300402- 0610310005

CH2MHILL

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

SM-043/03
June 30, 2003

06-30-03 P02:37 IN

MIAMISBURG
LOG G-01060
CODE 6444.89

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 89 BUILDING DATA PACKAGE, FINAL
Bldg 89-GFS/I: Planning Documents Approved- Activity ID: EBDEE089AL

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 89, 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,

R. C. Ransbottom for K. L. Kehler

K. L. Kehler
SMPP/TFV Project Manager

KLK/VKD

Enclosures

Approved: Paul Lucas 6/30/03
Paul Lucas Date
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
Lisa Rawls, DOE/MCP, w/o attachments
Randy Tormey, DOE/MCP, (1) w/attachments
Terry Tracy, DOE/HQ, (1) w/attachments
Dann Bird, MMCIC, (1) 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
Admin Record (2) w/attachments

QC Review Checklist

Document Title: Bldg. 89 BDP (Demolition) Working Draft March 03

Author/contributors: Don Kramer - BDP ; Lee Koehnstedt - Work Package ; Rol case - PSP

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reference titles correct	yes / no / (na)
acceptable copy quality	(yes) / no / na
other/comments: Lee Koehnstedt 3/24/03	

Sr. Technical Review* (sign/date):	Karen WORK PACKAGE NOT REVIEWED & PSP 25mar3 26Mar3	Bob R.C. Ronsbottom
	Kurt R.C. Ronsbottom for R.L. Kehler	Rob/DOE RAN 3/27/03 Paul Lewis 3-27-03

Work Package + PSP not reviewed (UKD) Frank Schmidt 4/2/03

*ho ho check

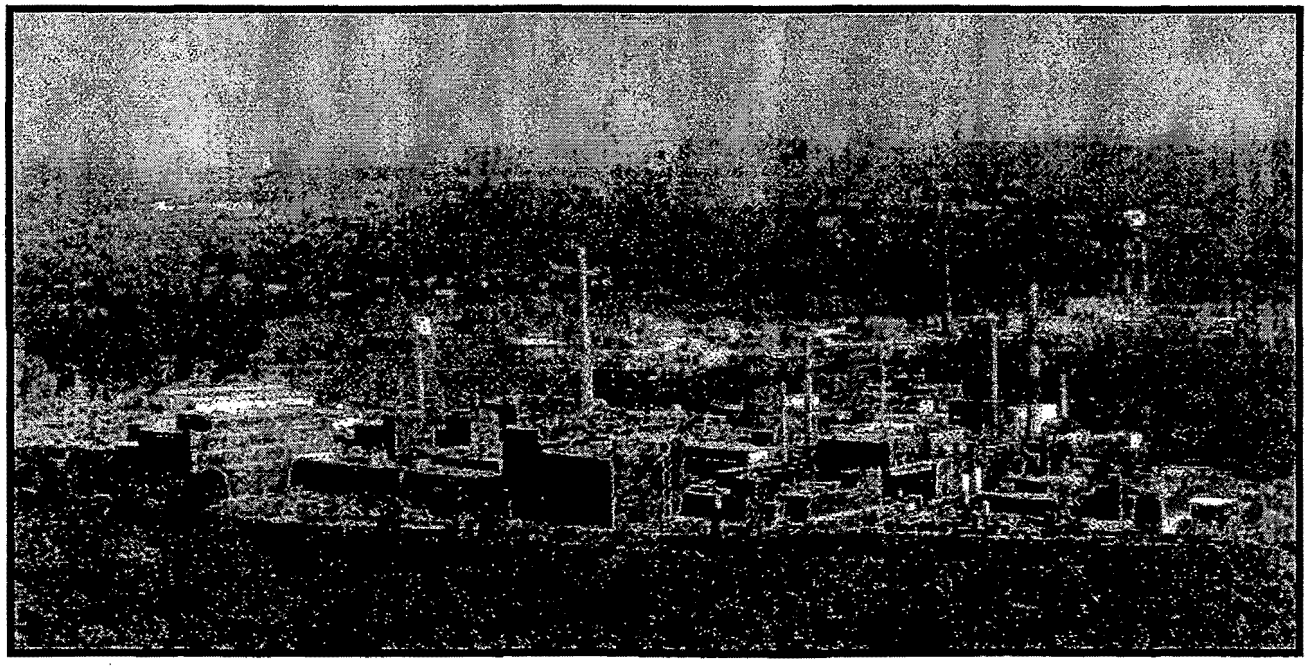
Environmental
Restoration
Program

Miamisburg Closure Project
Building Data Package

Building 89

(Demolition)

Final
June 2003



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

June 2003

Mr. Daniel Bird, AICP
Planning Manager
Miamisburg Mound Community Improvement Corporation
720 Mound Road
COS Bldg. 4221
Miamisburg, Ohio 45342-6714

Dear Mr. Bird:

The Core Team, consisting of the U.S. Department of Energy Miamisburg Closure Project (DOE-MCP), U.S. Environmental Protection Agency (USEPA), and the Ohio Environmental Protection Agency (OEPA), appreciates your comments on the Building 89 Building Data Package. Attached is our response.

Should the responses to comments require additional detail, please contact Paul Lucas at (937) 847-8350, x314 and we will gladly arrange a meeting or telephone conference.

Sincerely,

DOE/MCP: Frank Schmalz for Paul Lucas, Remedial Project Manager — 6/10/03 date

USEPA: David P. Seely, Remedial Project Manager — 6/23/03 date

OEPA: Brian K. Nickel, Project Manager — 6/10/03 date

Response to MMCIC Comments on the Building 89 Building Data Package Public Review Draft April 2003

Comment 1. From our review of the Building 89 Data Package, MMCIC concurs with the demolition of the building. MMCIC request that after demolition, the building site and surrounding area be returned to the appropriate condition as outlined in the Mound Reuse Plan.

Response 1. We appreciate your input and review of the document. The Core Team agrees that overall cost efficiencies could be achieved if the restoration of the Building 89 site is designed with its reuse in mind. To the extent practicable, that goal will be pursued.

Miamisburg Closure Project

MIAMISBURG CLOSURE PROJECT
POTENTIAL RELEASE SITE PACKAGE
Notice of Public Review Period

The following Potential Release Site (PRS) package 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 April 9, 2003 through May 9, 2003.

PRS 269: Building 36 Historic Gasoline Tanks

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

MOUND

Environmental Restoration Program

MIAMISBURG CLOSURE PROJECT
BUILDING DATA PACKAGE

The following Building Data Package (BDP) will be available on 9 April 2003 for your information in the CERCLA Public Reading Room, 305 E. Central Ave., Miamisburg, Ohio.

BDP Building 89: Detonator Storage Facility

Questions can be referred to Frank Schmaltz at (937) 865-3178.

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BDP Building 89

REV	DESCRIPTION	DATE
WORKING DRAFT (to DOE)		**March 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 BDP was made available in the CERCLA Public Reading Room on April 9, 2003	**April 2003**
FINAL	The Core Team's response to public comments is included in this document. No text changes were indicated based on public comments. OEPA and USEPA had no comments regarding this document. Section 2.4 and Appendix G were revised to provide the final radiological survey information.	**June 2003**

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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 89 (Detonator Storage Facility) 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 89 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 89, the soil beneath, and a 15-foot wide perimeter border around the building. The investigation of Building 89 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, June 1995 Contaminant Surveys
- MLM-3791, Mound Facility Physical Characterization, December 1993

2.0 BUILDING 89 OVERVIEW

Building 89 was constructed in 1985 on the western edge of the site (Figure 1). The building is a two-story, 4,830 square-foot structure, constructed of reinforced concrete block and (in some locations) poured concrete walls. The roof structure is of a typical metal joist and ribbed deck with a built-up membrane roof. The basement or lower floor of the structure consists of one room (mechanical room) located on the southern third of the structure, with the remaining two-thirds of the area underlying the first floor being unexcavated. The first floor is a storage and processing area. Building 89 has not had any additions constructed onto it, and remains at the "as constructed" square footage. Floor plans are included as Appendix D.

The building is serviced by stormwater service lines, a fire sprinkler water main, a potable water line, and electric service of 480 volts. The building uses central steam for heating and a refrigeration unit for cooling. Heat and cooling are distributed through a central air handling unit. Building 89 has no sanitary services.

2.1 Past Uses of Building 89

Building 89 was constructed and used as a detonator storage facility. The building also contained a forge hammer operation that was used to crush detonator components. In the mid-1990s, Building 89 processes ceased, and the building was vacated and designated

for transfer to the Miamisburg Mound Community Improvement Corporation (MMCIC) as a user facility. On 19 February 1997, the Core Team binned Building 89 No Further Assessment (NFA), however, the building was not transferred to MMCIC. Subsequently, the building was put in use briefly by a small business, and later used as a storage building for equipment and furnishings belonging to MMCIC. The binning recommendation sheet is provided in Appendix P.

Even though Building 89 was previously binned NFA, this data package was issued because the building was in use for more than six years after it was binned NFA, and because the building disposition was changed from transition to demolition.

2.2 Current Uses of Building 89

Building 89 is currently being used as a storage building for equipment (such as a tensile testing machine, a laser welder, product testers, and fume hoods) and office furnishings belonging to MMCIC. The equipment and furnishings are in the process of being removed. All required equipment will be removed from the building, and any remaining equipment will be left in place and demolished/disposed of with the building.

2.3 Summary of Environmental Concerns and Findings - Building 89

Table 1: Summary of Environmental Concerns and Findings

Description	Comment	Resolution
Lead-Based Paint	No previous lead surveys or sampling data were found pertaining to the paint coatings in Building 89. Paint coatings were observed to be largely intact. Although untested paint coatings must be assumed to contain lead, the observed condition of the paint indicates that there are currently no lead paint hazards within the building (Appendix J).	If lead-based paint were present, it would not impact the demolition or disposal of the debris. Close worker disturbance of paint coatings will be avoided during demolition. If close disturbance is necessary, point of contact will be tested for lead and appropriate controls and personal protective equipment (PPE) will be used for disturbance as required.
Chemicals	There were no chemicals in the building at the time of a walk-through performed on March 10, 2003. Historical documents indicate that chemicals were not stored in Building 89. A solvent cabinet and a drum labeled "decon water" that were reported in historical documents (Appendix F) as being outside of the building had been removed. Appendix K contains additional chemical information.	N/A
Fluorescent Lamps and PCBs	Fluorescent lamps were used in the building. Ballasts may contain polychlorinated biphenyls (PCBs).	Ballasts that may contain PCBs will be removed prior to demolition.

Table 1: Summary of Environmental Concerns and Findings

Description	Comment	Resolution
Air Emissions	N/A	N/A
Asbestos	A room-by-room inspection of all accessible spaces was conducted in order to prepare an inventory of the location and approximate quantities of identified asbestos-containing materials (ACMs). One type of material was identified through analysis to be asbestos-containing. This material was the grey transite panel lining contained within the two orange laboratory fume hoods that were being stored in Building 89. A copy of the asbestos survey is provided in Appendix I.	The two fume hoods, which were the property of MMCIC, were removed from the building along with other equipment and furnishings before the building was turned over to the site contractor for Safe Shutdown and demolition. The roofing-type mastic sealant, which is nonfriable, does not have to be removed prior to demolition so long as it remains nonfriable up to that point. All work will be performed in accordance with current state and federal regulations.
Drainage Sumps	There are no drainage sumps.	N/A
Lead	N/A	N/A
Mercury	N/A	N/A
Radiological	Radiological materials were not normally handled within the building; however, radiological control documents contain references to a tritium-contaminated flammable storage cabinet being found in the building. These same references indicate that this cabinet, which had been located in E Building, was not properly surveyed prior to being moved to Building 89. The cabinet was removed from Building 89 and subsequent surveys found no additional contamination in Building 89.	The review team concluded that the building meets radiological surface release criteria established by DOE Order 5400.5, and no further radiological surveys are required. Supporting documentation for the information is summarized in Section 2.4 and provided in the Final Status Survey (Appendix G).
Septic System	N/A	N/A
Wastewater	There is no sanitary system.	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 (Appendix H).	No further action required.
HVAC	HVAC refrigerant will be drained and disposed of during Safe Shutdown.	No further action required.

Table 1: Summary of Environmental Concerns and Findings

Description	Comment	Resolution
Energetic Materials	Historical documentation states that the building has areas of energetic material contamination; however, this statement may be an assumption that is not based on facts. Energetic material contamination in Building 89 would be unlikely because bulk energetic material powders were not introduced into the building. Energetic materials were pelletized or otherwise encapsulated (sealed) in completed detonators before the detonators were packaged in suitcases and stored on shelves in Building 89. Detonator components crushed in the Forge Hammer Operation did not contain energetic material.	Heavy duty equipment will be used for demolition and debris handling. If necessary, demolition debris will be wet down.
Soil Contamination	Appendix L contains a graphic showing all soil sample locations within 15-feet of the Building 89 perimeter, 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 2. All other results are below applicable levels.	Based on the historical analytical data, post-demolition soil sampling is not planned.

N/A: Not applicable

Table 2: Maximum Results Exceeding Screening Levels (pCi/g)

Analyte	Maximum Result	Background	RBGV (10^{-6})	Screening Level
Cesium-137	0.8	0.42	0.34	0.76
Cobalt-60	0.5	N/A	0.07	0.07
Plutonium-238	61	0.13	6.1	55

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.

2.4 Radiological Characterization Summary for Building 89

A radiological assessment of Building 89 was performed by reviewing historical, operational, and radiological survey information. Building 89 has not routinely generated wastes that required handling as radioactive or as hazardous wastes. No radiological process systems were ever a part of the facility. No radioactive materials were stored in this facility.

However, a contaminated flammable storage cabinet was found in Room 101 of Building 89. Because of this, the floor in Room 101 was surveyed as a Class 3 survey unit. The remaining areas of Building 89 are classified as non-impacted based on history and use. An assessment of residual radioactive contamination of Building 89 structural surfaces was performed to support these classifications.

The review team concluded that the building meets radiological surface release criteria established by DOE Order 5400.5, and no further radiological surveys are required. Supporting documentation for the information summarized in the Table 3 is provided in the Final Status Survey (Appendix G).

Table 3: 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	03-TF-0071	Interior Floor	11.21	20
Highest Alpha Fixed Activity	03-TF-0075	Interior Wall	90	100
Highest Beta Smearable Activity	03-TF-0076	Interior Wall	12.72	1,000
Highest Beta Fixed Activity	03-TF-0071	Interior Floor	750	5,000
Highest Tritium Smearable Activity	03-TF-0071	Interior Floor	14.03	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 89 is located at the DOE MCP site, formerly known as Mound Plant. The MCP Site is situated in the City of Miamisburg, Miami Township, Montgomery County, State of Ohio as shown in Appendix B.

The Mound Plant at one time was situated on 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 the facility along Mound Road. Benner Road formed the southern property line of the Mound Plant (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 89

As shown on Figures 2 and 3, Building 89 is bordered by a grassy area and a roadway on the north side, Building 56 to the south, a grassy hillside and a roadway to the east, and a grassy hillside on the west side.

3.3 Current and Past Uses of Buildings in Proximity to Building 89

Building 56 (located south of Building 89) houses a pumping station for the fire suppression system water tank next to the building. Previously, there were two other buildings (Building 92 and I Building) and a magazine (Magazine 7) in the vicinity of Building 89, but they have been demolished. Building 92, demolished in February 1996, was a 1,600 square-foot wooden modular production training facility located northeast of Building 89. I Building, demolished in April 2002, was a 25,736 square-foot facility used for radiological bioassay and environmental analysis, and later, used for the production of inert and/or plastic components of weapons devices and detonators. I Building was located northeast of Building 89. Magazine 7, demolished in January 1998, was a 387 square-foot reinforced concrete structure used for energetic materials storage in support of the conversion of I

Building to an explosive-detonator facility. Magazine 7 was located east of Building 89. Building 92, I Building, and Magazine 7 are believed to have had no environmental impact on Building 89.

4.0 RECORDS REVIEW

4.1 General/Historical CERCLA Information

In compliance with permit requirements under Resource Conservation and Recovery Act (RCRA), the Clean Water Act (CWA), the Safe Drinking Water Act (SDWA), and the Clean Air Act (CAA), the 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. The site also 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 RAPCA and the Ohio Environmental Protection Agency (OEPA). The site also 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 March 2002 version of this report indicated that no reportable chemicals are stored in Building 89.

The Mound Plant was identified as a contaminated site on the National Priorities List under CERCLA (Superfund) in 1989. The Mound Plant was originally listed due to 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 operable unit (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 knowledge of historic or current use indicates that the site 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 89

4.2.1 Occurrence Reports

A search of the occurrence reporting system revealed three reports, all of which were minor and without environmental impact. Copies of the occurrence reports are provided in Appendix M.

- pink dye tracing liquid erroneously mistaken for ethylene glycol spill,
- precautionary evacuation (false fire alarm), and
- smoke detector activation due to dust from diamond saw cutting of concrete.

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 Environmental Restoration (ER) Program, DOE and the site contractor tabulated all the PRSs identified under the various regulatory programs in effect at the site. Of these 440 PRSs, two are at or near Building 89, as identified in Table 4. Additional information is included in Appendix N.

Table 4: PRSs in Proximity to Building 89

PRS	CERCLA or Bldg. Related	Binning Status	Comments
91*	CERCLA	Further Assessment (FA)	Main Hill Seep 0601.
239	CERCLA	No Further Assessment (NFA)	Site Survey Project Potential Hot Spot Locations S0208.

**PRS 91, or Main Hill Seep 0601, is a site on the hillside west of and down gradient from Building 89 where subsurface groundwater exits the soil. PRS 91 was binned FA because effluent from the seep exceeds the maximum contaminant level (MCL) that is acceptable for material in drinking water. The Environmental Compliance and Analytical Services group is monitoring and will continue to monitor Main Hill Seep 0601 until the effluent falls below the MCL. PRS 91 will not have an impact on the demolition of Building 89, and conversely, the demolition of Building 89 will not affect PRS 91.*

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, J. L. Boston, was interviewed via a building manager questionnaire (included in Appendix F). The current Building Manager, Gary Weidenbach, was interviewed regarding past facility operations and current conditions. No significant items related to the building were identified based on the questionnaire or interviews.

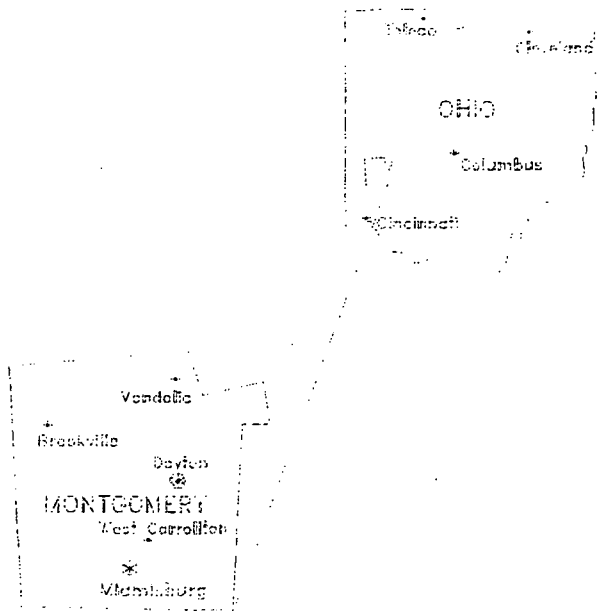
Appendix A

General Listing of Acronyms

ASTM	American Society for Testing and Materials
BDP	Building Data Package
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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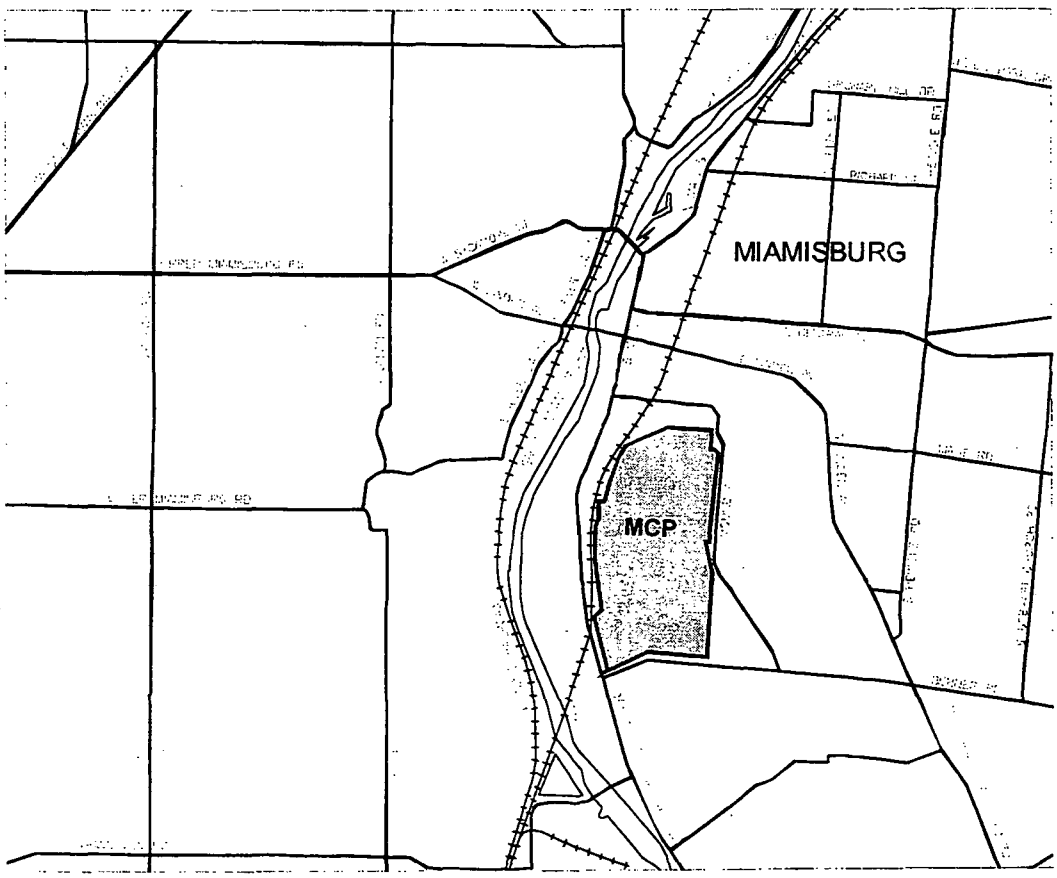
MONTGOMERY
West Carrollton
Miamisburg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MCP

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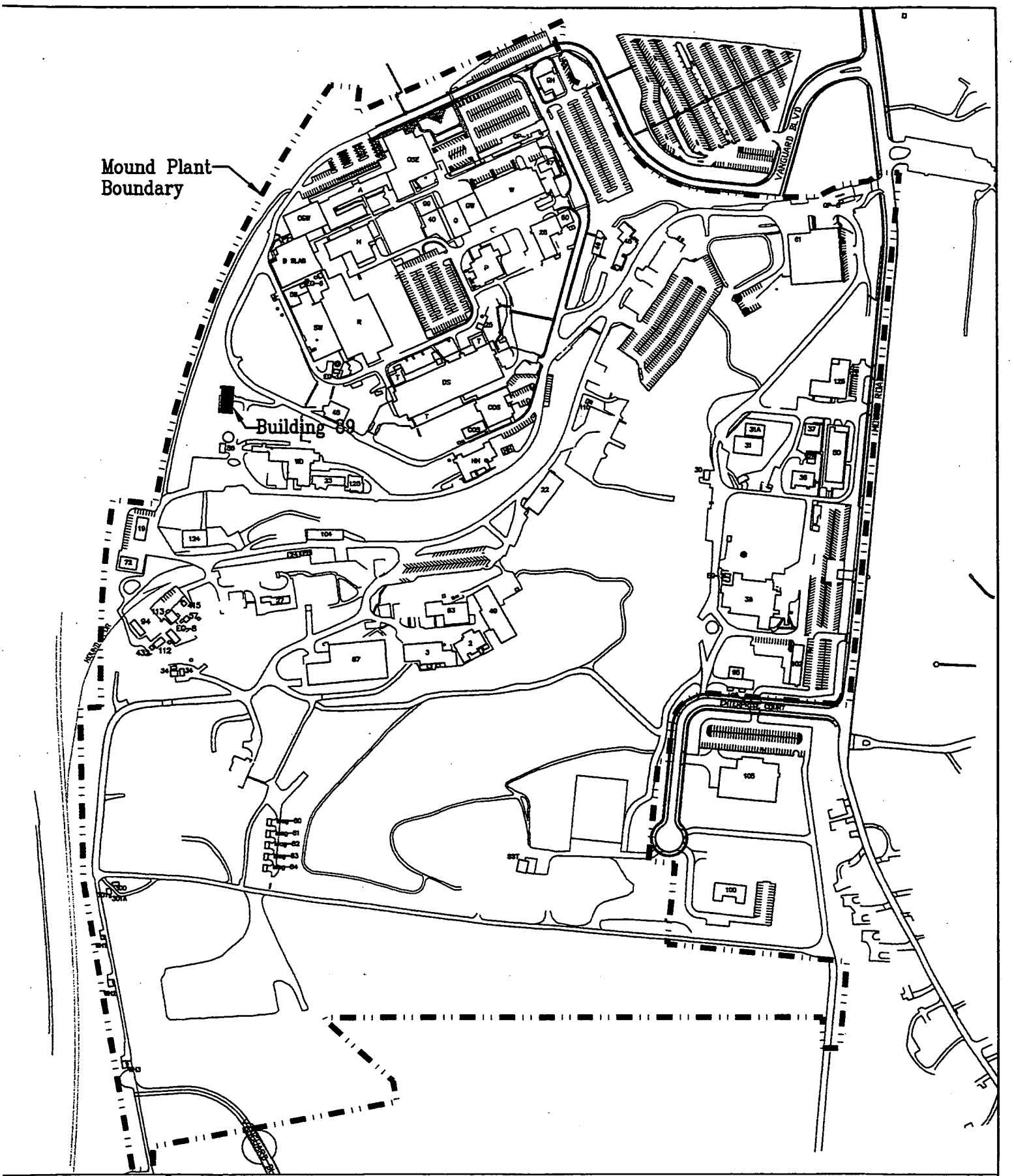
Appendix C

Figures



Legend

45 Structures
Roadway
Mound Spur
Mound Plant Boundary
Railroad

0 225 450 900
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

DRAWING CLASSIFICATION: UNCLASSIFIED

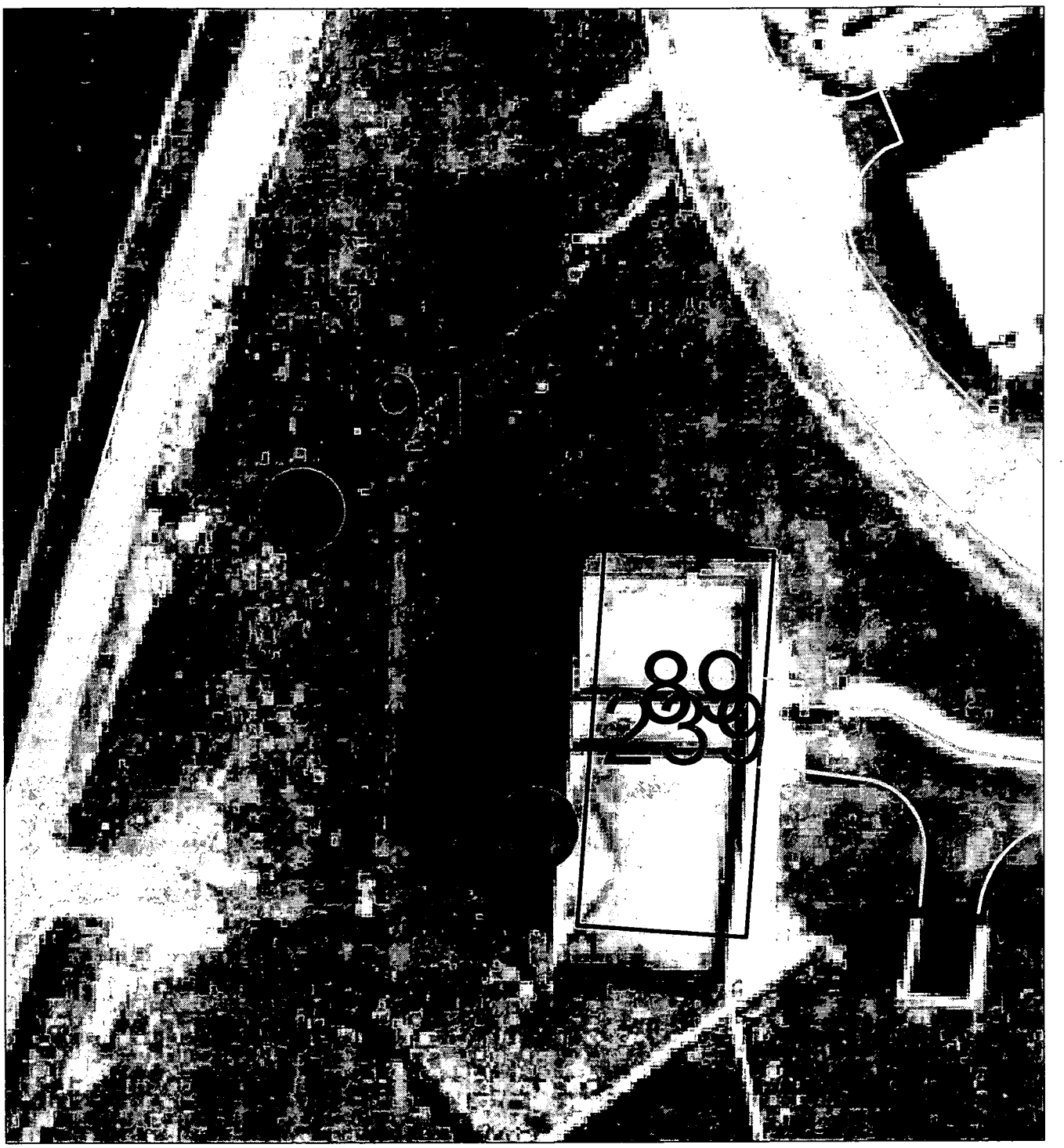
SIZE | DRAWING NUMBER: MAPS.DWG | JOB NUMBER

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

STATUS MD-REL-00/00/00 | ORIGIN AUTOCAD

DATE	REVISION	BY	CHKR	ENG	LP&EC	APVD	M

Figure 1
Location of Building 89



Legend

45 Structures

PRS Point

PRS Area

PRS Line

DATE	REVISION	BY	CHKR	ENG	LP&EC	APVD	M

MOUND

Environmental Restoration Geographic Information System

SHEET	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
ISSUE																					

SHEET	1	2	3	4	5	6
ISSUE	•					

PART CLASSIFICATION

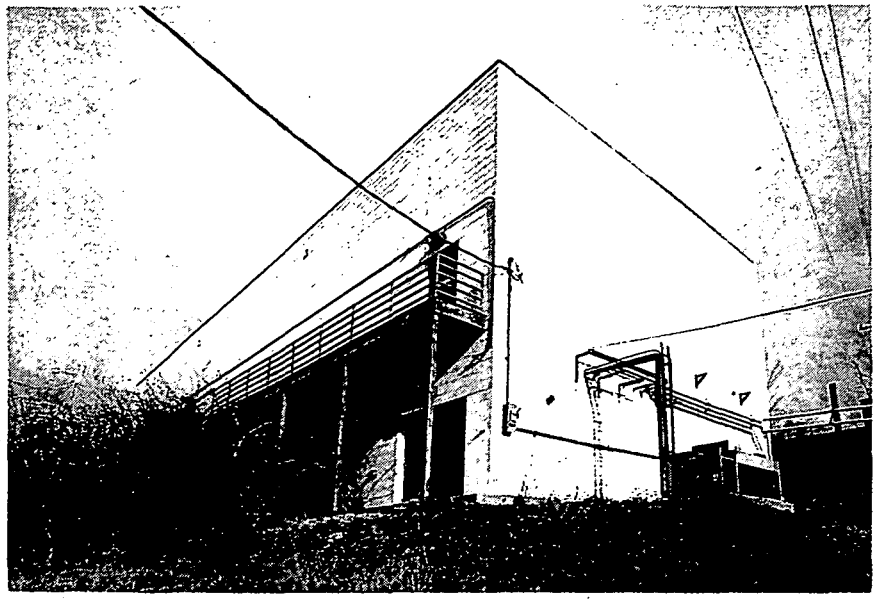
DRAWING CLASSIFICATION: UNCLASSIFIED

Figure 2
Building 89
and Vicinity

SIZE | DRAWING NUMBER: MAPS.DWG | JOB NUMBER

DWG TYPE STE | PRMG ER-GS | CAGEC | SCALE | SHEET 1 OF

STATUS MD-REL-**/**/** | ORIGIN AUTOCAD



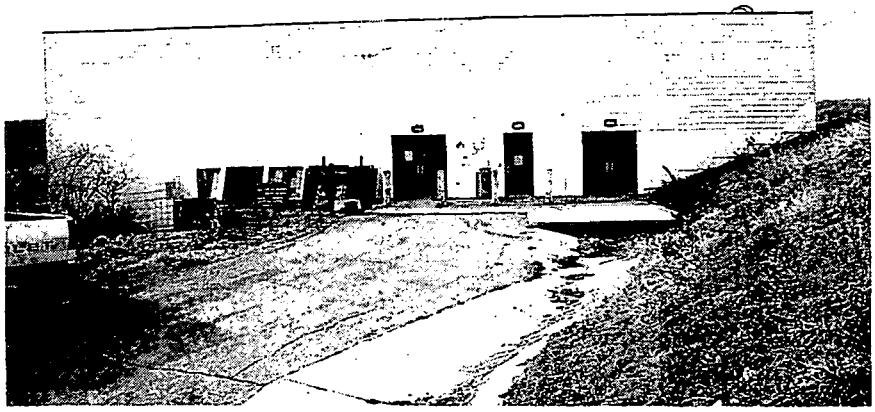
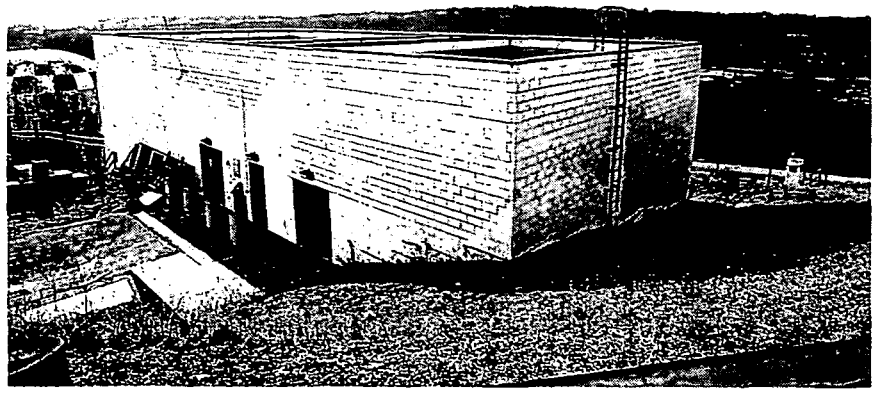


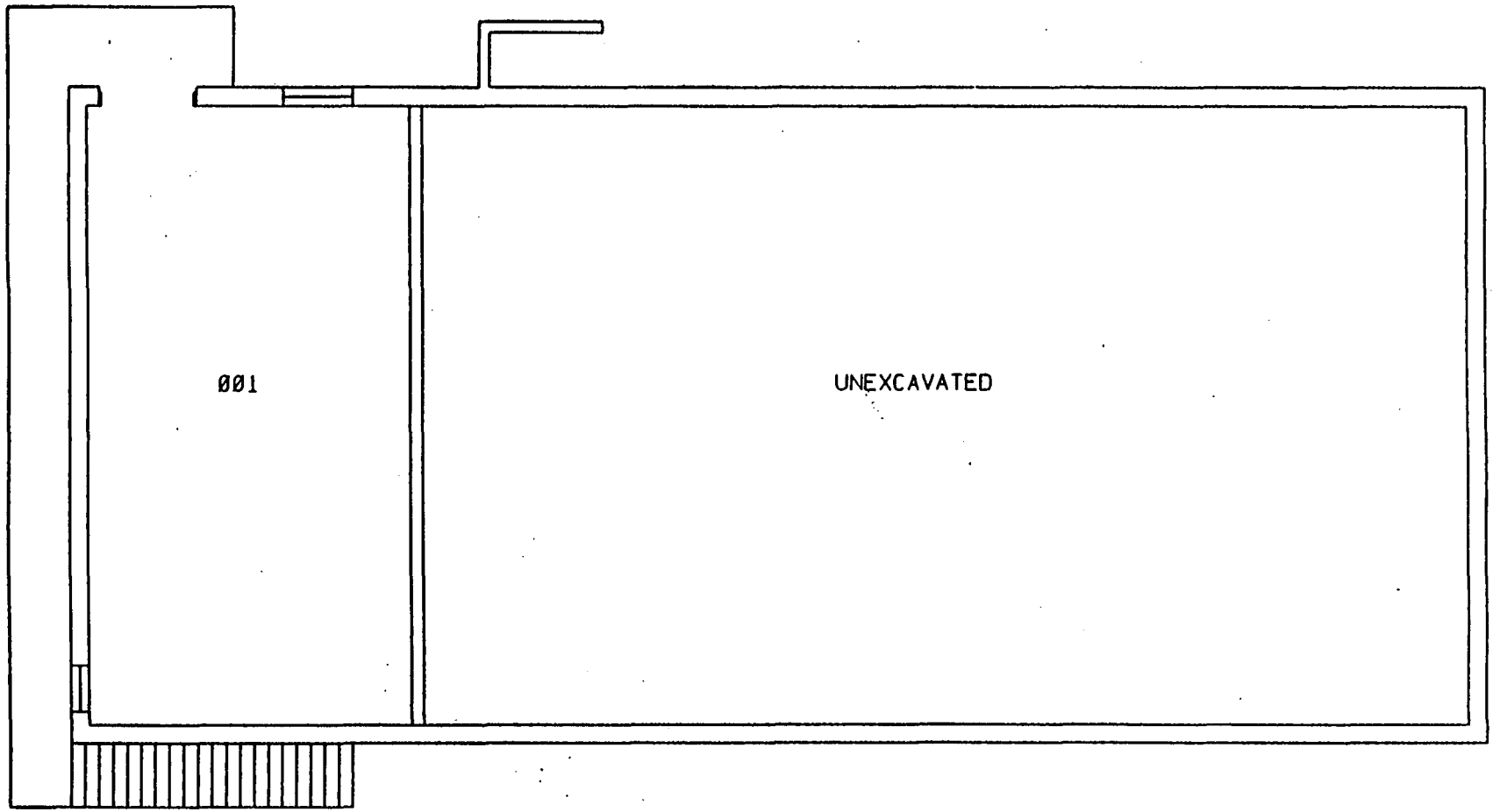
Figure 3
Building 89



Appendix D

Floor Plans

ISS	DATE	REVISION	BY	CHKD	DWD	UPKD	APVD	R
0	12/12/91	ASBUILT ISSUE	DCB				DVD	



DERIVATIVE CLASSIFIER

(Title) (Date) 2/20/96

BLDG #89
BASEMENT
BLDG CODE:3089

NOT FOR PUBLIC DISSEMINATION

MAY CONTAIN UNCLASSIFIED CONTROLLED NUCLEAR INFORMATION SUBJECT TO SECTION 148 OF THE ATOMIC ENERGY ACT OF 1954, AS AMENDED (42 USC 2168). APPROVAL BY THE DEPARTMENT OF ENERGY PRIOR TO RELEASE IS REQUIRED.

