 1994 due to qualitative PETREX soil gas results obtained during the Operable Unit 5, Operational Area Phase I Investigation. A subsequent quantitative *Soil Gas Confirmation Investigation* within 50 feet of PRS 356 showed that all concentrations of volatile, semivolatile, PCBs, pesticides, metals, radionuclides, and explosives in the soils were below their respective ALARA, regulatory or 10^{-5} Risk Based Guideline Criteria. Therefore, NO FURTHER ASSESSMENT is recommended for PRS 356.

CONCURRENCE:

DOE/MEMP: Arthur W. Kleinrath, Remedial Project Manager 2/19/1997 (date)

USEPA: Timothy J. Fischer, Remedial Project Manager 2/19/97 (date)

OEPA: Brian K. Nickel, Project Manager 2/19/97 (date)

SUMMARY OF COMMENTS AND RESPONSES:

Comment period from 5/8/97 to 6/16/97

☐ No comments were received during the comment period.

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

N162

RECOMMENDATION

PRS 31-36, 125, & 270 Package

Potential Release Sites (PRSs) 31-36, 125, and 270 were identified as PRSs as a result of breaks and/or separations in Mound's sanitary sewer lines, identified during a 1982 video survey of the lines. Radionuclides were not considered contaminants of concern. The concern was the potential release of non-radioactive contaminants into the environment from the identified breaks in the lines. A subsequent project repaired these lines by replacing them or by extruding a liner at the point of the breaks. Soil sampling was performed and results for all non-radioactive analytes were below 10^{-5} Risk-Based Guideline Values.

Therefore, the Core Team recommends **No Further Assessment** for PRSs 31-36, 125, and 270.

11-27-02

Rob Rothman, OSC
U.S. Department of Energy
Miamisburg, Ohio

11/26/02

Tim Fischer, RPM
USEPA
Chicago, Illinois

11/27/02

Brian Nickel
OEPA
Dayton, Ohio

Appendix O

Work Plan

WORK PACKAGE / PRELIMINARY HAZARD ANALYSIS

☐~ Office Master Copy (Original Approval Signatures) ☐ ~ Field Working Copy (Original Field Sign -Offs) ☐ ~ Review Copy [Note: Mark this section in color] ☐ ~ Other Copy

The Project Engineer is responsible for completing Sections 1 through 10. On subcontractor projects, the subcontractor shall complete sections 6, 9, and 10.

1. WORK PACKAGE TITLE: **Building 94 Demolition**

2. WORK PACKAGE NUMBER. *SMPP/TFV- 33185-00* | REQUESTOR: L. Koehmstedt

8. WORK PACKAGE SCOPE:

The purpose of this effort is to demolish Building 94, see Figure 1.0. Using heavy equipment to demolish the facility, remove and dispose of the debris, provide site restoration grading and provide erosion/restoration protection with seeding and mulch. Safe shutdown activities will have already been completed prior to demolition.

4. WORK PACKAGE PHASES:

1. **Establish Work Zone.**
2. **Demolish structure.**
3. **Demolish slab and foundation.**
4. **Restore area for erosion protection and drainage.**

Insert the proper sequence of Work Package phases for the job. A phase is a separately definable portion of the project.

5. WORK LOCATION:

Building #: **94**

Room #: **N/A**

Other: **Spoils Area**

6. SPECIAL MATERIALS AND EQUIPMENT:

1. Tracked excavator with shear, grapple, hoe ram, concrete cracker/pulverizer, or bucket attachment.
2. Rubber tired and tracked front-end loaders.
3. Transport equipment for debris as required.
4. Other equipment as needed.

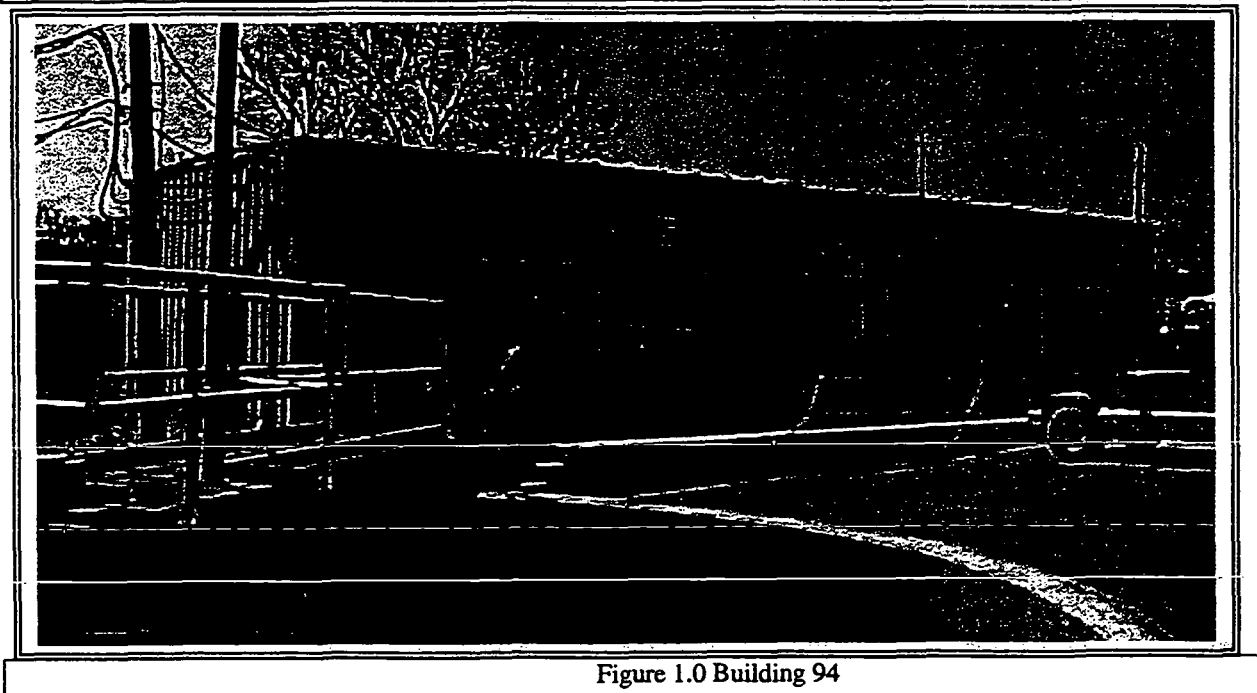

Figure 1.0 Building 94

7. DETAILED WORK STEPS: See the attached Job Specific Work Plan (JSWP)

Insert the activities to be performed during the job. Describe the specific methods of accomplishing these activities. Activities listed must be grouped under the Work Package phases listed in item 4.

8. *Note: Comments, to identify activities/hazards that are common to multiple phases of the project. Identification of these items will facilitate the option of addressing the items once in the pre-job briefing, as opposed to redundantly listing them in the JSHAs for different phases.*

COMMENTS:

Enter any review comment or issues in this section and/or information generated as a result of completing detailed work steps.

9. REVIEW SIGNATURES:

Written by: _____ Date: 12/10/02 Phone: 3659

Job Foreman: _____ Date: 12/30/02 Phone: 3663

Superintendent/ Constr. Mgr: _____ Date: 12/11/02 Phone: 3866

Project Eng. Mgr: _____ Date: 12/10/02 Phone: 4220

Industrial Safety & Hygiene: _____ Date: 12/12/02 Phone: 4096 3737

Rad. Controls: _____ Date: 12/12/02 Phone: 4235

ES&C: _____ Date: 12/11/02 Phone: 3248

Waste Mgmt: _____ Date: 12/12/02 Phone: x3882

Bldg. Mgr: _____ Date: 01/09/03 Phone: 3241

Craft Review: _____ Trade HD Date: 12/19/02 Phone: 3663

Craft Review: _____ Trade HD Date: 12/19/02 Phone: 3663

Craft Review: _____ Trade HD Date: 12/19/02 Phone: 3663

Craft Review: _____ Trade HD Date: 12/19/02 Phone: 3663

If more sign-off lines are needed see attached pages.

10. USQ SCREEN / DETERMINATION REQUIRED? ☐ YES ☒ NO

Brief Explaination This activity has no effect upon a Nuclear Facility

USQ Trained Person: _____ Date: 01/09/03 Phone: 3241

10. AUTHORIZATION SIGNATURE:

Project Manager: _____ Date: 01/13/03 Phone:

11. WORK PACKAGE CLOSURE:

Job Supervisor: _____ Date: / / Phone:

Project Manager: _____ Date: / / Phone:

RETURN PHA TO IS&H AT JOB COMPLETION.

PRELIMINARY HAZARD ANALYSIS (PHA)
FOR WORK PACKAGE ACTIVITIES

SECTION A, INDUSTRIAL SAFETY - TO BE COMPLETED BY THE INDUSTRIAL SAFETY AND HEALTH REPRESENTATIVE
Identify engineering/administrative controls or PPE as required, keyed to the following checklist items. Insert any required and/or other special actions to be taken because of the particular hazard (i.e. lead compliance plans, confined space plans, hearing conservation programs, etc.). Including any notations for future Hazard Analyses. Additionally, identify any activities which DOE prescribed Occupational Safety and Health standards, that require protective measures be designed, inspected, or approved by a professional engineer or other competent person. (Use Section D if additional space is needed.)

