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**BWXT of Ohio, Inc.**1 Mound Road  
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February 21, 2001

01-TC/02-21

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

ATTENTION: Robert Rothman

SUBJECT: Contract No. DE-AC24-97OH20044  
**BUILDING DATA PACKAGE FOR COS BUILDING - FINAL**

REFERENCE: Statement of Work Requirement C 7.1d -- Regulator Data Requests

Dear Mr. Provencher:

Rob Rothman from your office has approved the release of the Building Data Package for COS Building - Final version to the regulators for their review. If you or members of your staff have any questions regarding the document, or if additional support is needed, please contact Dave Rakel at extension 4203.

Sincerely,

Jeffrey S. Stapleton  
Manager, Environmental Safeguards & Compliance

JSS/nmg

cc: Tim Fischer, USEPA, (1) w/attachment  
Brian Nickel, OEPA, (1) w/attachment  
Ruth Vandegrift, ODH, (1) w/attachment  
Joe Ebersole, DOE/OH, (1) w/attachment  
Terrence Tracy, DOE/HQ, (1) w/attachment  
Joe Bartee, BWXT of Ohio, (2) w/attachment  
Dann Bird, MMCIC, (2) w/attachment  
Public Reading Room, (5) w/attachment  
Administrative Record, (2) w/attachment  
DCC