SHEET	1 2 3 4 5 6
ISSUE	0 0
TITLE	BLDG #89 FLOOR PLANS
(U) TITLE CLASSIFICATION	
DRAWING CLASSIFICATION	UCNI
SIZE	C
DRAWING NUMBER	FSC911281
JOB NUMBER	12335
DWG TYPE	SFP
FROM	BLDG #89
CHECK	14865
SCALE AS NOTED	
SHEET	1 OF 2
STATUS	HD-REL-12/12/91
ORIGIN	HD-BR3-V3.0

APPROVALS: DATE:
SAFETY COMMITTEE REQUIRED:
___NONE ___UNCONC ___TECHC ___CHEMC
TECH. REVP. ___
BR. MGR. ___
TECHC ___
CHEMC ___

DESIGN CHK | PROJ MGR | SPCHK | CHK REPV | CP & EE | PROJ REV | CHK MGR | APVD | DATE

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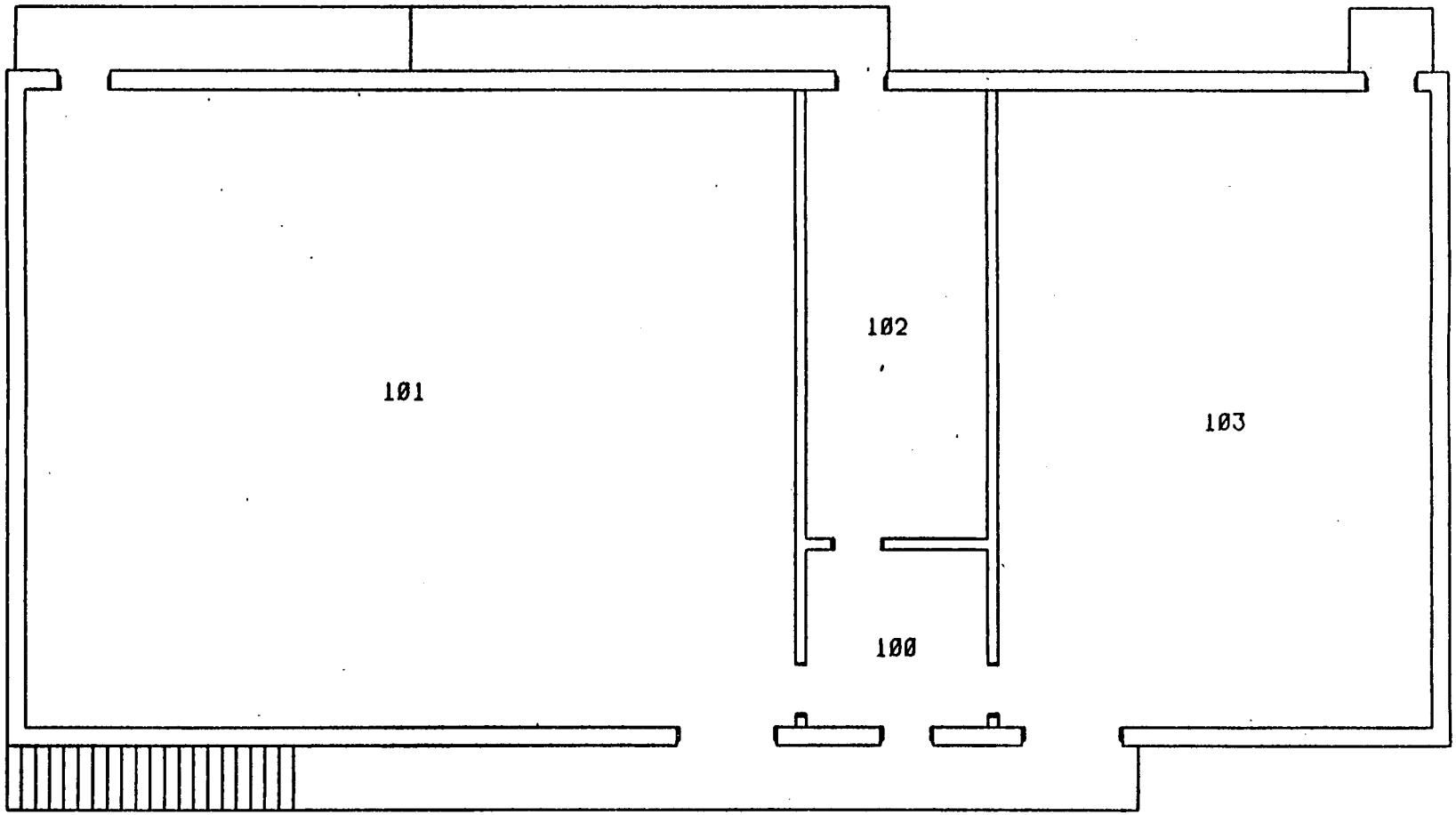

DERIVATIVE CLASSIFIER

Name

Sr Class Anal. 2/20/96

(Title) (Date)

BLDG #89
FIRST FLOOR
BLDG CODE:3089

NOT FOR PUBLIC DISSEMINATION

MAY CONTAIN UNCLASSIFIED CONTROLLED NUCLEAR INFORMATION SUBJECT TO SECTION 148 OF THE ATOMIC ENERGY ACT OF 1954, AS AMENDED (42 USC 2168). APPROVAL BY THE DEPARTMENT OF ENERGY PRIOR TO RELEASE IS REQUIRED.

DRAWING NUMBER FSC911281	JOB NUMBER 12335
DRAWING CLASSIFICATION UCNI	
SIZE C	LAYOUT 14065 / SCALE AS NOTED
	ISSUE 0 / SHEET 2

D 2 of 2

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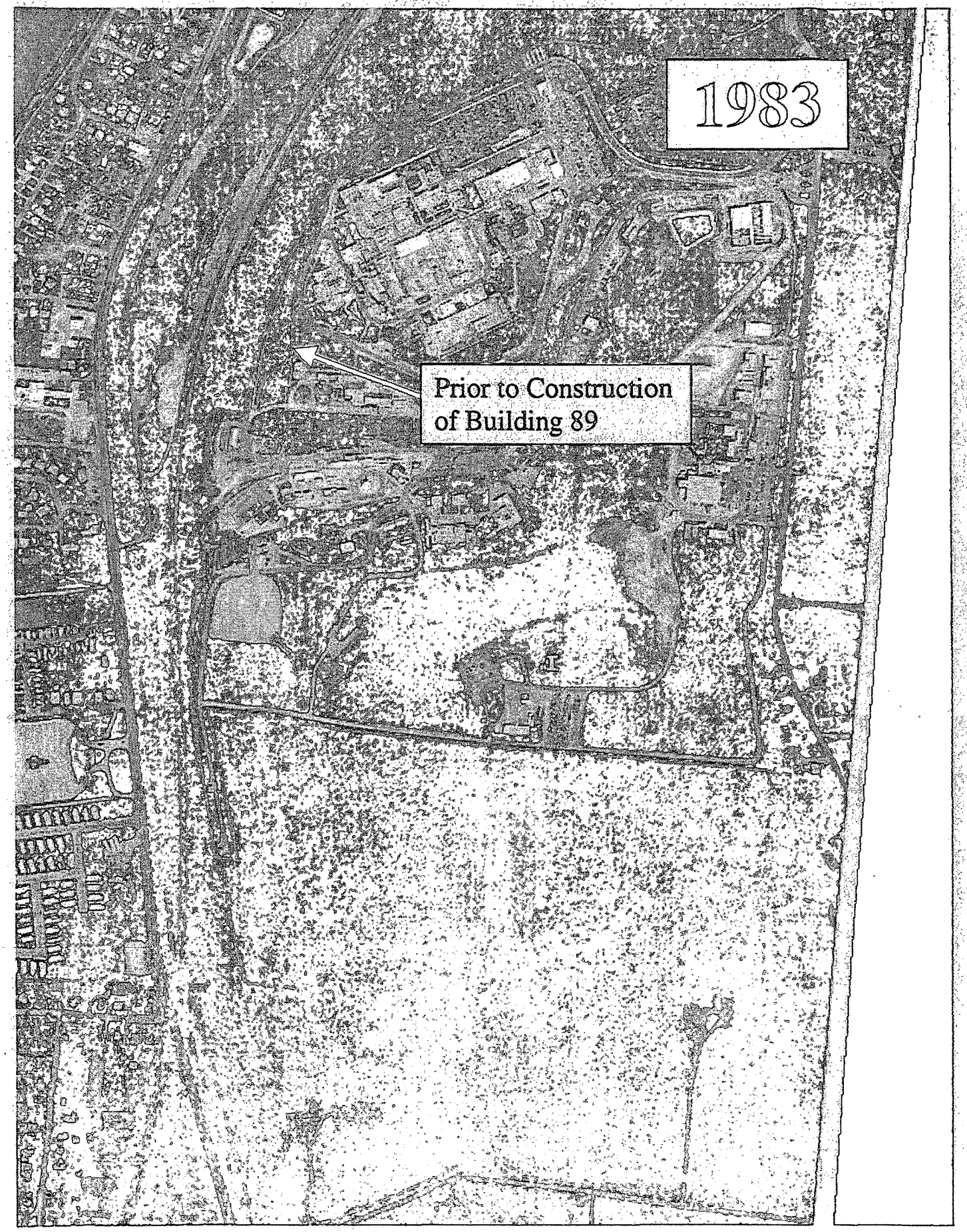
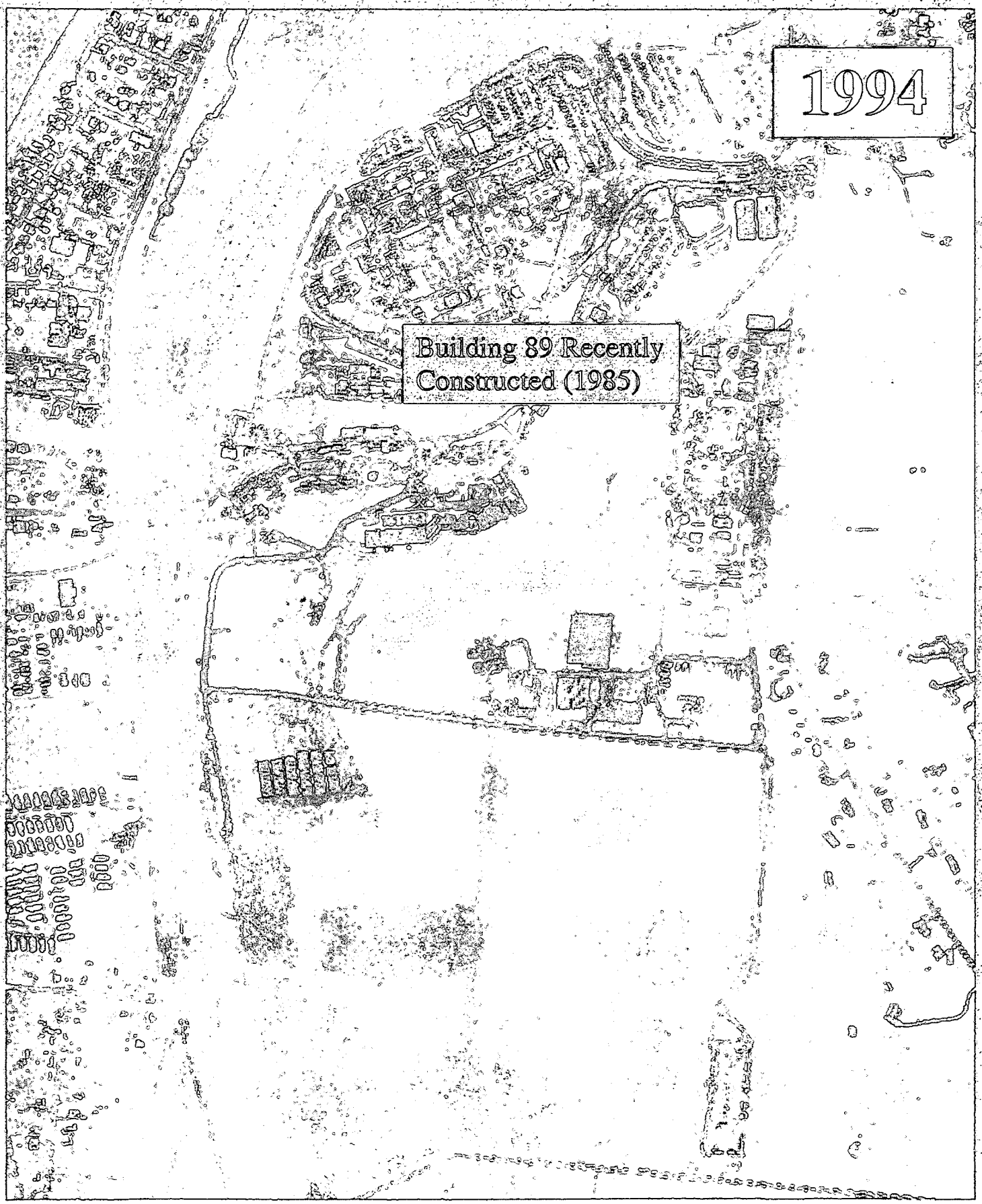
Appendix E

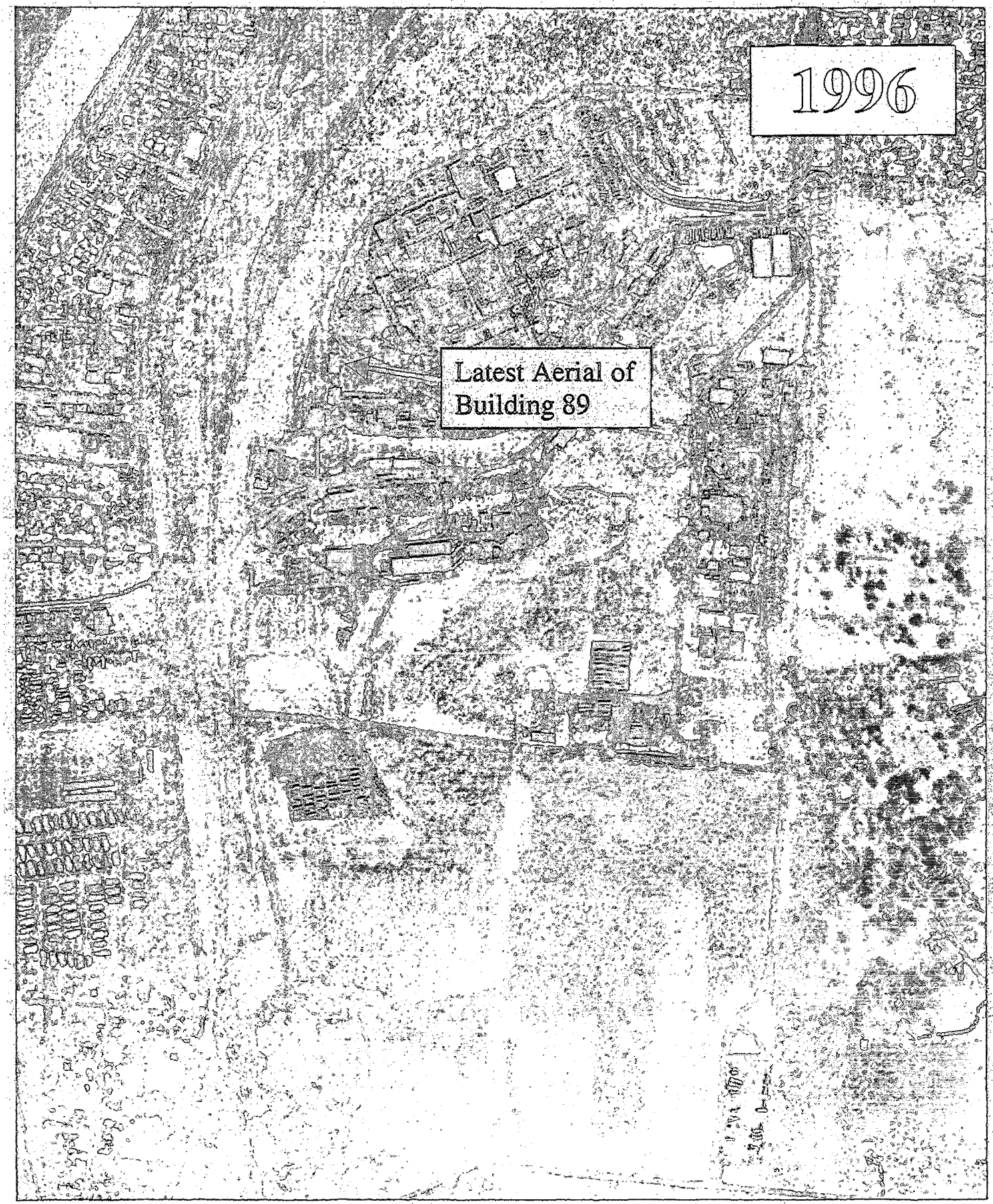
Aerial Photographs



E 1 of 3



E 2 of 3



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Appendix F

Environmental Appraisal Report of the Mound Plant (excerpt)

9.96 BUILDING 89

9.96.1 Scope of Building 89 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 on the morning of February 20, 1996. The Environmental Appraisal Checklist (EAC) was used to record findings. The EAC is presented as Attachment 1 (Section 9.96.6.1). The appraisers were accompanied by the building manager and process owner. Other information was supplied by the building manager and recorded on the Building Manager's Questionnaire (BMQ), included as Attachment 2 (Section 9.96.6.2).

9.96.2 Description of Building

Building 89 is a two-story, 4,380-square-foot, reinforced concrete building with a built-up membrane roof. The location is shown in Attachment 3 (Section 9.96.6.3). The building is bordered by a roadway on the north, Building 56 on the south, a roadway on the east, and a hillside on the west. The first floor of the structure is a mechanical room. The second floor is a storage and process area. Floor plans are presented as Attachment 4 (Section 9.96.6.4). The building is serviced by central steam for heat, chilled water, and electrical service (*Mound Facility Physical Characterization*, 12-1-93).

Building 89 was constructed in 1985. The building has been used for the same purposes since construction. The building has areas of energetic material contamination. It is not contaminated with radioactive materials (*Mound Facility Physical Characterization*, 12-1-93).

9.96.3 Summary of Findings

Building 89 contains storage areas, a mechanical room, and a process area used to crush parts. These areas are in use. The building is well-maintained. One issue of environmental concern was identified during the walk-through and review of reference materials.

9.96.4 Observations

9.96.4.1 Air Emissions

There are no processes that create air emissions. There are no fuel-burning units in the building. There is no evidence of fugitive dust.

9.96.4.2 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.

9.96.4.2.1 Sanitary Wastewater

The building does not have sanitary services. According to a diagram of underground lines, presented as Attachment 5 (Section 9.96.6.5), the building is not serviced by a sanitary line. Confirmation of drainage of sanitary waste into sanitary conveyance lines was not within the scope of this effort, therefore, neither dye tests nor smoke tests were conducted.

9.96.4.2.2 Storm Wastewater

The building is serviced by storm drains according to Attachment 5 (Section 9.96.6.5). There were interior floor drains. Exterior grates and drains were not tested to confirm that they connect to the storm drainage system. Inspection showed no sign of odors, colored discharges, or scarring which would indicate that any materials other than storm water has entered the storm drainage system.

9.96.4.2.3 Chemicals

There were several chemicals stored outside the building in an NFPA-approved flammable solvent cabinet. At the time of the walk-through there were no chemicals stored in Building 89. According to information provided in Attachment 2 (Section 9.96.6.2), the BMQ, there were no chemicals listed as stored in building 89 during the 1994 chemical inventory. Chemical storage and handling procedures are in place for proper disposal of chemicals. There is no evidence that chemicals enter the storm or sanitary drains. There have been no reported spills from Building 89.

9.96.4.3 Potable and Service Water

Potable water is not supplied to the building. Water is supplied to a fire sprinkler system in the building.

9.96.4.4 Chemical Storage and Hazardous Materials

There are no chemicals or hazardous materials stored in Building 89. There are several chemical containers stored in a NFPA approved flammable cabinet outside the building. There were Material Safety Data Sheets (MSDS's) readily available for these materials. One drum, belonging to Environmental Restoration, was labeled "decon water" and has been sitting outside the building since October 1994. Chemicals are stored outside the building in accordance with applicable standards.

The building is equipped with appropriate emergency response equipment such as a fire extinguisher. Inspection tags were present and 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. There are no sumps, separators, or catch basins, in or around the building and no underground storage tanks are associated with this building.

The building has been tested and does contain asbestos-containing building material (MD-10391, *Asbestos Program Manual*, 9-14-95). There is no evidence of friable asbestos.

There are no capacitors or transformers containing polychlorinated biphenyls (PCB's) located in the building (1995 PCB Annual Document Log).

9.96.4.5 Solid, Hazardous, and Radioactive Wastes

Solid wastes generated are primarily scrap metal. There is paper and aluminum can recycling to minimize solid waste. Solid wastes are removed by janitorial personnel to a site collection point, then shipped offsite to a local landfill by a contractor. Aluminum cans, glass and cardboard are removed by janitorial personnel to specific collection points, then sent offsite to be recycled by a contractor. White paper is collected, compacted and sent offsite for recycling by a contractor. Scrap metal is collected at a specific site, then sent offsite to be recycled by a contractor. Lead-acid batteries are recycled by a contractor. All service contracts are maintained by Waste Management. Classified paper is collected and taken to the Montgomery County South Incinerator by Security. There is no evidence that hazardous materials or wastes are mixed with solid waste streams.

The processes that generated hazardous waste are no longer present.

9.96.4.6 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. Programs in Building 89 for waste minimization and pollution prevention are scrap metal, aluminum can and paper can recycling.

9.96.5 Findings and Recommendations

Photographs were taken to document inspection findings. They are included as Attachment 6 (Section 9.96.6.6). The environmental appraisal of Building 89 indicates that the following action items should be planned and scheduled for accomplishment thus assuring that best management and operating practices are in place.

89-1 Coordinate efforts to remove drum of "decon water" from the area and place it in an approved storage location.

ENVIRONMENTAL APPRAISAL CHECKLIST

Building Name 89

Appraisers:

Name _____ Discipline _____

Name _____ Discipline _____

Name _____ Discipline _____

Name _____ Discipline _____

Building Manager: J. Boston 2/22/96

Process Manager: TERRY L. HALDERMAN

Date: 2/20/96

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ENVIRONMENTAL APPRAISAL CHECKLIST

Table of Contents

Checklist	Page
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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

Environmental Appraisal Checklist

Building Name: E4 Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore Date: 2/20/96

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	N/A CHEMICALS ARE NOT STORED IN OR USED IN THE BUILDING
	Is the building in operation? What are the processes and where do they discharge to?	(Y) / N _____ _____	BUILDING IS CURRENTLY USED BY the City of MIAMISBURG FOR STORAGE
	Do the floor drains, sinks & toilets appear to be draining properly?	Y / N	N/A - UNPLUGGED FLOOR DRAINS NOT IN USE
OAC 3745-33	Do the floor drains and sinks drain to a sanitary or storm sewer?	Sanitary Storm	STORM
	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	N/A N/A
	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	N/A

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Environmental Appraisal Checklist

Building Name: 89 Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 2/20/96

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	

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	

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Environmental A[illegible]aisal Checklist

Building Name: 89 Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 2/20/96

CAA Checklist

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

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: _____

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Environmental Appraisal Checklist

Building Name: 89

Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore

Date: 2/20/96

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.

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)	NOT READILY AVAILABLE
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	FLAMMABLE CABINET STORED OUTSIDE of BUILDING 89
29 CFR 1910.106(d)(7)	Incompatible chemicals are not stored together.	(Y) / N	
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	N/A

Environmental Appraisal Checklist

Building Name: 89

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 2/20/96

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	N/A
29 CFR 1910.151	Eyewashes/showers shall be provided within the work area. Ensure unit is operational.	Y / N	N/A
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	N/A
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	N/A
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	N/A
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	N/A
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	N/A
29 CFR 1910.104	Bulk oxygen storage shall be permanently placarded "OXYGEN - NO SMOKING - NO OPEN FLAMES".	Y / N	N/A
	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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Environmental Appraisal Checklist

Building Name: 89

Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore

Date: 2/20/96

HM Checklist

Regulatory Guideline	Question	Response	Comments
	Is there a process area?	(Y) / N	AREA FOR PART CRUSHING
	Does it have proper containment?	(Y) / N	
	Is there a liquid bulk transfer area?	Y / (N)	
	Is there proper containment?	Y / N	N/A
	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
				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

Source: _____

Environmental Appraisal Checklist

Building Name: 89 Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore Date: 2/20/96

Safe Drinking Water Act (SDWA) Screening Checklist

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

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	N/A
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	N/A
	Are sources of service water (janitorial and laboratory faucets, or outdoor spigots) posted as non-potable water sources?	Y / N	N/A
	Does the facility contain any water coolers or fountains that are not lead free? Complete Table C.	Y / N	N/A

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TABLE C—Water Fountain Survey

Building	Location	Model #	Comments / Date of Analysis for Lead

Source: _____

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Environmental Appraisal Checklist

Building Name: E9

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 2/20/96

RCRA Screening Checklist

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

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	PROCESS KNOWLEDGE SOLID WASTE GENERATION CONSISTS OF SCRAP METAL RECYCLING EFFORTS
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)	

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Building Name: 89 Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 2/20/96

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	
	Is it treated as such?	Y / N	N/A
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	

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Environmental Appraisal Checklist

Building Name: 89

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 2/20/96

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.		

Building Name: 89 Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 2/20/96

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	
	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	
	Is there a sump?	Y / N	
	Is it dry?	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	
	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: 89

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 2/20/96

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	

General Comments:

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Environmental Appraisal Checklist

Building Name: 89 Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 2/20/96

Asbestos Screening Checklist

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

Asbestos Checklist

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	INSPECTION / ANALYSIS
	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: Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore Date:

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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	
	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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Environmental Appraisal Checklist

Building Name: 89 Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 2/20/96

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: 89

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 2/20/96

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	

GENERAL COMMENTS:

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Building Name: 89 Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 2/20/96

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: 09

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 2/20/96

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	

Building Name: 89 Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 2/20/96

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: E9

Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore

Date: 2/20/96

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: 89 Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 2/20/96

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: 89 Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 2/20/96

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

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	WASTE MINIMIZATION IN PLACE FOR METALS, ALUMINUM, AND PAPER
	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	N/A
	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	

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Building Name: 89 Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 2/20/96

Waste Minimization/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
HALOGENATED ORGANIC (NONSOLVENT) WASTES			
	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			
	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			
	Are acidic or basic cleaning solutions used as treatment for pH adjustment chemicals?	Y / N	

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Environmental Appraisal Checklist

Building Name: 89 Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 2/20/96

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			
	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			
	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: 89 Appraisers: Terry Glander, Marie-Louis Hoagland, John Puckett, Mary Sizemore Date: 2/20/96

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			
	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: 89 Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 2/20/96

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			
	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	

Environmental Appraisal Checklist

Building Name: 89 Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore Date: 2/20/96

Waste Minimization/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
	If there is a recycling program, what technique is used?	Y / N	
	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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Building Manager's Questionnaire

Building Name: 89 Building Manager: J.L. Boston Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

NONE

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

NONE

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

4. Provide a physical description of the building.

Building is a one-story, 4,830-ft², reinforced concrete structure with a BUM roof (asphalt). It has central steam heat and package air conditioning. It was built in 1985. Building is slightly contaminated with energetic materials, but is not contaminated with radioactive materials. The building was found to be asbestos free in May of 1993.

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

5. Provide a drawing of the building.

Attached.

6. What is the current building use?

Building is used for long- and short-term storage of energetic materials that will be analyzed later in Building 48.

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

Building Manager's Questionnaire

Building Name: 89 Building Manager: J.L. Boston 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: Storage of components containing explosives

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 Name: 89 Building Manager: J.L. Boston 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 Emissions
			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: 89 Building Manager: J.L. Boston 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

Building Manager's Questionnaire

Building Name: 89 Building Manager: J.L. Boston 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: 89 Building Manager: J.L. Boston 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?
WASTE management

22. What janitorial supplies are stored inside or outside of the building?
none

23. Where do excess janitorial supplies go?
N/A

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: 89 Building Manager: J.L. Boston 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	

Source: _____

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

Materials	Amount
Alumina Powder	186.9
Silica Gel	170.4

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

Building Manager's Questionnaire

Building Name: 89 Building Manager: J.L. Boston 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: 89 Building Manager: J.L. Boston 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 Manager's Questionnaire

Building Name: 89 Building Manager: J.L. Boston 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.

NONE

Building Manager's Questionnaire

Building Name: 89 Building Manager: J.L. Boston 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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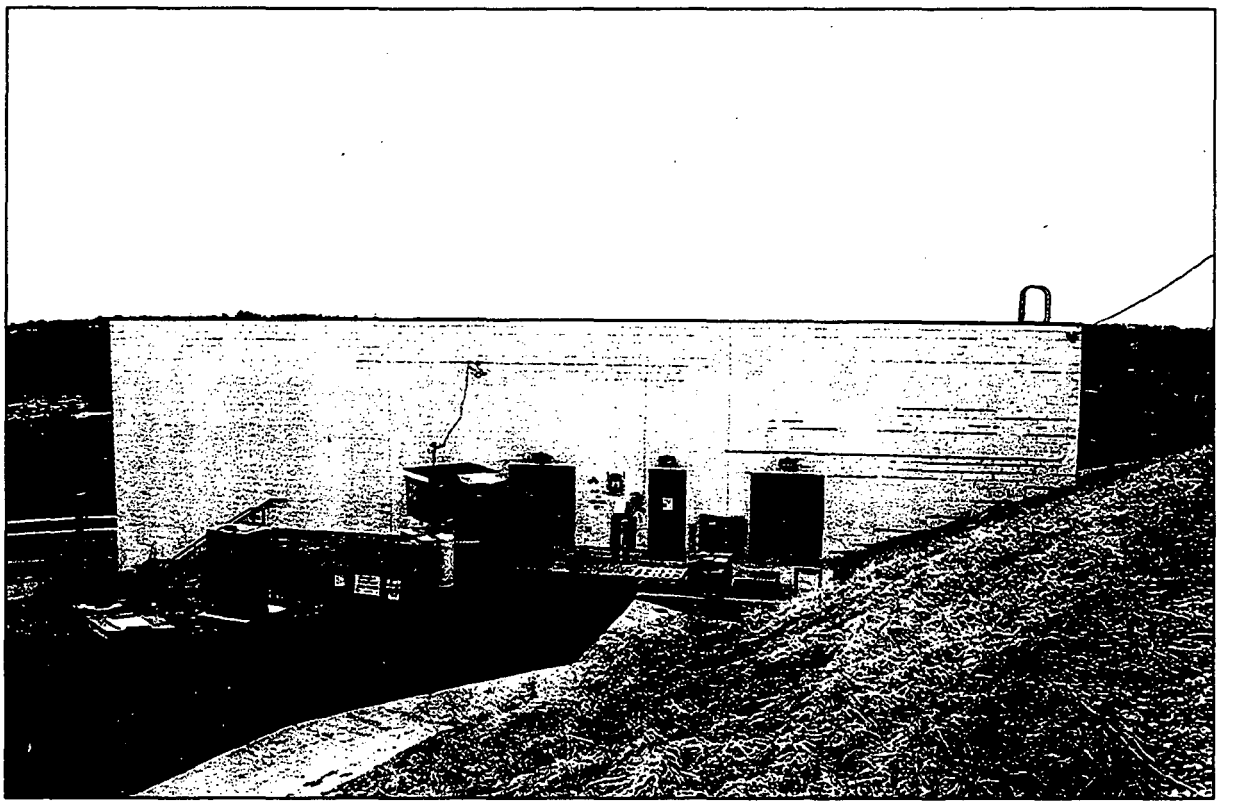
Appendix G

Radiological Information

Final Status Report
For
Building 89



Prepared by:	**Roderick C. Case /**	**Date:**	**April 8, 2003**
Reviewed by:	**Joe Guido /**	**Date:**	4/9/03
Approved by:	**A. Steven Collas /**	**Date:**	4/9/03

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1.0 Historical Review

Building 89 is located on western edge of the "Main Hill", just to the west-southwest of the site where I Building was located. Based upon site references, Building 89 contains 4,830-ft^2, and has not had any additions or modifications. It is constructed of reinforced concrete block, and in some locations poured walls, set on footers. The reinforced block and poured walls are 8" thick, and are covered on the exterior by 4" block. A layer of 2 " insulation is sandwiched between the inner block and/or poured walls and the exterior 4" block "sheathing."