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Blockage of exits or means of egress	NO	N/A	[EGRESS]
Blockages/obstructions (Identify)	NO	N/A	
Burning, welding, hot-work (Fire Watch)	YES	Demolition of slab and foundation	[BURN] Possible use of cutting torch during demolition. Administrative Controls, Permit required. Keep fire extinguisher near by during cutting.
Chemical compatibility of corrosives/flammables	NO	N/A	
Chemical process safety	NO	N/A	
Compressed gas cylinders	NO	N/A	
Confined space entry	NO	N/A	[CONFINE]
Crane operations, overhead or mobile	NO	N/A	
Critical lifts (heavy or high value loads)	NO	N/A	[CLIFT]
Electrical hazards	NO	N/A	[LIVEL] Electrical Isolation of facility was accomplished during safe shutdown activities.
Elevated work/fall protection	NO	N/A	[ELEV]
Emergency eyewash/shower available	NO	N/A	[EWASH]
Emergency alarms or evacuation plans required	YES	All	[EMERG] Plant Public Address system will be used to announce any plant emergency over the plant radio channel, cell phones will be used also, no specific added hazards exist in the demolition of this building.
Explosive/flammable atmosphere	NO	N/A	
Explosives	NO	N/A	
Fire protection system/equipment outage	YES	Structural Demolition	[FIRE/EFIRE] Fire Alarm System isolation prior to start of structural demolition.
Fire Hazards Analysis Required of Demolition	YES	Structural Demolition	[FHA/ADJA]
Flammable liquids/gases	YES	Structural Demolition	[FLAM] Possible use of cutting torch during demolition. Administrative Controls, Permit required. Keep fire extinguisher near by during cutting.
Forklifts, aerial lifts or material handling equipment	NO	N/A	
Grounding of electrical equipment	YES	Structural Demolition	Temp. power to portable equipment. All hand held electrical tools must be equipped with GFCI.
Hazards due to condition of facility or terrain (Identify)	NO	N/A	
Hoisting and rigging	NO	N/A	[HOIST]
Lighting/illumination/adequacy	NO	N/A	[MLITE]
Excavation and Soil disturbance	YES	Slab and Foundation Demolition	An excavation and soil disturbing permit is required.

SECTION A, INDUSTRIAL SAFETY - TO BE COMPLETED BY THE SAFETY AND HEALTH REPRESENTATIVE

Identify engineering/administrative controls or PPE as required, keyed to the following checklist items. Insert any required and/or other special actions to be taken because of the particular hazard (i.e. lead compliance plans, confined space plans, hearing conservation programs, etc.). Including any notations for future Job Safety and Health Analysis(JSHA). Additionally, identify any activities which DOE prescribed Occupational Safety and Health standards that require protective measures be designed, inspected, or approved by a professional engineer or other competent person. (Use Section D if additional space is needed.)

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Lockout/tagout of hazardous sources:	NO	N/A	[LOTO/ISO] Electrical/Mechanical Isolation of facility was accomplished during safe shutdown activities.
• Electrical	NO	N/A	See Above
• Mechanical (steam, hydraulic, pneumatic)	NO	N/A	See Above
• Interlocks	NO	N/A	[ILOCK]
• Chemical	NO	N/A	
• Radiological	NO	N/A	
Machine guards	NO	N/A	
Modification to Fire Wall/Door	NO	N/A	[FIREWAL]
Obstruction of fire protection equipment (pull boxes, hydrants, fire department connections, control panels, fire extinguishers, etc.)	NO	N/A	
Off-shift work	NO	N/A	
Outages of the plant public announcement (PA) system or the emergency notification system	YES	Demolition	[OUTAGE] The plant radio system transmits public announcements, which will be use to monitor for emergencies.
Overhead or underground utilities (Identify)	NO	N/A	[UTIL] Electrical/Mechanical Isolation of facility was accomplished during safe shutdown activities.
Penetrations into walls, floors, etc.	NO	N/A	[PENETR]
Plastic sheeting or wood framing/enclosures	NO	N/A	
Powder-actuated tools	NO	N/A	
Plant utilities (Identify)	NO	N/A	[WATER] Electrical/Mechanical Isolation of facility was accomplished during safe shutdown activities.
Repetitive work	NO	N/A	[ERGO]
Structural Modification	YES	Demolition	[STRUCT] Building is being demolished.
Special Fire Protection Equipment Required	NO	N/A	[FIREQU]
Trenching/Shoring	NO	N/A	[DIG]
Temporary heating facilities	NO	N/A	
Temporary/portable buildings or structures	NO	N/A	[FACIL]
Temporary service hook-ups (Identify)	YES	Demolition	Temp. electrical and water service (for dust control).
Traffic control/flagman	NO	N/A	[TRAFIC]
Work in attics, ceilings, chases, or crawlspaces	NO	N/A	
Work impacting adjacent normally occupied areas	YES	N/A	[ADJAC/BMAPP/SIGNS/NOTIF] Waste water treatment plant
Work Requiring Scaffolding, construction and inspection	NO	N/A	[SCAFF]
Other (Specify)	N/A	N/A	

SECTION B, INDUSTRIAL HYGIENE - TO BE COMPLETED BY INDUSTRIAL HYGIENE REPRESENTATIVE

Identify engineering/administrative controls or PPE as required, keyed to the following checklist items. Insert any required and/or other special actions to be taken because of the particular hazard (i.e. lead compliance plans, confined space plans, hearing conservation programs, etc.), Including any notations for future Job Safety and Health Analysis (JSHA). Additionally, identify any activities which DOE prescribed Occupational Safety and Health standards that require protective measures be designed, inspected, or approved by a professional engineer or other competent person. (Use Section D if additional space is needed.)

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Abrasive blast (☐ MSDS available)*	NO	N/A	
Asbestos	NO	N/A	[ASBEST
Beryllium	NO	N/A	
Blood-borne pathogens*	NO	N/A	
Cadmium	NO	N/A	
Carcinogens (☐ MSDS available)*	NO	N/A	[CARC]
Chemicals/solvents (☐ MSDS available)*	NO	N/A	[CHEM/MSDS]
Chlorofluorocarbon (CFC)	NO	N/A	[CFC]
Coal, tar or asphalt products	NO	demolition	
Coating/painting (☐ MSDS available)*	NO	N/A	
Corrosives/acids/caustics (☐ MSDS available)*	NO	N/A	
Dusty operations	YES	demolition	[POWDER] Potential dust generation controlled via water misting.
Hazardous Waste Operations (HAZWOPER)*	NO	N/A	
High Pressure systems	NO	N/A	[HIPRES]
Insulation/man-made mineral fibers (☐ MSDS available)*	NO	N/A	
Lasers	NO	N/A	
Lead	YES	N/A	Paint may contain lead, do not torch cut painted surfaces.
Foam in Place Operations	NO	N/A	
Mercury	NO	demolition	
Noise in excess of 85 dBA	YES	demolition	[NOISE] Hearing protection will be used.
Polychlorinated biphenyls (PCBs)	NO	N/A	
Removal of ceiling tiles*	NO	N/A	
Spraying/generation of mists*	YES	demolition	Demolition dust control via water mist.
Temperature extremes (heat or cold stress)	Yes	ALL	[CRYRO/COLD/HEAT] Provide heating or cooling for personnel.
Ventilation or Air Monitoring requirements	Yes	demolition	[VENTIL/IH] Air monitoring for potential silica during demolition activities will be performed, as needed basis.
Welding, brazing, or thermal cutting operations	Yes	demolition	[BURN] Cutting of rebar and etc. will require a permit.
Other (specify)	N/A	N/A	

***NOTE: Requires a description of the materials involved which present a hazard. Identify the physical location of the MSDS.**

SECTION C, RADIOLOGICAL PROTECTION - TO BE COMPLETED BY RADIOLOGICAL CONTROLS REPRESENTATIVE

Identify engineering/administrative controls or PPE as required, keyed to the following checklist items. Insert any required and/or other special actions to be taken because of the particular hazard (i.e. RWP, ALARA Plan, etc.). Additionally, identify any activities which DOE prescribed Occupational Safety and Health standards that require protective measures be designed, inspected, or approved by a professional engineer or other competent person. (Use Section D if additional space is needed.)