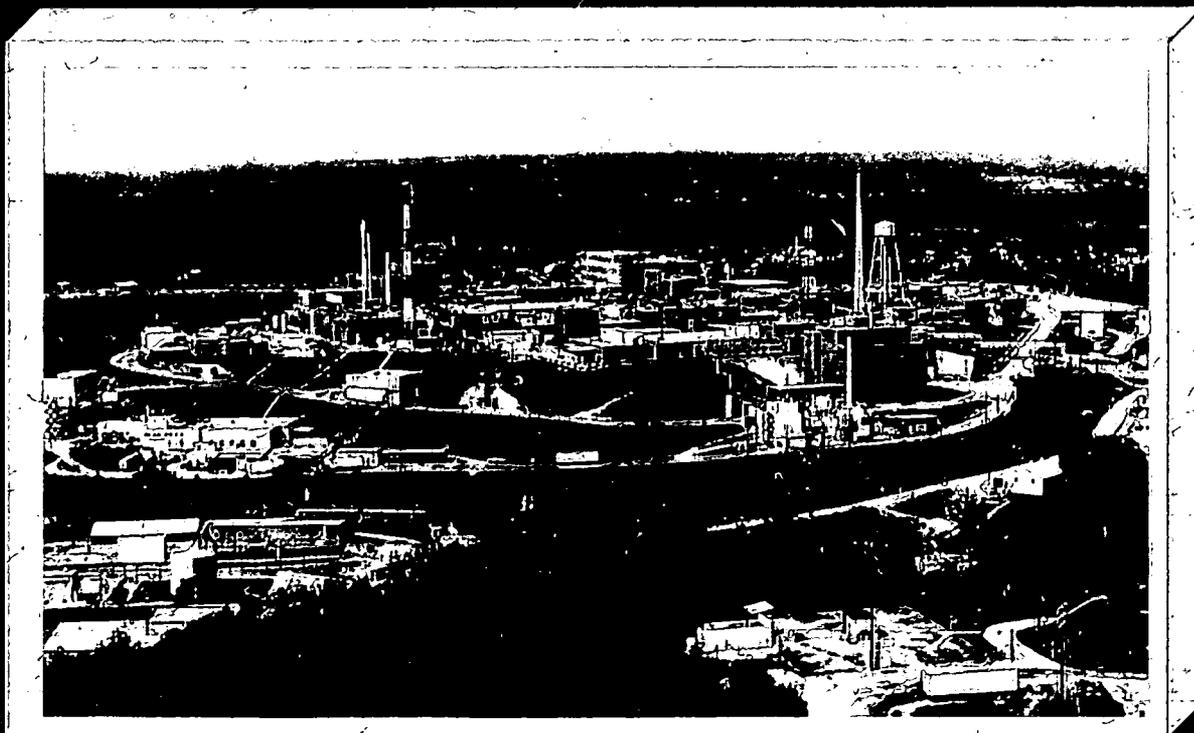
3005-0302180002



# MOUND PLANT

## Building Data Package

### COS Building



## BDP COS Building

<b>REV</b>	<b>DESCRIPTION</b>	<b>DATE</b>
<b>WORKING DRAFT</b>		<b>August 7, 2000</b>
<b>DRAFT</b>	Building binned No Further Assessment required on 9/18/2000.	<b>August 21, 2000</b>
<b>DRAFT PROPOSED FINAL</b>	Binning comments and OEPA comments addressed and incorporated. Recommendation page signed and inserted.	<b>October 10, 2000</b>
<b>PUBLIC REVIEW DRAFT</b>	Public review: 11/15/2000 - 12/16/2000	<b>November 2, 2000</b>
<b>FINAL</b>	Public review complete. MMCIC comments and Core Team responses incorporated. Narrative unchanged. Appendix spreadsheet replaced.	<b>January 18, 2001</b>

**MOUND**



Environmental  
Restoration  
Program

**MOUND PLANT  
POTENTIAL RELEASE  
SITE PACKAGE**

*Notice of Public Review Period*



The following Building Data Package (BDP) is available for public review in the CERCLA Public Reading Room, 305 E. Central Ave., Miamisburg, Ohio. Public comment on this document will be accepted November 15, 2000 through December 16, 2000.

**BDP COS Building: Offices (Central Operations Support)**

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



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

---

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 Environmental Management Project (DOE-MEMP), U.S. Environmental Protection Agency (USEPA), and the Ohio Environmental Protection Agency (OEPA), appreciates your comments on the COS Building Data Package. Attached are our responses.

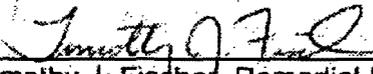
Should the responses to comments require additional detail, please contact Rob Rothman at (937) 865-3597 and we will gladly arrange a meeting or telephone conference.

Sincerely,

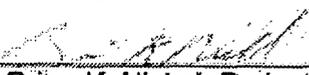
DOE/MEMP:

  
\_\_\_\_\_  
Robert S. Rothman, Remedial Project Manager

USEPA

  
\_\_\_\_\_  
Timothy J. Fischer, Remedial Project Manager

OEPA

  
\_\_\_\_\_  
Brian K. Nickel, Project Manager

**Response to MMCIC Comments on the  
COS Building Data Package  
Public Review Draft  
November 2, 2000**

**Substantive Comment**

1. No comment.

**Errata**

1. The copy of the soil sample results spreadsheet in Appendix L is blurred and illegible.

**Response:**

A legible spreadsheet will be included in the Final version of the Building Data Package.