Over it's 18 year history Building 89 has been used primarily as a detonator and energetic material storage facility. Process information indicates that this building continued in this function until the mid 1990's when the building was transitioned to the Miamisburg Mound Community Improvement Corporation (MMCIC) as a "user facility." Building 89 was returned to Mound control and is scheduled for demolition in accordance with the Mound Exit plan.

Based upon the information provided in Reference 1, Building 89 has not routinely generated wastes that required handling as radioactive or as hazardous wastes. No radiological process systems were ever a part of the facility. No radioactive materials were stored in this facility.

However, radiological control documents do contain references to a flammable storage cabinet found with tritium contamination in Room 101 of Building 89 (Radiological Awareness Report #2000029). These same references indicate that this cabinet, which had been located in E Building, was not properly surveyed prior to being moved. The cabinet was removed from Building 89 and subsequent surveys found no additional contamination in Building 89. Because of this event, the floor in Room 101 was surveyed as a Class 3 survey unit. The remaining areas of Building 89 are classified as non-impacted based on history and use. An assessment of residual radioactive contamination of Building 89 structural surfaces was performed to support these classifications.

A complete structural and operational 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 89 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 5400.5. These limits are the Derived Concentration Guidelines (DCGL's) for building and structure release.

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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 assume 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 the building internal and external surfaces. The building was divided into survey units as follows:

Survey Unit 1 – Room 101 Floor

Survey Unit 2 – First Floor interior surfaces

Survey Unit 3 – Basement Utility Area

Survey Unit 4 – External surfaces (Roof and Exterior Walls)

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 ($n = 20$) was obtained from Table 5.5, Reference 2.

Twenty (20) data points were randomly placed in Survey Unit 1 using a reference coordinate grid system. The location of each data point was determined by multiplying the north-south (X) and the east-west (Y) dimensions of the survey unit by a randomly generated number for each dimension.

Twenty (20) judgmental data points were placed in each of the remaining survey units and are broadly representative of the survey unit. Hallways and major walkways throughout the building were scanned for alpha contamination.

Ten (10) judgmental data points were placed on the roof area and ten (10) judgmental data points were located on exterior walls.

Loose surface contamination was measured by smearing an area of 100cm^2 at each data point. Smears were counted for gross alpha/beta activity. Removable tritium contamination was measured on interior surfaces by liquid scintillation counting of coin smears.

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 Ludlum 2360 with an L 43-93 scintillation probe was used for beta measurements in accordance with Reference 4. 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 were averaged and compared to the $DCGL_W$. None of the fixed-point results was greater than the $DCGL_W$; therefore, the Sign Test was not utilized. The gross alpha and beta fixed point measurements from each remaining survey unit was collected and compared directly to the $DCGL_W$. All of the remaining data points were found to be below the $DCGL_W$. A graphical representation of the average and maximum total activity for each survey unit is shown in Attachment 1.

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	±	Max	Average	±
Survey Unit 1	58	32.2	5.12	750	564.5	52.15
Survey Unit 2	90	39.3	7.53	710	201.5	74.72
Survey Unit 3	71	32.6	9.10	665	369.3	67.67
Survey Unit 4	64	39.7	7.54	510	291.8	44.44

The results of the removable alpha and beta surface activity 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	±	Max	Average	±
Survey Unit 1	11.2	1.5	1.09	8.97	2.4	1.13
Survey Unit 2	6.6	1.5	0.70	5.5	2.1	0.61
Survey Unit 3	9.8	2.1	1.10	12.7	2.3	1.53
Survey Unit 4	3.8	1.2	0.56	4.0	1.3	0.54

The highest removable tritium activity was 14.03 dpm/100cm2 (RSDS# 03-TF-0071). The average removable tritium was 2.59 dpm/100cm2 (±0.76).

The floors and major walkways were scanned for alpha activity. The highest activity measured was 23 dpm/100cm2.

2.3 Sediment Sample Data

No sediment was observed in floor drains or ventilation units. A smear sample and direct alpha and beta measurement was obtained at each location in accordance with SPF 89-01. Smear samples were analyzed for gross alpha, beta and tritium activity in accordance with the survey plan (See RSDS # 03-TF-0076). Smear sample results are as follows:

Highest Removable Alpha	Highest Removable Beta	Highest Removable Tritium
2.13 dpm/smear	2.85 dpm/smear	10.22 dpm/smear

The initial direct alpha measurement on an air dryer in the Utility Room was 1854 dpm/100cm^2. It was believed that the elevated reading was the result of short-lived activity from Radon daughters. To test this, the affected area was covered with a polyethylene sheet for 24 hours and re-surveyed. This process interrupts the equilibrium of the short-lived activity and allows the radon daughters to decay. The re-survey results were 60 dpm/100cm^2 alpha and 505 dpm/100cm2 beta. The highest activity observed at all other sample locations was 84 dpm/100cm^2 alpha and 460 dpm/100cm^2 beta.

2.4 Quality Control

Quality control measurements were taken to ensure the quality of the survey data. Twelve data points were selected from the sample group of 86 data points. The highest and lowest alpha measurements and corresponding beta measurements were selected from 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 (S^2) of the original sample population is within a factor of two of the variance in the replicate samples (at 95% confidence level).

The first alpha replicate set was not in agreement with the initial data set ($S^2_{initial} > 2 \times S^2_{replicate}$). An investigation was conducted and it was determined that the alpha

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background variation was the potential cause. The alpha background counts per minute (cpm) was observed to vary from .8cpm to 4.2cpm. The replicate measurements were taken again at each data point with an alpha background of 1cpm. The final 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
SU1QC02	13	7.21	32	590	48.58	725
SU1QC02	58	15.23	26	310	35.21	615
SU1QC02	26	10.20	13	535	46.26	570
SU1QC02	45	13.42	13	670	51.77	580
SU1QC02	13	7.21	32	155	24.90	210
SU1QC02	90	18.97	64	210	28.98	220
SU1QC02	39	12.49	39	440	41.95	490
SU1QC02	71	19.85	26	230	30.33	215
SU1QC02	6	4.90	19	195	27.93	230
SU1QC02	64	16.00	70	220	29.66	190
SU1QC02	8	5.66	90	345	37.15	495
SU1QC02	24	9.80	30	510	45.17	360
Variance (S^2)	766.6		585.4	30802.3		36978.8
Ratio			1.31			0.83
Agreement			Yes			Yes

Replicate analyses were not performed on smears or sediment samples. 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 was 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.

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 89 satisfy the site release criteria established by DOE Order 5400.5. This is accomplished by comparing the survey data to the release criteria in accordance with the MARSSIM (Reference 2).

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All of the Data Quality Objectives (DQO's) for this survey plan have been met and no further surveys are required. Building 89 meets the surface 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 89 Survey Results

TYPE	RSDS	LOCATION	SURVEY RESULTS (dpm/100 cm^2)	SURFACE CONTAMINATION GUIDELINES (dpm/100 cm^2) (Note 1)	COMMENTS
Highest Alpha Smearable Activity	03-TF-0071	Interior Floor	11.21	20	
Highest Alpha Fixed Activity	03-TF-0075	Interior Wall	90	100	
Highest Beta Smearable Activity	03-TF-0076	Interior Wall	12.72	1000	
Highest Beta Fixed Activity	03-TF-0071	Interior Floor	750	5000	
Highest Tritium Smearable Activity	03-TF-0071	Interior Floor	14.03	10,000	
Note 1: DOE Order 5400.5 (DCGLw)					

3.0 Attachments and Enclosures

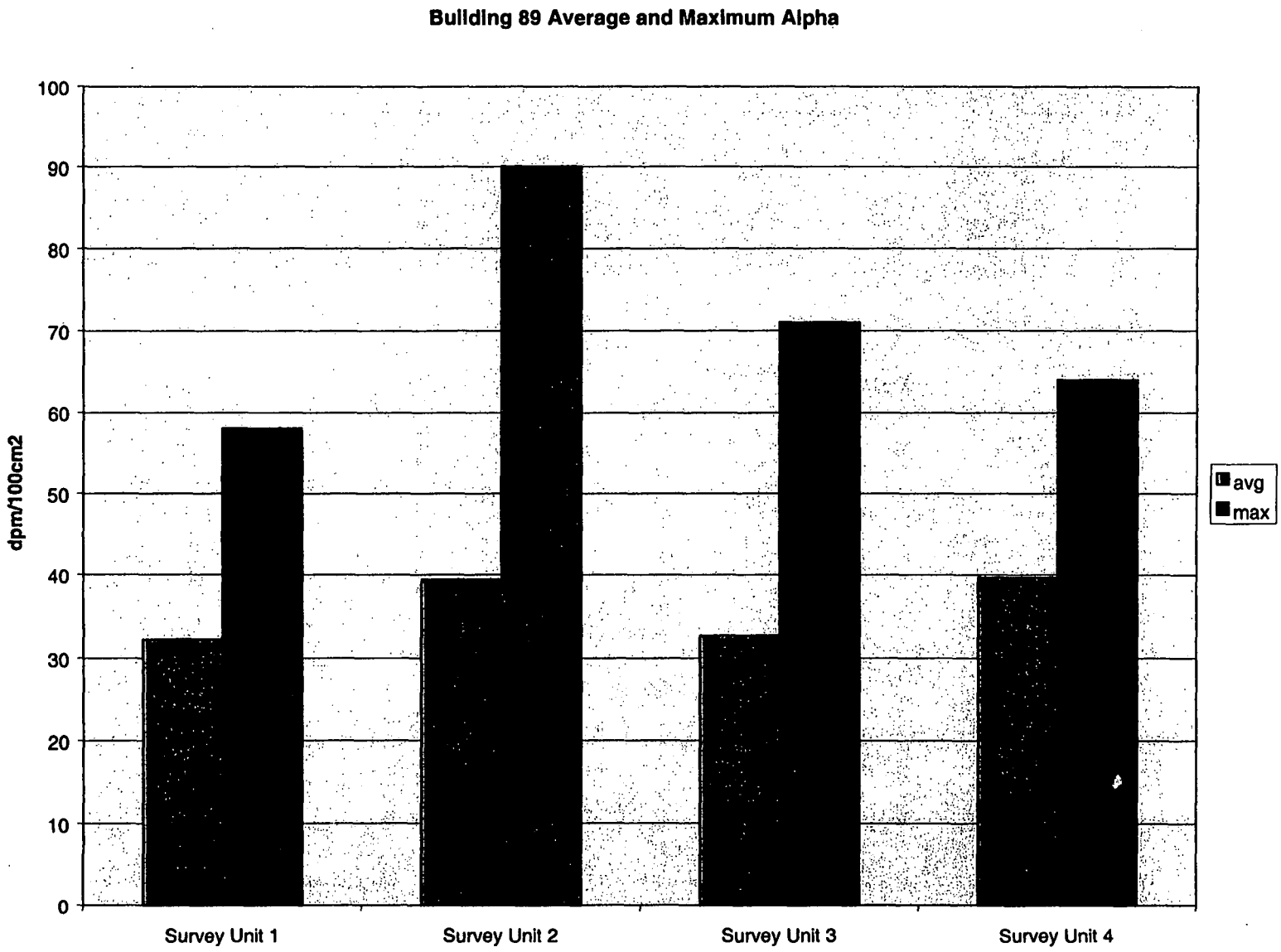
Attachment 1 – Average Total Alpha and Beta Graph

Enclosure 1 – Sample Data Analysis Worksheets

Enclosure 2 – SPF 89-01

4.0 References

1. CH2MHILL Mound, Inc., EC&AS Department, White Paper: Building 89 Structural History and Process History Summary Background Document, January 2003
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
4. MD80036, Issue 29, Op. No. 30031,*Operation of the Ludlum 2360 Scaler/Ratemeter with Ludlum 43-93 Alpha/Beta Scintillator,* Section 6.3


Building 89 Average and Maximum Alpha
dpm/100cm2
100
90
80
70
60
50
40
30
20
10
0
Survey Unit 1
Survey Unit 2
Survey Unit 3
Survey Unit 4
avg
max

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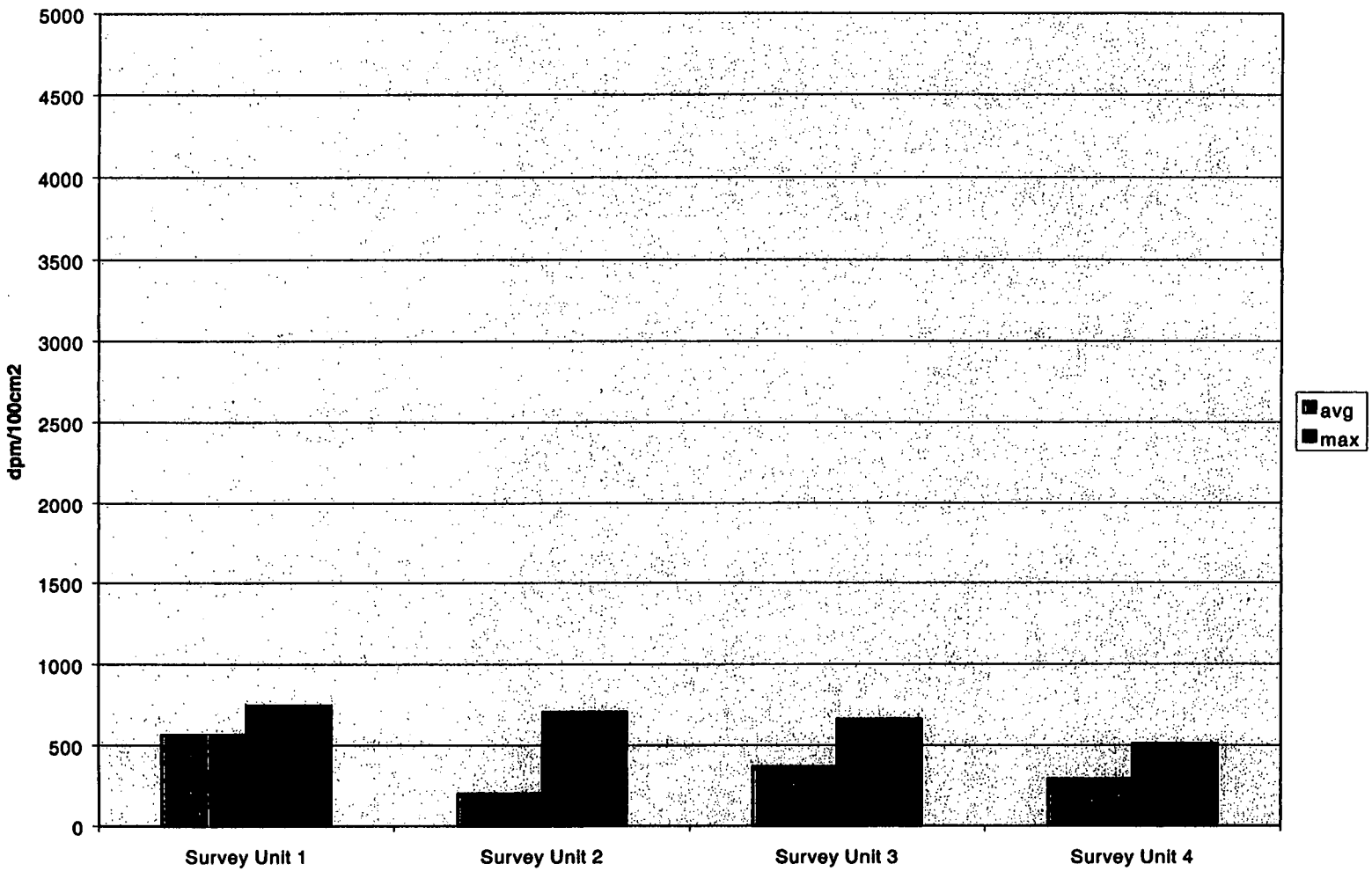
Building 89 Final Status Report
Attachment 1



Building 89 Sample Data Analysis Worksheets
ENCLOSURE 1

Building 89 Data

		Loose Surface dpm/100cm2			Fixed dpm/100cm2	
Location	RSDS	α	β	H	α	β
SU1-01	0071	3.48	2.45	12.83	19	580
SU1-02	0071	0	6.21	5.47	13	590
SU1-03	0071	1.68	8.97	6.35	26	600
SU1-04	0071	1.24	1.38	6.25	58	310
SU1-05	0071	0	0	7.67	32	680
SU1-06	0071	1.31	0	6.62	45	695
SU1-07	0071	0	5.21	0	39	365
SU1-08	0071	1.45	2.35	5.87	32	625
SU1-09	0071	1.56	0.36	3.4	26	470
SU1-10	0071	1.32	0.36	0	32	750
SU1-11	0071	0	0.67	6.02	51	520
SU1-12	0071	2.91	1.95	3.71	26	570
SU1-13	0071	0	0.37	6.55	26	560
SU1-14	0071	0	1.58	4.8	51	355
SU1-15	0071	0	2.92	0	26	535
SU1-16	0071	0	1.55	3.08	39	625
SU1-17	0071	1.45	0	9.1	32	490
SU1-18	0071	11.21	4.3	14.03	19	615
SU1-19	0071	1.68	6.49	0.4	26	700
SU1-20	0071	1.47	0.2	5.54	26	655
SU2-01	0075	2.19	1.21	0	13	155
SU2-02	0075	2.18	2.58	4.54	39	60
SU2-03	0075	0	0	0	32	175
SU2-04	0075	0	2.74	0	39	100
SU2-05	0075	0	2.74	0	90	210
SU2-06	0075	0	5.48	0	84	140
SU2-07	0075	2.19	1.21	0	32	80
SU2-08	0075	0	1.37	0	77	130
SU2-09	0075	2.18	2.58	0	32	-30
SU2-10	0075	6.56	0	0	19	75
SU2-11	0075	0	1.37	0	19	100
SU2-12	0075	0	0	0	13	80
SU2-13	0075	4.37	1.06	5.85	51	55
SU2-14	0075	2.18	2.58	0	32	275
SU2-15	0075	4.37	1.06	0	51	180
SU2-16	0075	2.19	1.21	0	26	155
SU2-17	0075	0	0	0	39	710
SU2-18	0075	0	2.74	0	39	290
SU2-19	0075	2.18	3.95	0	51	665
SU2-20	0075	0	4.11	0	45	670
SU2-21	0075	0	2.74	0	26	295
SU2-22	0075	2.18	5.32	0	32	265
SU2-23	0075	4.37	0	0	26	15
SU2-24	0075	0	4.11	0	26	120
SU2-25	0075	0	2.74	0	45	130

Building 89 Sample Data Analysis Worksheets
ENCLOSURE 1

Location	RSDS	Loose Surface dpm/100cm2			Fixed dpm/100cm2	
SU2-26	0075	2.18	2.58	0	45	140
SU3 01	0076	0	0.21	0.58	13	665
SU3-02	0076	0	2.81	3.73	26	500
SU3 03	0076	0	0	0	39	370
SU3 04	0076	1.47	2.56	4.18	39	440
SU3 05	0076	5.57	0	0	39	650
SU3 06	0076	1.31	2.51	0	71	570
SU3 07	0076	3.67	1.04	0.49	13	320
SU3 08	0076	1.45	0.03	4.44	58	150
SU3 09	0076	0	3.01	4.38	71	230
SU3 10	0076	0	0	7.76	13	160
SU3 11	0076	1.66	3.01	4.39	13	345
SU3 12	0076	0	0	6.52	6	195
SU3 13	0076	1.4	1.43	0.5	13	335
SU3 14	0076	2.71	10.78	4.33	58	275
SU3 15	0076	1.62	4.04	0	26	230
SU3 16	0076	9.78	12.72	3.17	26	250
SU3 17	0076	0	0.21	1.93	13	540
SU3 18	0076	1.58	0.26	2.64	45	335
SU3 19	0076	3.79	0.15	0	51	445
SU3 20	0076	5.44	1.1	6.82	19	380
SU3 21	0076	0	2.79	0	34	415
SU3 22	0076	0	0.29	0.83	24	125
SU3 23	0076	0	2.65	1.62	84	-5
SU3 24	0076	0	0	6.52	34	155
SU3 25	0076	1.56	2.85	0.67	84	460
SU3 26	0076	0	0.53	2.9	60	505
SU4-01	0072	1.44	0.06		32	295
SU4-02	0072	1.58	0		48	240
SU4-03	0072	3.79	1.39		32	305
SU4-04	0072	0	2.7		58	215
SU4-05	0072	0	0.29		64	95
SU4-06	0072	0	1.49		48	145
SU4-07	0072	1.59	2.49		24	175
SU4-08	0072	3.44	0		64	220
SU4-09	0072	3.63	2.7		56	225
SU4-10	0072	0	0		8	310
SU4-11	0072	0	1.91		48	310
SU4-12	0072	0	0		32	295
SU4-13	0072	1.4	1.43		48	450
SU4-14	0072	1.57	0.2		32	320
SU4-15	0072	0	1.2		32	420
SU4-16	0072	0	0.36		8	345
SU4-17	0072	0	0.21		24	510
SU4-18	0072	1.58	2.66		24	360
SU4-19	0072	1.68	4.01		56	350
SU4-20	0072	1.47	2.56		56	250
SU1QC02	00071				45	545

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Building 89 Sample Data Analysis Worksheets
ENCLOSURE 1

Location	RSDS	Loose Surface dpm/100cm2			Fixed dpm/100cm2	
SU1QC04	00071				19	505
SU1QC15	00071				26	695
SU2QC20	0075				19	195
SU2QC01	0075				26	165
SU2QC05	0075				39	530
SU3QC04	0076				26	435
SU3QC09	0076				26	255
SU3QC12	0076				32	100
SU4QC8	0072				64	160
SU4QC16	0072				40	415
SU4QC17	0072				40	240
SU1QC02	0082				32	725
SU1QC04	0082				26	615
SU1QC15	0082				13	570
SU2QC20	0082				13	580
SU2QC01	0082				32	210
SU2QC05	0082				64	220
SU3QC04	0082				39	490
SU3QC09	0082				26	215
SU3QC12	0082				19	230
SU4QC8	0082				70	190
SU4QC16	0082				90	495
SU4QC17	0082				30	360
	N	92	92	72	92	92
	Max	11.21	12.72	14.03	90	750
	Avg	1.481087	1.993913	2.59	37.31522	341.3587
	Sd	2.030449	2.291692	3.280693	18.86151	201.0796

Building 89 Sample Data Analysis Worksheets
ENCLOSURE 1

Survey Unit 1

	α	β	H3	α	β
No	20	20	20	20	20
Avg	1.538	2.366	5.3845	32.2	564.5
Sd	2.49604	2.578885	3.829691	11.7321	119.0301
Max	11.21	8.97	14.03	58	750

Survey Unit 2

No	26	26	26	26	26
Avg	1.512308	2.133846	0.399615	39.34615	201.5385
Sd	1.830443	1.598632	1.423827	19.67728	194.4107
Max	6.56	5.48	5.85	90	710

Survey Unit 3

No	20	20	20	20	20
Avg	2.0725	2.2935	2.793	32.6	369.25
Sd	2.52727	3.498204	2.545353	20.75268	154.4368
Max	9.78	12.72	7.76	71	665

Survey Unit 4

No	20	20	0	20	20
Avg	1.1585	1.283	#DIV/0!	39.7	291.75
Sd	1.288305	1.238722	#DIV/0!	17.22025	101.4276
Max	3.79	4.01	0	64	510

Graph Data

	Survey Uni	Survey Uni	Survey Uni	Survey Unit 4
avg	32.2	39.34615	32.6	39.7
max	58	90	71	64

Graph Data Beta

	Survey Uni	Survey Uni	Survey Uni	Survey Unit 4
avg	564.5	201.5385	369.25	291.75
max	750	710	665	510

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Building 89 Sample Data Analysis Worksheets
ENCLOSURE 1

Scan Data

	RSDS	dpm/100cm^2
SCAN 01	0071	10
SCAN 02	0071	16
SCAN 03	0071	23
SCAN 04	0071	16

Inst Data

Inst	RSDS	Ser#	CDD	α Bkg	β Bkg
L2350	0071	5673/5676	8/13/03	10	
L2360	0071	5833/5847	3/13/04		169
L2360	0072	5836/5848	3/12/04	1	173
L2350	0075	5673/5143	8/13/03	27	
L2360	0075	5836/5848	3/12/04		177
L2350	0076	5673/5143	8/13/03	5	
L2360	0076	5833/5847	3/13/04	1	176
L2350	0082	5673/5143	9/13/03	6	
L2360	0082	5833/5847	3/13/04	1	164

95% Confidence Interval Calculator

				+/-
N =	72			
M =	2.59	1.832359	3.347641	0.757641
σ =	3.28			

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Replicate Fixed Point QC

	alpha (dpm/100cm2)			beta (dpm/100cm2)		
Location #	initial	2s	replicate	initial	2s	replicate
SU1QC02	13	7.21	32	590	48.58	725
SU1QC04	58	15.23	26	310	35.21	615
SU1QC15	26	10.20	13	535	46.26	570
SU2QC20	45	13.42	13	670	51.77	580
SU2QC01	13	7.21	32	155	24.90	210
SU2QC05	90	18.97	64	210	28.98	220
SU3QC04	39	12.49	39	440	41.95	490
SU3QC09	71	16.85	26	230	30.33	215
SU3QC12	6	4.90	19	195	27.93	230
SU4QC8	64	16.00	70	220	29.66	190
SU4QC16	8	5.66	90	345	37.15	495
SU4QC17	24	9.80	30	510	45.17	360
Variance (S2) =	766.6288		585.4242	30802.27		36978.79
Ratio			1.309527			0.832971
Agreement			YES			YES

Replicate Data

	1st replicate		0082	
	α	β	α	β
SU1QC02	45	545	32	725
SU1QC04	19	505	26	615
SU1QC15	26	695	13	570
SU2QC20	19	195	13	580
SU2QC01	26	165	32	210
SU2QC05	39	530	64	220
SU3QC04	26	435	39	490
SU3QC09	26	255	26	215
SU3QC12	32	100	19	230
SU4QC8	64	160	70	190
SU4QC16	40	415	90	495
SU4QC17	40	240	30	360
var	165.9091	36615.15	585.4242	36978.79
bkg	4.2	177		
	0.6	176		
	1	175		
	0.8	169		
var	2.916667	12.91667		
avg	1.65	174.25		

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ENCLOSURE 2

SURVEY PLAN FORM

SP NUMBER	89-01	**DATE OF REQUEST**	April 8, 2003
TYPE OF SP	☐ FSS ☒ CHARACTERIZATION ☐ REFERENCE ☐ OTHER:		
AREA/LOCATION	Building 89		
PURPOSE	The purpose of this SP is to characterize Building 89 to support decisions on final disposition.		
SURVEY UNIT # 1	Room 101 Floor	**SURVEY UNIT # 4**	Roof and Exterior Surfaces
SURVEY UNIT # 2	Remaining Interior Surfaces	**SURVEY UNIT**	
SURVEY UNIT # 3	Basement Utility Room	**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**	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 Probe or 43-20 Hand Probe		
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**	L 2360	**COUNT TIME & DETECTOR DISTANCE FROM SURFACE**	Refer to MD-80036, Issue 29, Op. No. 30030, *Operation of the Ludlum 2360 Scaler/Ratemeter with Ludlum 43-89 Alpha/Beta Scintillator*, Section 6.3
		PROBE TYPE	L 43-89		
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. Take photographs of survey units, if possible. Pay particular attention to grid markings or other identifying features. Date and label photos. Any sampling and surveying discrepancies shall be documented in the Comments section on the Survey Plan Form.

SP NUMBER	89-01	DATE OF REQUEST	February 1, 2003

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.

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

1. Set the Ludlum 2350-1 datalogger to alarm at 75dpm/100cm^2 in the ratemeter mode.
2. Perform a floor scan of hallways and major walkways throughout the building.
3. Perform a floor scan of at least 10% of Survey Unit 1 (218ft^2). Scan locations are randomly selected by the surveyor and should be broadly representative of the Survey Unit.
4. 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.
5. Record the location of the area scanned on the RSDS map and document the results of any integrated counts.

Data Point Location

1. Locate the data points in Survey Unit 1 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.

Static Measurements Using L 2350 with 43-20 (alpha) probe and L 2360 with 43-89 (beta) probe

1. Perform an alpha and beta count at twenty (20) data points in Survey Units 1.
2. Perform an alpha and beta count on at least twenty (20) data points in Survey Units 2 & 3. Data points are selected by the surveyor and should be broadly representative of the entire survey unit.
3. Perform an alpha and beta measurement on at least ten (10) data points on the roof. Data points are randomly selected by the surveyor and should be broadly representative of the entire survey unit.
4. Perform an alpha and beta measurement on at least ten (10) data points on the building exterior walls and exposed foundations. Data points are randomly selected by the surveyor and should be broadly representative of the entire survey unit.
5. Perform an integrated alpha and beta count at each sediment sample location.
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.

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.

Sediment Samples

1. Collect approximately 250ml of debris from each accessible ventilation unit, 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 of the location.

Continued Next Page

Specific Survey and Sampling Instructions (continued)

3. Document sample information and description of material on Attachment 1.
4. Label sample container with sample number, date and time of collection, and location in accordance with Mound procedures.
5. Show sample location on the RSDS map.
6. Submit sediment samples to laboratory for gamma spectroscopy analysis. Submit smears for gross alpha and beta analysis.
7. Additional intrusive samples may be collected in areas of elevated activity as determined by the MARSSIM Engineer.

Quality Control

1. QC measurements will be performed by re-surveying 3 data points in each survey unit. Data points selected for resurvey should include the highest, lowest, and average readings in the survey unit.
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	February 1, 2003
Technical Reviewer	G. Tomlinson	DATE	2-3-03
Rad Con Manager	J. K. Riley	DATE	2-3-03
SP CLOSE-OUT SIGNATURES			
MARISSM Engineer	R. Case	DATE	4-8-03
Technical Reviewer	Josef Guido	DATE	4/9/03
Rad Con Manager	Steve Collins	DATE	4-9-03

COMMENTS

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Building 89 SPF 89-01
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
89-01-									
89-01-									
89-01-									
89-01-									
89-01-									
89-01-									
89-01-									
89-01-									
89-01-									
89-01-									
89-01-									
89-01-									
89-01-									

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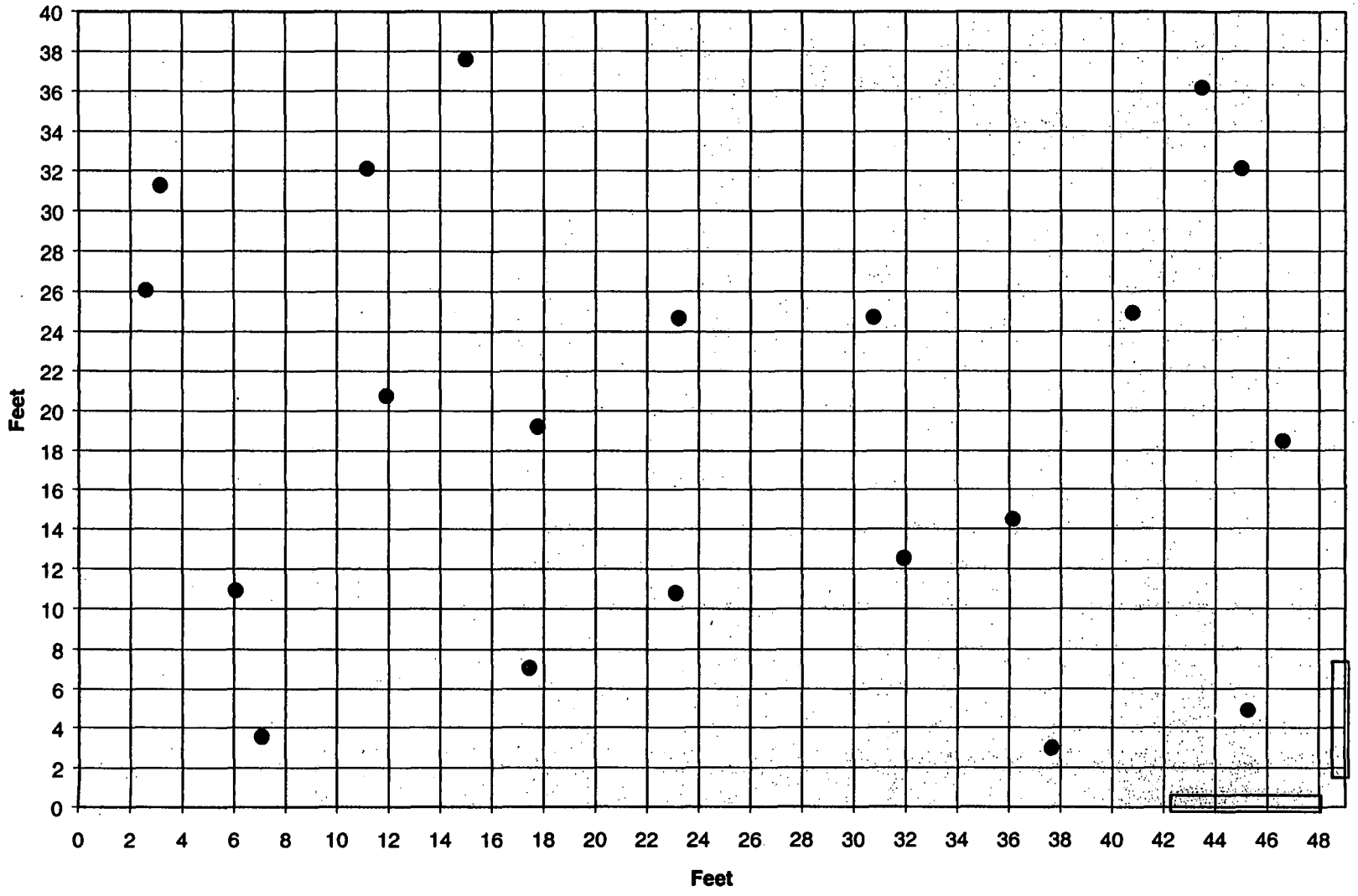
Building 89 Survey Unit 1 Data Point Locations



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Survey Unit 1 Data
Point Coordinates

X	Y
17	7
45	32
43	36
32	13
6	11
36	14
23	11
47	18
38	3
15	38
18	19
31	25
23	25
41	25
7	4
12	21
3	26
11	32
3	31
45	5

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG/AREA/ROOM) BLD 89 Room 101	SURVEY NO. 03-TF-0071
PURPOSE: MARSSM SURVEY PLAN 89-01 UNIT 1	RWP NO. N/A
	DATE: 3-24-03
	TIME: 1430

MAP/DRAWING

COPY

SEE ATTACHED

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

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
2350	5673/5676/5143	8-13-03
2360	5833/5847	3-13-04
	N/A	

[redacted] HPs 6178 7474 Date: 3-27-03 [redacted]