Item		Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Location:	Controlled Area	NO	N/A	
	Contamination Area	NO	N/A	[STP]
	High Contamination Area	NO	N/A	[STP]
	Radioactive Materials Storage Area	NO	N/A	
	Airborne Radioactivity Area (STP or OBT)	NO	N/A	
	Radiation Area	NO	N/A	
	High Radiation Area	NO	N/A	
	Very High Radiation Area	NO	N/A	
	Other (Specify)	NO	N/A	
Activities:	Criticality Safety Concerns	NO	N/A	
	Digging/Soil Removal	YES	Demolition/slab and foundation	[DIG] Water mist to control potential dust. Air monitoring during demolition.
	Surface destruction of radioactively contaminated materials or equipment?	NO	N/A	[SURFAC]
	Welding, burning, or grinding?	NO	demolition	[SURFAC]
	Hammering, chipping or scraping?	NO	N/A	[SURFAC]
	Abrasive blasting?	NO	N/A	[SURFAC]
	Dust-collecting equipment or systems?	NO	N/A	
	Decontamination and clean-up?	NO	N/A	
	Rad Waste Storage and Disposal Required	NO	N/A	[RWSTOR/WASTE/CHAR]
	Other (Specify)	N/A		
Sources:	X-Ray machine/generator	NO	N/A	[XRAY]
	Sealed radioactive sources	NO	N/A	
	Unsealed radioactive sources	NO	N/A	
Controls:	Radiological Work Permit	NO	N/A	[RWP/RWP=JS/RWP=N/R/RPGEN]
	ALARA Plan	NO	N/A	[ALARA]
	Air Flow Studies	NO	N/A	[AIRFLOW/CAM]
	Urinalysis program	NO	N/A	
	Preliminary or in-process characterization	NO	N/A	[SURVPS/SURVIP]
	Anti-contamination clothing	NO	N/A	
	Respiratory protection	NO	N/A	[RESP]
	Needs Analysis Evaluation	NO	N/A	
	Hazards Analysis	NO	N/A	
	Engineering Controls	YES	ALL	Dust control via misting.
	Administrative Controls	YES	N/A	Barricades of construction zone
	Supplemental dosimetry	NO	N/A	
	Shielding	NO	N/A	
	Personnel monitoring (frisking)	NO	N/A	

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SECTION D - OTHER CONDITIONS, CONCERNS, OR SUPPLEMENTAL INFORMATION FROM SECTIONS A THROUGH C
Identify Assembly Points: Assembly area is north of building 94 on the south side of the railroad track. ***Be aware of threatening weather and take shelter when life-threatening storms are imminent.*** Take shelter area is in building 19, -See Appendix E

Work Package Revision Form

Work Package Revision Form			
Work Package No.SMPP/TFV-33185-00		Revision No.	
Revision Description: (attach page revisions to form)			
	Name	Signature	Date
PREPARED BY:			
Revision Preparer:			
REVIEWED BY:			
Project Engr. Manager:			
Project Foreman:			
Project Superintendent/ Constr. Mgr.:			
Industrial Safety & Hygiene P o C:			
Radiological Point of Contact:			
Environmental Safeguards & Compliance P o C:			
Waste Management PoC:			
Building Manager:			
Other:			
Other:			
USQ Trained Person			
USQ SCREEN / DETERMINATION REQUIRED? ☐YES ☐NO Brief Explaination_____			
APPROVED BY:			
Project Manager:			

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Work Package Revision History Form

WORK PACKAGE REVISION HISTORY FORM			
REV. NO.	REASON	SIGNATURE	DATE

Job Specific Work Plan
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Job Specific Work Plan

1. WORK SCOPE

1.1 Introduction

This Job Specific Work Package (JSWP) follows the outline of PP-1059A, Integrated Work Control Program at the Mound Site, Miamisburg, Ohio. Included are a Preliminary Hazard Analysis (PHA) 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 Work Package Scope

The purpose of this effort is to demolish the superstructure, slab, and foundation, to 3 foot beneath grade of Building 94, remove the debris, and to provide site restoration, grading, seeding and mulching of the area to prevent erosion. This will be accomplished by confirming that all utilities have been isolated during safe shutdown activities, establishing a safe work zone, and the demolition of the building using heavy-duty equipment, and removing of debris as directed by Waste Management.

1.3 Site Information

Building 94, the "Materials Compatibility Building," was constructed in 1984 or 85 in the plant valley area near the western edge of the site boundary. It is a single-story, 1,240 square foot, pre-fabricated "Butler"-type metal building with metal roof, on a one-foot thick reinforced concrete slab. The building has four rooms: three larger bays and one smaller mechanical area. The building's north and west walls are contiguous with the current MCP security fence; however, all four building entrances are accessible only from within the current MCP fence-line. The building is serviced with window air conditioner units for cooling and thermostatically controlled electric heaters in each of the three bays. The smaller room has an electric-fin-tube-type radiation heater. There are louver covered exhaust fans as well, with a fan located in each bay. The building has potable water and sanitary services provided by the MCP Plant facility.

1.4 Current Uses of Building 94

Building 94 is currently vacant and inactive. Safe shutdown is in process.

1.5 Past Uses of Building 94

Building 94 was built as the "Materials Compatibility Building" to support detonator and explosives program operations. Originally, Bays 1 through 3 were oven rooms, and Room 4 was an equipment room. Subsequently, the building was used for materials aging as described in one report that notes "explosives, pyrotechnics, and explosive components are heated in ovens (aged)." When the material aging processes were

discontinued, the ovens were removed from the building. Later, the building was used as a staging area for soil and water sample storage.

In 1997, the building housed a pilot study to evaluate the effectiveness of extracting plutonium and thorium contamination from soil at the MCP site. Because of the process ineffectiveness at removing thorium and high cost of operation, the program ended in 1999, and the equipment was removed from the building and the building cleaned.

In 2000, the building was turned over to the Test Fire Valley (TFV) project and was used to store Environmental Restoration (ER) project soil and water samples that had been collected at the site, analyzed at offsite laboratories, and returned to the site for disposal. In June 2002, the building was vacated and preparations for demolition were initiated.

1.6 Summary of Environmental Concerns and Findings – Building 94

Table 1: Summary of Environmental Concerns and Findings

Description	Comment	Resolution
Lead-Based Paint	No previous lead surveys or sampling data could be found. The paint coatings in a few areas within the building were analyzed in the field using a Niton Model XL-309 XRF lead detector. The sampled paints were found to not contain any amount of lead within the instrument's detection limit. No lead paint hazards currently exist within the building, and no further action is necessary unless any of the untested coatings were to be disturbed by close worker contact.	If lead-based paint were present, there would be no impact to the demolition or disposal of the facility. Close worker disturbance of paint coatings (sanding, grinding, scraping, torching) would be avoided during demolition. If close disturbance is necessary, the point of contact will be tested for lead and appropriate controls and personal protective equipment (PPE) used for disturbance as required.
Chemicals	All chemicals have been removed from the building.	N/A
Fluorescent Lamps and Polychlorinated Biphenyls (PCBs)	N/A	N/A
Air Emissions	N/A	N/A
Asbestos	An asbestos survey was conducted in accordance with EPA NESHAP requirements prior to demolition. No asbestos-containing materials were identified.	N/A
Drainage Sumps	N/A	N/A
Lead	N/A	N/A
Mercury	N/A	N/A

Table 1: Summary of Environmental Concerns and Findings

Description	Comment	Resolution
Radiological	Radiological surveys of building surfaces showed areas with readings above surface release criteria.	Areas with elevated radiological readings were remediated. All final surveys showed that remediation was successful and all areas meet surface release criteria.
Soil Contamination	Of the historic soil samples collected within a 15-foot perimeter of Building 94, one boring location west of the building showed one analytical result (at a depth of 1.5 feet below ground surface) above screening level.	Based on the soil analytical results, no additional protective measures are indicated during building demolition activities. The boring location with the elevated reading will be evaluated as part of the PRS 41 Further Assessment Sampling and Analysis Plan. Any required soil sampling and remediation will be handled by the ER group.
Septic System	N/A	N/A
Wastewater	Handled by the site wastewater facility.	N/A
Stains & Corrosion/HVAC	N/A	N/A
Storage Tanks	N/A	N/A
Solid Waste Disposal	N/A	N/A
Migratory Hazards	N/A	N/A
Radon	Within acceptable limits.	N/A
Energetic Material	N/A	N/A

N/A: not applicable

2. DRAWINGS AND REFERENCES

PP-1059A, Issue 8, "Integrated Work Control Program"

MD-50000, Issue 11, "Maintenance Work Order and Material Processing"

3. INITIAL CONDITIONS AND PREREQUISITES

3.1 Lessons Learned

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

- Removal of Pier Breaks Underground Water Line

See Appendix F for the full report. The result of the Lessons Learned is that when removing similar piers, or piers of an unknown configuration especially when they are known to be near underground utilities, greater effort in planning the job should be exercised and consideration should be given to excavating the pier rather than simply pulling it out of the ground.

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 E, identifies construction boundaries, evacuation routes, the take shelter area, and the assembly area. Debris will be cleared from the immediate construction zone as required to promote safe equipment activity.

3.2.2 Underground electrical utilities will be identified and field located by scanning the area during safe shutdown activities prior to beginning any field demolition activities. 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 fugitive 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. 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. Earplugs (or other hearing protection) will be worn, as appropriate.

4. RADIATION PROTECTION REQUIREMENTS

A radiological assessment of Building 94 was performed by reviewing operational history, and radiological survey information. Building 94 was initially placed in service to support detonator and explosives program operations. It then was used to store CERCLA program materials, including aqueous and soil samples collected at Mound, analyzed at offsite laboratories, and returned to Mound for deposit. The building was subsequently used as a site for demonstration of a process for washing radioactively contaminated soils. The most recent use was for Environmental Restoration (ER) sampling support.

Building 94 was classified as impacted because of its history of radioactive material processing and storage. Surveys were performed throughout the building in accordance with the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM). Several areas of elevated activity were identified on the floor and remediated. The Final Status surveys demonstrate that remediation was complete and no additional elevated areas were found. The review team has concluded that the building meets radiological surface release criteria established by DOE Order 5400.5 (see Table 2), and no further

radiological surveys are required. Supporting documentation for the information summarized in the following table is contained in the BDP Appendix G.