# MOUND PLANT RECOMMENDATION

## COS Building

### Background:

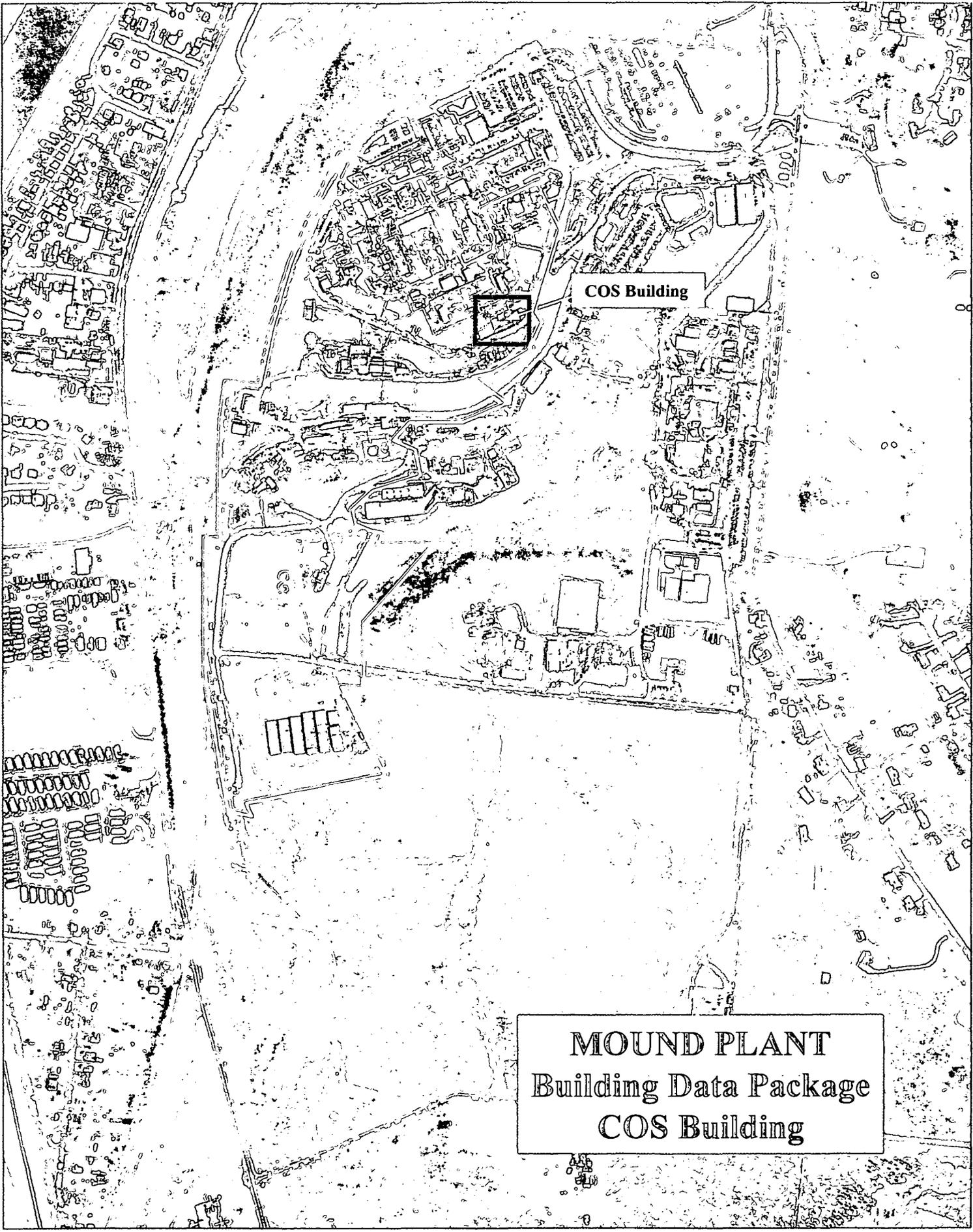
COS (Central Operations Support) Building consists of four floors, a basement level, and a penthouse. It was constructed primarily in 1986, with the basement level and separate mechanical building completed in 1991. The exterior walls are concrete block with face brick. Upper floors are constructed of concrete on metal decks. The built-up asphalt roof system is also on a steel deck. COS Building possesses 64,654 square feet. It was originally constructed for production support for weapons components, including explosives laboratories, a standards lab, and a robotics lab.

### Recommendation:

After thorough review of the environmental data and the Building Data Package, the Core Team agrees that all existing environmental issues associated with COS Building have been resolved. Future use of COS Building will be restricted to commercial/industrial 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:	<u>Art Kleinrath</u>	<u>9/18/00</u>
	Art Kleinrath, Remedial Project Manager	(Date)
USEPA:	<u>Timothy J. Fischer</u>	<u>9/18/00</u>
	Timothy J. Fischer, Remedial Project Manager	(Date)
OEPA:	<u>Brian K. Nickel</u>	<u>9/18/00</u>
	Brian K. Nickel, Project Manager	(Date)