Counted by: (Signature) SEE	HPs	Date:
Counted by: (Print Name) ATTACHED		
Reviewer [redacted]	HPs 5214	Date: 03-27-03
Reviewer [redacted]		

ML-9620 (2-98)

2 of

Survey No. 03-TF-0071

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1-20	SEE	ATTACHED		FLOOR
		N	A	

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

COMMENTS: N/A

NOTES:

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

ML-9620 (4-98)

89 BUILDING CHARACTERIZATION SURVEY UNIT-1

RSDS#03-TF-0071 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	
SRC BKG	5673	7474	5676	3		3/24/03	9:33	32	300	10	
SRC CHECK	5673	7474	5676	3		3/24/03	9:36	2109	60	3407	
SRC CHECK	5673	7474	5676	3		3/24/03	9:38	2081	60	3362	
SRC CHECK	5673	7474	5676	3		3/24/03	9:40	2158	60	3486	
SRC CHECK	5673	7474	5676	3		3/24/03	9:41	2097	60	3388	
SRC CHECK	5673	7474	5676	3		3/24/03	9:43	2012	60	3250	
SRC CHECK	5673	7474	5676	3		3/24/03	9:45	2101	60	3394	
SCAN 01	5673	7474	5676	3	1	3/24/03	12:55	3	30	10	
SCAN 02	5673	7474	5676	3	2	3/24/03	12:59	5	30	16	
SCAN 03	5673	7474	5676	3	3	3/24/03	13:01	7	30	23	
SCAN 04	5673	7474	5676	3	4	3/24/03	13:04	5	30	16	
SRC BKG	5673	7474	5143	2		3/25/03	7:51	3	300	4	
SRC CHECK	5673	7474	5143	2		3/25/03	7:55	1893	60	12161	
SRC CHECK	5673	7474	5143	2		3/25/03	7:56	2034	60	13067	
SRC CHECK	5673	7474	5143	2		3/25/03	7:58	2036	60	13080	
SRC CHECK	5673	7474	5143	2		3/25/03	7:59	1960	60	12592	
SU-1 01	5673	7474	5143	2	1	3/25/03	8:06	3	60	19	
SU-1 02	5673	7474	5143	2	2	3/25/03	8:08	2	60	13	
SU-1 03	5673	7474	5143	2	3	3/25/03	8:10	4	60	26	
SU-1 04	5673	7474	5143	2	4	3/25/03	8:12	9	60	58	
SU-1 05	5673	7474	5143	2	5	3/25/03	8:14	5	60	32	
SU-1 06	5673	7474	5143	2	6	3/25/03	8:16	7	60	45	
SU-1 07	5673	7474	5143	2	7	3/25/03	8:18	6	60	39	
SU-1 08	5673	7474	5143	2	8	3/25/03	8:21	5	60	32	
SU-1 09	5673	7474	5143	2	9	3/25/03	8:24	4	60	26	
SU-1 10	5673	7474	5143	2	10	3/25/03	8:28	5	60	32	
SU-1 11	5673	7474	5143	2	11	3/25/03	8:30	8	60	51	
SU-1 12	5673	7474	5143	2	12	3/25/03	8:32	4	60	26	
SU-1 13	5673	7474	5143	2	13	3/25/03	8:34	4	60	26	
SU-1 14	5673	7474	5143	2	14	3/25/03	8:37	8	60	51	

89 BUILDING CHARACTERIZATION SURVEY UNIT-1

RSDS#03-TF-0071 RCT: 29 N RCT:_____

LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
SU-1 15	5673	7474	5143	2	15	3/25/03	8:39	4	60	26
SU-1 16	5673	7474	5143	2	16	3/25/03	8:41	6	60	39
SU-1 17	5673	7474	5143	2	17	3/25/03	8:44	5	60	32
SU-1 18	5673	7474	5143	2	18	3/25/03	8:46	3	60	19
SU-1 19	5673	7474	5143	2	19	3/25/03	8:48	4	60	26
SU-1 20	5673	7474	5143	2	20	3/25/03	8:50	4	60	26
QC 02	5673	6178	5143	2		3/25/03	8:53	7	60	45
QC 04	5673	6178	5143	2		3/25/03	8:57	3	60	19
QC 15	5673	6178	5143	2		3/25/03	8:59	4	60	26

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89-BLDG CHARACTERIZATION BETA SURVEY UNIT-1

RSDS#03-TF-0071 RCT: 294 RCT: _____

LOCATION	2360	RCT ID	PROBE	ITEM #	DATE	gross count	CT TIME	dpm/100cm2
1	5833	7474	5847	1	3/24/03	285	60	580
2	5833	7474	5847	2	3/24/03	287	60	590
3	5833	7474	5847	3	3/24/03	289	60	600
4	5833	7474	5847	4	3/24/03	231	60	310
5	5833	7474	5847	5	3/24/03	305	60	680
6	5833	7474	5847	6	3/24/03	308	60	695
7	5833	7474	5847	7	3/24/03	242	60	365
8	5833	7474	5847	8	3/24/03	294	60	625
9	5833	7474	5847	9	3/24/03	263	60	470
10	5833	7474	5847	10	3/24/03	319	60	750
11	5833	7474	5847	11	3/24/03	273	60	520
12	5833	7474	5847	12	3/24/03	283	60	570
13	5833	7474	5847	13	3/24/03	281	60	560
14	5833	7474	5847	14	3/24/03	240	60	355
15	5833	7474	5847	15	3/24/03	276	60	535
16	5833	7474	5847	16	3/24/03	296	60	635
17	5833	7474	5847	17	3/24/03	267	60	490
18	5833	7474	5847	18	3/24/03	292	60	615
19	5833	7474	5847	19	3/24/03	309	60	700
20	5833	7474	5847	20	3/24/03	300	60	655
QC-2	5833	6178	5847	1	3/24/03	278	60	545
QC-4	5833	6178	5847	2	3/24/03	270	60	505
QC-15	5833	6178	5847	3	3/24/03	308	60	695
BETA BACKGROUND FOR 3-24-2003 WAS---------->								169

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Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: SMEAR008
Batch Ended: 3/25/03 14:09
Cal. Due Date: 4/25/03
Serial Number: 26966-3

Batch ID: 03-TF-0071 HARVEY-20 BSB

Detector ID	Sample ID	Alpha Activity			Beta Activity		
		DPM	σ	flags	DPM	σ	flags
A1	1	3.48	2.91		2.46	2.56	
A2	2	0.00	2.00		5.21	2.95	
A3	3	1.68	2.22		8.97	3.74	
A4	4	1.47	2.02		1.38	2.05	
B1	5	0.00	2.02		0.00	1.25	
B2	6	1.31	2.00		0.00	1.19	
B3	7	0.00	2.16		5.21	3.15	
B4	8	1.45	2.03		2.35	2.33	
C1	9	1.56	2.09		0.36	1.77	
C2	10	1.32	1.86		0.36	1.64	
C3	11	0.00	2.10		0.67	1.76	
C4	12	2.91	2.85		1.95	2.69	
D1	13	0.00	1.95		0.37	1.75	
D2	14	0.00	2.12		1.58	2.10	
D3	15	0.00	2.17		2.92	2.56	
D4	16	0.00	2.11		1.55	2.07	
A1	17	1.45	2.05		0.00	1.28	
A2	18	11.21	4.78		4.30	2.94	
A3	19	1.68	2.20		6.49	3.29	
A4	20	1.47	2.01		0.20	1.67	

DJH DJH

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Cab 9

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DJH 3-27-03

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	6.39
Region B:	2.0	- 18.6	0	0.0	6.13
Region C:	40.0	- 2000	0	0.0	9.42

Quench Indicator: tSIE/AEC
~~Ext Std Terminator: Count~~
03-TF-0071 HARVEY-29 BSB
Luminescence Correction On
Coincidence Time(ns): 18
Delay Before Burst(ns): Normal
Protocol Data Filename: c:\data\PROT2.DAT
Count Data Filename: c:\data\SDATA2.DAT
Spectrum Data Drive & Path: c:\data

S#	TIME	CPMA	CPMB	LUM	FLAG	tSIE	DPM1	2Sigma	CPMC
-1	10.00	6.39	6.13	0	B	598.39		0.00	9.42
0	2.00	590.68	559.43	0		486.23	1285.02	123.29	1.08
1	2.00	6.69	5.63	0		626.30	12.83	10.32	0.00
2	2.00	2.60	2.73	0		519.05	5.47	9.54	4.08
3	2.00	3.30	1.63	0		620.16	6.35	9.04	10.08
4	2.00	3.11	2.65	0		569.58	6.25	9.35	4.70
5	2.00	3.61	3.16	5		507.45	7.67	10.11	6.44
6	2.00	3.11	2.87	0		504.12	6.62	9.91	9.58
7	2.00	0.00	0.00	38		410.71	0.00	0.00	4.95
8	2.00	2.67	2.32	11		476.65	5.87	10.03	5.58
9	2.00	1.61	1.75	0		512.85	3.40	9.12	10.90
10	2.00	0.00	0.00	0		600.79	0.00	0.00	2.58
11	2.00	3.11	3.37	0		613.52	6.02	9.01	2.08
12	2.00	1.61	1.87	0		442.24	3.71	9.96	0.08
13	2.00	3.42	3.68	0		627.45	6.55	9.03	3.08
14	2.00	2.24	1.91	0		497.45	4.80	9.56	0.08
15	2.00	0.00	0.00	0		564.18	0.00	0.00	0.58
16	2.00	1.61	1.87	0		627.58	3.08	8.25	4.58
17	2.00	4.77	4.87	0		632.69	9.10	9.54	2.58
18	2.00	6.99	7.03	0		572.38	14.03	10.92	10.08
19	2.00	0.21	0.48	0		644.78	0.40	7.50	8.08
20	2.00	2.80	2.57	0		590.95	5.54	9.05	0.00

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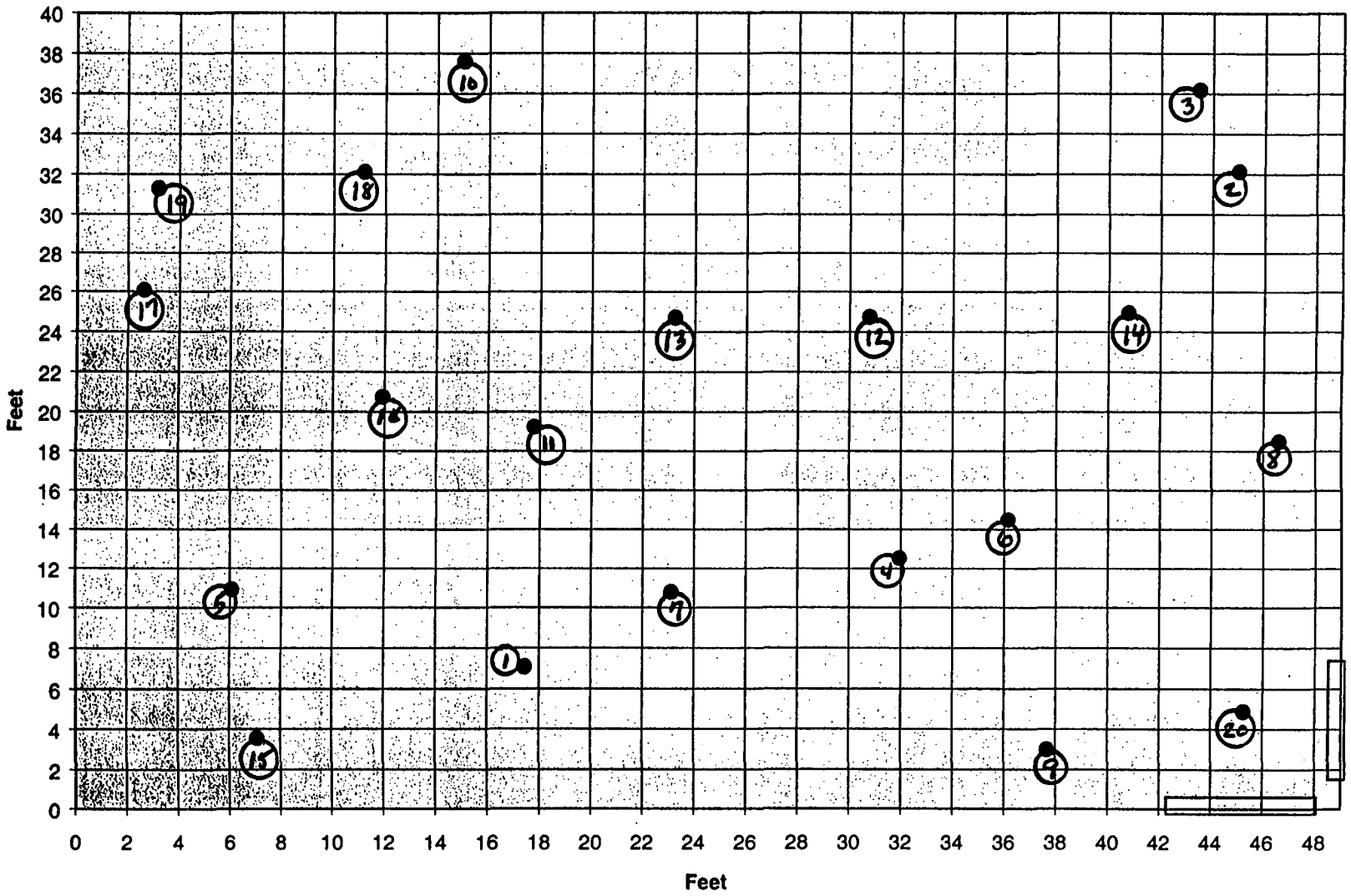
Building 89 SPF 89-01
Attachment 2

Building 89 Survey Unit 1 Data Point Locations



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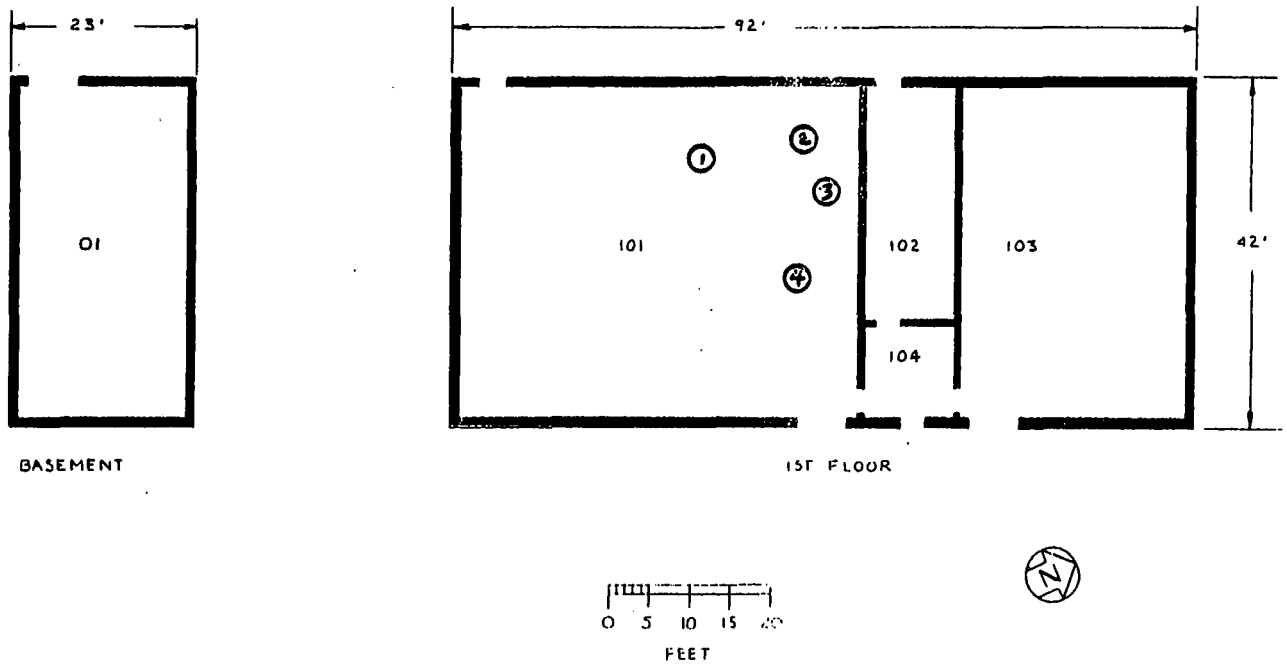
03-TF-0071

C.19



03-TF-0071

FLOOR SCAN

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Dgh

A	7-84	NEW BUILDING	GB						
PCN	DATE	REVISION							

MONSANTO RESEARCH CORPORATION
MOUND FACILITY
MIAMISBURG, OHIO

PROGRAM TITLE: BLDG 89

DRAWING TITLE: DETONATOR STORAGE FACILITY

DWG. TYPE

DWG CLASSIFICATION
LEVEL OF: UNCL
DERIVATIVE CLASSIFIER
BY
TITLE
DATE

DESIGNED GAB	CHECKED	APVD
CHECKED	DATE	ENG. MGR.
DESIGN ENG.	ENG. MGR.	
APVD	DATE	
SCALE	WT. NO.	
JOB NO.	DWG. NO.	

CODE IDENT NO. 18665

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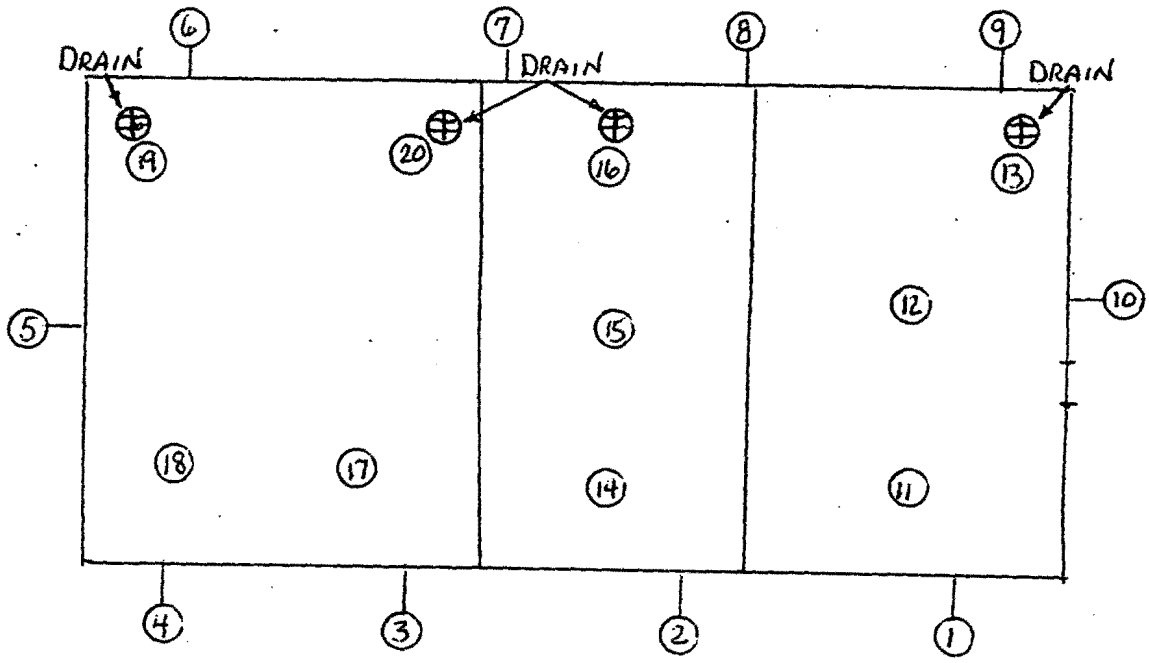
RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) 89 ROOF	SURVEY NO. 03-TF-0072
PURPOSE: MARSSIM Survy Plan 89-01 UNIT 4	RWP NO. NA
	DATE: 3-25-03
	TIME: 1300

MAP/DRAWING



COPY

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

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
2360	5836/5848	3-12-04
	NA	

[redacted] HP# 6178 Date: 3-27-03

Counted by: (Print Name) [redacted] ched

Revie[redacted] HP# 5214 Date: 03-27-03

Revie[redacted]

ML-9620 (2-98)

Survey No. 03-TF-0072

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1	See Attached		NA	O/S WALL
2				
3				
4				
5				
6				
7				
8				
9				
10				O/S WALL
11				ROOF
12				
13				
14				
15				
16				
17				
18				
19				
20	See Attached		NA	ROOF
		N	A	

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

COMMENTS: N/A

NOTES:

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

ML-9620 (4-98)

89-BLDG CHARACTERIZATION ALPHA- BETA SURVEY UNIT 4

RSDS#03-TF-0072 RCT: KA RCT: Dgh

						BETA			ALPHA		
LOCATION	2360	RCT ID	PROBE	ITEM #	DATE	gross count	CT TIME	dpm/100cm2	gross count	CT TIME	dpm/100cm2
1	5836	7474	5848	1	3/25/03	232	60	295	5	60	32
2	5836	7474	5848	2	3/25/03	221	60	240	7	60	48
3	5836	7474	5848	3	3/25/03	234	60	305	5	60	32
4	5836	7474	5848	4	3/25/03	216	60	215	7	60	48
5	5836	7474	5848	5	3/25/03	192	60	95	9	60	64
6	5836	7474	5848	6	3/25/03	202	60	145	7	60	48
7	5836	7474	5848	7	3/25/03	208	60	175	4	60	24
8	5836	7474	5848	8	3/25/03	217	60	220	9	60	64
9	5836	7474	5848	9	3/25/03	218	60	225	8	60	56
10	5836	7474	5848	10	3/25/03	235	60	310	2	60	8
11	5836	7474	5848	11	3/25/03	235	60	310	7	60	48
12	5836	7474	5848	12	3/25/03	232	60	295	5	60	32
13	5836	7474	5848	13	3/25/03	263	60	450	7	60	48
14	5836	7474	5848	14	3/25/03	237	60	320	5	60	32
15	5836	7474	5848	15	3/25/03	257	60	420	5	60	32
16	5836	7474	5848	16	3/25/03	242	60	345	2	60	8
17	5836	7474	5848	17	3/25/03	275	60	510	4	60	24
18	5836	7474	5848	18	3/25/03	245	60	360	4	60	24
19	5836	7474	5848	19	3/25/03	243	60	350	8	60	56
20	5836	7474	5848	20	3/25/03	223	60	250	8	60	56
QC-8	5836	6178	5848	1	3/25/03	205	60	160	9	60	64
QC-16	5836	6178	5848	2	3/25/03	256	60	415	6	60	40
QC-17	5836	6178	5848	3	3/25/03	221	60	240	6	60	40

19 pcs 6

89-BLDG CHARACTERIZATION ALPHA- BETA SURVEY UNIT 4

RSDS#03-TF-0072 RCT: KA RCT: DJH

LOCATION	2360	RCT ID	PROBE	ITEM #	DATE	gross count	CT TIME	dpm/100cm2	gross count	CT TIME	dpm/100cm2
BETA BACKGROUND FOR 1-22-2003 WAS---------->								173			
ALPHA BACKGROUND FOR 1-22-2003 WAS---------->								1			

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Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: SMEAR007
Batch Ended: 3/25/03 14:02
Cal. Due Date: 4/25/03
Serial Number: 26966-3

0072 3/26/03

Batch ID: 03-TR ~~0022~~ HARVEY-20 BSB

By Brown

Detector ID	Sample ID	Alpha Activity DPM	Alpha Activity σ	Alpha Activity flags	Beta Activity DPM	Beta Activity σ	Beta Activity flags
A1	1	1.44	2.06		0.06	1.81	
A2	2	1.58	1.94		0.00	1.20	
A3	3	3.79	3.02		1.39	2.15	
A4	4	0.00	2.03		2.70	2.36	
B1	5	0.00	2.03		0.29	1.77	
B2	6	0.00	2.03		1.49	2.06	
B3	7	1.59	2.13		2.49	2.57	
B4	8	3.44	2.83		0.00	1.64	
C1	9	3.63	2.96		2.70	2.50	
C2	10	0.00	1.84		0.00	1.16	
C3	11	0.00	2.11		1.91	2.16	
C4	12	0.00	2.06		0.00	1.85	
D1	13	1.40	1.96		1.43	2.14	
D2	14	1.57	2.10		0.20	1.72	
D3	15	0.00	2.18		4.20	2.87	
D4	16	0.00	2.10		0.36	1.69	
A1	17	0.00	2.06		0.21	1.81	
A2	18	1.58	1.98		2.66	2.40	
A3	19	1.68	2.17		4.01	2.78	
A4	20	1.47	2.03		2.56	2.36	

KA KA

G3708 61

KA
~~Page 1 of 1~~
3-27-03

5 of 5

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RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG/AREA/ROOM) BUILDING 89 INTERIOR	SURVEY NO. 03-TF0075
PURPOSE: MARSSIM SURVEY PLAN UNIT 2	RWP NO. N/A
	DATE: 03-27-03
	TIME: 1430

MAP/DRAWING

COPY

SEE ATTACHED

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

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
2350/43-20	5673/5143	08-13-03
2360/43-93	5836/5848	03-12-04
	N A	

[redacted]

	HPs 6178 7474	Date: 3-27-03
SEE ATTACHED	HPs	Date:
Counted by: (Print Name) N/A		
Revi[redacted]	HPs 5214	Date: 03-27-03
Reviewed/Approv[redacted]		

Survey No. 03-TF-0075

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
	Swipes (dpm/100cm²)			
Sample #	β/γ	Alpha	Tritium	Comments
SU-2-01				WALL 101
02				WALL 101
03				WALL 101
04				WALL 101
05				WALL 101
06				WALL 101
07				WALL 101
08				WALL 101
09				CEILING 101
10				CEILING 101
11				FLOOR 100
12				WALL 100
13				WALL 100
14				WALL 102
15				WALL 102
16				WALL 102
17				FLOOR 102
18				WALL 102
19				FLOOR 103
20				FLOOR 103
21				WALL 103
22				WALL 103
23				WALL 103
24				WALL 103
25				CEILING 103
SU-2-26				CEILING 103

SEE ATTACHED RESULTS

N/A

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

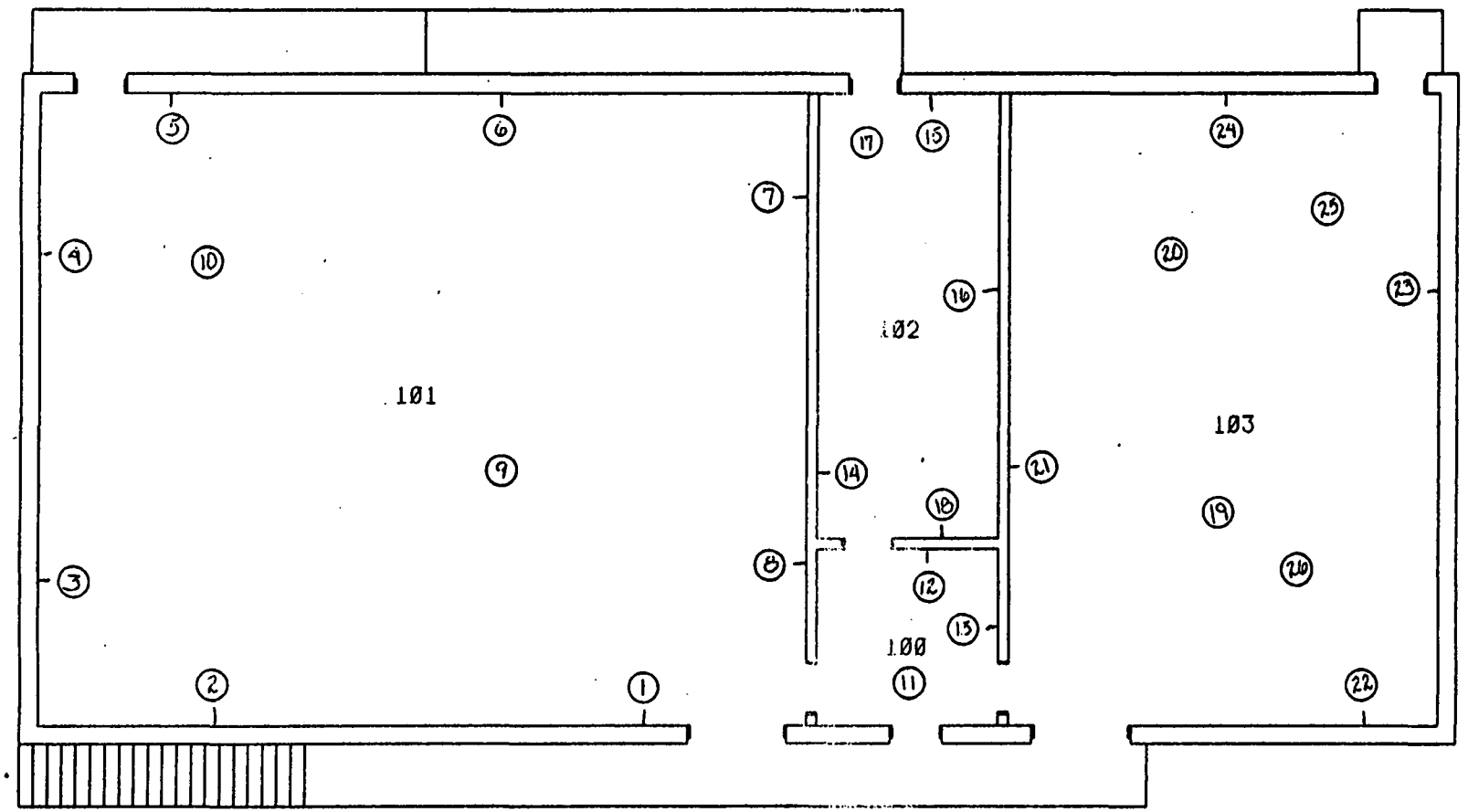
N/A.

COMMENTS: N/A

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

ML-9620 (4-98)

G4006 61



BLDG #89
FIRST FLOOR
BLDG CODE:3089

NOTICE: This document / page does NOT contain Unclassified Controlled Nuclear Information(UCNI)

Reviewing Official: H.A. ROBINSON, CH2M HILL
CLASSIFICATION OFFICER Date: 4-10-03

[Label File: "Not-UCNI.dcs"

DRAWING NUMBER	FSC911281
JOB NUMBER	12335
DRAWING CLASSIFICATION	[redacted]
SIZE	C
CODE	14865
SCALE	AS NOTED
ISSUE	0
SHEET	2
STATUS	MD-REL-12/12/91

G4108 61

Page 9A

89 BUILDING CHARACTERIZATION SURVEY UNIT-2

RSDS#03-TF-0075 RCT: 29 A RCT: KA

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	5143	2		3/26/03	8:45	21	300	27	
SRC CHECK	5673	6178	5143	2		3/26/03	8:47	2016	60	12951	
SRC CHECK	5673	6178	5143	2		3/26/03	8:49	2050	60	13170	
SRC CHECK	5673	6178	5143	2		3/26/03	8:50	1913	60	12290	
SRC CHECK	5673	6178	5143	2		3/26/03	8:52	1929	60	12392	
SU-2 01	5673	6178	5143	2	1	3/26/03	9:00	2	60	13	
SU-2 02	5673	6178	5143	2	2	3/26/03	9:04	6	60	39	
SU-2 03	5673	6178	5143	2	3	3/26/03	9:09	5	60	32	
SU-2 04	5673	6178	5143	2	4	3/26/03	9:13	6	60	39	
SU-2 05	5673	6178	5143	2	5	3/26/03	9:15	14	60	90	
SU-2 06	5673	6178	5143	2	6	3/26/03	9:17	13	60	84	
SU-2 06	5673	6178	5143	2	7	3/26/03	9:19	5	60	32	
SU-2 08	5673	6178	5143	2	8	3/26/03	9:21	12	60	77	
SU-2 09	5673	6178	5143	2	9	3/26/03	9:24	5	60	32	
SU-2 10	5673	6178	5143	2	10	3/26/03	9:28	3	60	19	
SU-2 11	5673	6178	5143	2	11	3/26/03	9:31	3	60	19	
SU-2 12	5673	6178	5143	2	12	3/26/03	9:32	2	60	13	
SU-2 13	5673	6178	5143	2	13	3/26/03	9:34	8	60	51	
SU-2 14	5673	6178	5143	2	14	3/26/03	9:36	5	60	32	
SU-2 15	5673	6178	5143	2	15	3/26/03	9:37	8	60	51	
SU-2 16	5673	6178	5143	2	16	3/26/03	9:39	4	60	26	
SU-2 17	5673	6178	5143	2	17	3/26/03	9:41	6	60	39	
SU-2 18	5673	6178	5143	2	18	3/26/03	9:42	6	60	39	
SU-2 19	5673	6178	5143	2	19	3/26/03	9:45	8	60	51	
SU-2 20	5673	6178	5143	2	20	3/26/03	9:46	7	60	45	
SU-2 21	5673	6178	5143	2	21	3/26/03	9:48	4	60	26	
SU-2 22	5673	6178	5143	2	22	3/26/03	9:50	5	60	32	
SU-2 23	5673	6178	5143	2	23	3/26/03	13:54	4	60	26	
SU-2 24	5673	6178	5143	2	24	3/26/03	14:00	4	60	26	
SU-2 25	5673	6178	5143	2	25	3/26/03	14:03	7	60	45	
SU-2 26	5673	6178	5143	2	26	3/26/03	14:08	7	60	45	

 642061

89 BUILDING CHARACTERIZATION SURVEY UNIT-2

RSDS# 03-TF-0075 RCT: DGA RCT: KA

LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
QC 20	5673	7474	5143	2		3/26/03	14:13	3	60	19
QC 01	5673	7474	5143	2		3/26/03	14:15	4	60	26
QC 05	5673	7474	5143	2		3/26/03	14:16	6	60	39

89-BLDG CHARACTERIZATION BETA SURVEY UNIT 2

RSDS# 03-TF-0075 RCT: Dgh RCT: KA

LOCATION	2360	RCT ID	PROBE	ITEM #	DATE	gross count	CT TIME	dpm/100cm2
1	5836	7474	5848	1	3/26/03	208	60	155
2	5836	7474	5848	2	3/26/03	189	60	60
3	5836	7474	5848	3	3/26/03	212	60	175
4	5836	7474	5848	4	3/26/03	197	60	100
5	5836	7474	5848	5	3/26/03	219	60	210
6	5836	7474	5848	6	3/26/03	205	60	140
7	5836	7474	5848	7	3/26/03	193	60	80
8	5836	7474	5848	8	3/26/03	203	60	130
9	5836	7474	5848	9	3/26/03	171	60	-30
10	5836	7474	5848	10	3/26/03	192	60	75
11	5836	7474	5848	11	3/26/03	197	60	100
12	5836	7474	5848	12	3/26/03	193	60	80
13	5836	7474	5848	13	3/26/03	188	60	55
14	5836	7474	5848	14	3/26/03	232	60	275
15	5836	7474	5848	15	3/26/03	213	60	180
16	5836	7474	5848	16	3/26/03	208	60	155
17	5836	7474	5848	17	3/26/03	319	60	710
18	5836	7474	5848	18	3/26/03	235	60	290
19	5836	7474	5848	19	3/26/03	310	60	665
20	5836	7474	5848	20	3/26/03	311	60	670
21	5836	7474	5848	21	3/26/03	236	60	295
22	5836	7474	5848	22	3/26/03	230	60	265
23	5836	7474	5848	23	3/26/03	180	60	15
24	5836	7474	5848	24	3/26/03	201	60	120
25	5836	7474	5848	25	3/26/03	203	60	130
26	5836	7474	5848	26	3/26/03	205	60	140
QC-1	5836	6178	5848	1	3/26/03	216	60	195
QC-5	5836	6178	5848	2	3/26/03	210	60	165
QC-20	5836	6178	5848	3	3/26/03	283	60	530
BETA BACKGROUND FOR 3-26-2003 WAS---------->								177