Table 2: Radiological Summary

TYPE	RSDS (Radiological Survey Data Sheet)	LOCATION	SURVEY RESULTS (dpm/100 cm^2) (Note 1)	SURFACE CONTAMINATION GUIDELINES (dpm/100 cm^2) (Note 2)
Highest Alpha Smearable Activity	02-TF-1462	Internal Floor Surface	8.74	20
Highest Alpha Fixed Activity	02-TF-1461	Internal Floor Surface	85	100
Highest Beta Smearable Activity	02-TF-1459	Internal Wall Surface	9.59	1,000
Highest Beta Fixed Activity	02-TF-1462	Internal Floor Surface	960	5,000
Highest Tritium Smearable Activity	02-TF-1465	External Wall Surface	28.62	10,000

Note 1: Residual radiological activity may be present and not be a concern (within applicable limits). This may result from or be a function of counting statistics, instrument variances, the randomness of decay, radon presence, and/or natural fluctuations in background levels.
Note 2: Guideline values per DOE Order 5400.5, Radiation Protection of the Public and the Environment.

5. ENVIRONMENTAL PROTECTION REQUIREMENTS

5.1 CERCLA

5.1.1 General/Historical CERCLA Information

Demolition work for this facility will be handled as a non-CERCLA deconstruction . There is no history of spills or releases from this building.

5.1.2 Specific Record Sources for Building 94

5.1.2.1 Occurrence Reports

A search of the occurrence reporting system revealed one report:

- Contaminated Wrench Found in Building 94

5.1.2.2 Spills and Releases

- None

5.1.2.3 Associated PRS Overview

As a result of the investigations and documentation accomplished to comply with the CERCLA cleanup process via the Federal Facilities Agreement (FFA)/DOE Environmental Restoration (ER) Program, DOE and BWXTO have tabulated all the

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PRSs identified under the various regulatory programs in effect at the site. Of these 440 PRSs, six are near Building 94 (see Table 2) however none of the PRS are associated with Building 94, other than that Building –94 lies within PRS 41 boundary.

Table 2: PRSs in Proximity to Building 94

PRS	CERCLA or Bldg. Related	Binning Status	Comments
7	CERCLA	Further Assessment (FA)	Plant Sanitary Outfall Pipeline.
31	CERCLA	No Further Assessment (NFA)	Underground Sanitary Sewer Line G5.
41	CERCLA	FA	Area 3, Thorium Drum Storage and Redrumming Area.
54	Buildings	Unbinned	Building 57 Sand Filters (2 Units).
56	Buildings	Unbinned	Building 57 Chlorine Contact Chamber (Tank 112).
356	CERCLA	NFA	Elevated Soil Gas Location.

* *PRS 41 is currently undergoing further assessment soil sampling; samples will be taken around the Building 94 footprint. Any required soil sampling and remediation will be handled by the ER group.*

5.1.2.4 Sampling Data

5.1.2.4.1 Radiological Surveys

Initial radiological surveys of building surfaces showed some results above screening criteria. Remediation was performed and final surveys showed that the remediation was effective and no additional elevated areas were found. The review team concluded that Building 94 meets radiological surface release criteria established by DOE Order 5400.5

5.1.2.4.2 Soil Sampling Data

As shown in Table 3 below, one result from boring location CO115 had a thorium-232 result that exceeded the screening level comparison value. The sample was collected from a depth of 1.5 feet below ground surface. That boring location will be evaluated as part of the PRS 41 Further Assessment. Sampling and Analysis Plan. Any required soil sampling and remediation will be handled by the ER group. Based on the soil analytical results, no additional protective measures are needed indicated during building demolition activities.

Table 3: Maximum Results Exceeding Screening Levels

Analyte	Maximum Result	Background	RBGV* (10^{-6})	Screening Level Comparison
Thorium-232 (pCi/g)	3.56	1.4	0.07	1.47

* *RBGV: most stringent of construction and office worker scenarios per Risk-Based Guideline Values, March 1997, Final, as performed using April 2001 HEAST slope factors.*

5.1.2.5 Chemical History

All chemicals have been removed from building. The most recent (March 2002) annual chemical inventory report found no "emergency and hazardous" chemicals located in the building.

5.1.2.6 Lead-Based Paint

No lead surveys or sampling data could be found for Building 94. The paint coatings in a few areas within the building exhibited some damage due to impact damage. Representative samples of the damaged paint were analyzed in the field using a Niton Model XL-309 XRF lead detector. The sampled paints were found to not contain any amount of lead within the instrument's limit of detection. A copy of the Niton's lead sample readout is provided in the BDP. No lead paint hazards currently exist within the building, and no further action would be necessary unless any of the untested coating were to be disturbed by close worker contact (sanding, grinding, scraping, torching).

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

5.1.2.7 Asbestos

An asbestos survey was conducted in accordance with EPA NESHAP requirements prior to demolition. No asbestos-containing materials were identified.

5.1.2.8 Radon

The results of a 1989-90 Mound Indoor Radon study indicated an average radon concentration of 0.5 picoCuries/liter (pCi/L) in Building 94. The USEPA recommended standard for a maximum radon level is 4.0 pCi/L.

5.2 Review of Building Prints

This structure has been examined by an Energetic Material Subject Matter Expert (SME) and has been determined to be safe for demolition.

5.3 National Emissions Standards for Hazardous Air Pollutants (NESHAPs)

The estimated dose equivalent (EDE) to an offsite individual was calculated to be 3.6 e-6 mrem /yr. Therefore, USEPA approval to begin the project is not necessary.

5.4 Notification

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.

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:

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

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

Trucks hauling debris to the onsite spoils area should be covered while in transit.

5.6 Clean Water Act & Storm Water Pollution Prevention

All inlets to the sanitary and storm systems will be plugged to prevent accidental discharges to the wastewater treatment plant or the environment.

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 site's Storm Water Pollution Prevention Plan OPA980099. Appropriate activities would include, Redirect flow patterns around the project site to prevent stormwater run-on. 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. 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 stormwater pollution. 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.

5.7 National Historic Preservation Act (NHPA)

Building 94 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 temporarily suspended until which time the items or artifacts have been recovered.

5.8 Safe Drinking Water Act

The potable water supply to Building 94 was turned off and capped to protect the integrity of the water supply to that portion of the plant site.

5.9 Emergency Spill Response

Building 94 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 onsite phone or 937-865-4040 if using a cell or other outside phone to report it, also see Emergency Preparedness section. 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

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 See. Appendix G.

Fluorescent tubes and non-PCB containing ballasts will be left in place, and will be demolished with the building. PCB containing ballasts had been in the building; they have been removed during Safe Shutdown activities. Note: The fluorescent tubes have been removed.

7. EMERGENCY PREPAREDNESS

7.1 Site Notification Procedures

Use **911** for all emergency services onsite. 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.

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.

Employees 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.

7.2 Evacuation Route/Assembly Areas

Assemble area is north of Building 415 on the south side of the railroad track. See map per Appendix E.

7.3 Take Shelter Area

CAUTION

Be aware of threatening weather and take shelter when life-threatening storms are imminent.

The take shelter area is in Building 19. See map per Appendix E.

8. PRE-DEMOLITION SEQUENCE OF WORK

8.1 Site Characterization

8.1.1 Physical Characterization

A structural engineering survey (see appendix G) was performed and documented for Building 94 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.

8.1.2 Radiological Characterization

A radiological assessment of Building 94 was performed by reviewing operational history, and radiological survey information. Building 94 was initially placed in service to support detonator and explosives program operations. It then was used to store CERCLA program materials, including aqueous and soil samples collected at Mound, analyzed at offsite laboratories, and returned to Mound for deposit. The building was subsequently used as a site for demonstration of a process for washing radioactively contaminated soils. The most recent use was for Environmental Restoration (ER) sampling support. Building 94 was classified as impacted because of its history of radioactive material processing and storage. Surveys were performed throughout the building in accordance with the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM). Several areas of elevated activity were identified on the floor and remediated. The Final Status surveys demonstrate that remediation was complete and no additional elevated areas were found. The review team has concluded that the building meets radiological surface release criteria established by DOE Order 5400.5

8.1.3. Chemical and Metals Characterization

All chemicals and metals have been removed from building. The most recent (March 2002) annual chemical inventory report found no "emergency and hazardous" chemicals located in the building.

8.1.4. Asbestos Characterization

An asbestos survey was conducted in accordance with EPA NESHAP requirements prior to demolition. No asbestos-containing materials were identified.

8.1.5. Radon

The results of a 1989-90 Mound Indoor Radon study indicated an average radon concentration of 0.5 pico Curies/liter (pCi/L) in Building 94. The USEPA recommended standard for a maximum radon level is 4.0 pCi/L.

8.2 Site Preparation

8.2.1. Site Access Control

The demolition area will be identified utilizing the construction fencing around the building, or at the discretion of the project construction manager/foreman, marked off with barricade tape/fencing.

8.2.2. Temporary Utilities

The only temporary utility that may be required is water and electricity. Coordinate with site Safety and Health. Water will be used to control dust emissions.

8.2.3. Temporary Facilities

This project will use the existing SMPP/TFV project new trailer complex to be located in the existing Mound "C" parking lot.

8.2.4. Temporary Communications

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.

8.2.5. Staging Areas

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

8.3 Preliminary Activities

- Domestic water, firewater, electrical, fire alarm system and communications lines have been disconnected under separate safe shutdown MSR. 30026. An excavation/soil disturbance permit for slab and footing removal will be required prior to excavation activities.