COS Building

**MOUND PLANT**  
Building Data Package  
COS Building

# Mound Plant

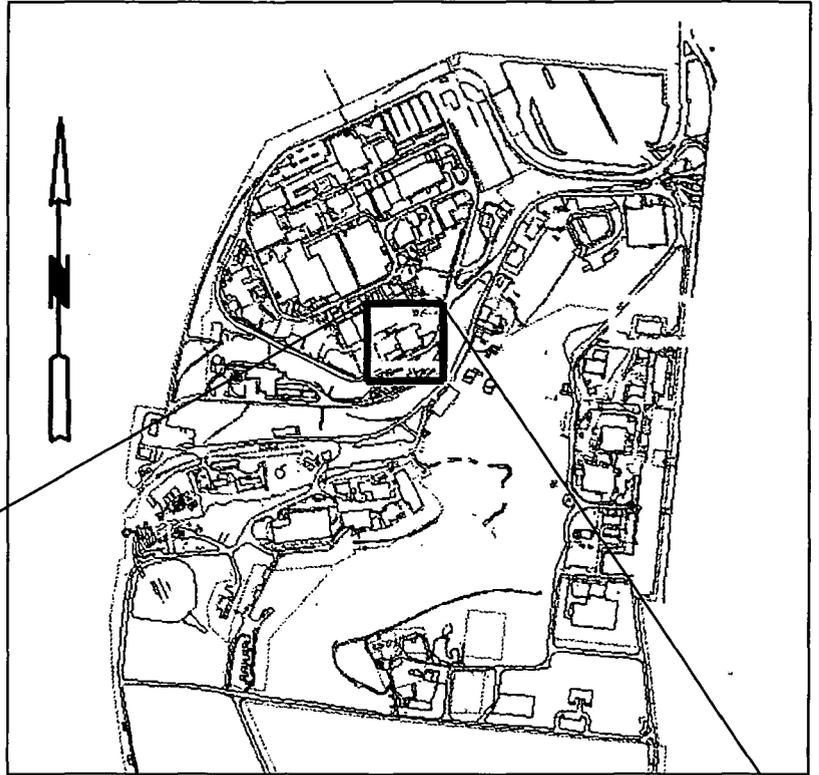
## COS Building

### Offices

(Central Operations Support)

On the map below:

- Bldg. number and location shown in black
- PRS's shown in blue
- Fencing shown in red
- Elevation contours shown in brown





**Mound Plant - COS Building**

**BUILDING DATA PACKAGE (BDP)**

**COS Building**

**DOE MOUND PLANT**

**MIAMISBURG, OHIO 45343**

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Appendix C	Site Plan
Appendix D	Building Drawings
Appendix E	Aerial Photographs
Appendix F	Environmental Appraisal Report of the Mound Plant (Extract)
Appendix G	Radiological Summary/Information
Appendix H	Radon Survey Summary/Information
Appendix I	Asbestos Summary/Information
Appendix J	Lead Summary/Information (There is no lead summary/information available.)
Appendix K	Chemical Summary/Information
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Appendix M	Occurrence Reports
Appendix N	PRS Information
Appendix O	Mound Facility Physical Characterization (Extract)
Appendix P	COS Building Tenants/Locations

## 1.0 General Overview

### 1.1 Introduction

The purpose of this Building Data Package is to identify, if possible, any recognized environmental conditions (defined below) that may affect the subject property. The intended building disposition is "transfer." Ultimate disposition is a function of building condition and DOE/EPA evaluation.

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, ground water, or surface water near the building.

### 1.2 Scope

This document has been prepared in accordance with agreements and requirements as specified in the *Work Plan For Environmental Restoration of the DOE Mound Site, the Mound 2000 Approach*. It is a Building Data Package of COS Building located at the DOE Mound Plant in Miamisburg, Ohio. This investigation was performed to support procedures as 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 the building, the soil beneath, and a 15-foot wide perimeter border around the building. Soil sampling results are noted in Appendix L. This perimeter includes roadways, sidewalks, pavement, and grass covered areas. The investigation of COS Building included the following.

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

- Lead paint
- Asbestos
- Radon

Building investigations were conducted by BWXT Of Ohio personnel from May through July, 2000.

This report used a variety of previous assessments completed by BWXT of Ohio and/or its subcontractors. The reports used include:

- Characterization of Mound's Hazardous, Radioactive, and Mixed Wastes, August 1990
- 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
- Building Prints
- PRS Information
- Mound Asbestos Survey - Building Summary, October 3, 1991

## 2.0 Building Specific Overview

Mound Plant is located in the southern portion of the corporation limits of Miamisburg, Ohio. The entire Mound Plant facility is situated on approximately 300 acres of land and contains approximately 130 buildings. The subject property consists of Mound Plant COS Building footprint and an arbitrary 15-foot wide perimeter around the building. COS Building contains 64,654 square feet. It was constructed primarily in 1986. The basement level was completed in 1991. No waste was stored in COS Building.

### 2.1 Current Uses Of COS Building

COS Building is leased to tenants by the Miamisburg Mound Community Improvement Corporation (MMCIC). See Appendix P.

### 2.2 Past Uses Of COS Building

See Appendix F, Paragraph 9.4.2, and Appendix O, Paragraph 1.a.

### 2.3 Summary of Environmental Concerns And Findings

DESCRIPTION	COMMENT	RESOLUTION	REFERENCE
Copper (Cu) Contamination (to Sanitary Sump)	Incidents occurred in 1996 - 1998.	Installation, proper operation/maintenance of Cu pre-treatment system. Current tenant no longer discharges effluent to sanitary system.	Para. 4.2.1.1 Appendix M
T Building	7 waste lines in geographic proximity coming from T-Building PRSs (sumps)	Safe shutdown/ D & T of T-Building.	Section 2.5 Para. 4.2.1.3 Appendix N

## 2.4 Radiological Characterization Summary For COS Building

See Appendix G.