G-44861

Alpha/Beta Analysis

Batch ID:	Smear Unit 1 - 200303261506	**Count Date:**	3/26/2003
Group:	D	**Count Minutes:**	1.5
Serial Number:	78218-1	**Count Mode:**	Simultaneous
Batch ID:	03-TF-0075 HARVEY-~~20~~ 26 BSB 3/26/03	**Operating Volts:**	1440
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	41	2.19	1.92	1.21	1.45
2	16	2.18	1.92	2.58	2.05
3	56	0.00	0.00	0.00	0.00
4	86	0.00	0.00	2.74	2.04
5	83	0.00	0.00	2.74	2.04
6	82	0.00	0.00	5.48	2.89
7	15	2.19	1.92	1.21	1.45
8	79	0.00	0.00	1.37	1.45
9	22	2.18	1.92	2.58	2.05
10	20	6.56	3.33	0.00	0.29
11	88	0.00	0.00	1.37	1.45
12	13	0.00	0.00	0.00	0.00
13	27	4.37	2.72	1.06	1.46
14	56	2.18	1.92	2.58	2.05
15	69	4.37	2.72	1.06	1.46
16	12	2.19	1.92	1.21	1.45
17	55	0.00	0.00	0.00	0.00
18	23	0.00	0.00	2.74	2.04
19	86	2.18	1.92	3.95	2.51
20	38	0.00	0.00	4.11	2.50
21	96	0.00	0.00	2.74	2.04
22	9	2.18	1.92	5.32	2.90
23	65	4.37	2.72	0.00	0.23
24	51	0.00	0.00	4.11	2.50
25	72	0.00	0.00	2.74	2.04
26	85	2.18	1.92	2.58	2.05

B J Brown
DJA

Batch ID: 03-TF-0075 HARVEY-20 BSB

PS 7 of 8
~~Page 1 of 1~~ 03-27-03

Dg 8 of

26 Mar 2003 17:20 ALPHA/BETA - 1.09 ~~Page #1~~

Protocol #: 2 PW H3 #403727 User : 5

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	10.40
Region B:	2.0	- 18.6	0	0.0	10.25
Region C:	40.0	- 2000	0	0.0	14.10

Quench Indicator: tSIE/AEC
Ext Std Terminator: Count
03-TF-0075 HARVEY-~~20~~ BSB ✓ 26 3/27/03 bs
Luminescence Correction On
Coincidence Time(ns): 18
Delay Before Burst(ns): Normal
Protocol Data Filename: C:\DATA\PROT2.DAT
Count Data Filename: C:\DATA\SDATA2.DAT

S#	TIME	CPMA	CPMB	CPMC	tSIE	LUM	FLAG	DPM1	2SIGMA
-1	10.00	10.40	10.25	14.10	494.40	3	B		0.00
0	2.00	406.78	393.33	1.40	515.60	0		859.53	87.77
1	2.00	0.00	0.00	0.00	668.44	0		0.00	0.00
2	2.00	2.39	2.54	1.90	655.57	0		4.54	10.39
3	2.00	0.00	0.00	0.00	709.04	0		0.00	0.00
4	2.00	0.00	0.00	0.00	640.36	0		0.00	0.00
5	2.00	0.00	0.00	0.00	685.92	0		0.00	0.00
6	2.00	0.00	0.00	0.00	625.54	0		0.00	0.00
7	2.00	0.00	0.00	0.00	709.12	0		0.00	0.00
8	2.00	0.00	0.00	0.00	694.97	0		0.00	0.00
9	2.00	0.00	0.00	0.00	679.39	0		0.00	0.00
10	2.00	0.00	0.00	0.00	571.22	0		0.00	0.00
11	2.00	0.00	0.00	0.00	685.83	0		0.00	0.00
12	2.00	0.00	0.00	0.00	713.02	0		0.00	0.00
13	2.00	3.10	3.25	0.00	671.18	0		5.85	10.55
14	2.00	0.00	0.00	0.00	639.56	0		0.00	0.00
15	2.00	0.00	0.00	0.00	649.69	0		0.00	0.00
16	2.00	0.00	0.00	0.00	717.15	0		0.00	0.00
17	2.00	0.00	0.00	0.00	555.97	0		0.00	0.00
18	2.00	0.00	0.00	0.00	651.78	0		0.00	0.00
19	2.00	0.00	0.00	0.17	565.16	0		0.00	0.00
20	2.00	0.00	0.00	0.00	607.27	0		0.00	0.00
21	2.00	0.00	0.00	0.00	615.33	0		0.00	0.00
22	2.00	0.00	0.00	0.00	700.45	0		0.00	0.00
23	2.00	0.00	0.00	0.00	692.03	0		0.00	0.00
24	2.00	0.00	0.00	0.00	649.52	0		0.00	0.00
25	2.00	0.00	0.00	0.00	613.18	0		0.00	0.00
26	2.00	0.00	0.00	0.00	638.64	0		0.00	0.00

BJ Brown Dg A

G4606 61

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) 89-BASEMENT	SURVEY NO: 03-TF-0076
PURPOSE: MARISSM SURVEY PLAN 89-01 UNIT 3	RWP NO. N/A
	DATE: 3-27-03
	TIME: 1430

MAP/DRAWING

COPY

SEE ATTACHED

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

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
2350	5673/5143	8-13-03
2360	5833/5847	3-13-04
	N/A	

[redacted]	HP# 6178 5744/5744	Date: 4-1-03
Counted by: (Signature) SEE	HP#	Date:
Counted by: (Print Name) ATTACHED		
Revie[redacted])	HP# 7492	Date: 4-1-03
Revie[redacted]e)		

ML-9620 (2-98)

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Survey No. 03-TF-0076

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RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1-6	SEE	ATTA	CHED	FLOOR
7-16	↓	↓	↓	WALLS
17-20	↓	↓	↓	CEILING
21	↓	↓	↓	LOUVER
22	↓	↓	↓	DRAIN
23	↓	↓	↓	EXHAUST FAN
24	↓	↓	↓	VENTILATION
25	↓	↓	↓	VENTILATION FILTER
26	↓	↓	↓	AIR DRYER
		N	A	

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

COMMENTS: N/A

NOTES:

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

ML-9620 (4-98)

89 BUILDING CHARACTERIZATION SURVEY UNIT-3

RSDS#03-TF-0076 RCT: DJH RCT: KA

ALPHA

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	5143	2		3/27/03	7:48	4	300	5	
SRC CHECK	5673	6178	5143	2		3/27/03	7:50	1977	60	12701	
SRC CHECK	5673	6178	5143	2		3/27/03	7:51	2106	60	13529	
SRC CHECK	5673	6178	5143	2		3/27/03	7:53	2054	60	13195	
SRC CHECK	5673	6178	5143	2		3/27/03	7:54	2076	60	13337	
SU-3 01	5673	6178	5143	2	1	3/27/03	8:03	2	60	13	
SU-3 02	5673	6178	5143	2	2	3/27/03	8:10	4	60	26	
SU-3 03	5673	6178	5143	2	3	3/27/03	8:13	6	60	39	
SU-3 04	5673	6178	5143	2	4	3/27/03	8:16	6	60	39	
SU-3 05	5673	6178	5143	2	5	3/27/03	8:18	6	60	39	
SU-3 06	5673	6178	5143	2	6	3/27/03	8:20	11	60	71	
SU-3 07	5673	6178	5143	2	7	3/27/03	8:22	2	60	13	
SU-3 08	5673	6178	5143	2	8	3/27/03	8:23	9	60	58	
SU-3 09	5673	6178	5143	2	9	3/27/03	8:26	11	60	71	
SU-3 10	5673	6178	5143	2	10	3/27/03	8:28	2	60	13	
SU-3 11	5673	6178	5143	2	11	3/27/03	8:30	2	60	13	
SU-3 12	5673	6178	5143	2	12	3/27/03	8:32	1	60	6	
SU-3 13	5673	6178	5143	2	13	3/27/03	8:34	2	60	13	
SU-3 14	5673	6178	5143	2	14	3/27/03	8:36	9	60	58	
SU-3 15	5673	6178	5143	2	15	3/27/03	8:38	4	60	26	
SU-3 16	5673	6178	5143	2	16	3/27/03	8:40	4	60	26	
SU-3 17	5673	6178	5143	2	17	3/27/03	9:18	2	60	13	
SU-3 18	5673	6178	5143	2	18	3/27/03	9:20	7	60	45	
SU-3 19	5673	6178	5143	2	19	3/27/03	9:22	8	60	51	
SU-3 20	5673	6178	5143	2	20	3/27/03	9:23	3	60	19	
QC 04	5673	7474	5143	2		3/27/03	9:26	4	60	26	
QC 09	5673	7474	5143	2		3/27/03	9:28	4	60	26	
QC 12	5673	7474	5143	2		3/27/03	9:31	5	60	32	
AIR DRYER	5673	7474	5143	2		3/27/03	9:34	58	60	373	

89-BLDG CHARACTERIZATION BETA SURVEY UNIT 3

RSDS#03-TF-0076 RCT: DJH RCT: SKR

LOCATION	2360	RCT ID	PROBE	ITEM #	DATE	gross count	CT TIME	dpm/100cm2
1	5833	5214	5847	1	3/27/03	309	60	665
2	5833	5214	5847	2	3/27/03	276	60	500
3	5833	5214	5847	3	3/27/03	250	60	370
4	5833	5214	5847	4	3/27/03	264	60	440
5	5833	5214	5847	5	3/27/03	306	60	650
6	5833	5214	5847	6	3/27/03	290	60	570
7	5833	5214	5847	7	3/27/03	240	60	320
8	5833	5214	5847	8	3/27/03	206	60	150
9	5833	5214	5847	9	3/27/03	222	60	230
10	5833	5214	5847	10	3/27/03	208	60	160
11	5833	5214	5847	11	3/27/03	245	60	345
12	5833	5214	5847	12	3/27/03	215	60	195
13	5833	5214	5847	13	3/27/03	243	60	335
14	5833	5214	5847	14	3/27/03	231	60	275
15	5833	5214	5847	15	3/27/03	222	60	230
16	5833	5214	5847	16	3/27/03	226	60	250
17	5833	5214	5847	17	3/27/03	284	60	540
18	5833	5214	5847	18	3/27/03	243	60	335
19	5833	5214	5847	19	3/27/03	265	60	445
20	5833	5214	5847	20	3/27/03	252	60	380
QC-04	5833	6178	5847		3/27/03	263	60	435
QC-09	5833	6178	5847		3/27/03	227	60	255
QC-12	5833	6178	5847		3/27/03	196	60	100
BETA BACKGROUND FOR 3-27-2003 WAS---------->								176

DJH 3-27-03

4

89-BLDG CHARACTERIZATION ~~BETA~~ DSA SURVEY MISC.

RSDS# 03-TF-0076 RCT: DSH RCT: _____

						BETA			ALPHA		
LOCATION	2360	RCT ID	PROBE	ITEM #	DATE	gross count	CT TIME	dpm/100cm2	gross count	CT TIME	dpm/100cm2
21	5833	6178	5847	21	3/27/03	259	60	415	4	60	34
22	5833	6178	5847	22	3/27/03	201	60	125	3	60	24
23	5833	6178	5847	23	3/27/03	175	60	-5	9	60	84
24	5833	6178	5847	24	3/27/03	207	60	155	4	60	34
25	5833	6178	5847	25	3/27/03	268	60	460	9	60	84
26	5833	6178	5847	26	3/27/03	896	60	3600	186	60	1854
BETA BACKGROUND FOR 3-27-2003 WAS---------->								176			
ALPHA BACKGROUND FOR 3-27-2003 WAS---------->								1			
Air Dryer was covered with plastic over the weekend and resurveyed on Monday 3-31-2003											
26	5833	6178	5847	26	3/27/03	276	60	505	7	60	60
BETA BACKGROUND FOR 3-31-2003 WAS---------->								175			
ALPHA BACKGROUND FOR 3-31-2003 WAS---------->								1			

19 20150

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: SMEAR010
Batch Ended: 3/27/03 10:00
Cal. Due Date: 4/25/03
Serial Number: 26966-3

Batch ID: 03-TF-0076 HARVEY-26 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	0.00	2.06		0.21	1.81	
A2	2	0.00	1.98		2.81	2.40	
A3	3	0.00	2.13		0.00	1.24	
A4	4	1.47	2.03		2.56	2.36	
B1	5	5.57	3.50		0.00	1.77	
B2	6	1.31	2.04		2.51	2.39	
B3	7	3.67	2.98		1.04	2.22	
B4	8	1.45	2.01		0.03	1.64	
C1	9	0.00	2.12		3.01	2.50	
C2	10	0.00	1.84		0.00	1.16	
C3	11	1.66	2.12		3.01	2.50	
C4	12	0.00	2.07		0.00	2.16	
D1	13	1.40	1.96		1.43	2.14	
D2	14	5.71	3.70		10.78	4.05	
D3	15	1.62	2.19		4.04	2.87	
D4	16	9.78	4.74		12.72	4.34	
A1	17	0.00	2.06		0.21	1.81	
A2	18	1.58	1.95		0.26	1.70	
A3	19	3.79	3.02		0.15	1.75	
A4	20	5.44	3.47		1.10	2.05	
B1	21	0.00	2.06		2.79	2.50	
B2	22	0.00	2.01		0.29	1.69	
B3	23	0.00	2.13		2.65	2.57	
B4	24	0.00	2.00		0.00	1.17	
C1	25	1.56	2.12		2.85	2.50	
C2	26	0.00	1.86		0.53	1.64	

DJH DJH

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~~Page 1 of 1~~

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Protocol #: 1 PW H3 405828 User : 5268

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	6.24
Region B:	2.0 -	18.6	0	0.0	6.04
Region C:	40.0 -	2000	0	0.0	11.57

Quench Indicator: tSIE/AEC
~~Ext Std Terminator:~~ Count
03-TF-0076 HARVEY-26 BSB
~~Luminescence Correction~~ On
Coincidence Time(ns): 18
Delay Before Burst(ns): Normal
Protocol Data Filename: c:\data\PROT1.DAT
Count Data Filename: c:\data\SDATA1.DAT
Spectrum Data Drive & Path: c:\data

S#	TIME	CPMA	CPMB	LUM	FLAG	tSIE	DPM1	2Sigma	CPMC
-1	10.00	6.24	6.04	0	B	605.18		0.00	11.57
0	2.00	223.99	210.01	0		471.19	497.21	60.90	0.43
1	2.00	0.26	0.00	0		476.86	0.58	8.67	0.00
2	2.00	1.76	1.85	0		512.03	3.73	9.11	0.00
3	2.00	0.00	0.00	0		553.14	0.00	0.00	2.43
4	2.00	1.76	1.96	0		424.95	4.18	10.19	4.79
5	2.00	0.00	0.00	0		542.96	0.00	0.00	0.43
6	2.00	0.00	0.00	0		472.26	0.00	0.00	0.00
7	2.00	0.26	0.46	0		662.09	0.49	7.33	0.00
8	2.00	2.22	2.19	0		576.51	4.44	8.81	0.43
9	2.00	2.26	1.86	0		616.67	4.38	8.54	2.93
10	2.00	4.04	3.92	0		625.41	7.76	9.23	0.00
11	2.00	2.26	2.17	0		613.29	4.39	8.56	0.00
12	2.00	3.37	3.27	0		615.39	6.52	9.03	0.00
13	2.00	0.26	0.00	0		629.90	0.50	7.52	0.00
14	2.00	2.26	2.14	0		628.18	4.33	8.46	0.00
15	2.00	0.00	0.00	0		644.71	0.00	0.00	0.00
16	2.00	1.66	1.53	0		632.42	3.17	8.16	0.00
17	2.00	0.76	0.58	0		386.79	1.93	10.24	3.93
18	2.00	0.98	0.52	0		354.63	2.64	11.12	5.93
19	2.00	0.00	0.00	0		437.76	0.00	0.00	0.00
20	2.00	3.01	2.44	0		455.87	6.82	10.40	0.00
21	2.00	0.00	0.00	0		606.42	0.00	0.00	0.00
22	2.00	0.32	0.16	0		374.96	0.83	10.22	0.00
23	2.00	0.76	0.23	0		511.94	1.62	8.60	3.93
24	2.00	3.26	3.46	0		576.81	6.52	9.28	0.00
25	2.00	0.32	0.00	0		527.13	0.67	8.25	0.00
26	2.00	1.26	0.97	0		447.15	2.90	9.60	0.00

DPM

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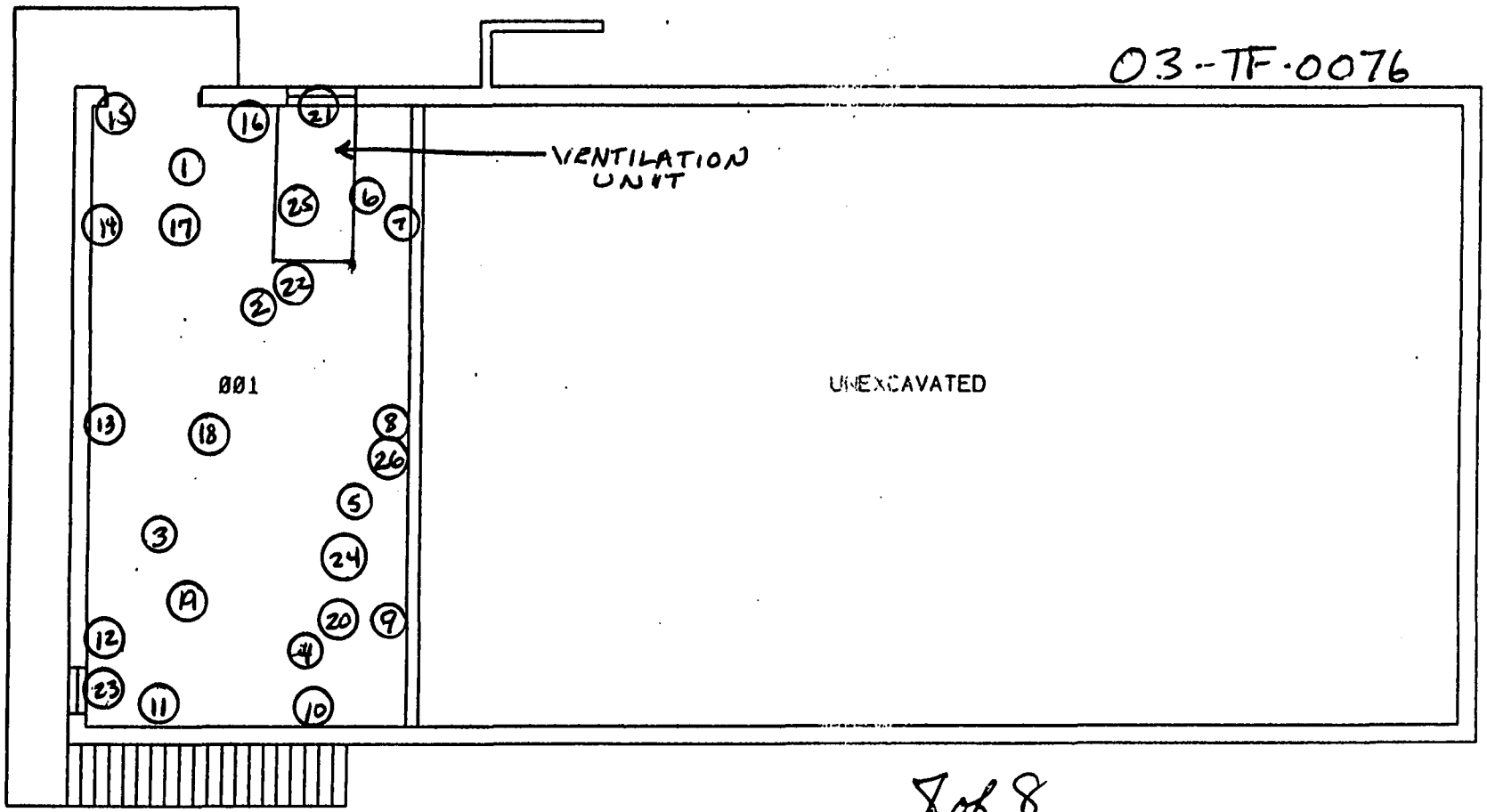
ISS	DATE	REVISION	BY	CHKR	ENG	UPRCE	APPD	R
0	12/12/91	ASBUILT ISSUE	DCW				DVD	

03-TF-0076



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192459

BLDG #89
BASEMENT
BLDG CODE:3089

NOTICE: This document / page does NOT contain Unclassified Controlled Nuclear Information(UCNI)
Reviewing Official: H.A. JOHNSON, CHZM HILL
CLASSIFICATION OFFICER Date: 4-10-03
[Label File: "Not-UCNI.des"

SHEET	1	2	3	4	5	6
ISSUE	0	0				

TITLE (U) TITLE CLASSIFICATION
BLDG #89
FLOOR PLANS

PART CLASSIFICATION
DRAWING CLASSIFICATION UCNI

SIZE C | DRAWING NUMBER FSC911281 | JOB NUMBER 12335

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) 89 ALL	SURVEY NO. 03-TF-0082
PURPOSE: MARSSIM SURVEY PLAN 89-01 QC CHECKS	RWP NO. N/A
	DATE: 4-2-03
	TIME: 1130

MAP/DRAWING

COPY

SEE ATTACHED

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

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
2350	5673/5143	~~9-13-03~~ 8-13-03
2360	5833/5847	3-13-04
	N/A	

[redacted]		HP# 6178 5214	Date: 4-7-03
Counted by: (Signature)	N/A	HP# N/A	Date: N/A
Counted by: (Print Name)			
Review [redacted]		HP# 7442	Date: 4-7-03
Review [redacted]			

4-7-03

ML-9620 (2-98)

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Survey No. 03-TF-0082

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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	Comments

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 results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-9620 (4-98)

89 BUILDING CHARACTERIZATION ALPHA SURVEY QC RE-CHECK

RSDS# 03-TF-0082 RCT: DJH RCT: SKR

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	5214	5143	2		4/2/03	10:07	5	300	6	
SRC CHECK	5673	5214	5143	2		4/2/03	10:09	2086	60	13401	
SRC CHECK	5673	5214	5143	2		4/2/03	10:11	2174	60	13966	
SRC CHECK	5673	5214	5143	2		4/2/03	10:13	1957	60	12572	
SRC CHECK	5673	5214	5143	2		4/2/03	10:15	2124	60	13645	
SU-1 QC 02	5673	5214	5143	2	1	4/2/03	10:21	5	60	32	
SU-1 QC 04	5673	5214	5143	2	2	4/2/03	10:24	4	60	26	
SU-1 QC 15	5673	5214	5143	2	3	4/2/03	10:25	2	60	13	
SU-2 QC 20	5673	5214	5143	2	4	4/2/03	10:28	2	60	13	
SU-2 QC 01	5673	5214	5143	2	5	4/2/03	10:30	5	60	32	
SU-2 QC 05	5673	5214	5143	2	6	4/2/03	10:31	10	60	64	
SU-3 QC 04	5673	5214	5143	2	7	4/2/03	10:40	6	60	39	
SU-3 QC 09	5673	5214	5143	2	8	4/2/03	10:41	4	60	26	
SU-3 QC 12	5673	5214	5143	2	9	4/2/03	10:43	3	60	19	

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89-BLDG CHARACTERIZATION BETA SURVEY QC RE-CHECK

RSDS#03-TF-0082 RCT: DJH RCT: [illegible]

LOCATION	2360	RCT ID	PROBE	ITEM #	DATE	gross count	CT TIME	dpm/100cm2
SU-1 QC 02	5833	6178	5847	1	4/2/03	309	60	725
SU-1 QC 04	5833	6178	5847	2	4/2/03	287	60	615
SU-1 QC 15	5833	6178	5847	3	4/2/03	278	60	570
SU-2 QC 20	5833	6178	5847	4	4/2/03	280	60	580
SU-2 QC 01	5833	6178	5847	5	4/2/03	206	60	210
SU-2 QC 05	5833	6178	5847	6	4/2/03	208	60	220
SU-3 QC 04	5833	6178	5847	7	4/2/03	262	60	490
SU-3 QC 09	5833	6178	5847	8	4/2/03	207	60	215
SU-3 QC 12	5833	6178	5847	9	4/2/03	210	60	230
BETA BACKGROUND FOR 4-2-2003 WAS---------->								164

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89-BLDG CHARACTERIZATION QC RE-CHECK

RSDS#03-TF-0082 RCT: [illegible] RCT: [illegible]

						BETA			ALPHA		
LOCATION	2360	RCT ID	PROBE	ITEM #	DATE	gross count	CT TIME	dpm/100cm2	gross count	CT TIME	dpm/100cm2
SU-4 QC 8	5833	6178	5847	10	4/2/03	202	60	190	8	60	70
SU-4 QC 16	5833	6178	5847	11	4/2/03	263	60	495	10	60	90
SU-4 QC 17	5833	6178	5847	12	4/2/03	236	60	360	4	60	30
BETA BACKGROUND FOR 4-2-2003 WAS---------->								164			
ALPHA BACKGROUND FOR 4-2-2003 WAS---------->								1			

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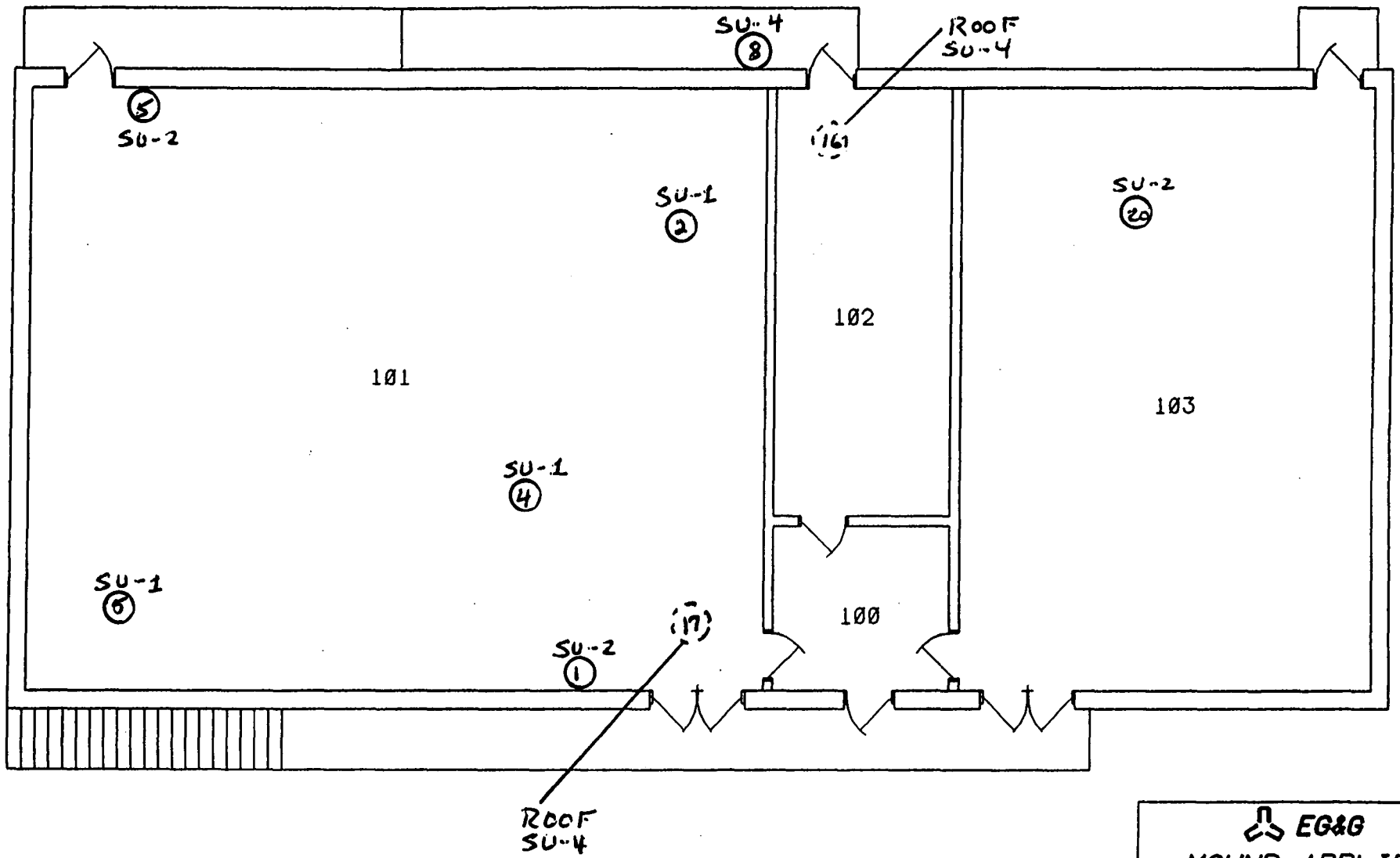


EG&G

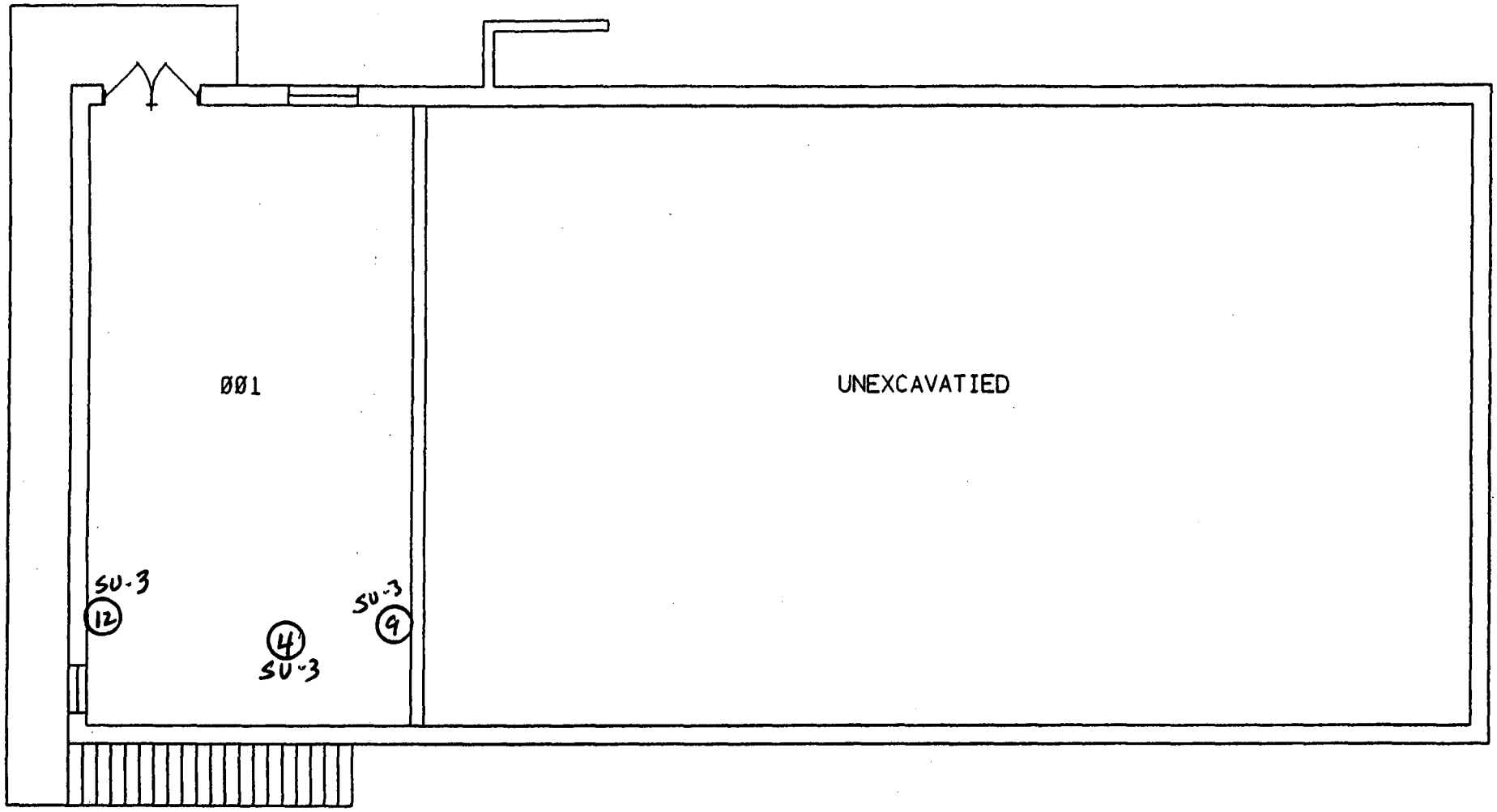
MOUND APPLIED TECHNOLOGIES

SMALL SCALE FLOOR PLANS

BLDG. 89

FIRST FLOOR

BLDG. CODE : 3089



EG&G

MOUND APPLIED TECHNOLOGIES

SMALL SCALE FLOOR PLANS

BLDG. 89

BASEMENT

BLDG. CODE : 3089

REV. DATE 02/15/89

CLASSIFICATION UCNI

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Appendix H

Radon Information

The USEPA recommended standard for a maximum radon level is 4.0 pCi/L.