Verify all mercury-containing switches have been removed during safe shutdown. If found, dispose through Waste Management.

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

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

9. BUILDING DEMOLITION SEQUENCE OF WORK

9.1 Establish Work Zone

Establish work zone boundary using the existing fence and/or with barricade tape as directed by the Project Foreman. 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 Manager/Foreman first. Do not begin any demolition activities until the following items are completed.

All new workers assigned to this project have received a pre-job briefing prior to performing work and a walkdown of the project area. The following must be completed prior to starting work.

Review of the *Preliminary Hazard Analysis* for work package activities must be complete.

9.1.1 The Pre-Job Briefing Record must be completed and signed.

9.1.2 The Job Specific Hazards Analysis (JSHA) must be 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.**

9.1.3 Verify Safe Shutdown activities have isolated all the connections to Building 94, including the following systems: electric/communication/fire alarm systems, sewage and potable water systems.

9.1.4 Verify that all pre-demolition notifications have been made and permits are in place.

Install sediment/storm water control fence around designated construction area as necessary. Note: NPDES outfall 601 & waste
water treatment plant are adjacent to the deconstruction site. Exercise extreme care as to not create an upset condition.

Prepare water distribution system for the control of dust.

9.2 Structural Demolition

9.2.1 Structure Demolition

Demolish the structural steel frame using heavy equipment. Use the existing slab for load out surface for loading debris and placing into appropriate hauling containers or trucks.

Note: The progression of the building demolition will ultimately be determined in the field.

HAZARD	MITIGATION
Contact overhead power lines with heavy-duty equipment.	If an part of heavy-duty equipment has the potential to come within 10' of overhead powers, perform LOTO.
Struck by flying debris Struck by moving equipment	Establish construction boundary. Wear hardhat safety glasses, safety shoes, and 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
Noise Hazard	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

Exact sequence of demolition will be left up to the skill of the craft.

9.2.2 Slab and Foundation Demolition

Using heavy equipment, break apart the concrete slab, foundation, and footers in order to eliminate the occurrence structural concrete to 3-feet below grade, torch cut the rebar if required (Hot Work Permit is required if used) to support demolition and downsizing. During the concrete demolition, use heavy equipment to assist radiological control personnel to perform radiological screening of all concrete surfaces. Based on radiological screening results, transport to Mound's spoils area, offsite disposal, or rail spur as directed by Waste Management.

Note: The progressions of the building demolition will ultimately be determined in the field.

HAZARD	MITIGATION
Burns/fire	Burn permit, fire protection, and PPE.
Strike underground utilities	Obtain Excavation permit and follow its requirements per MD-10286 O5

9.2.3 Organize area for future soil remediation

The last step will be to restore the area by grading to drain and seeding. Remove any unnecessary remaining sediment/storm water control fences. Scan equipment for radiological contamination. If contamination is detected or found during radiological surveys only then the equipment will be decontaminate prior to leaving area. Remove dust control water distribution system, temporary power, fencing and any traffic control.

Appendix A
JSHA/HASP

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Project/Activity: Building 94 Demolition
Name: Lee Koehmstedt

JSHA CRITERIA CHECKLIST	YES	NO	N/A
1. Work performed with a 6 ft. or greater fall hazard, excluding portable ladders. See Item 14 for further requirements.		X	
2. Roof work requiring the use of fall protection (within 6 ft of an unprotected edge) or special fall protection procedures.		X	
3. Potential hazardous chemical exposure above action levels or permissible exposure limits (PELs), or ACGIH Threshold Limit Values (TLVs).		X	
4. Work activity in an immediately dangerous to life or health (IDLH) breathing hazard environment.		X	
5. Fire or explosion hazards. Are fire hazards beyond a Hot Work Permit? (Reference O2, MD-10286)		X	
6. Work within close proximity of live electrical greater than 50 volts, conductors, and/or work that requires multiple locks, multiple hazard sources, or complicated lockout/tagout circumstances. (Reference MD-10444, *Lockout/Tagout Procedure Manual*, for multiple energy lockout/tagout.)		X	
7. Any maintenance or repair of equipment under pressure where the pressure cannot be shut off and de-energized.		X	
8. Work with high or extreme exposure to ionizing or nonionizing radiation (reference MD-80036, Op 10002), noise, or heat or cold stress (reference D9, D13 & D16, MD-10286).	X		
9. Determined by an appropriate core team, building manager, member of general or executive management, or the IS&H manager to require a JSHA.	X		
10. Any onsite construction or service project directed to have JSHAs based on this procedure and/or instruction from project personnel or IS&H staff.	X		
11. Near-miss event with the potential for loss of life or limb or disabling injury/illness if repeated.		X	
12. Excessive trauma/motion/vibration work situations or manual lifting involving heavy, large, and/or awkward-to-handle objects (reference MD-10407, *Ergonomics Program.*		X	
13. Unguarded, unmarked close clearance, pinch point, exposed moving machinery parts.		X	
14. Known potential falling object hazards (e.g., employees working above other employees, potential for dropping tools, falling equipment or material) or working in areas with the potential for flying objects (flying chips, sandblasting, etc.), exposure to sharp or protruding objects (e.g., working inside plenums, air mover ducts, etc.).	X		

MANDATORY JSHA REQUIRED TO ADDRESS ANY/ALL (YES) RESPONSES

JOB SAFETY & HEALTH ANALYSIS

JSHA MASTER DOCUMENT CONTROL NO:
SMPP/TFV – 33185-0

SIGNATURES

ORIGINATOR: Lee Koehmstedt 12/10/02
REVIEW/REV: Jared Willis/Chris Ahlquist
REVIEW/REV: Bill Wahler/ Jim Harvey
REVIEW/REV: Gary Weidenbach 01-09-03
APPROVED: C.D. Thompson 01-13-03

DATE: 12/10/2002	_X_ NEW ___ REV	**BUILDING:** 94	**JOB:** Demolish Building 94
DEPARTMENT/COMPANY: SMPP/TFV			**SECTION:** N/A

OCCUPATIONS: : *Heavy Duty Operators, Demo Tech's, Constr. Crafts, Pipefitter/Welders, Electricians, Fab. Mechanics.*
Supported by Project Personnel e.g.. Supervision, Engineering, RAD Control, Ind. Hygiene, and Safety

REQUIRED PERSONAL PROTECTIVE EQUIPMENT:
Hard Hat, Safety Glasses with side shields, safety shoes, safety vest

MSDS(s)/CHEMICALS ASSOCIATED WITH THE JOB:
Insecticide

BASIC JOB STEPS	POTENTIAL ACCIDENT/ILLNESSES OR KNOWN HAZARDS	SAFE JOB PROCEDURES
Break the job down into basic steps that tell what is done first, what is done next, and so on. Record the job steps in their normal order of occurrence. Describe what is done, not the details of how it is done. Usually, three or four words are sufficient to describe each job step. For example, the job of "replacing a light bulb" may break down into basic steps as follows: 1. Bring and set up ladder 2. Ascend ladder 3. Remove light globe & bulb 4. Replace light bulb 5. Replace light globe 6. Descend ladder 7. Remove and store ladder	Ask yourself for each job what accidents/illnesses could occur to the employee doing the job. Record potential accidents/illnesses by combining one of the abbreviations below with the agent of contact. For example, "struck by a crane hook" is recorded "SB-crane hook." Number each potential accident. SB - Struck by CB - *Contacted by* SA - Struck against CW - Contact with CI - Caught in CO - Caught on *IB* - Caught between F - Fall SO - Strain-overexertion* E - Exposure (occ. illness) *Show ergonomic stresses as SO (repetitive trauma, single event strain, or awkward position)	For each potential accident/illness, ask yourself exactly what the employee should do or not do to *avoid the accident/illness.* Describe specific precautions in detail. Give each precaution the same number given in the potential accident (center column) to which it applies. Avoid generalities such as "Be alert," "Be careful," and "Take caution." Use simple do or don't statements; e.g., "Lock out main power switch," "Stand clear of lift before signaling," or "Check wrench grip before exerting full force." If necessary, explain how, as well as what, to do. Amount of detail is a matter of judgment. Describe ergonomic solutions (job redesign, new tools, worker lift assistance, etc.)
1) Establish work zone	**General Safety Note** A wide variety of incidents occur on a regular basis that potentially could result in injury or illness	1) Be cognizant of your own safe work practices as well as those of your co-workers 2) Review any related safety procedures of which you are unsure 3) Utilize STOP WORK Authority as necessary
1a) Pre-job meeting with involved personnel to discuss the work plan and safety requirements.	NA	This project engages in Enhanced Work Planning(EWP), a ISM process that evaluates and improves the approach by which work is identified, planned, approved, controlled, and executed.
1b) Area preparation	Standard construction hazards.	A) Demolition preparation is defined by 29CFR1926.850; workers, unfamiliar with construction standards must notify the project supervision and/or project health and safety personnel. B) Once the work area is defined, only authorized personnel are permitted in the construction perimeter. C) Unescorted, Non-project and Non-emergency personnel, must have acceptance of the SMPP/TFV Project Manager for entry.
1c) Utility protection	Running into PIV's, etc. or grates over field drains.	A) Mark PIV's and other utility equipment with visible stakes and/or colored flags, and/or protective barriers as required. B) Cover field grates with steel sheeting to protect.
1d) Emergency egress/access	Blocked access	A) Emergency access to the work zone will be maintained to the extent possible.