TYPE	RSDS	LOCATION	SURVEY RESULTS (dpm/100 cm <sup>2</sup> )	Surface Contamination Guideline (dpm/100cm <sup>2</sup> ) (Note 1)	COMMENTS
Highest Alpha Smearable Activity	Note 2	Basement Rm. 22, Wipe 1	7.104	20	
Highest Alpha Fixed Activity	Note 3	Note 3	<100	100	
Highest Beta Smearable Activity	R-339-96	Desk	132.99	1,000	
Highest Beta Fixed Activity	Note 3	Note 3	<5,000	5,000	
Highest Tritium Smearable Activity	R-239-96	Cabinet, Room COS-226	1253.62	10,000	

Note 1: *Work Plan for Environmental Restoration of the DOE Mound Site, the Mound 2000 Approach, Appendix A, Table 1: Surface and Volumetric Release Criteria for Building Disposition.*

Note 2: Taken from 1995 COS Cold Building Shutdown radiological survey data. No associated RSDS number.

Note 3: All RSDS' associated with the confirmatory survey were <100 dpm/100 cm<sup>2</sup> alpha and <5000 dpm/100 cm<sup>2</sup> beta. (See Appendix G.)

RSDS: Data Sheet that provides radiological field monitoring survey results.

## 2.5 Associated PRS Table For COS Building

See Paragraph 4.2.1.3 and Appendix N.

PRS #	CERCLA or BLDG. RELATED	BINNING STATUS	COMMENTS
147	CERCLA	NFA: 02/01/1996	Geographic Proximity (HH Building Soils)
215	T Building Related	TBD	Geographic Proximity
216	T Building Related	TBD	Geographic Proximity
219	T Building Related	TBD	Geographic Proximity
223	T Building Related	TBD	Geographic Proximity
225	T Building Related	TBD	Geographic Proximity
226	T Building Related	TBD	Geographic Proximity
227	T Building Related	TBD	Geographic Proximity

### 3.0 Site Description

#### 3.1 Site/Vicinity Location And Characteristics

COS Building is located at the U.S. Department of Energy Facility known as Mound Plant. Mound is situated in the city of Miamisburg, Miami Township, Montgomery County, state of Ohio.

The Mound facility is situated on approximately 300 acres of land and contains approximately 130 buildings with a total of approximately 1.4 million square feet of floor space (the number of buildings diminishes as buildings are decommissioned and either sold or demolished). The original 182-acre site, purchased by the Manhattan Engineering District in 1946, consists of two hills and an intervening valley that runs approximately east and west. COS Building is located on the main hill of the Mound site. The 124-acre tract acquired in 1981 is an undeveloped mixture of fields and woods that undulates and slopes downward to the west, away from the main site. This area was acquired to serve as a buffer and has been used as a staging area and parking area for contractors working on-site. See introductory maps and Appendix C.

To the west lies a railroad line and the north south trending Miami-Erie Canal. The northern boundaries of the site abut the residential area of Miamisburg, Ohio. Mound Road marks the northern half of the eastern perimeter of the facility then veers east, away from the southern half of the eastern boundary. A public golf course (belonging to the City of Miamisburg), the Miamisburg Mound Memorial Park, old agricultural fields, residential lots, and vacant wooded lots border against the facility along Mound Road. Benner Road forms the southern property line of the Mound Plant, with agricultural fields and farms occupying the lands beyond.

#### 3.2 Description Of Structures, Roads, Other Improvements Related To COS Building

COS Building was constructed primarily in 1986. The building consists of four floors, a basement level, and a penthouse. The basement level of the building was finished in 1991 as a tape processing facility, and a separate mechanical building was constructed to serve this facility. The exterior walls of COS Building are concrete block with face brick. Each upper floor in the fire-proofed steel framed structure is concrete on metal deck. The built-up asphalt roof system is on a steel deck. The overall building height is approximately 96 feet from grade at the south face, to

the roof of the penthouse elevator. In 1996, DOE allowed for a "transfer-in-place" of specific personal property located in COS Building to the Miamisburg Mound Community Improvement Corporation (MMCIC). EG&G (the Mound Plant operator before BWXTO) conducted high-risk reviews of the subject property, and some of the property was found to have been exposed to energetic materials. Since the MMCIC and its customers were willing to accept this leased property in its current condition, EG&G was exempted from having to perform additional cleaning of energetic materials from the listed property. (See Appendix P.)