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

Bldg	Bldg Description	Room	pCi/l	pCi/l	Manid	Gupid	Date	Date	Comments
21		ABOVE AIR SAMPLER	161.1	125.0	1678055	1666782	12/14/89	2/16/90	MET - OLD THORIUM STORA
21		ABOVE AIR SAMPLERS	116.7		1668588		12/14/89	2/16/90	MET - OLD THORIUM STORA
	SM	19 MID EAST WALL	4.0		1661547		12/12/89	2/19/90	HISTORY OF ELEVATED REA
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 SD 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	1.9		1681565		12/12/89	2/19/90	
87		143	1.5		1681563		12/13/89	2/19/90	
998	FIRE STATION	ROOM 002 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		1661518		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		12/16/89	2/19/90	
61		RM 221 MIDDLE OF NORTH WALL	.8		1681585		12/13/89	2/19/90	
67		101 N	.8		1678029		12/12/89	2/19/90	
G-13	LOG	G-514 WEST WALL	.8		1661544		12/12/89	2/16/90	
	T	CORRIDOR 26	.8		1678039		1/15/90	2/19/90	
	T	153	.8		1678067		1/15/90	2/19/90	
	T	78	.8		1678077		1/15/90	2/19/90	
	T	38	.8		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		12/16/89	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 9X2	.8		1672052		12/12/89	2/16/90	
	R BUILDING	60 NORTH WALL	.8		1678058		12/13/89	2/16/90	
	SM	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	1661635	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	.5	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		1671279		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		1/02/90	2/19/90	
93		HALLWAY 107 (MIDWAY)	.6		1681628		12/13/89	2/20/90	
98	FIRE STATION	ROOM 114 CORN	.6		1661507		12/12/89	2/19/90	
	COS	RM STAIRWELL AT BASEMENT LEVEL	.6		1672086		12/14/89	2/19/90	
	OSM	120 C	.6		1681573		12/12/89	2/16/90	
	SM	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	1658114	1666819	12/12/89	2/16/90	

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...ne	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		WALL 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	
	63M		RM 4	.4		1678070		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		170 MEETING ROOM CENTER WALL	.4		1678041		12/12/89	2/19/90	
	88		ROOM 116	.4		1671215		12/12/89	2/19/90	
	95	SN/PP	95- BLD-ROOM41	.4		1661531		12/12/89	2/20/90	
		BS BUILDING	CORRIDOR 2 - 6 FT. ABOVE FLOOR	.4		1678071		12/13/89	2/19/90	
		I	I HALLWAY	.4		1667184		12/12/89	2/19/90	
		M BUILDING	M 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

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Bldg	Bldg Description	Room	Avg Radon pCi/l	Duplicate Radon pCi/l	Monid	Dupid	Monitor Install Date	Monitor Retrieve Date	Comments
	R BUILDING	163 NEXT TO NORTH WALL	.5	.5	1660533	1660816	12/13/89	2/16/90	
101		ROOM 5 ON SOUTH WEST WALL IN OFFSET	.5		1671288		12/12/89	2/19/90	
	"B" 175	175 WEST WALL	.5		1678048		12/12/89	2/16/90	
		ELECTRICAL PANEL RM IN ELECTRONICS	.5		1678062		12/12/89	2/19/90	
46		100	.5		1654480		12/13/89	2/16/90	
40		1 EAST WALL OVER WATER DISPENSER	.5		1678076		12/12/89	2/20/90	
43		ON BULLETIN BOARD	.5		1678047		12/12/89	2/16/90	
44		102 MIDDLE OF EAST WALL	.5		1678058		12/12/89	2/16/90	
47		CELL 113	.5		1661582		12/13/89	2/19/90	
50		CENTRAL HALLWAY WEST OF DOOR TO RM7	.5		1661605		12/18/89	2/16/90	
79		101 NEAR BACK CORNER BY ROOF DRAIN	.5		1678079		12/15/89	2/19/90	
89		1ST FLOOR	.5		1661525		12/15/89	2/16/90	
91		2ND FLOOR OUTSIDE RM215	.5		1661593		12/15/89	2/16/90	
91		HALLWAY RIGHT OFF ROOM 8	.5		1661509		12/12/89	2/19/90	
92		BAY 2 NORTH WALL	.5		1654477		12/12/89	2/19/90	
94	A	215 WEST WALL	.5		1661572		12/14/89	2/16/90	
	A	1080 WEST WALL	.5		1661580		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		1661590		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		1661587		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	.5		1678054		12/12/89	2/19/90	
	H BLDG	ROOM 127	.5		1661571		12/12/89	2/16/90	
	MH	MH-6	.5		1671269		12/18/89	2/19/90	
	E 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		1672084		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		1661611		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	
	SN/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	
	MH	MH-24	.4		1667187		12/14/89	2/19/90	
	DS 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		1661583		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		1661570		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: Kramer, Donald
Date: 2/18/03 6:16PM
Subject: Building 89 Asbestos & Lead

Donald -

I have completed walk-through surveys of Building 89 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 89. Observed paint coatings were largely intact.

Although untested paint coatings must be assumed to contain lead, the observed condition of the paint indicates that there are currently no lead paint hazards within the building. No further action would be necessary to protect occupant or worker health unless any coatings were to be disturbed by close worker contact (sanding, grinding, scraping, torch cutting, etc.). If these types of activities are planned, the affected paint coatings should be tested to verify the absence of lead. Since the building is scheduled for demolition, these restrictions should be incorporated into any work plans for which disturbance of paint is a possibility.

In accordance with guidance from Mound Waste Management, paint coatings should not result in a hazardous waste issue during the course of normal demolition by heavy-duty means.

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 by Mr. Ahlquist (an Ohio Department of Health Certified Asbestos Hazard Evaluation Specialist) in accordance with EPA NESHAP requirements prior to demolition. One type of material (transite fume hood lining panels) was found to contain asbestos which must be removed prior to demolition. The roofing (4,000 square feet) is of a built-up asphalt variety which is assumed to contain asbestos - being classified as an EPA Nonfriable Category I type of material, its removal is not necessary prior to demolition by normal heavy-duty means. A copy of the survey report is attached.

Let me know if I can be of further assistance.

Chris Ahlquist
SMPP/TFV Safety & Health

CC: Darnell, Val; Koehmstedt, Lee

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MOUND

INTEROFFICE CORRESPONDENCE

Date: February 18, 2003

From: Christopher Ahlquist
SMPP/TFV Safety & Health

To: Lee Koehmstedt
SMPP/TFV Engineering

Re: Building 89: Asbestos-Containing Materials

During February of 2003, Mr. Christopher Ahlquist, an Industrial Hygienist with CH2MHill Mound, Inc. (CH2M), completed a survey of Building 89 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 and collected additional bulk samples of materials found within Building 89 as necessary in order to determine the asbestos content of said 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. One (1) distinct type of material was found to contain greater than one percent (>1%) asbestos content which defines a material as asbestos-containing by EPA and OSHA regulations. No asphalt roofing materials were sampled during the course of this or previous referenced surveys, and all such materials should be assumed to contain asbestos until analysis indicates otherwise.

Sample Method

During CH2M'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

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of asbestos fibers: chrysotile, amosite, crocidolite, anthophyllite, tremolite, and actinolite asbestos. The method specifies that the asbestos content in a bulk sample shall be 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 is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). 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

One (1) type of material was identified through analysis to be asbestos-containing (>1%) per EPA and OSHA definition. This material was the grey transite panel lining contained within the two orange laboratory fume hoods which were being stored in Room 101 (large, open room) of Building 89. There was approximately 130 square feet of this material, and it is considered to be an EPA Nonfriable Category II material. Since the building is scheduled for demolition, this material will have to be removed prior to demolition. Removal activities must be accomplished by properly trained individuals employing appropriate work methods and engineering controls.

Please call with any questions or concerns.

Respectfully,

Christopher Ahlquist
Industrial Hygienist

Appendix J

Lead Information

From: Christopher Ahlquist
To: Kramer, Donald
Date: 2/18/03 6:16PM
Subject: Building 89 Asbestos & Lead

Donald -

I have completed walk-through surveys of Building 89 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 89. Observed paint coatings were largely intact.

Although untested paint coatings must be assumed to contain lead, the observed condition of the paint indicates that there are currently no lead paint hazards within the building. No further action would be necessary to protect occupant or worker health unless any coatings were to be disturbed by close worker contact (sanding, grinding, scraping, torch cutting, etc.). If these types of activities are planned, the affected paint coatings should be tested to verify the absence of lead. Since the building is scheduled for demolition, these restrictions should be incorporated into any work plans for which disturbance of paint is a possibility.

In accordance with guidance from Mound Waste Management, paint coatings should not result in a hazardous waste issue during the course of normal demolition by heavy-duty means.

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 by Mr. Ahlquist (an Ohio Department of Health Certified Asbestos Hazard Evaluation Specialist) in accordance with EPA NESHAP requirements prior to demolition. One type of material (transite fume hood lining panels) was found to contain asbestos which must be removed prior to demolition. The roofing (4,000 square feet) is of a built-up asphalt variety which is assumed to contain asbestos - being classified as an EPA Nonfriable Category I type of material, its removal is not necessary prior to demolition by normal heavy-duty means. A copy of the survey report is attached.

Let me know if I can be of further assistance.

Chris Ahlquist
SMPP/TFV Safety & Health

CC: Darnell, Val; Koehmstedt, Lee

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Appendix K

Chemical Information

Chemical Information – Building 89

The most recent site chemical inventory would not have listed chemicals in Building 89 because the building was transitioned to the MMCIC. A chemical inventory report and a building walk-through performed in the mid-1990s indicate that chemicals were not stored in Building 89. Historical documents indicate that solvents were stored outside the building in an NPFA-approved flammable solvent cabinet; however, no specific chemicals are named in those reports. Processes which involved the routine use of chemicals were not performed in Building 89 since the building was used by the site contractor primarily as a detonator storage facility and then, after transition, as a storage building for equipment and furnishings accumulated by the MMCIC.

A walk-through of the building performed on March 10, 2003, indicates that the solvent cabinet and the drum labeled "decon water" (Appendix F) were removed from outside the building and no chemicals were in the building at the time of the walk-through.

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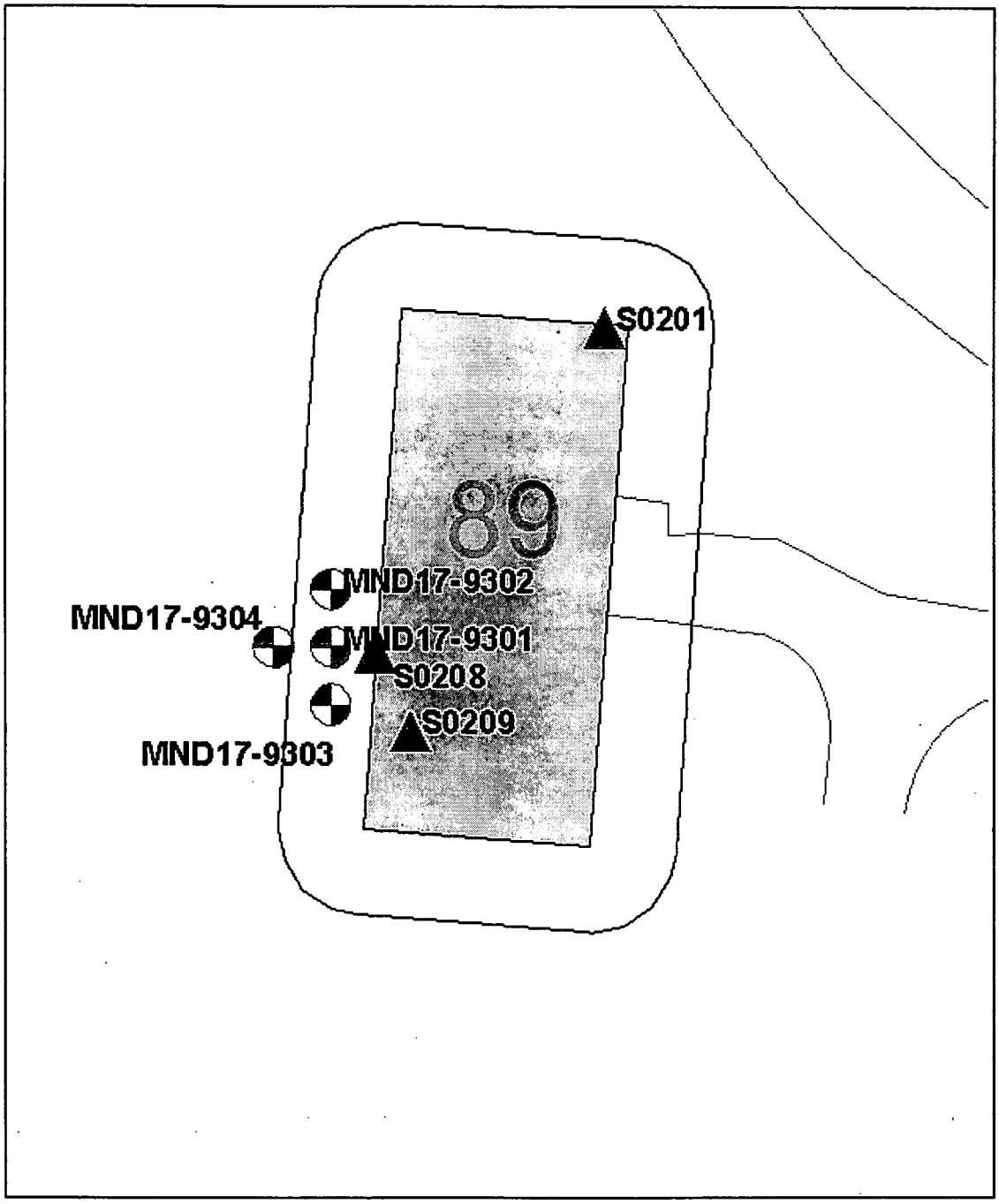
Appendix L

Soil Sampling, Vicinity

Historic Sample Locations within 15 feet of Building 89



25 0 25 50 75 100 Feet

Sample Detect

N
W E
S

MOUND

Environmental Restoration Geographic Information System

e:\cad_proj\bldg_89\cert\bldg89_15ft_012303.apr

01/23/03

L 1 of 18

Building 89 Detects

Location _name	Sample_id	Collection_ date	Value_name	Measured _value	Value _units	Detection _limit	Chem_c lass	Start_d epth	End _depth	Lab	Data	Project_code	Media	Comments
MND17-9303	9303-5002	19950829	Antimony	10.2700	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9304	9304-5002	19950829	Antimony	7.4003	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9302	9302-5002	19950829	Antimony	-2.2956	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9301	9301-5002	19950829	Antimony	-17.7750	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9301	9301-5002	19950829	Arsenic	66.6260	MG/KG	100.00	INORG	0.5	2.0			MND17	Soil	26
MND17-9302	9302-5002	19950829	Arsenic	51.2250	MG/KG	100.00	INORG	0.5	2.0			MND17	Soil	2
MND17-9303	9303-5002	19950829	Arsenic	40.5800	MG/KG	100.00	INORG	0.5	2.0			MND17	Soil	2
MND17-9304	9304-5002	19950829	Arsenic	38.0550	MG/KG	100.00	INORG	0.5	2.0			MND17	Soil	2
MND17-9302	9302-5002	19950829	Barium	231.8800	MG/KG	2000.00	INORG	0.5	2.0			MND17	Soil	2
MND17-9303	9303-5002	19950829	Barium	200.9600	MG/KG	2000.00	INORG	0.5	2.0			MND17	Soil	2
MND17-9304	9304-5002	19950829	Barium	147.3900	MG/KG	2000.00	INORG	0.5	2.0			MND17	Soil	
MND17-9301	9301-5002	19950829	Barium	132.3100	MG/KG	2000.00	INORG	0.5	2.0			MND17	Soil	
MND17-9301	9301-5002	19950829	Cadmium	14.7550	MG/KG	20.00	INORG	0.5	2.0			MND17	Soil	2
MND17-9304	9304-5002	19950829	Cadmium	0.1861	MG/KG	20.00	INORG	0.5	2.0			MND17	Soil	
MND17-9302	9302-5002	19950829	Cadmium	-40.6130	MG/KG	20.00	INORG	0.5	2.0			MND17	Soil	
MND17-9303	9303-5002	19950829	Cadmium	-43.3960	MG/KG	20.00	INORG	0.5	2.0			MND17	Soil	
MND17-9301	9301-5002	19950829	Calcium	137515.0000	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9304	9304-5002	19950829	Calcium	111444.0000	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9302	9302-5002	19950829	Calcium	94973.0000	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9303	9303-5002	19950829	Calcium	94462.0000	MG/KG		INORG	0.5	2.0			MND17	Soil	
S0209	9849	19850601	Cesium-137	0.8000	PCI/G	0.50	RAD	0.0	0.0			RSS	Soil	123
MND17-9302	9302-5002	19950829	Cesium-137	0.0400	PCI/G		RAD	0.5	2.0			MND17	Soil	
MND17-9301	9301-5002	19950829	Chromium-HI	-403.9500	MG/KG	100.00	INORG	0.5	2.0			MND17	Soil	
MND17-9303	9303-5002	19950829	Chromium-HI	-550.3200	MG/KG	100.00	INORG	0.5	2.0			MND17	Soil	
MND17-9302	9302-5002	19950829	Chromium-HI	-556.6000	MG/KG	100.00	INORG	0.5	2.0			MND17	Soil	
MND17-9304	9304-5002	19950829	Chromium-HI	-564.7500	MG/KG	100.00	INORG	0.5	2.0			MND17	Soil	
MND17-9301	9301-5002	19950829	Chromium-LO	229.1100	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9302	9302-5002	19950829	Chromium-LO	95.0860	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9303	9303-5002	19950829	Chromium-LO	-28.9280	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9304	9304-5002	19950829	Chromium-LO	-31.1290	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9301	9301-5002	19950829	Cobalt	221.9400	MG/KG		INORG	0.5	2.0			MND17	Soil	2
MND17-9303	9303-5002	19950829	Cobalt	137.4500	MG/KG		INORG	0.5	2.0			MND17	Soil	2
MND17-9302	9302-5002	19950829	Cobalt	125.2100	MG/KG		INORG	0.5	2.0			MND17	Soil	2
MND17-9304	9304-5002	19950829	Cobalt	-44.9540	MG/KG		INORG	0.5	2.0			MND17	Soil	
S0209	9849	19850601	Cobalt-60	0.5000	PCI/G	0.50	RAD	0.0	0.0			RSS	Soil	13
MND17-9302	9302-5002	19950829	Copper	27.1720	MG/KG		INORG	0.5	2.0			MND17	Soil	2
MND17-9304	9304-5002	19950829	Copper	-2.8268	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9303	9303-5002	19950829	Copper	-34.6110	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9301	9301-5002	19950829	Copper	-37.5870	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9302	9302-5002	19950829	Iron	23034.0000	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9303	9303-5002	19950829	Iron	20102.0000	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9301	9301-5002	19950829	Iron	13060.0000	MG/KG		INORG	0.5	2.0			MND17	Soil	

Location _name	Sample_id	Collection_ date	Value_name	Measured _value	Value _units	Detection _limit	Chem_c lass	Start_d epth	End _depth	Lab	Data	Project_code	Media	Comments
MND17-9304	9304-5002	19950829	Iron	12739.0000	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9303	9303-5002	19950829	Lead	-4.9898	MG/KG	100.00	INORG	0.5	2.0			MND17	Soil	
MND17-9301	9301-5002	19950829	Lead	-10.2660	MG/KG	100.00	INORG	0.5	2.0			MND17	Soil	
MND17-9302	9302-5002	19950829	Lead	-10.2850	MG/KG	100.00	INORG	0.5	2.0			MND17	Soil	
MND17-9304	9304-5002	19950829	Lead	-10.4520	MG/KG	100.00	INORG	0.5	2.0			MND17	Soil	
MND17-9301	9301-5002	19950829	Manganese	361.9200	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9303	9303-5002	19950829	Manganese	349.3500	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9302	9302-5002	19950829	Manganese	190.4500	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9304	9304-5002	19950829	Manganese	-172.2600	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9304	9304-5002	19950829	Mercury	-0.8828	MG/KG	4.00	INORG	0.5	2.0			MND17	Soil	
MND17-9301	9301-5002	19950829	Mercury	-34.3570	MG/KG	4.00	INORG	0.5	2.0			MND17	Soil	
MND17-9302	9302-5002	19950829	Mercury	-59.5110	MG/KG	4.00	INORG	0.5	2.0			MND17	Soil	
MND17-9303	9303-5002	19950829	Mercury	-79.1350	MG/KG	4.00	INORG	0.5	2.0			MND17	Soil	
MND17-9303	9303-5002	19950829	Molybdenum	6.6289	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9301	9301-5002	19950829	Molybdenum	4.8388	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9302	9302-5002	19950829	Molybdenum	3.0685	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9304	9304-5002	19950829	Molybdenum	2.1198	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9303	9303-5002	19950829	Nickel	89.6530	MG/KG		INORG	0.5	2.0			MND17	Soil	2
MND17-9302	9302-5002	19950829	Nickel	23.1860	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9304	9304-5002	19950829	Nickel	-19.4110	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9301	9301-5002	19950829	Nickel	-22.2850	MG/KG		INORG	0.5	2.0			MND17	Soil	
S0208	3085	19831001	Plutonium-238	61.0000	PCI/G	0.01	RAD	0.0	0.0			RSS	Soil	123
S0201	6219	19840801	Plutonium-238	2.2100	PCI/G	0.01	RAD	0.0	0.0			RSS	Soil	2
MND17-9302	9302-5002	19950829	Potassium	25815.0000	MG/KG		INORG	0.5	2.0			MND17	Soil	2
MND17-9303	9303-5002	19950829	Potassium	22922.0000	MG/KG		INORG	0.5	2.0			MND17	Soil	2
MND17-9304	9304-5002	19950829	Potassium	14801.0000	MG/KG		INORG	0.5	2.0			MND17	Soil	2
MND17-9301	9301-5002	19950829	Potassium	12904.0000	MG/KG		INORG	0.5	2.0			MND17	Soil	2
MND17-9302	9302-5002	19950829	Radium-226	1.1900	PCI/G		RAD	0.5	2.0			MND17	Soil	1
MND17-9303	9303-5002	19950829	Radium-226	0.9600	PCI/G		RAD	0.5	2.0			MND17	Soil	1
MND17-9301	9301-5002	19950829	Radium-226	0.9000	PCI/G		RAD	0.5	2.0			MND17	Soil	1
S0209	9849	19850601	Radium-226	0.8000	PCI/G		RAD	0.0	0.0			RSS	Soil	1
MND17-9304	9304-5002	19950829	Radium-226	0.6000	PCI/G		RAD	0.5	2.0			MND17	Soil	1
MND17-9302	9302-5002	19950829	Rubidium	89.7670	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9303	9303-5002	19950829	Rubidium	66.7880	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9304	9304-5002	19950829	Rubidium	43.5870	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9301	9301-5002	19950829	Rubidium	36.0080	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9302	9302-5002	19950829	Selenium	-3.9812	MG/KG	20.00	INORG	0.5	2.0			MND17	Soil	
MND17-9304	9304-5002	19950829	Selenium	-7.1703	MG/KG	20.00	INORG	0.5	2.0			MND17	Soil	
MND17-9303	9303-5002	19950829	Selenium	-24.3400	MG/KG	20.00	INORG	0.5	2.0			MND17	Soil	
MND17-9301	9301-5002	19950829	Selenium	-30.5990	MG/KG	20.00	INORG	0.5	2.0			MND17	Soil	
MND17-9301	9301-5002	19950829	Silver	58.5042	MG/KG	100.00	INORG	0.5	2.0			MND17	Soil	2
MND17-9304	9304-5002	19950829	Silver	55.9894	MG/KG	100.00	INORG	0.5	2.0			MND17	Soil	2
MND17-9303	9303-5002	19950829	Silver	46.5469	MG/KG	100.00	INORG	0.5	2.0			MND17	Soil	2

Location _name	Sample_id	Collection_ date	Value_name	Measured _value	Value _units	Detection _limit	Chem_c lass	Start_d epth	End _depth	Lab	Data	Project_code	Media	Comments
MND17-9302	9302-5002	19950829	Silver	41.7790	MG/KG	100.00	INORG	0.5	2.0			MND17	Soil	2
MND17-9302	9302-5002	19950829	Strontium	187.9300	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9301	9301-5002	19950829	Strontium	175.7600	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9304	9304-5002	19950829	Strontium	173.8700	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9303	9303-5002	19950829	Strontium	152.6700	MG/KG		INORG	0.5	2.0			MND17	Soil	
S0209	9849	19850601	Thorium-228	0.8000	PCI/G		RAD	0.0	0.0			RSS	Soil	1
MND17-9302	9302-5002	19950829	Thorium-232	0.5400	PCI/G		RAD	0.5	2.0			MND17	Soil	1
MND17-9303	9303-5002	19950829	Thorium-232	0.5200	PCI/G		RAD	0.5	2.0			MND17	Soil	1
MND17-9304	9304-5002	19950829	Thorium-232	0.3000	PCI/G		RAD	0.5	2.0			MND17	Soil	1
MND17-9301	9301-5002	19950829	Thorium-232	0.2000	PCI/G		RAD	0.5	2.0			MND17	Soil	1
MND17-9303	9303-5002	19950829	Tin	-20.1670	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9304	9304-5002	19950829	Tin	-22.6340	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9302	9302-5002	19950829	Tin	-27.2440	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9301	9301-5002	19950829	Tin	-38.4250	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9302	9302-5002	19950829	Titanium	2639.7000	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9303	9303-5002	19950829	Titanium	2286.3000	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9301	9301-5002	19950829	Titanium	1401.8000	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9304	9304-5002	19950829	Titanium	1180.1000	MG/KG		INORG	0.5	2.0			MND17	Soil	
S0208	3085	19831001	Tritium	0.7200	PCI/ML		RAD	0.0	0.0			RSS	Soil	
MND17-9304	9304-5002	19950829	Uranium-238	0.4000	PCI/G		RAD	0.5	2.0			MND17	Soil	
MND17-9303	9303-5002	19950829	Zinc	311.6700	MG/KG		INORG	0.5	2.0			MND17	Soil	2
MND17-9304	9304-5002	19950829	Zinc	29.8110	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9301	9301-5002	19950829	Zinc	18.0100	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9302	9302-5002	19950829	Zinc	9.8414	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9302	9302-5002	19950829	Zirconium	176.4200	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9303	9303-5002	19950829	Zirconium	120.3400	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9304	9304-5002	19950829	Zirconium	68.6690	MG/KG		INORG	0.5	2.0			MND17	Soil	
MND17-9301	9301-5002	19950829	Zirconium	68.0690	MG/KG		INORG	0.5	2.0			MND17	Soil	

*Comments

1 Exceeds the 10-6 Risk-Based Guide Value
2 Exceeds the OU9 Soil Background Value
3 Exceeds screening level
5 Exceeds MCL
6 Exceeds the Guide Value based on the hazard index

Common nutrients (such as sodium, potassium, and magnesium) and common anions (such as nitrate, nitrite, sulfate, sulfide, phosphate, flouride iodide, nitrogen, and bromide) are not considered in site risk assessments and therefore not evaluated herein.

There are no risk-based or hazard comparison values for rubidium, strontium, titanium, and zirconium.

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Building 89 Non-Detects

Location name	Sample_id	Collection date	Value_name	Measured value	Value units	Detection limit	Chem class	Start_ depth	End depth	Lab	Data	Project_code	Media
MND17-9303	9303-5002	19950829	Actinium	0.1400	PCI/G		RAD	0.5	2.0	U		MND17	Soil
MND17-9302	9302-5002	19950829	Actinium	0.1400	PCI/G		RAD	0.5	2.0	U		MND17	Soil
MND17-9304	9304-5002	19950829	Actinium	0.1000	PCI/G		RAD	0.5	2.0	U		MND17	Soil
MND17-9301	9301-5002	19950829	Actinium	0.0800	PCI/G		RAD	0.5	2.0	U		MND17	Soil
S0209	9849	19850601	Americium-241	0.5000	PCI/G	0.5000	RAD	0.0	0.0	U		RSS	Soil
MND17-9303	9303-5002	19950829	Americium-241	0.0400	PCI/G		RAD	0.5	2.0	U		MND17	Soil
MND17-9302	9302-5002	19950829	Americium-241	0.0400	PCI/G		RAD	0.5	2.0	U		MND17	Soil
MND17-9304	9304-5002	19950829	Americium-241	0.0300	PCI/G		RAD	0.5	2.0	U		MND17	Soil
MND17-9301	9301-5002	19950829	Americium-241	0.0300	PCI/G		RAD	0.5	2.0	U		MND17	Soil
MND17-9304	9304-5002	19950829	Cesium-137	0.0200	PCI/G		RAD	0.5	2.0	U		MND17	Soil
MND17-9303	9303-5002	19950829	Cesium-137	0.0200	PCI/G		RAD	0.5	2.0	U		MND17	Soil
MND17-9301	9301-5002	19950829	Cesium-137	0.0100	PCI/G		RAD	0.5	2.0	U		MND17	Soil
MND17-9304	9304-5002	19950829	Cobalt-60	0.0200	PCI/G		RAD	0.5	2.0	U		MND17	Soil
MND17-9302	9302-5002	19950829	Cobalt-60	0.0200	PCI/G		RAD	0.5	2.0	U		MND17	Soil
MND17-9303	9303-5002	19950829	Cobalt-60	0.0100	PCI/G		RAD	0.5	2.0	U		MND17	Soil
MND17-9301	9301-5002	19950829	Cobalt-60	0.0100	PCI/G		RAD	0.5	2.0	U		MND17	Soil
MND17-9303	9303-5002	19950829	Plutonium-238	34.7400	PCI/G		RAD	0.5	2.0	U		MND17	Soil
MND17-9304	9304-5002	19950829	Plutonium-238	33.6000	PCI/G		RAD	0.5	2.0	U		MND17	Soil
MND17-9302	9302-5002	19950829	Plutonium-238	30.8300	PCI/G		RAD	0.5	2.0	U		MND17	Soil
MND17-9301	9301-5002	19950829	Plutonium-238	28.0000	PCI/G		RAD	0.5	2.0	U		MND17	Soil
MND17-9301	9301-5002	19950829	Protactinium-231	0.7000	PCI/G		RAD	0.5	2.0	U		MND17	Soil
MND17-9303	9303-5002	19950829	Protactinium-231	0.6100	PCI/G		RAD	0.5	2.0	U		MND17	Soil
MND17-9302	9302-5002	19950829	Protactinium-231	0.5700	PCI/G		RAD	0.5	2.0	U		MND17	Soil
MND17-9304	9304-5002	19950829	Protactinium-231	0.4000	PCI/G		RAD	0.5	2.0	U		MND17	Soil
MND17-9303	9303-5002	19950829	Thorium-230	3.5000	PCI/G		RAD	0.5	2.0	U		MND17	Soil
MND17-9302	9302-5002	19950829	Thorium-230	3.3900	PCI/G		RAD	0.5	2.0	U		MND17	Soil
MND17-9304	9304-5002	19950829	Thorium-230	3.0000	PCI/G		RAD	0.5	2.0	U		MND17	Soil
MND17-9301	9301-5002	19950829	Thorium-230	2.6000	PCI/G		RAD	0.5	2.0	U		MND17	Soil
S0201	6219	19840801	Thorium-232	2.0000	PCI/G	2.0000	RAD	0.0	0.0	U		RSS	Soil
S0208	3085	19831001	Thorium-232	2.0000	PCI/G	2.0000	RAD	0.0	0.0	U		RSS	Soil
MND17-9302	9302-5002	19950829	Uranium-238	2.7100	PCI/G		RAD	0.5	2.0	U		MND17	Soil
MND17-9303	9303-5002	19950829	Uranium-238	2.6900	PCI/G		RAD	0.5	2.0	U		MND17	Soil
S0209	9849	19850601	Uranium-238	2.0000	PCI/G		RAD	0.0	0.0	U		RSS	Soil
MND17-9301	9301-5002	19950829	Uranium-238	2.0000	PCI/G		RAD	0.5	2.0	U		MND17	Soil

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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.

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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

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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

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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

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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

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Appendix M

Occurrence Reports

A search of the occurrence reporting system revealed three reports, all of which were minor and without environmental impact:

- pink dye tracing liquid erroneously mistaken for ethylene glycol spill,
- precautionary evacuation (false fire alarm), and
- smoke detector activation due to dust from diamond saw cutting of concrete.

OH-MB-BWO-BWO05-2001-0001 Final Report

Occurrence Report

Utilities Facilities

(Name of Facility)

Balance-of-Plant

(Facility Function)

Mound Plant Babcock and Wilcox of Ohio, Inc.

(Laboratory, Site, or Organization)

Name: DIXON, DONALD V
Title: BUILDING MANAGER **Telephone No.:** (937) 865-4371

(Facility Manager/Designee)

Name: DIXON, DONALD V
Title: BUILDING MANAGER **Telephone No.:** (937) 865-4371

(Originator/Transmitter)

Name: Donald Dixon **Date:** 04/12/2001

(Authorized Classifier (AC))

1. Occurrence Report Number: OH-MB-BWO-BWO05-2001-0001

Glycol Spill

2. Report Type and Date: Final

	Date	Time
Notification:	03/07/2001	09:48 (MTZ)
Initial Update:	04/12/2001	15:26 (MTZ)
Latest Update:	04/12/2001	15:26 (MTZ)
Final:	05/22/2001	05:44 (MTZ)

3. Occurrence Category: Off-Normal

4. Number of Occurrences: 1 **Original OR:**

5. Division or Project: BWXTO

6. Secretarial Office: EM - Environmental Management

7. System, Bldg., or Equipment: Storm Water Outfall

8. UCNI?: No

9. Plant Area: Balance of Plant

10. Date and Time Discovered: 03/06/2001 15:30 (ETZ)

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11. Date and Time Categorized: 03/07/2001 07:00 (ETZ)

12. DOE Notification:

13. Other Notifications:

Date	Time	Person Notified	Organization
03/06/2001	16:50 (ETZ)	Chris White	DOE-MEMP

14. Subject or Title of Occurrence:

Glycol Spill

15. Nature of Occurrence:

02) Environmental
E. Environmental Agreement/Compliance Activities

16. Description of Occurrence:

On Tuesday, March 6, 2001 between 3:30 and 4:00 p.m. there was a spill of ethylene glycol. A pink liquid was noticed going down the concrete spillway behind Bd. 89. As of this morning the source has not been determined.

17. Operating Conditions of Facility at Time of Occurrence:

Normal

18. Activity Category:

03 - Normal Operations

19. Immediate Actions Taken and Results:

The Mound Fire Dept. Was notified and responded to the scene
Ron Paulick was contacted at approximately 4:15pm.
The sluice gates and diverter valve were closed.
Environmental Monitoring was called to collect samples at Outfall 602.
Notifications were made to DOE, the ESH & Q Director and the Site & Grounds Facility Manager.
The OEPA hot line was called to report the event

20. Direct Cause:

3) Personnel Error
C. Communication Problem

21. Contributing Cause(s):

22. Root Cause:

3) Personnel Error
C. Communication Problem

23. Description of Cause:

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After discussions with Powerhouse Personnel, it seems a well intentioned operator, used some dye tablets to locate the source of water infiltration into a drainage trench under Boiler #2, late Tuesday afternoon. This could account for pink coloring in the effluent at 602, but not glycol.

24. Evaluation (by Facility Manager/Designee):

Because this incident was reported to the Ohio EPA via their Hot Line, this act warrants an occurrence report. There was no impact to the environment.

25. Is Further Evaluation Required?: No

26. Corrective Actions

(* = Date added/revised since final report was approved.)

1. Maintenance personnel to be reminded to inform their supervision prior to the use of any dye substance, so supervision is to inform the environmental group.

Target Completion Date: 03/10/2001	**Completion Date:** 03/10/2001

27. Impact on Environment, Safety and Health:

None

28. Programmatic Impact:

None

29. Impact on Codes and Standards:

None

30. Lessons Learned:

The environmental organization should be notified of any use of dye tracing so the regulators can be notified in advance and eliminate the need to notify then via a hotline.

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: DIXON, DONALD V, Facility Manager/Designee
Date: 04/12/2001
Telephone No.: (937) 865-4371

Approved by: WHITE, CHRISTOPHER A, Facility Representative/Designee
Date: 05/22/2001
Telephone No.: (937) 865-4396

Approved by: Approval delegated to FR
Date: 05/22/2001
Telephone No.:

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ALO-DA-EGGM-EGGMAT03-1992-0002 Final Report

Occurrence Report

Main Hill Facilities

(Name of Facility)

Explosive

(Facility Function)

Mound Plant EG&G Mound Applied Technologies

(Laboratory, Site, or Organization)

Name: Fischbein, Robert A.
Title: Director, Operations **Telephone No.:** (513) 865-3727

(Facility Manager/Designee)

Name: ROBERT A. FISCHBEIN
Title: DIRECTOR, OPERATIONS **Telephone No.:** (513) 865-3727

(Originator/Transmitter)

Name: **Date:**

(Authorized Classifier (AC))

1. Occurrence Report Number: ALO-DA-EGGM-EGGMAT03-1992-0002

BUILDING 89 EVACUATION; GROUP 1 FACILITY CONDITION I OFF-NORMAL SUB PARAGRAPH (F)

2. Report Type and Date: Final

	Date	Time
Notification:	07/09/1992	11:24 (MTZ)
Initial Update:	07/14/1992	08:46 (MTZ)
Latest Update:	07/14/1992	08:46 (MTZ)
Final:	08/03/1992	06:57 (MTZ)

3. Occurrence Category: Off-Normal

4. Number of Occurrences: 1 **Original OR:**

5. Division or Project: EG&G MOUND APPLIED TECHNOLOGIES

6. Secretarial Office: DP - Defense Programs

7. System, Bldg., or Equipment: BUILDING 89

8. UCNI?: No

9. Plant Area: LOWER PLANT AREA

10. Date and Time Discovered: 07/08/1992 11:09 (ETZ)

M 5 of 12

11. Date and Time Categorized: 07/08/1992 13:05 (ETZ)

12. DOE Notification:

Date	Time	Person Notified	Organization
07/08/1992	13:10 (ETZ)	ART KLEINRATH	DOE/DAO

13. Other Notifications:

14. Subject or Title of Occurrence:

BUILDING 89 EVACUATION; GROUP 1 FACILITY CONDITION I OFF-NORMAL SUB PARAGRAPH (F)

15. Nature of Occurrence:

01) Facility Condition
H. Operations

16. Description of Occurrence:

"This occurrence report was originated and approved by a Derivative Classifier (Robert Fischbein, 07/09/92 @ 10:15) and contains no classified nor UNCI information."