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JOB SAFETY AND HEALTH ANALYSIS FORM
(CONTINUATION SHEET)

BASIC JOB STEPS	POTENTIAL ACCIDENT/ILLNESSES OR KNOWN HAZARDS	SAFE JOB PROCEDURES
1c) Utility isolation	Electrical shock or electrocution	A) Utilities to the building including electrical have been disconnected by project electricians at a point away from the building. B) Identify sources outside the building that may require LOTO to prevent incidental contact by Heavy Duty Equipment.
2/3) Demolition of building and slab	Personnel in proximity with heavy duty equipment	Heavy duty equipment will be used to provide an additional margin of safety vs. putting workers in harms way. – stay clear of operating equipment.
Operation of heavy equipment near electric overhead lines	Electrocution	LOTO all electrical overhead lines.
Demolish building, and slab using excavator mounted shear, hoe ram, grapple, loader, and bobcat	Struck by flying debris Struck by moving equipment Noise Hazard	Establish construction boundary. Wear hard hat safety glasses, safety shoes, and reflective vest inside construction area. Make eye contact with operator when working around equipment. Use hand signals to communicate intent. Maintain the following distances from operating equipment: Shear – 75 feet Hoe Ram – 50 feet Other heavy duty equipment – 30 feet Bobcat – 15 feet Make sure equipment is in safe working order. Use spotter if operator vision is obstructed. Install traffic control. Wear hearing protection while running heavy duty equipment Follow the requirements of MD-10286 D9
Torch cut rebar or to weaken structural members	Burns, fire Potential lead paint	Obtain and follow Hot Work permit per MD-10286 O2. Wear proper PPE, have fire extinguishers in the construction zone. Test for lead paint; do not torch cut lead paint.
Working in excessive heat/cold	Heat Stress/Cold Stress	Follow the requirements of MD-10286 D13/D16
Working outside.	Adverse weather conditions	Be aware of adverse weather conditions, assembly and take shelter areas.
Slab removal	Strike underground utilities Silica exposure	Obtain Excavation permit and follow its requirements per MD-10286 O5 Monitor for silica, keep area wet for fugitive dust suppression.
4) Restore area	**General Safety Note** A wide variety of incidents occur on a regular basis that potentially could result in injury or illness	1) Be cognizant of your own safe work practices as well as those of your co-workers 2) Review any related safety procedures of which you are unsure

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		3) Utilize STOP WORK Authority as necessary
4a) Rough grading	Equipment/ personnel mixture	Ground personnel stay clear and in sight of the equipment operator.
4b) Covering ground	Slip – Trip – Fall Lifting /twisting strain	Uneven walking and/or working surfaces –use extra caution. Follow accepted practices
4c) Protecting / filtering field drains	Lifting /twisting strain	2 man rule follow standard practice lifting grates.
4d) Dismantling fence	Slip trips and falls Cuts and abrasions Lifting /twisting strain	1) Be cognizant of your own safe work practices as well as those of your co-workers 2) Review any related safety procedures of which you are unsure 3) Utilize STOP WORK Authority as necessary

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SIGN-OFF SHEET

3.2.8 I have read and understand the attached Job Specific Work Plan and JSHA:

SIGNATURE	**Date**	**Department**

Appendix B

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Appendix C
PRE-JOB BRIEFING

JOB SPECIFIC WORK PLAN
PRE-JOB UPDATE

MSR/PROCEDURE (if applicable):	JOB SUPERVISOR

A.	Time, Date and Location of PJB:
B.	Applicable Procedure Number:
C.	Job Description:
D.	Personnel Attending:

HP#	SIGNATURE	HP#	SIGNATURE

JOB SUPERVISOR – This is a reminder checklist for the update. The supervisor need only discuss and note changes from the previous day's briefing or update. (Use NC for No Change).

1.	Any changes/revisions to safety envelope for work: a. New/added assignments and responsibilities of any individual b. Changes in facility conditions, tagouts, valve lineups c. New or changed precautions/hazards d. Valid RWP or other required work permits still in effect
2.	Adequate supply of PPE
3.	New training, any training coming up on expiration
4.	New changes to relevant Category "A" or Category "B" procedures.
5.	Equipment and tools calibrations in effect
6.	Relevant lessons learned, critique reports
7.	RWP revisions: a. Changes to radiological conditions of the workplace, particularly with respect to postings. b. Change in scope, especially if it is a reduction in scope or Stop Work Levels.
8.	Changes to radiological and/or health monitoring.
9.	Open the floor to questions.

The above minimum requirements have been met; this PJB has been conducted in sufficient detail to maximize continued safe conduct of the job, and all personnel have been through a previous Pre-Job Brief.

_____ _____

Job Supervisor/Foreman **Date**

NOTE: Completed pre-job update sheet must be retained with the work package or maintained in your record file.

JOB SPECIFIC WORK PLAN

Daily Toolbox Safety Meeting

Project:	**Date:**
Safety Topic of Meeting:	
Work Description of Meeting:	

Review the following to determine if conditions have changed since the last Pre-Job Meeting
If this is the 1st meeting with a subcontractor, has Safe Work Authorization been done?
Check off each item that applies or mark N/A if it doesn't apply.

Hot Work Permit (torch cutting, spark producing grinding, open flame heaters, welding)		Signage and Barricades (construction area, hazard notification, rad postings, etc).	
Penetration Permit (penetrating walls, ceilings, or floors in a building)		Air Monitoring (as required by Environmental Compliance and/or Industrial Hygiene)	
Excavation Permit (digging in soil)		Dust Suppression (misting, etc.)	
Trench Plan (shoring, soil layback, etc. if over 4 feet below grade)		Water Runoff Prevention (silt fence, straw bales, collection pond, etc.)	
Confined Space Entry Permit (manhole, tank, or other confined space entry)		Radiation Work Permit (as required by Rad Controls)	
Fall Protection (person's feet over 6 feet above ground)		TLDs (as required by RWP and rad postings)	
Lockout/Tagout (all energy sources to equipment being worked on)		Waste Containers (rolloffs, sealands, dumpsters, LSA boxes, drums, etc.)	
PPE (respirators, Tyveks, safety shoes, safety glasses, hard hats, gloves, reflective vests, etc.)		Utility review especially for asbestos abatement contractor (label live utilities e.g. FAS, phone, electric)	
Personnel Training up-to-date for assigned work (Radworker II, Asbestos, Lead, etc.)		Hoisting and Rigging Review	

042061

JOB SPECIFIC WORK PLAN
PRE-JOB UPDATE

Continuation Sheet for _____/_____/_____

HP#	SIGNATURE	HP#	SIGNATURE

JOB SPECIFIC WORK PLAN

PRE-JOB UPDATE

MSR/PROCEDURE (if applicable):	JOB SUPERVISOR

A.	Time, Date and Location of PJB:
B.	Applicable Procedure Number:
C.	Job Description:
D.	Personnel Attending:

HP#	SIGNATURE	HP#	SIGNATURE

JOB SUPERVISOR – This is a reminder checklist for the update. The supervisor need only discuss and note changes from the previous day's briefing or update. (Use NC for No Change).

2. Any changes/revisions to safety envelop for work:
   e. New/added assignments and responsibilities of any individual
   f. Changes in facility conditions, tagouts, valve lineups
   g. New or changed precautions/hazards
   h. Valid RWP or other required work permits still in effect

2. Adequate supply of PPE

3. New training, any training coming up on expiration

4. New changes to relevant Category "A" or Category "B" procedures.

5. Equipment and tools calibrations in effect

6. Relevant lessons learned, critique reports

8. RWP revisions:
   c. Changes to radiological conditions of the workplace, particularly with respect to postings.
   d. Change in scope, especially if it is a reduction in scope or Stop Work Levels.

8. Changes to radiological and/or health monitoring.

9. Open the floor to questions.

The above minimum requirements have been met; this PJB has been conducted in sufficient detail to maximize continued safe conduct of the job, and all personnel have been through a previous Pre-Job Brief.