### 3.3 Current And Past Uses Of Buildings Adjacent To COS Building

See introductory maps and Appendix C.

Building	Building Area (Sq. Ft.)	Current Use	Direction From COS Building
DS	47,810	Binned for lease - 11/18/1998	North
T	172,963	Safe Shutdown	North
HH	15,276	Safe Shutdown	South

## 4.0 Records Review

### 4.1 General/Historical CERCLA Information

In compliance with permit requirements under RCRA, the Clean Water Act (CWA), the Safe Drinking Water Act (SDWA), and the Clean Air Act (CAA), Mound Plant has applied for or has received permits for its surface water discharges, air emissions, and hazardous waste program. Mound Plant is currently operating hazardous waste storage facilities under a RCRA Part B permit dated October 18, 1996. Mound Plant also maintains a NPDES surface water discharge permit with Facility I.D. number OH 009857. Permits for the open burning of wastes involving explosives and other fuels have been issued by the Regional Air Pollution Control Agency (RAPCA). Other operations that produce particulate or vaporous emissions are registered with RAPCA and OEPA. Mound Plant also submits annual Emergency and Hazardous Chemical Inventory forms to the OEPA, pursuant to SARA, Title III, the Emergency Planning and Community Right-to-Know Act. The 1998 version of this report indicated that no chemicals are stored in COS Building in quantities above the regulatory thresholds.

The Mound Plant site was identified as a contaminated site on the National Priority List under CERCLA (Superfund) in 1989. The Mound Plant site was originally listed as a consequence of VOC contamination in the western end of the lower valley area. The clean-up of the Mound Site was originally to be accomplished under the CERCLA mandated procedures for regulating Superfund Sites using the operable unit (OU) system to define and characterize clean-up areas. As the clean-up effort went forward, it became apparent that the Mound Site did not fit the profile for a clean-up strategy based on the operable units. The Department of Energy (DOE), the United States Environmental Protection Agency (USEPA), and the Ohio Environmental Protection Agency (OEPA) designed a new decision making process for the clean-up of Mound. The new process is known formally as a "removal site evaluation process" and informally as the "Mound 2000 process." The Mound 2000 process system divided Mound into geographic parcels containing over 400 Potential Release Sites (PRSs) with approximately 200 concerned with potentially contaminated soils, and the balance with potential contamination in buildings or associated primarily with building operations. 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 COS Building

### 4.2.1 History Of Occurrences, Spills, And Releases

#### 4.2.1.1 Occurrence Reports

In November, 1996, samples collected from Outfall 001 exceeded NPDES permit limitations for copper. Sampling traced the source of the copper discharges to a sump in the basement of COS Building leased by building tenant Mound Flexible Circuits (MFC). The COS Building basement tenant (in 1996) temporarily discontinued discharge of an etcher/stripper waste stream and installed a new pre-treatment unit in December, 1996. In January, 1997, EG&G had a contractor pump out the sump that receives this effluent, rinse the sump walls/floor/pumps and water-jet clean 150 feet of sanitary line. Copper levels decreased significantly after the sump was cleaned.

Because of an increasing trend in total copper concentrations observed from October 1997 - February 1998 at Outfalls 601 and 001, a second investigation was conducted, including sampling at the same COS Building sump. Further study concluded that copper was not being retained on the pre-treatment system resin columns and that they needed to be regenerated. The tenant agreed, pumped out the basement sump and disposed of the contents through a waste management firm. Subsequently, copper concentrations from the COS effluent were within applicable pretreatment guidelines and no further elevated copper concentrations were encountered in the discharge from the wastewater treatment plant.

The current tenant, does not discharge the etcher/stripper waste stream to sanitary sewer. According to the tenant, most etching is performed off-site and the small amount of effluent generated on-site is collected for process recycling or off-site

disposal. See Appendix M for associated information and investigative sample results.

#### 4.2.1.2 Spills and Releases

See Paragraph 4.2.1.1 and Appendix M.

#### 4.2.1.3 Associated PRS Overview

As a result of the investigations and documentation accomplished to comply with the CERCLA cleanup process via the FFA/DOE ER program, DOE and BWXT Of Ohio have tabulated all the Potential Release Sites (PRSs) identified under the various regulatory programs in effect at the site. A total of 420 PRSs have been identified. None of these 420 PRSs is attributed to COS Building. Several PRSs are related by proximity. See Appendix N and paragraph 2.5.