On 7/08/92 at 1109 hours, the fire department monitored a smoke detector alarm signal from Building 89. The alarm signal was monitored at the emergency communications center.

17. Operating Conditions of Facility at Time of Occurrence:

NORMAL FIRST SHIFT OPERATING CONDITIONS. AT THE TIME OF THE OCCURENCE A HOT, HIGH HUMIDITY CONDITION EXISTED IN THE AREA.

18. Activity Category:

03 - Normal Operations

19. Immediate Actions Taken and Results:

The fire department responded to the alarm signal and ordered the two occupants of the building to evacuate. No abnormal condition was found in building 89.

20. Direct Cause:

1) Equipment/Material Problem

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E. Electrical or Instrument Noise

21. Contributing Cause(s):

4) Design Problem
B. Inadequate or Defective Design

22. Root Cause:

7) External Phenomena
A. Weather or Ambient Condition

23. Description of Cause:

The combination of high humidity and temperature in the locations of the smoke detector, the interface panels and the inter connect transmission lines to the alarm computer are felt to be the probable cause for the transient electrical signals to the Emergency Communications Center.

24. Evaluation (by Facility Manager/Designee):

Given the weather conditions at the time of the incident i.e., lightning alerts, high temperature and humidity that occurred in and around the time of this incident, the conclusion reached, with regard to probable cause, was that the false alarm was weather related.

25. Is Further Evaluation Required?: No

26. Corrective Actions
(* = Date added/revised since final report was approved.)

1.

Smoke detector in building 89 was replaced.	
Target Completion Date: 07/08/1992	**Completion Date:** 07/08/1992

27. Impact on Environment, Safety and Health:

None

28. Programmatic Impact:

None

29. Impact on Codes and Standards:

None

30. Lessons Learned:

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Transients in electrical power can cause false alarms. Some frequency of occurrence is to be expected given the state of the art of current designs.

31. Similar Occurrence Report Numbers:

1. ALO-DA-EGGMAT03-1992-0003
2. ALO-DA-EGGMAT03-1991-1001

32. User-defined Field #1:

33. User-defined Field #2:

34. DOE Facility Representative Input:

35. DOE Program Manager Input:

36. Approvals:

Approved by: Fischbein, Robert A., Facility Manager/Designee
Date: 07/14/1992
Telephone No.: (513) 865-3727

Approved by: PORCO, DAVID J., Facility Representative/Designee
Date: 07/24/1992
Telephone No.:

Approved by: HAGAN, RALPH A., Program Manager/Designee
Date: 08/03/1992
Telephone No.:

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ALO-DA-EGGM-EGGMAT03-1994-0010 Final Report

Occurrence Report

Main Hill Facilities

(Name of Facility)

Explosive

(Facility Function)

Mound Plant EG&G Mound Applied Technologies

(Laboratory, Site, or Organization)

Name: BOSTON, JEFFREY L
Title: BLDG MGR EXPLOSIVE FACILITIES **Telephone No.:** (513) 865-3262

(Facility Manager/Designee)

Name: J. L. Boston
Title: Bldg. Mgr. Explosive Facilities **Telephone No.:** (513) 865-3262

(Originator/Transmitter)

Name: D. A. Homan **Date:** 06/29/1994

(Authorized Classifier (AC))

1. Occurrence Report Number: ALO-DA-EGGM-EGGMAT03-1994-0010

Activation of Safety System - Smoke Detector

2. Report Type and Date: Final

	Date	Time
Notification:	06/22/1994	14:56 (MTZ)
Initial Update:	06/30/1994	13:31 (MTZ)
Latest Update:	06/30/1994	13:31 (MTZ)
Final:	07/08/1994	05:43 (MTZ)

3. Occurrence Category: Off-Normal

4. Number of Occurrences: 1 **Original OR:**

5. Division or Project: EG&G Mound Applied Technologies

6. Secretarial Office: DP - Defense Programs

7. System, Bldg., or Equipment: Building 89

8. UCNI?: No

9. Plant Area: Main Hill Area

10. Date and Time Discovered: 06/21/1994 10:30 (ETZ)

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11. Date and Time Categorized: 06/21/1994 14:00 (ETZ)

12. DOE Notification:

Date	Time	Person Notified	Organization
06/22/1994	14:00 (ETZ)	Fred B. Holbrook	DOE/DAO

13. Other Notifications:

14. Subject or Title of Occurrence:

Activation of Safety System - Smoke Detector

15. Nature of Occurrence:

01) Facility Condition
H. Operations

16. Description of Occurrence:

On Jun 21, 1994 at approximately 1030 hours (ETZ), a smoke detector in Building 89, Surveillance Explosives Storage Facility, was activated. The Mound Fire Department responded, found no smoke present and reset the smoke detector.

This Occurrence Report was reviewed by an Authorized Derivative Classifier (D. A. Homan, Manager) on 6/29/94 at 0845 hours (ETZ) and contains no Classified or UCNI Information.

17. Operating Conditions of Facility at Time of Occurrence:

Construction operations existed during occurrence

18. Activity Category:

01 - Construction

19. Immediate Actions Taken and Results:

The maintenance crew and Mound Fire Department determined that the smoke detector was activated by airborne dust associated with diamond saw cutting of concrete during construction for the installation of the 10,000 lb. forge hammer. After the incident, the smoke detectors were taken out of service to prevent activation during the remaining concrete cutting operations.

20. Direct Cause:

1) Equipment/Material Problem
F. Contaminant

21. Contributing Cause(s):

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22. Root Cause:

3) Personnel Error
A. Inattention to Detail

23. Description of Cause:

The Direct Cause of the activation of the Building 89 smoke detector safety system was cutting saw gasoline engine exhaust contamination of the smoke detector sensor. This occurred during maintenance operations involving cutting of the concrete. The Root Cause of the occurrence was personnel error in failure to notify the Fire Department of the Maintenance Operation in order to temporarily put the smoke detection system off line.

24. Evaluation (by Facility Manager/Designee):

operation involving cutting of the concrete floor to install the 10,000 pound force hammer was performed utilizing a gasoline-powered diamond cutting saw. The exhaust gases from the engine contaminated the smoke detector sensor resulting in activation of the alarm system.

25. Is Further Evaluation Required?: No

26. Corrective Actions
(* = Date added/revised since final report was approved.)

1. Building Manager to instruct area technicians to ensure maintenance operations that have the potential to activate the smoke detection system are not performed until the Fire Department is notified.

Target Completion Date: 06/22/1994	**Completion Date:** 06/22/1994

2. Facility Manager to instruct Area Engineer and Maintenance Foreman as to the importance of attention to detail with regards to their responsibilities during maintenance operations that could affect Fire Protection and other safety systems.

Target Completion Date: 06/28/1994	**Completion Date:** 06/28/1994

27. Impact on Environment, Safety and Health:

None

28. Programmatic Impact:

None

29. Impact on Codes and Standards:

None

30. Lessons Learned:

Inattention to detail in thoroughly planning of maintenance

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operations can have many negative impacts to personnel, safety, facilities and the environment. Management should stress as often as possible the importance of proper and thorough planning in this area.

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:

Approved by: BOSTON, JEFFREY L, Facility Manager/Designee
Date: 06/30/1994
Telephone No.: (513) 865-3262

Approved by: HOLBROOK, FRED B., Facility Representative/Designee
Date: 06/30/1994
Telephone No.:

Approved by: KUMAR, RAMENDRA, Program Manager/Designee
Date: 07/08/1994
Telephone No.: (301) 903-2865

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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 is no recommendation page included for PRS 91.

MOUND PLANT
PRS 239
SOIL CONTAMINATION - BUILDING 89

RECOMMENDATION:

This site was identified as a Potential Release Site (PRS) due to detectable plutonium-238 levels at surface soil samples, however no history of radiological processes occurred at the location of PRS 239. Additional verification sampling resulted with a plutonium-238 reading of 61 pCi/g which was below the DOE clean-up standard of 100 pCi/g. In addition, the stakeholders have been involved in developing a plutonium clean up level for the OU4 canal (which is based on a conservative recreational land use scenario) and have agreed on a clean up level of 75 pCi/g. The initial concentration was less than the offsite canal standard, therefore, PRS 239 requires NO FURTHER ASSESSMENT.

CONCURRENCE:

DOE/MB: Arthur W. Kleinrath, Remedial Project Manager — 2/28/96 (date)

USEPA: Timothy J. Fischer, Remedial Project Manager — 3/4/96 (date)

OEPA: Brian K. Nickel, Project Manager — 3/4/96 (date)

SUMMARY OF COMMENTS AND RESPONSES:

Comment period from ~~4/15/96~~ 3/15/96 to ~~5/15/96~~ 4/01/96.

☒ No comments were received during the comment period.

☐ Comment responses can be found on page_____ of this package.

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Appendix O

Work Plan

WORK PACKAGE / PRELIMINARY HAZARD ANALYSIS

☒ ~ Office Master Copy ☐ ~ Field Working Copy ☐ ~ Review Copy ☐ ~ Other Copy

(Original Approval Signatures) (Original Field Sign -Offs) [Note: Mark this section in color]

Note: The Project Engineer is responsible for completing Sections 1 through 10.

1. WORK PACKAGE TITLE: Building 89 Demolition

2. WORK PACKAGE NUMBER: SMPP/TFV-*35222 – 00* | Requestor: Lee Koehmstedt X - 3659

1. WORK PACKAGE SCOPE:

The purpose of this effort is to demolish Building 89. Using heavy equipment to demolish the concrete block / poured concrete walled facility (including concrete structure, slab, sidewalks, foundation, and the adjacent turnaround concrete structure), pipe stanchions including removal and disposal of the debris, provide site restoration, grading, and erosion protection with seeding and mulch.

This is a non-radiological demolition project and no RWP is required.

Asbestos abatement, safe shutdown, and utilities isolation activities will have already been completed prior to demolition.

4. WORK LOCATION: Building #: 89
West Side of Main Hill Area

5. WORK PACKAGE PHASES:

1. Site Information
2. Site Preparation & Mobilization
3. Building, Slab and Adjacent Turn Around Structure Demolition
4. Site Remediation & Demobilization

List of Appendixes

A – PHA/JSHA

B – Pre-Job Briefings/Job Status Log

C – Drawings/Sketches

D – Miscellaneous (RWP, USQ, etc.)

E – Post-Job Conference/Lessons Learned

Note: Insert the Work Package phases for the job. A phase is a separately definable portion or evolution of the project.

6. SPECIAL MATERIALS AND EQUIPMENT:

1. Tracked excavator with shear, grapple, hoe ram, concrete cracker/pulverizer, or bucket attachment.
2. Rock crusher.
3. Rubber tired and tracked front-end loaders.
4. Transport equipment for debris as required.
5. Water cannon.

Note: Insert any materials that require long lead procurement or special order. Don't list common items such as PPE.

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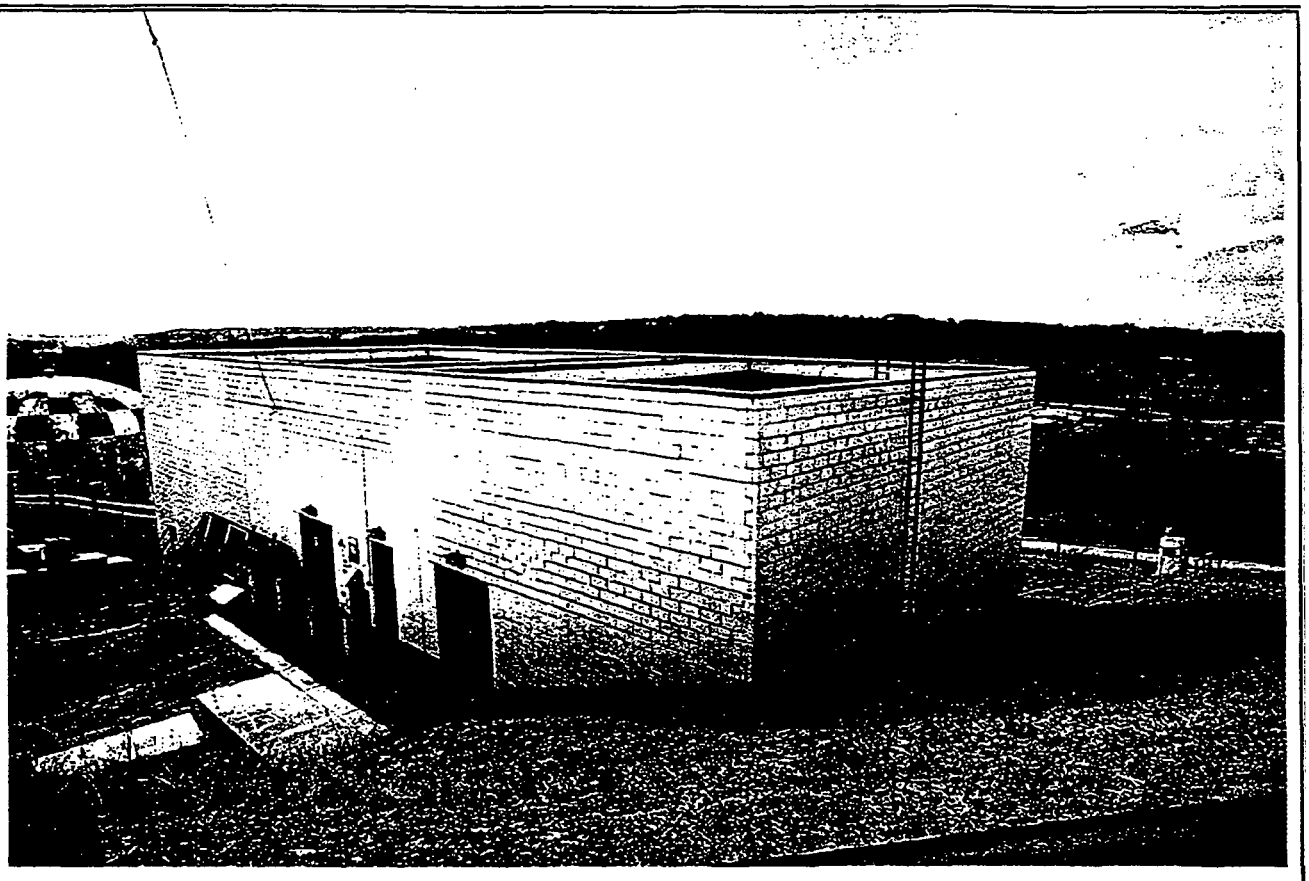

7. DETAILED WORK STEPS:

7.1 SITE INFORMATION:

Building 89 was constructed in 1985 on the western edge of the "main hill", just to the west-southwest of the SW/R building complex. The building is a two-story, 4,830 square-foot structure, constructed of reinforced concrete block and (in some locations poured) concrete walls. The roof structure is of a typical metal joist and ribbed deck with a built-up membrane roof. The basement or lower floor of the structure consists of one room (mechanical room) located on the southern third of the structure, with the remaining two-thirds of the area underlying the first floor being unexcavated.

The foundation consists of reinforced concrete "grade beams, footers, and foundation walls."

The first floor slab consists of two systems, the first is a 5" thick reinforced concrete or a 12" precast concrete slab with a 2" topping slab. The basement has an on grade 5" thick reinforced concrete slab.

Exposed exterior wall construction generally consists of 4" concrete block veneer on reinforced poured concrete or block walls. Reinforcing rebar consists of #5 @ 8" for vertical wall reinforcement and continuous tie reinforcing rebar (#5). The concrete block veneer/block walls are anchored by #5 rebar at 8", set 24" in the footer.

The interior partition walls of the first floor are constructed of 8" reinforced masonry wall. The reinforcing rebar in this wall is running vertically (#5 @ 24").

The roof system consists of 28 LH steel joists with 20 gauge galvanized steel decking with built-up roofing materials.

7.2 NATIONAL HISTORIC PRESERVATION ACT (NHPA)

Building 89 is not listed as a historic structure with the Ohio Historic Preservation Office (OHPO). No mitigative documentation package is required.

IMPORTANT: 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.

7.3 SITE PREPARATION & MOBILIZATION

7.3.1 Site Access Control

Access to the work zone boundary will be controlled using fencing 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 Construction Manager/Foreman first.

Install sediment/storm water control fence around designated construction area per drawing in appendix C. Coordinate and evaluate effectiveness of controls periodically with Environmental Compliance PoC. Leave concrete slab (splash block) at storm drain.

7.3.2 Clear Area and Mark/Protect Utility Equipment

The area around the building will be mowed or otherwise cleared of obstacles as appropriate. Coordinate with site Safety and Health and Environmental Compliance.

Mark and/or protect fire protection and potable water lines in southwest corner of Building 89's basement. Cover with box or field grates for protection.

7.3.3 Temporary Utilities

Temporary utilities that may be required are water and electricity. Ensure backflow prevention is present if hard piped water is used, not necessary if portable water tanks are used. Coordinate with site Safety and Health and Environmental Compliance PoCs. Water will be used to control dust emissions.

7.3.4 Temporary Facilities

This project will use the existing SMPP/TFV project trailer complex located in the Mound "C" parking lot.

7.3.5 Temporary Communications

Temporary communications are required (cell phone, radios) due to the functions and equipment for hearing plant announcements and emergency notifications will have been removed prior to demolition. At the job site, plant announcements and emergency notifications can be heard on the Plant radio channel.

7.3.6 Staging Areas

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

7.4 PRELIMINARY ACTIVITIES AND VERIFICATIONS

WARNING

7.4.1 Contact DP&L (Bruce Anderson x3855 contact person) to de-energize 12.4 KV line which runs to the south of building 89. Give one week advance notice to Bruce.

verified by _____ date: _____

7.4.2 Verify all Building Safe Shutdown Activities have been completed per SMPP/TFV – 34621

verified by _____ date: _____

7.4.3 Verify all Building Utility Isolation Activities have been completed per UA – 35223

verified by _____ date: _____

7.4.4 The *Pre-Job Briefing Record* must be completed and signed.

7.4.5 The *Job Specific Hazards Analysis (JSHA) must be reviewed.*

7.4.6 Locate (per drawing in appendix C), flag and paint all monitoring wells in the vicinity to avoid damaging wells.

IMPORTANT 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.

7.5 BUILDING DEMOLITION SEQUENCE OF WORK

7.5.1 Structural Demolition

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.

HOLD POINT: RAPCA Notification verification

Environmental Compliance PoC_____ Date to Proceed with Demo_____

HOLD POINT: 'COLD & DARK' Review Team Walk-down Completed & Project Manager Authorizes Work to Start:

Project Manager:_____ Date and Time:_____

Demolish the superstructure of the building cut and pull down the joists and roofing materials, concrete masonry block & poured concrete walls using heavy equipment. Cut and remove pipe stanchion lines back to the construction fence between building WD and 89.

CAUTION HAZARD

Use the existing first floor slab as a load out surface for loading debris, be aware the floor structure over the basement section of building ***is not*** structurally sound enough to operate heavy equipment on and shall not be used for load out. Debris shall be placed into appropriate hauling containers or trucks.

Note: The progression of the building demolition will ultimately be determined in the field.

CAUTION HAZARD: Ensure safe footing is maintained on the steep terrain around building 89.

WARNING HAZARD: Dust Control – Utilize misting and/or fogging during demolition, and road wetting during waste hauling. **The Goal is no visible dust emissions.** Periodically evaluate the effectiveness of the dust controls during operations.

CAUTION HAZARD: Contacting of overhead power lines by heavy-duty equipment.
If any part of heavy-duty equipment has the potential to come within 10 feet of street lighting circuit, perform LOTO to de-energize electrical power source.

CAUTION HAZARD: Struck by flying debris. Establish construction boundary. Wear hard hat, safety glasses, safety shoes, and reflective vest inside construction area.

CAUTION HAZARD: Struck by moving equipment.

- Maintain the following distances from operating equipment:
  - Shear – 75 feet
  - Hoe Ram – 50 feet
  - Other heavy duty equipment – 30 feet
  - Bobcat – 15 feet

WARNING NOISE HAZARD: Wear hearing protection while running heavy-duty equipment. Follow the requirements of MD-10286 D9.

CAUTION HAZARD: Burns from torch cutting.
Obtain and follow Hot Work permit per MD-10286 O2

CAUTION HAZARD: Heat/Cold Stress.
Follow the requirements of MD-10286 D13/D16

7.5.2 Slab, Foundation, and Adjacent Turnaround Structure Demolition

Using heavy equipment, break apart the concrete slab, foundation, footers to 3 feet below grade and the adjacent turnaround concrete structure, torch cut the rebar if required (Hot Work Permit is required) to support demolition and downsizing.

During the concrete demolition, use heavy equipment to assist radiological control personnel to perform radiological screening of ground contact concrete surfaces. Based on radiological screening results, transport debris to Mound's spoils area, offsite disposal, or rail spur as directed by Waste Management PoC. (see appendix D)

Note: Take care to prevent damage to the fire protection or potable water lines blanked off at Southwest corner of building.

Note: The progressions of the slab & foundation demolition will ultimately be determined in the field.

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

CAUTION HAZARD: Burns/fire.
Utilize Burn Permit, fire protection, and wear appropriate PPE.

7.6 SITE REMEDIATION & DEMOBILIZATION

7.6.1 Grading, Seeding, & Mulching
Restore the area by grading and filling with appropriate amount of gravel/soil to grade to drain.

Apply appropriate amounts of grass seed and mulch to maintain erosion control/protection in accordance with Environmental Compliance PoC instructions.

Remove any unnecessary remaining sediment/storm water control fences

7.6.2 Remove Temporary Protection Structures
Remove protective barriers from Building 89 from potable and fire water lines.

7.6.3 Demobilize Construction Equipment
Remove dust control water distribution system, temporary power, fencing, and any traffic control. Scan equipment for radiological contamination prior to leaving area as required dependent upon in-process Rad surveys.

Note: Insert the activities to be performed during the job. Describe the specific methods of accomplishing these activities and appropriate level of detail based on the complexity, hazard, and skill of the craft. Activities listed must be grouped under the Work Package phases listed in item 5.

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: 4/2/03 Phone: 3659

Job Foreman: _____ Date: 4/7/03 Phone: 3663

Superintendent/Constr. Mgr: _____ Date: 4/7/03 Phone: 3866

Project Eng. Mgr: _____ Date: 4/2/03 Phone: 4220

Industrial Safety & Hygiene: _____ Date: 4/2/03 Phone: 4096/3737

Rad. Controls: _____ Date: 4/2/03 Phone: 4522

Environmental Compliance: _____ Date: 4/3/02 Phone: 4080

Waste Mgmt: _____ Date: 4/2/03 Phone: X3822

Bldg. Mgr: _____ Date: / / Phone:

Craft Review: _____ Trade H.D. Date: 4/8/03 Phone:

Craft Review: _____ Trade [illegible] Date: 4/8/03 Phone:

Craft Review: _____ Trade _____ Date: / / Phone:

Craft Review: _____ Trade _____ Date: / / Phone:

10. USQ SCREEN / DETERMINATION REQUIRED? ☐ YES X NO

Brief Explaination____This work effort will have no effect on Nuclear or Radiological Building_____

USQ Trained Person: _____ Date: 04/26/03 Phone: 3241

10. AUTHORIZATION SIGNATURE:

Project Manager: _____ Date: 4/21/03 Phone: 4169

11. WORK PACKAGE CLOSURE:

Job Supervisor: _____ Date: / / Phone:

Project Manager: _____ Date: / / Phone:

RETURN PHA TO IS&H AT JOB COMPLETION.

Work Package Revision Form

Work Package Revision Form			
Work Package No.SMPP/TFV-35222-00	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:			

Work Package Revision History Form

WORK PACKAGE REVISION HISTORY FORM			
REV. NO.	REASON	SIGNATURE	DATE

Appendix A

PHA/JSHA

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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)	N/A	N/A	
Burning, welding, hot-work (Fire Watch)	Yes	3	[BURN] Use of cutting torch during demolition. Hot Work Permit required.
Chemical compatibility of corrosives/flammables	No	N/A	
Chemical process safety	N/A	N/A	
Compressed gas cylinders	No	N/A	
Confined space entry	N/A	N/A	[CONFINE]
Crane operations, overhead or mobile	N/A	N/A	
Critical lifts (heavy or high value loads)	N/A	N/A	[CLIFT]
Electrical hazards	No	N/A	[LIVEL] Electrical Isolation of facility is accomplished during Utilities Isolation activities. Street light circuit will be LOTO when within 10 feet.
Elevated work/fall protection	N/A	N/A	[ELEV]
Emergency eyewash/shower available	N/A	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	N/A	N/A	
Explosives	N/A	N/A	
Fire protection system/equipment outage	Yes	All	[FIRE/EFIRE] FAS & fire protection system isolated during Utilities Isolation activities.
Fire Hazards Analysis Required of Demolition	No	N/A	[FHA/ADJA] FHA walkthrough of facility is accomplished during Utilities Isolation activities.
Flammable liquids/gases	N/A	N/A	[FLAM]
Forklifts, aerial lifts or material handling equipment	N/A	N/A	
Grounding of electrical equipment	N/A	N/A	
Hazards due to condition of facility or terrain (Identify)	Yes	2,3 & 4	Proximity to the steep slopes that surround BD89 on three sides.
Hoisting and rigging	N/A	N/A	[HOIST]
Lighting/illumination/adequacy	N/A	N/A	[MLITE]
Excavation and Soil disturbance	Yes	3 & 4	Excavation 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:			[LOTO/ISO]
• Electrical	Yes	2, 3, & 4	Electrical Isolation of facility is accomplished during Utilities Isolation activities.
• Mechanical (steam, hydraulic, pneumatic)	N/A	N/A	
• Interlocks	N/A	N/A	[ILOCK]
• Chemical	N/A	N/A	
• Radiological	No	N/A	BD89is not a radiological area, no RWP is required.
Machine guards	N/A	N/A	
Modification to Fire Wall/Door	N/A	N/A	[FIREWAL]
Obstruction of fire protection equipment (pull boxes, hydrants, fire department connections, control panels, fire extinguishers, etc.)	No	N/A	Fire hydrant available for emergency use.
Off-shift work	No	N/A	
Outages of the plant public announcement (PA) system or the emergency notification system	N/A	N/A	[OUTAGE]
Overhead or underground utilities (Identify)	Yes	2, 3, & 4	[UITL] See attached drawings.
Penetrations into walls, floors, etc.	N/A	N/A	[PENETR]
Plastic sheeting or wood framing/enclosures	N/A	N/A	
Powder-actuated tools	N/A	N/A	
Plant utilities (Identify)	N/A	N/A	[WATER]
Repetitive work	N/A	N/A	[ERGO]
Structural Modification	Yes	2 & 3	[STRUCT] Building & slab is being demolished.
Special Fire Protection Equipment Required	N/A	N/A	[FIREQU]
Trenching/Shoring	N/A	N/A	[DIG]
Temporary heating facilities	N/A	N/A	
Temporary/portable buildings or structures	N/A	N/A	[FACIL]
Temporary service hook-ups (Identify)	Yes	All	Temp. electrical and water service (for dust control).
Traffic control/flagman	No	N/A	[TRAFIC]
Work in attics, ceilings, chases, or crawlspaces	N/A	N/A	
Work impacting adjacent normally occupied areas	No	N/A	[ADJAC/BMAPP/SIGNS/NOTIF]
Work Requiring Scaffolding, construction and inspection	N/A	N/A	[SCAFF]
Other (Specify) Building Structural Engineering Survey per OSHA 29 CFR 1926.850	Yes	2	Survey Completed by ___W. Johanan_- letter in Appendix _D_____

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)*	N/A	N/A	
Asbestos	No	N/A	[ASBEST]
Beryllium	N/A	N/A	
Blood-borne pathogens*	N/A	N/A	
Cadmium	N/A	N/A	
Carcinogens (☐ MSDS available)*	N/A	N/A	[CARC]
Chemicals/solvents (☐ MSDS available)*	N/A	N/A	[CHEM/MSDS]
Chlorofluorcarbon (CFC)	N/A	N/A	[CFC]
Coal, tar or asphalt products	Yes	2	Roofing material contains tar and asphalt products; to be disposed of as construction debris.
Coating/painting (☐ MSDS available)*	N/A	N/A	
Corrosives/acids/caustics (☐ MSDS available)*	NA	N/A	
Dusty operations	Yes	2 & 3	[POWDER] Potential dust generation controlled via water misting during demolition and road wetting during waste hauling.
Hazardous Waste Operations (HAZWOPER)*	N/A	N/A	
High Pressure systems	N/A	N/A	[HIPRES]
Insulation/man-made mineral fibers (☐ MSDS available)*	N/A	N/A	
Lasers	NA	N/A	
Lead	Yes	2 & 3	Paint may contain lead, do not torch cut painted surfaces without verification by IH.
Foam in Place Operations	N/A	N/A	
Mercury	N/A	N/A	
Noise in excess of 85 dBA	Yes	2 & 3	[NOISE] Hearing protection required.
Polychlorinated biphenyls (PCBs)	N/A	N/A	
Removal of ceiling tiles*	N/A	N/A	
Spraying/generation of mists*	Yes	2 & 3	Demolition dust control via water mist and road wetting during waste hauling.
Temperature extremes (heat or cold stress)	Yes	All	[CRYRO/COLD/HEAT]] discuss in Pre-job/daily briefings & monitor work.
Ventilation or Air Monitoring requirements	Yes	2 & 3	[VENTIL/IH] Air monitoring for potential silica during demolition activities will be performed as needed for annual site assessment.
Welding, brazing, or thermal cutting operations	Yes	2 & 3	[BURN] Hot Work Permit required.
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	N/A	N/A	
	Contamination Area	N/A	N/A	[STP]
	High Contamination Area	N/A	N/A	[STP]
	Radioactive Materials Storage Area	N/A	N/A	
	Airborne Radioactivity Area (STP or OBT)	N/A	N/A	
	Radiation Area	N/A	N/A	
	High Radiation Area	N/A	N/A	
	Very High Radiation Area	N/A	N/A	
	Other (Specify)	N/A	N/A	
Activities:	Criticality Safety Concerns	N/A	N/A	
	Digging/Soil Removal	Yes	3 & 4	[DIG] Survey soil and concrete (soil contact side) following slab removal. Excavation Permit required. Flip slab sections to survey before release.
	Surface destruction of radioactively contaminated materials or equipment?	N/A	N/A	[SURFAC]
	Welding, burning, or grinding?	N/A	N/A	[SURFAC]
	Hammering, chipping or scraping?	N/A	N/A	[SURFAC]
	Abrasive blasting?	N/A	N/A	[SURFAC]
	Dust-collecting equipment or systems?	N/A	N/A	
	Decontamination and clean-up?	N/A	N/A	
	Rad Waste Storage and Disposal Required	N/A	N/A	[RWSTOR/WASTE/CHAR]
	Other (Specify)	N/A	N/A	
Sources:	X-Ray machine/generator	N/A	N/A	[XRAY]
	Sealed radioactive sources	N/A	N/A	
	Unsealed radioactive sources	N/A	N/A	
Controls:	Radiological Work Permit	N/A	N/A	[RWP/RWP=JS/RWP=N/R/RPGEN]
	ALARA Plan	N/A	N/A	[ALARA]
	Air Flow Studies	N/A	N/A	[AIRFLOW/CAM]
	Urinalysis program	N/A	N/A	
	Preliminary or in-process characterization	N/A	N/A	[SURVPS/SURVIP]
	Anti-contamination clothing	N/A	N/A	
	Respiratory protection	N/A	N/A	[RESP]
	Needs Analysis Evaluation	N/A	N/A	
	Hazards Analysis	N/A	N/A	
	Engineering Controls	N/A	N/A	
	Administrative Controls	N/A	N/A	
	Supplemental dosimetry	N/A	N/A	
	Shielding	N/A	N/A	
	Personnel monitoring (frisking)	N/A	N/A	

SECTION D, ENVIRONMENTAL COMPLIANCE - TO BE COMPLETED BY ENVIRONMENTAL COMPLIANCE REPRESENTATIVE
Identify engineering/administrative controls as required, keyed to the following checklist items. Insert any required and/or other special actions to be taken because of the particular hazard Additionally, identify any activities which are DOE or EPA prescribed protective requirements (Use Section F if additional space is needed.)

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Conditions			
Fugitive Dust OPA980014	Yes	3	Use water misting during demolition & road wetting during waste hauling.
Storm Water Runoff	Yes	3	Install silt fence per attached sketch.
Erosion Control	Yes	4	Grading, seeding, & mulching
NESHAPS Calculation	Yes	N/A	Emission Levels determined to be below requirement. No US EPA approval required for this building.
Safe Drinking Water Act	Yes	2 & 3	Ensure backflow prevention for water misting source.
Emergency Spill Response	Yes	3	Ensure glycol spill kit is available.
Notifications			
Monitoring wells	Yes	3	
RAPCA Notification for Asbestos	N/A	N/A	No regulated asbestos material removal performed in this building.
RAPCA Notification for Demolition	Yes	3	Required 10 business before beginning demolition activity.
Emergency Spill Response	Yes	3	Call 911 or 865-4040
other			

SECTION E. WASTE MANAGEMENT- TO BE COMPLETED BY WASTE MANAGEMENT REPRESENTATIVE *Include any required and/or other special actions to be taken because of the particular hazard. Additionally, identify any activities which are required by DOE, Nevada Test Site, Envirocare or other waste site.* (Use Section F If additional space is needed.)

	Quantity Expected	Work Package Phase	Radiological Characterization	Packaging Requirements	Mode of Disposal
Types: Solid Waste (list types):	Total 875 yds	3	No elevated radioacitivity levels	30 Cu. Yd. Roll-Off/End Dumps	Offsite disposal via Waste Management Operations/Journey LTD
Concrete					
Steel & Copper Piping					
Metal Roofing					
PVC					
Electrical Wiring					
Fiberglass Insulation					
Wood					
RCRA Hazardous Waste (list types)	Non-hazardous				
Asbestos Waste	None				All non-regulated asbestos disposed with construction debris
Low Level Waste	N/A				
TRU Waste	N/A				
NOTE: 1. Sealed pressure vessels will need to be at <1.5 atmosphere if present. 2. Any items not previously evaluated are to be set aside for evaluation by Waste Management prior to disposal.					
Other:					

SECTION F - OTHER CONDITIONS, CONCERNS, OR SUPPLEMENTAL INFORMATION FROM SECTIONS A THROUGH C INCLUDING APPLICABLE LESSONS LEARNED

EMERGENCY PREPAREDNESS

- 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 project two-way radios. Additionally, unique sheltering and evacuation signals are available should site-wide protective actions be necessary.

- Evacuation Route/Assembly Areas

Assembly area is east of Building 89 in the roadway. See map in Appendix C.

- Take Shelter Area

Be aware of threatening weather and take shelter when life-threatening storms are imminent.

The take shelter area is Building 48. See map per Appendix C.