_____

Job Supervisor/Foreman Date

Appendix D

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Appendix E
DRAWINGS/SKETCHES

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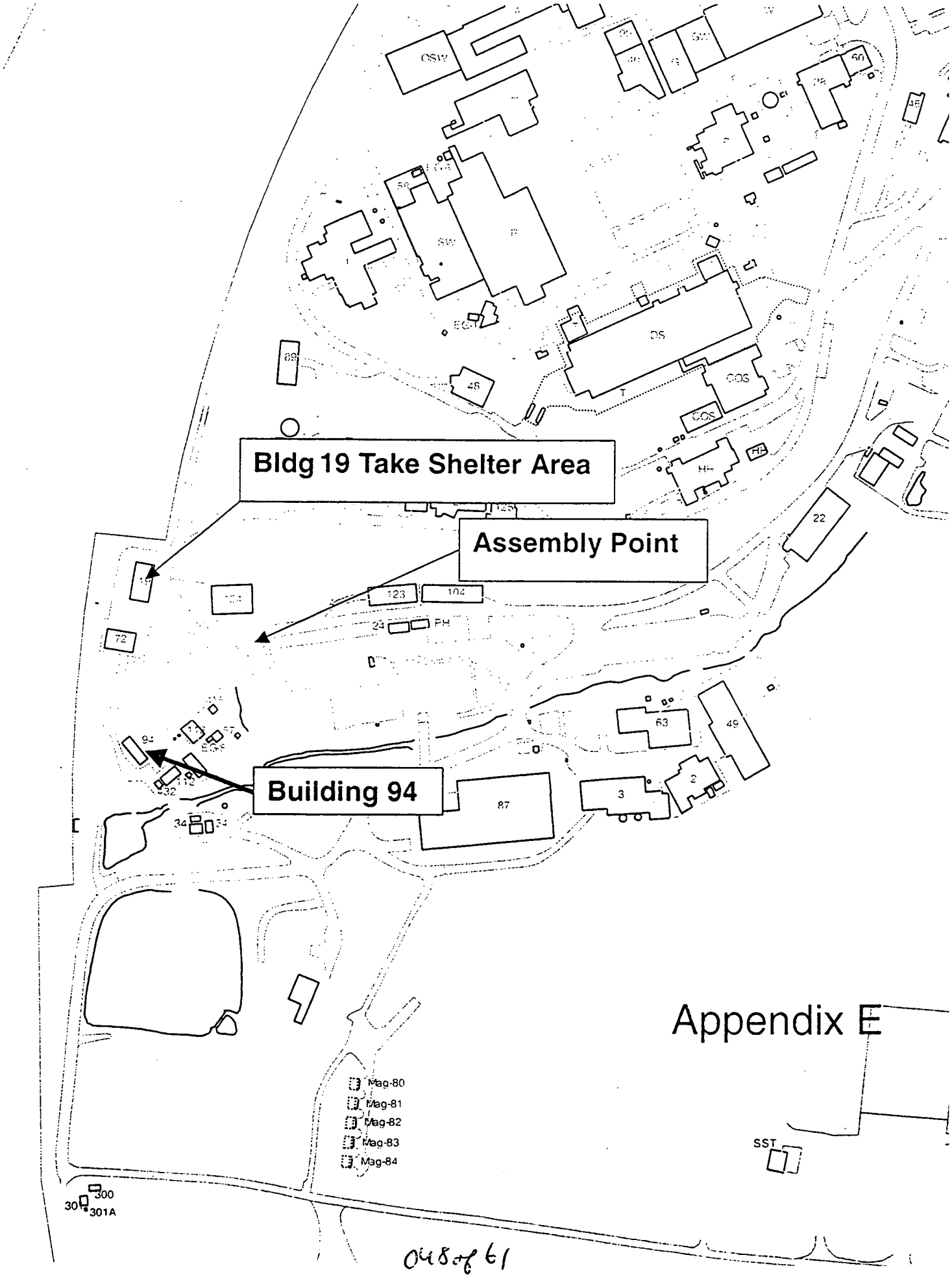
Bldg 19 Take Shelter Area
Assembly Point
Building 94
Mag-80
Mag-81
Mag-82
Mag-83
Mag-84
SST
300
301A
30
OSW
DS
COS
PH
22
49
63
87
3
2
72
123
104
24
94
32
34
89
46
60
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Appendix E

Appendix F
REFERENCES/ LESSONS LEARNED

Removal of Pier Breaks Underground Water Line

(Lessons Learned L01-113)

Lessons Learned Statement:

When piers of unknown configuration are to be removed from the ground near buried utilities, they should be dug out of the ground, not pulled out.

Background:

Concrete piers that were part of a now abandoned security system were to be removed as part of a demolition and they were known to be overtop of 6" concrete domestic water line. It was known that the bottom of the pier was close to the water line, but it was assumed to be a couple of feet away from the line and that the piers could be pulled out of the ground without impacting the water line.

A backhoe was hooked up to the pier and the pier was pulled out of the ground after a surprising amount of effort. The magnitude of the pier was not known because there were no as-built drawings. Instead of being a straight, square pier one or two feet deep, it turned out to be four feet deep and had an "L" shaped leg at the bottom to provide concrete encasement for the conduit of the security system.

Because of the "L" shape, when the pier was pulled out, it rotated downwards and crushed the concrete water main. Domestic water was isolated and the broken pipe was repaired.

Recommended Actions:

When removing similar piers, or piers of an unknown configuration especially when they are known to be near underground utilities, greater effort in planning the job should be exercised and consideration should be given to excavating the pier rather than simply pulling it out of the ground.

Back to Lessons Learned

Appendix G
MISCELLANEOUS
(USQ, RWP, Permits, etc.)

053061

INTER OFFICE MEMO BWXT OF OHIO

Date: December 9, 2002 cc. L. Koehmstedt

From: W. L. Johanan – OSW-430

Subject: Structural Survey of Building 94, RE: 29 CFR 1926.850 (a)

To: Bud Thompson-Project Manager

Please be advised that we have performed a structural review and walk down and found them to be satisfactory based on the demolition process and work plan.

Please call me if you have any further questions.

William L Johanan

W. L. Johanan P.E.
Site Structural Engineer

STATE OF OHIO
WILLIAM
L
JOHANAN
E-44883
REGISTERED
PROFESSIONAL ENGINEER

SMPP/TFV PROJECT
Waste Disposition Plan
Building 94 Demolition

The purpose of this Project Operations plan is to identify waste streams that will be generated during the demolition of building 94. Characterization of waste streams will be summarized and disposal options specified.

The plan will outline types of waste/waste quantities expected. Information will be provided on the schedule for waste generation, RCRA characterization, radiological characterization, packaging requirements/mode of disposal, and any specific waste acceptance criteria that must be met for disposal.

Waste types and estimates are based on a physical examination of the room conducted on Dec. 4, 2002 and review of the processes that were performed in the building. These areas are not considered to be contamination areas. The majority of the waste that will be generated in the demolition process of the building will be disposed of as demolition debris/solid waste. The waste will include all associated removable piping located inside/outside Bld. 94.
Sealed pressure vessels will need to be at < 1.5 atmospheres. Wastes are listed in expected order of generation.

Waste Type	Demolition debris/solid waste: Concrete, Steel and Copper Piping, Metal Roofing, Elect. Wiring, FG Installation, Wood
Quantity expected	8,839 Solid Cu. Ft.
Asbestos	Asbestos will need to be segregated and disposed of under asbestos waste stream. IH documentation that determines if asbestos is present will need to be provided before disposal.
Schedule for waste generation	Dec., 2002 - Jan. , 2003
RCRA characterization	Non-hazardous
Radiological characterization	Radiological surveys of the building /equipment indicate no elevated radioactivity levels. Building was non-impacted from site Radiological Operations.
Packaging requirements	30 Cu Yd. Roll-Off/ End Dumps
Mode of disposal	Offsite disposal via Waste Management Operations/Journey LTD
* NOTE: Sealed pressure vessels will need to be at < 1.5 atmosphere if present	

Any unusual or unexpected items not addressed in this plan should be set aside for examination and evaluation by the project engineer and waste coordinator.

Prepared by Willis Daniel
Date: 12/04/02

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D&D SOLID WASTE FREE RELEASE DECLARATION

The SMPP/TFV Project has determined that all solid waste streams resulting from safe shutdown, decontamination, and/or demolition of Building(s) 94 have been free released in accordance with DOE Order 5400.5, Mound procedural manuals MD-80036 and MD-80043, and direction from the DOE Miamisburg Environmental Management Project (MEMP) office (letter from Provencher to Baker, MB0423-99, dated April 27, 1999). Data supporting this free release determination may be found by contacting [illegible], Project Manager, at Mound. These data may include radiological surveys and data sheets and/or process knowledge utilized according to the above procedures.

Waste Coordinator

10/16/02
Date

ML-9987 (7/00)

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No USQs or RWPs are required at this time. An excavation permit will be required for the slab removal and a burn permit will be required for torch cutting rebar.

Appendix H
POST-JOB CONFERENCE

Title:	
Work Package No. **(JSWP or MSR)**	

POST JOB CONFERENCE

What went well?

What could be improved?

Other Comments:

Title:	
Work Package No. **(JSWP or MSR)**	

Items Requiring Further Action:

POST-JOB CONFERENCE ATTENDEES

NAME	HP	NAME	HP

Title:	
Work Package No. (JSWP or MSR)	