### 4.2.2 Sampling Data

#### 4.2.2.1 Radiation Surveys

COS Building radiological surveys were accomplished. Refer to paragraph 2.4 for further information. See Appendix G. No surface measurements exceeded surface contamination guidelines. Additional radiological survey data is available.

#### 4.2.2.2 Soil Sampling Data Summary

See Appendix L. No samples analyzed showed contamination concentrations that exceed guideline values. Please note Core Team approved guideline value for Plutonium-238 based on  $10^{-5}$  risk level is 55 pCi/g.

#### 4.2.2.3 Chemical History/Removal (As Applicable)

As listed in current COS Building chemical inventory information and observed in building inspections, there are chemicals associated with on-going operations. Note Paragraph 2.1 and Appendix P. See also paragraph 2.3 and Appendix K.

#### 4.2.2.4 Lead Paint

Congress established maximum lead concentrations in residential paint in 1978. The original building was constructed in 1986. Therefore, it is assumed that no lead paint is present. (See Appendix J.)

#### 4.2.2.5 Asbestos

Mound's technical manual, *Asbestos Program Manual, MD-10391*, indicates (known, assumed, or suspected) asbestos could possibly be found in COS Building. Based on an interview with the COS Building Manager, the building has no asbestos containing materials. Recent, more building-specific records and information including two site surveys and building files indicate that no asbestos exists in COS Building. (See Appendix I.)

#### 4.2.2.6 Radon

The results of a 1989-90 Mound Indoor Radon study indicated an average radon concentration of 0.6 picoCuries/liter in COS Building. The EPA recommended standard for radon is 4.0 picoCuries/liter. (See Appendix H.)

### 4.3 Aerial Photographs

Aerial photographs from 1983 and 1994 were reviewed and copies are found in Appendix E.

The overall Mound Plant facilities, as depicted in photos from 1983 and 1994 show plant change and expansion.

COS Building is visible in the photograph dated 1994.

## 5.0 Site Reconnaissance/Inspections: Findings, Observations

See Appendix F. Findings have been addressed and verified with the Building Manager on July 20, 2000.

### 5.1 Hazardous Substances In Connection With Identified Uses

#### 5.1.1 Space

None.

#### 5.1.2 Heating/Cooling

HVAC Air Handling Units providing the building's air conditioning are located in the penthouse. Central steam, condensate and chilled water are also provided along with other utility piping. The building has fire sprinkler service. These systems are presently operational and will continue in operation.

#### 5.1.3 Stains Or Corrosion

During the COS Building tour on July 11, 2000, no unusual stains or corrosion were observed either in labs or offices. A few ceiling tiles on the second floor were noted to have water stains, assumed to have occurred during replacement of a fire water line in April, 2000. The building was redecorated and repainted when MMCIC took possession in 1996.

#### 5.1.4 Drains And Sumps

The building is serviced by sanitary and storm drain systems. Floor drains discharge into the existing sanitary system.

#### 5.1.5 Wastewater

Potable water and sanitary service is provided for COS Building. Sewage from the COS Building flows to the existing sanitary sewer. The Mound Plant facility operates an on-site sanitary and storm water sewer treatment plant (Building 57) to manage the plant's storm water and sanitary wastewater pursuant to a National Pollutant Discharge Elimination System (NPDES) permit issued by OEPA.

### 5.1.6 Septic Systems

There is no evidence of septic systems (such as leaching field or septic tank vent pipes) in the vicinity of COS Building.

### 5.1.7 Suspected Asbestos Containing Material

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

Insulation in the building is found in the walls in the form of insulation board. Insulation around the pipes and equipment is fiber glass insulation, and the penthouse has sprayed-on fire protection insulation. The roof has phenolic foam insulation as part of the built-up attached roofing. None of this insulation has asbestos in the product content. Records verify that asbestos is not present in the building.

### 5.1.8 Paint

Lead based paint was used in the U.S. prior to 1978, when Congress established the limits on the maximum lead concentration allowable in residential buildings. The risk of a lead based paint hazard exists only when painted surfaces are damaged (cracked, chipped, loosened, or chewed).

Because the building was constructed in 1986, it is assumed that no lead paint exists in the building structure. COS Building was remodeled and repainted in 1996 when MMCIC took occupancy.