APPLICABLE LESSONS LEARNED – See Appendix E

Project/Activity: Building 89 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 – 89- 032003

DATE: 4/2/2003	_X_ NEW ___ REV	BUILDING: 89	JOB: Demolish Building 89
DEPARTMENT/COMPANY: SMPP-TFV Project/CH2M Hill Mound, Inc.			SECTION: N/A

OCCUPATIONS: : Heavy Duty Operators, Demolition Tech's, Demolition Crafts, & Electricians.
Supported by Project Personnel e.g.. Supervision, Engineering, RAD Control, Ind. Hygiene, and Safety

SIGNATURES

ORIGINATOR: Lee Koehnstedt	4/2/03
REVIEW/REV: Safety H	4.3
REVIEW/REV: Foreman	4-7-03
REVIEW/REV: Bldg Mgr	4-20-03
APPROVED: Project Manager	9/26/03

REQUIRED PERSONAL PROTECTIVE EQUIPMENT:
Hard Hat, Safety Glasses with side shields, safety shoes, safety vest

MSDS(s)/CHEMICALS ASSOCIATED WITH THE JOB:
None

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.)
General Safety Note	A wide variety of incidents occur on a regular basis that potentially could result in injury or illness	-Be cognizant of your own safe work practices as well as those of your co-workers -Review any related safety procedures of which you are unsure -Utilize STOP WORK Authority as necessary
Pre-job meeting with involved personnel to discuss the work plan and safety requirements. This meeting is conducted daily.	N/A	-This project engages in Enhanced Work Planning(EWP), an ISM process that evaluates and improves the approach by which work is identified, planned, approved, controlled, and executed.
1. Site Preparation & Mobilization	Standard construction hazards.	-Demolition preparation is defined by 29CFR1926.850; workers. unfamiliar with construction standards must notify the project supervision and/or project health and safety personnel.
1a. Site Access Control Emergency egress/access	Struck by equipment, debris Blocked access	-Once the work area is defined, only authorized personnel are permitted in the construction perimeter. -Unescorted, non-project and non-emergency personnel, must have acceptance of the SMPP/TFV Project Manager for entry.

098057

JOB SAFETY AND HEALTH ANALYSIS FORM
(CONTINUATION SHEET)

BASIC JOB STEPS	POTENTIAL ACCIDENT/ILLNESSES OR KNOWN HAZARDS	SAFE JOB PROCEDURES
1c. Clear Area and Mark/Protect Utility Equipment	Running into fire hydrants, manhole covers, or grates over field drains.	-Mark/protect fire protection and potable water lines in BD89 basement. -Cover field grates to protect.
2a. Operation of heavy equipment near electric overhead lines	Shock Hazard	-All utilities to the building including electrical have been disconnected by project electricians at a point away from the building. -Identify sources outside the building that may require LOTO to prevent incidental contact by Heavy Duty Equipment, such as street lighting circuit. ***Contact DPL to de-energize 12.4 KV feeder line week in advance – (Bruce Anderson)***
2c. Demolish building, pipe stanchions, building structure and slab using excavator mounted shear, hoe ram, grapple, loader, and bobcat.	Struck by flying debris Struck by moving equipment Steep slope on sides of area -Slip and tripping hazard. 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 vision is obstructed. Cautious walking on side slopes. -Wear hearing protection while running heavy duty equipment Follow the requirements of MD-10286 D9
2d. 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.
2e. Working in excessive heat/cold	Heat Stress/Cold Stress	-Follow the requirements of MD-10286 D13/D16 and discuss in daily pre-job briefings.
2f. Slab removal	Strike underground utilities Radiological Contamination	-Obtain Excavation permit and follow its requirements per MD-10286 O5. -Coordinate in-process Rad Surveys with Rad Techs.
3 Site Remediation & Demobilization	**General Safety Note** A wide variety of incidents occur on a regular basis that potentially could result in injury or illness	-Be cognizant of your own safe work practices as well as those of your co-workers. -Review any related safety procedures of which you are unsure. -Utilize STOP WORK Authority as necessary.

LS 9610

JOB SAFETY AND HEALTH ANALYSIS FORM
(CONTINUATION SHEET)

3a Rough grading	Equipment/ personnel mixture.	-Stay clear of operating heavy equipment.
3b. Seeding & Mulching	Slip – Trip – Fal.l Lifting /twisting strain .	-Uneven walking and/or working surfaces –use extra caution. -Follow accepted practices.
3c Remove Temporary Protection Structures Remove protective barriers from BD89 potable and firewater lines penetrations.	Lifting /twisting strain. Cuts and abrasions. Slip trips and falls.	-2 man rule follow standard practice lifting. -Wear appropriate PPE. -Be cognizant of your own safe work practices as well as those of your co-workers.
3d. Demobilize Construction Equipment Remove dust control water distribution system Remove temporary power Remove fencing	Equipment/ personnel mixture. Cuts and abrasions. Lifting /twisting strains. Radiological contamination of equipment if required by in-process surveys	-Be cognizant of your own safe work practices as well as those of your co-workers. -Review any related safety procedures of which you are unsure. -Utilize STOP WORK Authority as necessary. -Coordinate in-process Rad Surveys with Rad Techs.

SIGN-OFF SHEET

I have read and understand the attached Job Specific Work Plan and JSHA:

SIGNATURE	**Date**	**Department**

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Appendix B

PRE-JOB BRIEFING/JOB STATUS LOG

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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	

PRE-JOB UPDATE

Continuation Sheet for _____/_____/_____

HP#	SIGNATURE	HP#	SIGNATURE

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 envelop 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

JOB STATUS LOG

Work Package Title: Building 89Demolition

Work Package No: SMPP/TFV 35222 - 00

DATE	TIME	1.1. WORK PKG. SECTION	% Complete	BY	STATUS

LS 8820

Appendix C

DRAWINGS/SKETCHES

- Evacuation Assembly Area/Take Shelter Area Sketch
- Building 89 Surrounding Utilities Sketch
- Structural and Mechanical Drawings -Foundation Plan, Wall Sections and Mechanical Details
- Floor Plans
- Monitoring Well locations

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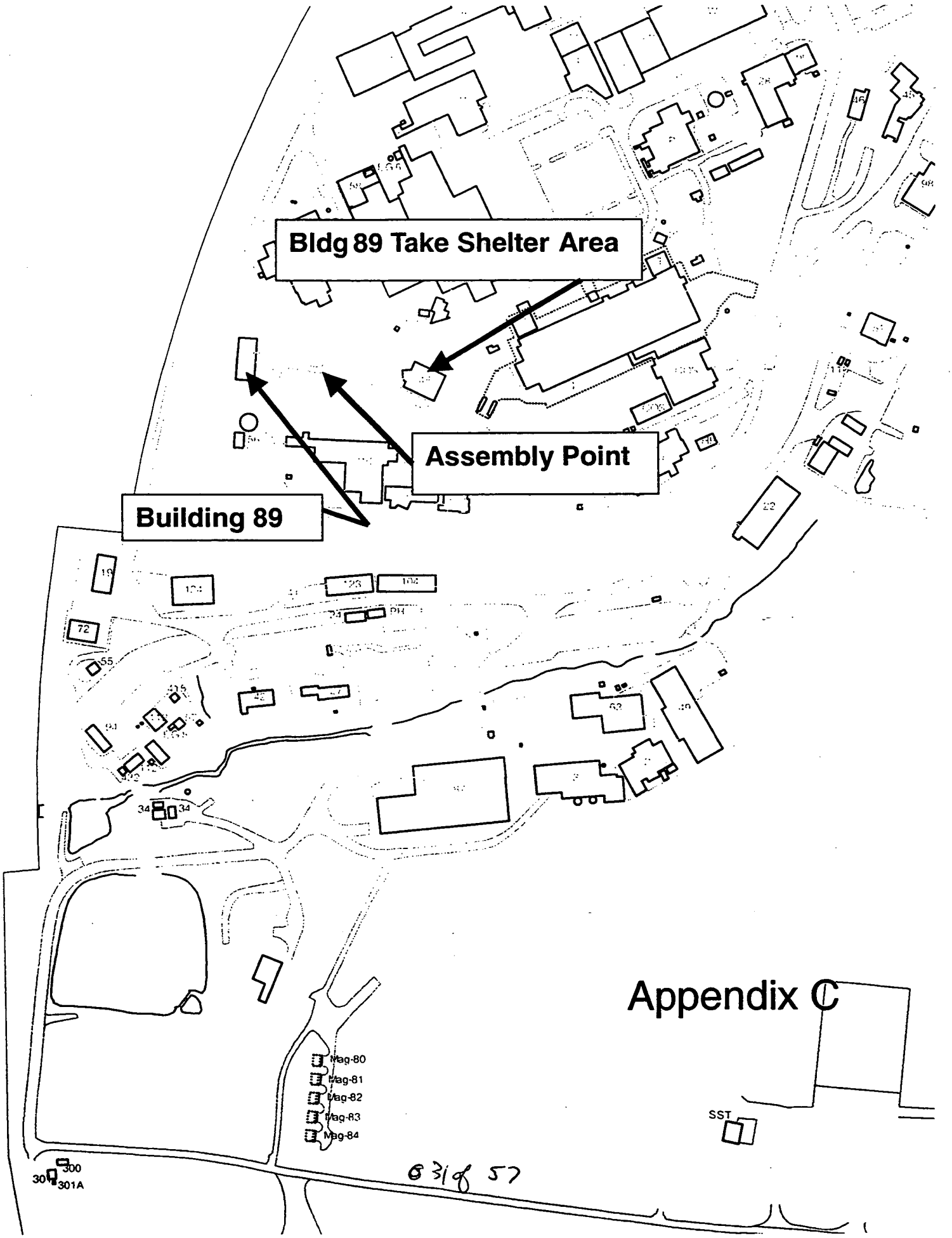
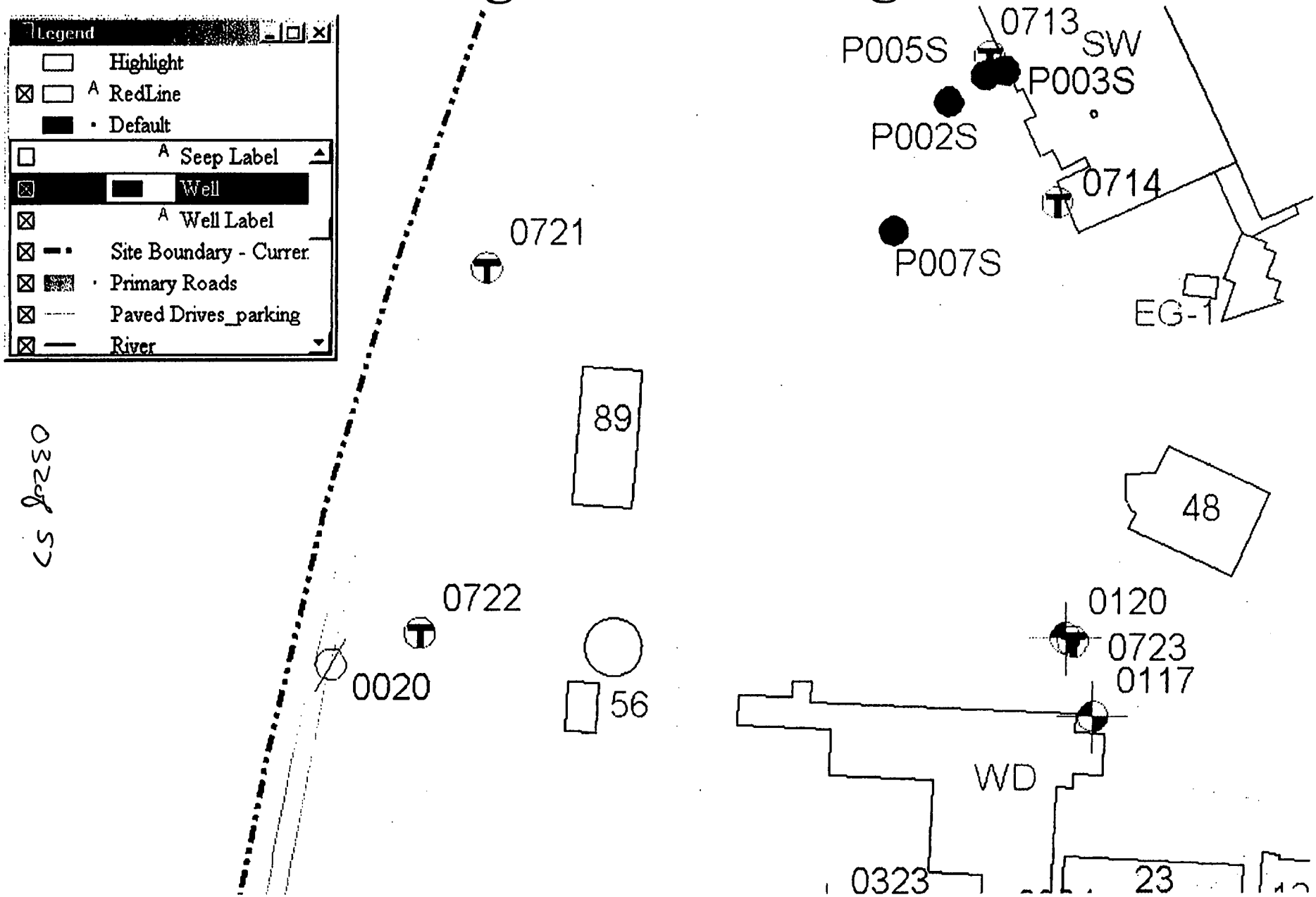

Bldg 89 Take Shelter Area
Assembly Point
Building 89
Mag-80
Mag-81
Mag-82
Mag-83
Mag-84
SST
300
301
301A

Appendix C

Building 89 Monitoring Wells



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REMOVE THIS CONCRETE TURN AROUND STRUCTURE

REMOVE STEAM AND CONDENSATE LINES FROM BUILDING 89 TO CONSTRUCTION FENCING FOR BUILDING WD DEMOLITION

BOX CULVERT TO PROVIDE EROSION/SEDIMENT CONTROL

LEAVE CONCRETE SIDEWALK/DRAINAGE SPLASH BLOCK AT THIS LOCATION

INSTALL SILT FENCE TO KEEP DEBRIS OUT OF DITCH

CONTACT DPL (BRUCE ANDERSON, CONTACT PERSON) TO DE-ENERGIZE OVERHEAD 12.4 KV FEEDER 1 WEEK IN ADVANCE OF DEMOLITION

LEGEND

URMA
SEWERS
GAS — GAS — GAS — GAS — GAS — GAS — GAS — GAS
WATER
ELECTRIC
SIGNAL, STEAM, AND COMMUNICATION LINES

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

ISS	DATE	REVISION	BY	CHKR	ENG	LP&EC	APVD	M

MOUND

Environmental Restoration Geographic Information System

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

PART CLASSIFICATION

DRAWING CLASSIFICATION: UNCLASSIFIED

SIZE

DRAWING NUMBER: bldg 94 ug utilities

JOB NUMBER: *

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

STATUS MD-REL-**/**/** | ORIGIN AUTOCAD

Figure
Building 89
Surounding Utilities

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Appendix D
MISCELLANEOUS
(USQ, RWP, etc.)

- No USQ required for this Work Package
- No RWP required for this Work Package
- Structural Engineering Survey letter, per OSHA CFR1926.
- Waste Disposition Plan

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INTER OFFICE MEMO CH2MHILL MOUND, INC.

Date: March 26, 2003 cc. L. Koehmstedt

From: W. L. Johanan – OSW-430

Subject: Structural Survey of Building 89, RE: 29 CFR 1926.850 (a)

To: Kurt Kehler-Project Manager

Please be advised that we have performed a structural review and walk down of the subject building and found them to be satisfactory based on the demolition process and work plan.

Please call me if you have any further questions.

W. L. Johanan P.E.
Site Structural Engineer

STATE OF OHIO
WILLIAM
L.
JOHANAN
E-44883
REGISTERED
PROFESSIONAL ENGINEER

0376 57

CH2MHILL

SMPP/TFV PROJECT
Waste Disposition Plan
Building 89 Demolition

The purpose of this waste disposition plan is to identify waste streams that will be generated during the demolition of building 89. Characterization of waste streams will be summarized and disposal options specified.

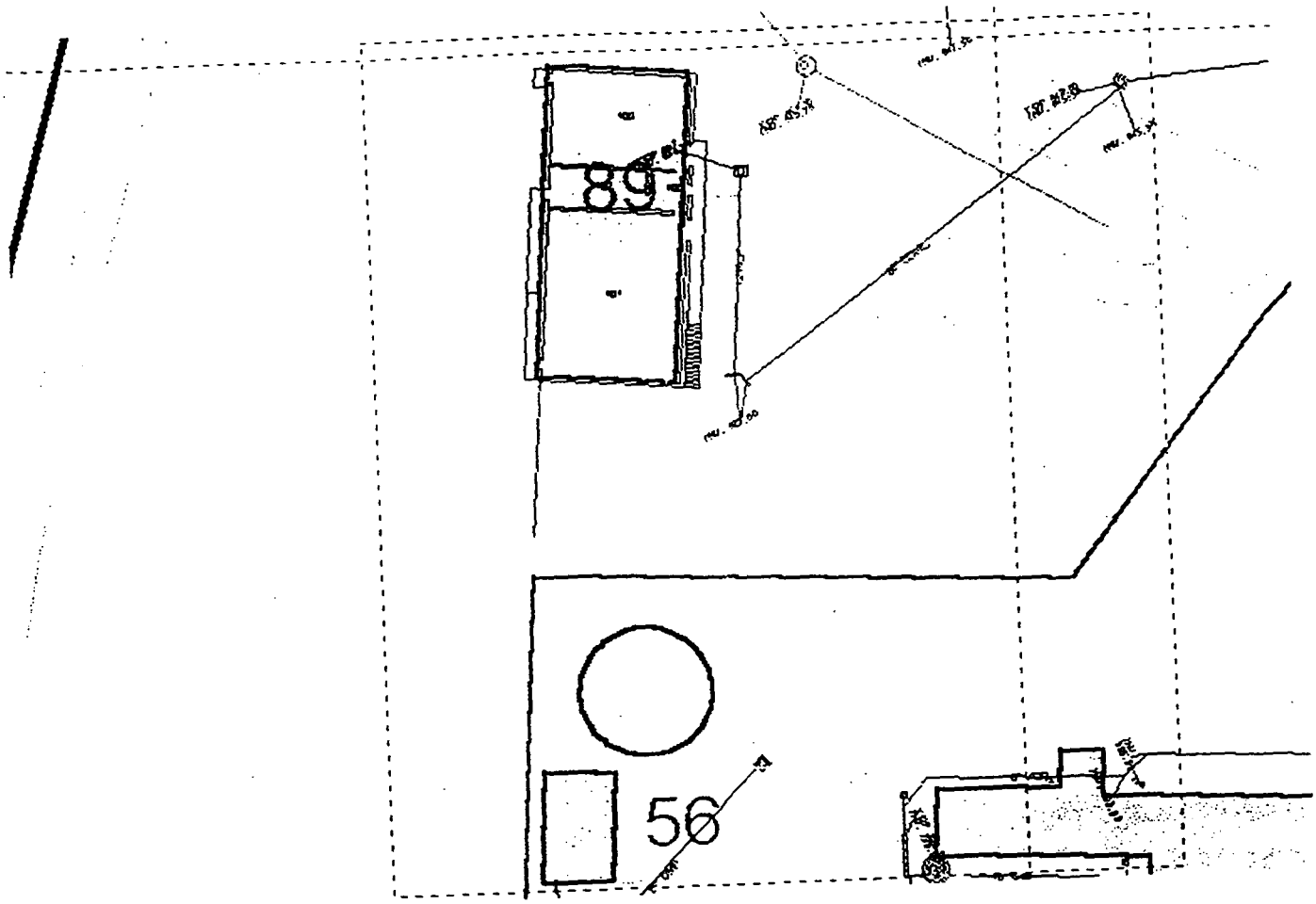
The plan will outline types of waste/waste quantities expected. Information will be provided on the schedule for waste generation, RCRA characterization, radiological characterization, packaging requirements/mode of disposal, and any specific waste acceptance criteria that must be met for disposal.

Waste types and estimates are based on a physical examination of the room conducted on Feb. 17, 2003 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. 89.
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, Sheet Metal, Elect. Wiring, FG Installation,
Quantity expected	28,718 cu ft **100% Solid Waste**
Asbestos	N/A
Schedule for waste generation	April- May, 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. 10 wheeler Trucks will be use for disposal
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
Waste Programs Date: 02/19/03


89
56

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Appendix E

POST-JOB CONFERENCE/LESSONS LEARNED

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Work Package Revisions Must Be Carefully Controlled (Lessons Learned L01-080)

Lessons Learned Statement:

Work packages tend to be living documents requiring change as errors are discovered, conditions change, methods improve, and other reasons. It's important that these changes receive proper reviews, including a peer review, which look at not only technical issues, but also work sequencing and format.

Discussion:

Recently a Mound Contractor Readiness Assessment (CRA) team completed a review of the SW19 Vertical Lathe work package. The CRA Team noted a significant amount of inconsistencies, do-loops and other errors associated with the SW19 Vertical Lathe work package. These inconsistencies, do-loops, and other errors were present even after peer reviews and a Line Management Self-Assessment (LMSA). The result was a work package that seemed confusing in some areas and in others could not be implemented as written. The purpose of this lessons learned is to discuss the causes and educate other personnel.

Analysis:

As a result of the reviews by peers, the LMSA, the CRA and DOE surveillance's, the SW19 work package underwent multiple revisions even after the first revision was published. As comments were resolved and additions and deletions were completed, numbering and work steps were not reviewed to assure that the sequencing could be followed.

Changes were made to the work package without a formal revision. Although the changes were not considered significant, they should have triggered a revision to the work package and further review in accordance with PP1059A. Subsequent reviews should have caught the errors.

The LMSA discovered many of the errors, but they were not corrected prior to the CRA. The LMSA team used an informal process to communicate needed changes to the work package. As a result, some changes were missed or not communicated and an opportunity to correct the errors was missed.

Recommended Actions:

1) Following changes to the work package, numbering and sequencing should be reviewed and verified by a peer reviewer.

2) A formal revision to the work package is triggered by changes other than minor editorial revisions. Based on the type of change, further reviews must be performed.

3) Editorial changes, comments, and other suggested changes should be documented during the LMSA and discussed at closing to assure that they have been incorporated.

Excavator Damaged During Demolition Work

Lesson Learned Statement:

Heavy powered equipment involved demolition activities should be inspected daily for damage that may result to that equipment during demolition activities.

Discussion of Activities:

On 9 February 2000, during the demolition of a concrete tank, an excavator shear was damaged. The initial estimated cost to repair is $20,000, and in addition to the damaged equipment, approximately 62 gallons of hydraulic fluid were spilled on the ground.

A trackhoe with a 360-degree rotating excavator shear attachment was being used to demolish a tank dome and sides at the 20H Site Water Tank, part of the Fernald Water Treatment Plant. When the crew returned from break, the operator started up the trackhoe and proceeded to raise the boom. The jaw section of the shear broke off from the head, where the slew ring was attached to the back plate. When the jaw section fell to the ground it pulled out a a hydraulic fluid line and the fluid poured out.

Analysis

The shear was found to have approximately 500 hours of use on it at the time of the incident. A full preventative maintenance check of the trackhoe and the shear had been performed two days prior to the incident that conformed with the manufacturer's recommended maintenance schedule. Photographs of the damaged shear and video of the previous day's operations were reviewed and indicated that the shear was probably damaged at some time prior to the day of the incident.

POST JOB CONFERENCE

5. WHAT WENT WELL?

What could be improved?

Other Comments:

Items Requiring Further Action:

POST-JOB CONFERENCE ATTENDEES

NAME	HP	NAME	HP

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 learn? (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

Work Package Revision Form

Work Package Revision Form **Building 89 Demolition**			
Work Package No.SMPP/TFV-35222-01	**Revision No. 01**		
Revision Description: (attach page revisions to form) Revise the package to incorporate two changes to scope, 1.) Remove the access road asphalt and concrete drainage ditch/channel and catch basin and 2.) to disconnect overhead electrical line along roadway.			
	Name	**Signature**	**Date**
PREPARED BY:			
Revision Preparer: Lee Koehmstedt @ 3659	LEE KOEHMSTEDT		5/27/03
REVIEWED BY:			
Project Engr. Manager:	RC Bangerton	R.C. Bangerton	5/27/03
Project Foreman:	Bill Wahler	Bill Wahler	5/28/03
Project Superintendent/ Constr. Mgr.:	Mike Stromberg	Mike Stromberg	5/28/03
Industrial Safety & Hygiene P o C:	Doug HANSON		5-28-03
Radiological Point of Contact:	N/A		
Environmental Safeguards & Compliance P o C:	N/A		
Waste Management PoC:	N/A		
Building Manager:	Gary Weidenbach	Gary Weidenbach	05-29-03
Other:	N/A		
Other:	N/A		
USQ Trained Person	Gary Weidenbach	Gary Weidenbach	05-29-03

USQ SCREEN / DETERMINATION REQUIRED? ☐YES ☒NO

Brief Explaination

Work will not impact a Nuclear or Radiological Bldg. SDERP in place to notify facilities and place controls within areas. Gary Weidenbach

APPROVED BY:			
Project Manager:	Kurt Kehler		5/29/03

Copies -
Stromberg (4)
Weidenbach
Engr. (2)
doc. files

04706 57

Work Package Revision History Form

WORK PACKAGE REVISION HISTORY FORM			
REV. NO.	**REASON**	**SIGNATURE**	**DATE**
01	**Revise the package to incorporate two changes to scope, 1.) Remove the access road asphalt and concrete drainage ditch/channel and catch basin and 2.) To disconnect overhead electrical line along roadway.**		

May 22, 2003 JSA 03-067
MODIFIED:

JSA AND SWITCH ORDER TO DISCONNECT OVERHEAD ELECTRICAL LINE ALONG ROADWAY

PURPOSE : To safely de-energize overhead electrical feeder to Building 56, then disconnect portion along roadway terminating into mini power-zone.

CONDITIONS : Due to the necessity to power down the plant fire pump (Building 56), obtain Firehouse (Tom Beal; x4897), Building 56 manager's, Charlie Sienkiewicz (x3314), Jerry Allison (x4533), Bill Tonne (x4354), D. Levan (x3571), Gary Weidenbach (x3241) and L. Casey (cell: 608-8209) (WD Contractor trailers) approval to proceed **(remind personnel that there will be an approximately 2 hour outage for 56 & two WD Contractor trailers)**.

Energized 480 volt switching within substation control area to be done while wearing **31cal/cm²** flame-retardant suits/face shields, cotton clothing, hearing protection and certified **class 0** rubber gloves. The safety observer shall stand at least **20 feet** to the side of the switching area and have a pair of **class 0** certified rubber gloves available.

Use a known operating CAT III 600 volt rated voltmeter to verify de-energized state (e.g. test on known energized source, verify areas of interest are de-energized; re-test on known energized source).

Verify with Frank Raker (x3438) that there is sufficient water in the tower for fire fighting capabilities.

Due to the diesel pump actuation, use ear protection if in Building 56.

SEQUENCE OF ACTIVITIES :

____1. Notify 56 (Tom Beal; Frank Raker), WD Contractor (L. Casey), Charlie Sienkiewicz, Bill Tonne, D. Levan, Gary Weidenbach & Jerry Allison that job is to proceed.

____2. Open 225 ampere circuit breaker for overhead feeder to Building 56 feeder, located in panel PP-B at B Substation, and LOTO.
LOTO # _____

____3. Verify overhead feeder located along roadway is de-energized using a known operating CAT III 600 volt rated voltmeter.

____4. At location along the roadway where Building 56 feeder is tapped into overhead, sever section that is terminated into a SqD Mini Power Zone next to Building 89 driveway, but do not remove feeder.

____5. Finish severed area of overhead to be re-energized with 600 volt rated electrical tape.

____6. Remove LOTO at PP-B (B Substation) & close 225 ampere circuit breaker for overhead feeder to Building 56.

____7 . Notify 56 (Tom Beal; Frank Raker), WD Contractor (L. Casey), Charlie Sienkiewicz, Bill Tonne, D. Levan, Gary Weidenbach & Jerry Allison work is completed.

APPROVED BY :

TERRY CANTRELL Terry Cantrell DATE 5/22/03

BRUCE ANDERSON Bruce Anderson DATE 5/22/03

WORK PERFORMED BY:

ELECTRICIAN #1 _____ DATE _____

ELECTRICIAN #2 _____ DATE _____

JOB SAFETY & HEALTH ANALYSIS

JSHA MASTER DOCUMENT CONTROL NO: JSHA#142-03

DATE: 8/21/03	_X_ NEW ___ REV	**BUILDING:** 56	**JOB:** Disconnect Electrical Overhead along Roadway
DEPARTMENT: Project Engineering			**SECTION:**
OCCUPATIONS: Electricians			

SIGNATURES

ORIGINATOR:	[signature]
REVIEW/REV:	[signature]
REVIEW/REV	
APPROVED	
APPROVED	

REQUIRED PERSONAL PROTECTIVE EQUIPMENT: safety glasses, leather safety shoes, cotton clothing for remainder refer to JSA 03-067

MSDS(s)/CHEMICALS ASSOCIATED WITH THE JOB:

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 1B - 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.)
Refer to JSA 03-067 for sequence of activities		
Hazards in JSA are as follows:		
(Use safety glasses & shoes for all steps.)		
1. Step 2 & 6 of JSA 03-067	1. Electric blast	1. Use 31 cal/cm² flame-retardent suits, face shields, hearing protection, cotton clothing and certified class 2 gloves. All panels secured.
2. Step 2 & 3 of JSA 03-067	2. Electric shock	2. Use known operating CAT III 600 volt rated voltmeter. Use LOTO.
3. Step 2 thru 6 of JSA 03-067	3. Pinch Points	3. Avoid pinch point locations.
4. Step 3, 4 & 5 of JSA 03-067	4. Fall Hazard	4. Tether to bucket of bucket truck.

65/8 57

REV "1"

REMOVE ASPHALT AND CONCRETE IN THESE AREAS.

~~LEAVE CONCRETE SIDEWALK/DRAINAGE SPLASH BLOCK AT THIS LOCATION~~

~~BOX CULVERT TO PROVIDE EROSION/SEDIMENT CONTROL~~

REMOVE THIS CONCRETE TURN AROUND STRUCTURE

REMOVE STEAM AND CONDENSATE LINES FROM BUILDING 89 TO CONSTRUCTION FENCING FOR BUILDING WD DEMOLITION

INSTALL SILT FENCE TO KEEP DEBRIS OUT OF DITCH

CONTACT DPL (BRUCE ANDERSON, CONTACT PERSON) TO DE-ENERGIZE OVERHEAD 12.4 KV FEEDER 1 WEEK IN ADVANCE OF DEMOLITION

LEGEND

URMA
SEWERS
GAS — GAS — GAS — GAS — GAS — GAS — GAS — GAS
WATER
ELECTRIC
SIGNAL, STEAM, AND COMMUNICATION LINES

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

ISS	DATE	REVISION	BY	CHKR	ENG	LP&EC	APVD	M
	5/21/03	REVISE DEMO						

MOUND

Environmental Restoration Geographic Information System

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

PART CLASSIFICATION

DRAWING CLASSIFICATION: UNCLASSIFIED

Figure
~~Building 89~~
Surounding Utilities

SIZE | DRAWING NUMBER: bldg 94 utilities | JOB NUMBER

DWG TYPE: SITE | PRMG ENGR | SCALE | SHEET 1 OF

STATUS MD-REL-00/00/00 | ORIGIN: AUTOCAD

SKETCH REV "1"

0536.57

May 21, 2003 JSA 03-067
MODIFIED:

JSA AND SWITCH ORDER TO DISCONNECT OVERHEAD ELECTRICAL LINE ALONG ROADWAY

PURPOSE : To safely de-energize overhead electrical feeder to Building 56, then disconnect portion along roadway terminating into mini power-zone.

CONDITIONS : Obtain Firehouse, Building 56 manager's, Charlie Sienkiewicz, Jerry Allison and L. Casey (WD Contractor trailers) approval to proceed (remind personnel that there will be outages for 56 & two WD Contractor trailers).

Energized 480 volt switching within substation control area to be done while wearing **31cal/cm²** flame-retardant suits/face shields, cotton clothing, hearing protection and certified **class 0** rubber gloves. The safety observer shall stand at least **20 feet** to the side of the switching area and have a pair of **class 0** certified rubber gloves available.

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____4. At location along the roadway where Building 56 feeder is tapped into overhead, sever section that is terminated into a SqD Mini Power Zone next to Building 89 driveway, but do not remove feeder.

____5. Finish severed area of overhead to be re-energized with 600 volt rated electrical tape.

____6. Remove LOTO at PP-B (B Substation) & close 225 ampere circuit breaker for overhead feeder to Building 56.

____7 . Notify building 56, WD (L. Casey) and Firehouse (x3313) managers work is completed.

APPROVED BY :

TERRY CANTRELL _____ DATE ____

BRUCE ANDERSON Bruce Anderson DATE 5/21/03

WORK PERFORMED BY:

ELECTRICIAN #1 _____ DATE _____

ELECTRICIAN #2 _____ DATE _____

JOB SAFETY & HEALTH ANALYSIS

JSHA MASTER DOCUMENT CONTROL NO: JSHA#142-03

DATE: 6/21/03	_X_ NEW ___ REV	**BUILDING:** 56	**JOB:** Disconnect Electrical Overhead along Roadway
DEPARTMENT: Project Engineering			**SECTION:**
OCCUPATIONS: Electricians			

SIGNATURES

ORIGINATOR:	
REVIEW/REV.	
REVIEW/REV	
APPROVED	
APPROVED	

REQUIRED PERSONAL PROTECTIVE EQUIPMENT: safety glasses, leather safety shoes, cotton clothing for remainder refer to JSA 03-067

MSDS(s)/CHEMICALS ASSOCIATED WITH THE JOB:

BASIC JOB STEPS	POTENTIAL ACCIDENT/ILLNESSES OR KNOWN HAZARDS	SAFE JOB PROCEDURES
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Refer to JSA 03-067 for sequence of activities		
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2. Step 2 & 3 of JSA 03-067	2. Electric shock	2. Use known operating CAT III 600 volt rated voltmeter. Use LOTO.
3. Step 2 thru 6 of JSA 03-067	3. Pinch Points	3. Avoid pinch point locations.
4. Step 3, 4 & 5 of JSA 03-067	4. Fall Hazard	4. Tether to bucket of bucket truck.

LS 8/CSO

Appendix P

Mound Plant Recommendation

Mound Plant Recommendation
Bldg. 89

BACKGROUND:

Building 89 is a one-story concrete block structure with a partial basement. The building was constructed in 1985 as a warehouse for explosive material for the United States nuclear stockpile. The building is still used for equipment storage (nonexplosive). Although the building has no process history for radiological materials, equipment from areas with process history for radiological materials was stored in building 89. These materials were properly removed in the safe shutdown process. All radiological survey results are below criteria in the Building Data Package.

RECOMMENDATION:

After thorough review of the environmental data and the Phase I report, the Core Team agrees that all existing environmental issues associated with Building 89 have been resolved. Future use of Building 89 shall be restricted to industrial/commercial use. The Core Team hereby recommends that the U.S. Department of Energy submit a letter to the Administrator of the U.S. EPA for final approval of the lease or sale of this property, as required by Section 120(h) of CERCLA.

CONCURRENCE:

DOE/MEMP: Sam Cheng 2/19/97
Sam Cheng, D&D Team Leader (date)

USEPA: Timothy J. Fischer 2/19/97
Timothy J. Fischer, Rem. Proj. Mgr. (date)

OEPA: Brian K. Nickel 2/19/97
Brian K. Nickel, Project Manager (date)

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