LESSONS LEARNED INPUT FORM

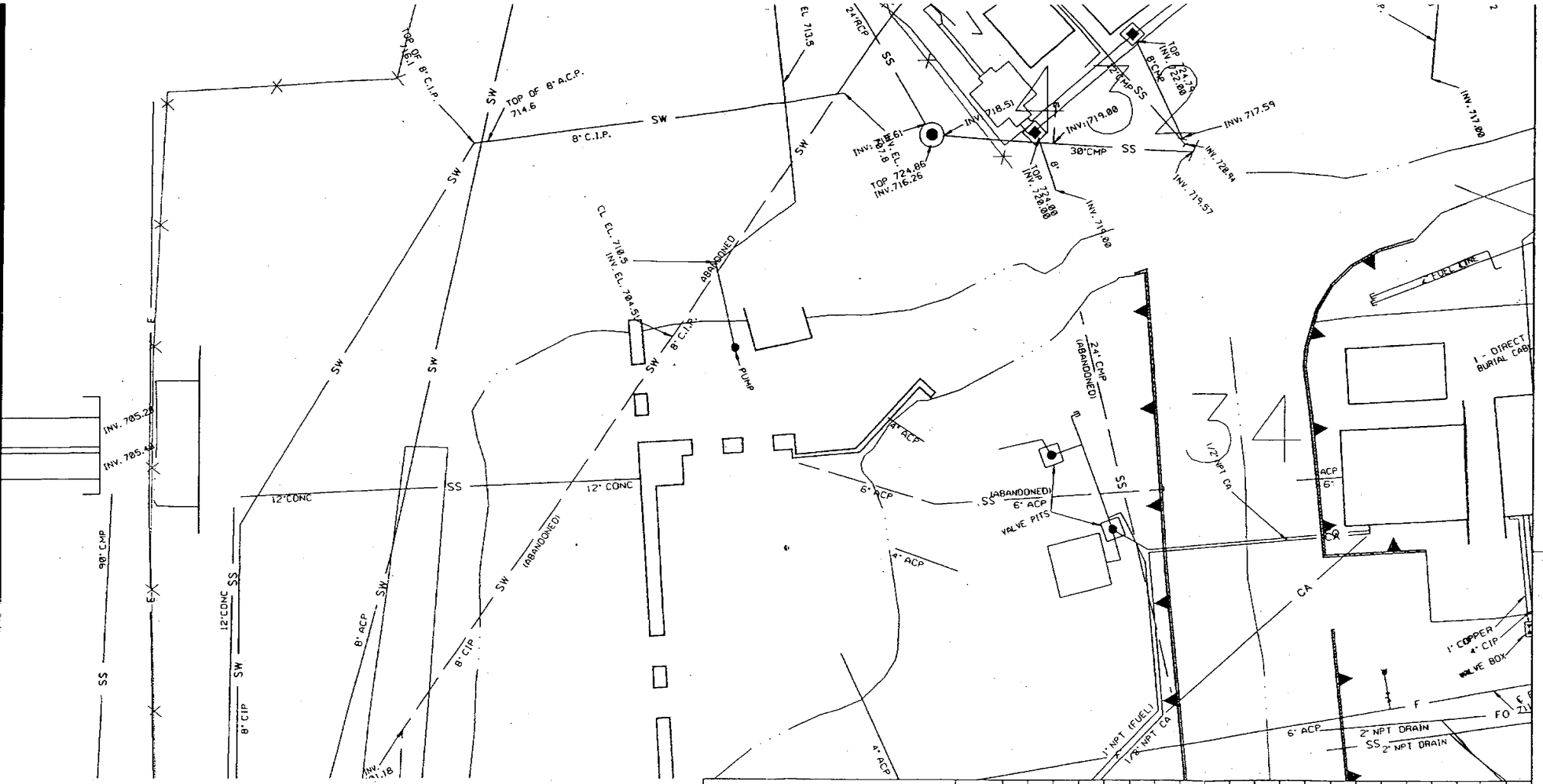
What Happened? (Describe in as little or as much detail as necessary the situation and what occurred. Do not mention any names, only job functions and activities)

What did you learned? (Describe how the job could have been done better, how a hazard could have been eliminated, etc.)

Submitted by: _____ **Date:** _____

OPTIONAL

Mail to: Lessons Learned Program Manager, W-219 or appropriate Project or Functional Manager



MOUND

Environmental Restoration Geographic Information System

SHEET	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
ISSUE																					

SHEET	1	2	3	4	5	6
ISSUE	*					

PART CLASSIFICATION

SITE PLAN BLDG. - 94

DRAWING CLASSIFICATION: UNCLASSIFIED

SIZE

DRAWING NUMBER: FSC*

JOB NUMBER: *

DWG TYPE: *

PRMG

CAGEC 14065

SCALE 1"=20'

SHEET * OF *

STATUS MD-REL-**/**/**

ORIGIN MSTATION / J

0	09/25/02	PLANNING - ungd_94.dgn	MR	*	*	*	*	
S	DATE	REVISION	BY	CHKR	ENG	LP&EC	APVD	M

D C B A

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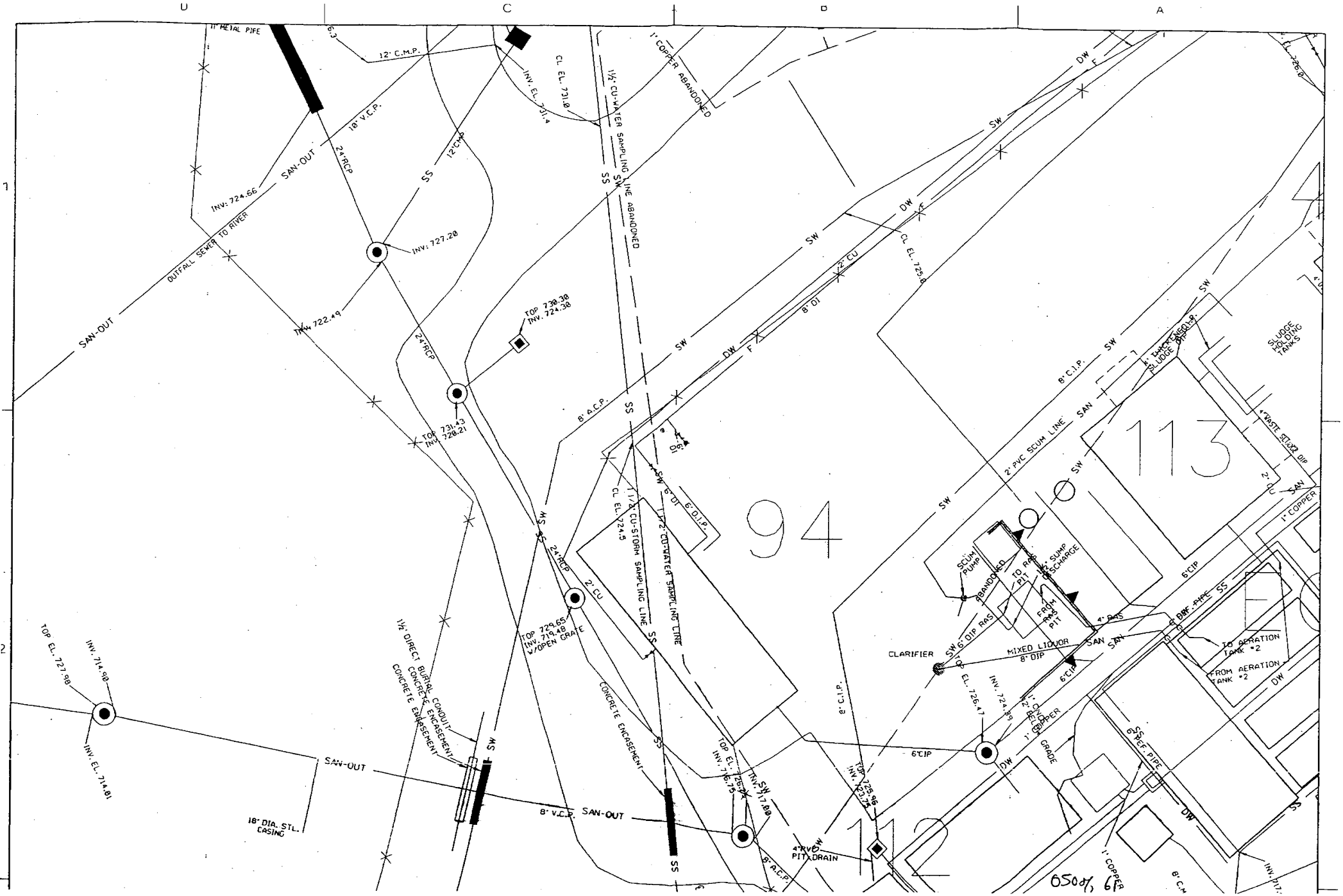
11" METAL PIPE
12" C.M.P.
18" V.C.P.
24" RCP
SAN-OUT
INV. 724.66
OUTFALL SEWER TO RIVER
INV. 727.20
INV. 722.49
TOP 730.38
INV. 724.38
TOP 731.43
INV. 720.21
CL EL. 731.8
INV. EL. 731.4
1½" CU-WATER SAMPLING LINE ABANDONED
1" COPPER ABANDONED
12" CMP
8" A.C.P.
CL EL. 724.5
1½" CU-STORM SAMPLING LINE
1½" CU-WATER SAMPLING LINE
6" DI
6" D.I.P.
2" CU
8" DI
CL EL. 725.8
8" C.I.P.
2" PVC SCUM LINE
SCUM PUMP
ABANDONED
TO RAS PIT
½" SUMP DISCHARGE
FROM RAS PIT
6" DIP RAS
4" RAS
6" DIP PIPE
CLARIFIER
MIXED LIQUOR 8" DIP
6" CIP
TO AERATION TANK #2
FROM AERATION TANK #2
EL. 726.47
INV. 724.99
1" COPPER
GRADE
SLUDGE HOLDING TANKS
4" WASTE SLUDGE DIP
1" COPPER
8" CIP
8" CIP PIPE
TOP EL. 727.98
INV. 714.98
INV. EL. 714.81
1½" DIRECT BURIAL CONDUIT
CONCRETE ENCASEMENT
CONCRETE ENCASEMENT
18" DIA. STL. CASING
8" V.C.P.
TOP 729.65
INV. 719.48
W/OPEN GRATE
TOP EL. 726.75
INV. 716.75
INV. 717.89
4" PVC PIT DRAIN
TOP 729.96
INV. 723.96
94
113
05087, 6E