## 5.2 Hazardous Substance Containers And Unidentified Substance Containers

No unidentified substances were found in or near COS Building. See Appendix K for a list of identified substances.

## 5.3 Storage Tanks

No storage tanks are associated with COS Building.

#### 5.4 Indications Of PCBs

Fluorescent lighting is used in this building. It is assumed that the lighting contains PCBs. The lighting will be replaced with normal maintenance. The building transformer does not contain PCBs.

#### 5.5 Indications Of Solid Waste Disposal

No solid waste other than office type waste was observed in the building. The current COS Building basement tenant is considered a conditionally exempt small quantity generator of hazardous waste. According to the tenant, the less than 100 kilograms per month of cupric chloride (characteristic hazardous waste) effluent generated from the etching process is recycled to the process or stored on-site. The amount stored on-site has never exceeded 1000 kilograms. No evidence of hazardous waste storage or disposal was noted in the vicinity of areas occupied by other tenants in COS Building.

#### 5.6 Physical Setting Analysis, If Migrating Hazardous Substances Are An Issue

Migrating hazardous substances are not an issue.

#### 5.7 Other Conditions Of Concern

No additional conditions of concern exist for COS Building.

#### 5.8 Recent Interviews

##### 5.8.1 Building Manager Interview

The current Building Manager of COS Building, Mr. Ken Hacker, has been employed at the plant for 14 years and has been Building Manager of COS Building for the last year.

##### 5.8.2 Personnel Interviews

Dann Bird - MMCIC Planning Manager  
Jeff Kamphake - MMCIC Marketing Manager  
Jack Melke - T-Building Engineer

## 5.9 Historical Interviews

Don Homan - previous COS Building employee during construction.  
No additional information was attained.

## Appendix A

### Acronyms

AEA	Atomic Energy Act of 1954
AEC	Atomic Energy Commission
ACM	Asbestos Containing Materials
AL	Action Level
ASTM	American Society for Testing and Materials
BDP	Building Data Package
BUSTR	Bureau of Underground Storage Tank Regulations
BWXTO	BWXT Of Ohio
CAA	Clean Air Act
CEG	Conditionally Exempt Generator
CERCLA	Comprehensive Environmental Response, Compensation & Liability Act
COD	Chemical Oxygen Demand
CWA	Clean Water Act
D&D	Decontamination and Decommissioning
DOE	U.S. Department of Energy
DPM	Disintegrations Per Minute
EMF	Electromagnetic Field
EPA	U.S. Environmental Protection Agency
ER	Environmental Restoration (Program)
ERDA	Energy Research and Development Administration
ERNS	Emergency Response Notification System

<b>FFA</b>	<b>Federal Facility Agreement</b>
<b>FINDS</b>	<b>Facility Index System</b>
<b>FS</b>	<b>Feasibility Study</b>
<b>GSA</b>	<b>General Services Administration</b>
<b>HEPA</b>	<b>High Efficiency Particulate Air</b>
<b>LQG</b>	<b>Large Quantity Generator</b>
<b>LUST</b>	<b>Leaking Underground Storage Tank</b>
<b>M&amp;O</b>	<b>Maintenance and Operations</b>
<b>MAT</b>	<b>Mound Applied Technologies</b>
<b>MCC</b>	<b>Monsanto Chemical Company</b>
<b>MEMP</b>	<b>Mound Environmental Management Project</b>
<b>MMCIC</b>	<b>Miamisburg Mound Community Improvement Corporation</b>
<b>MRC</b>	<b>Monsanto Research Corporation</b>
<b>NPDES</b>	<b>National Pollutant Discharge Elimination System</b>
<b>OEPA</b>	<b>Ohio Environmental Protection Agency</b>
<b>ORPS</b>	<b>Occurrence Reporting and Processing System</b>
<b>OU</b>	<b>Operable Unit</b>
<b>PADS</b>	<b>PCB Activity Database</b>
<b>PCB</b>	<b>Polychlorinated Biphenyls</b>
<b>PRS</b>	<b>Potential Release Site</b>

RAPCA	Regional Air Pollution Control Agency
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
RI	Remedial Investigation
RSDS	Radiological Survey Data Sheet
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
SQG	Small Quantity Generator
SWMU	Solid Waste Management Unit
TRIS	Toxic Chemical Release Inventory System
TSD	Treatment, Storage, & Disposal Facility
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOC	Volatile Organic Compound

**Appendix B**

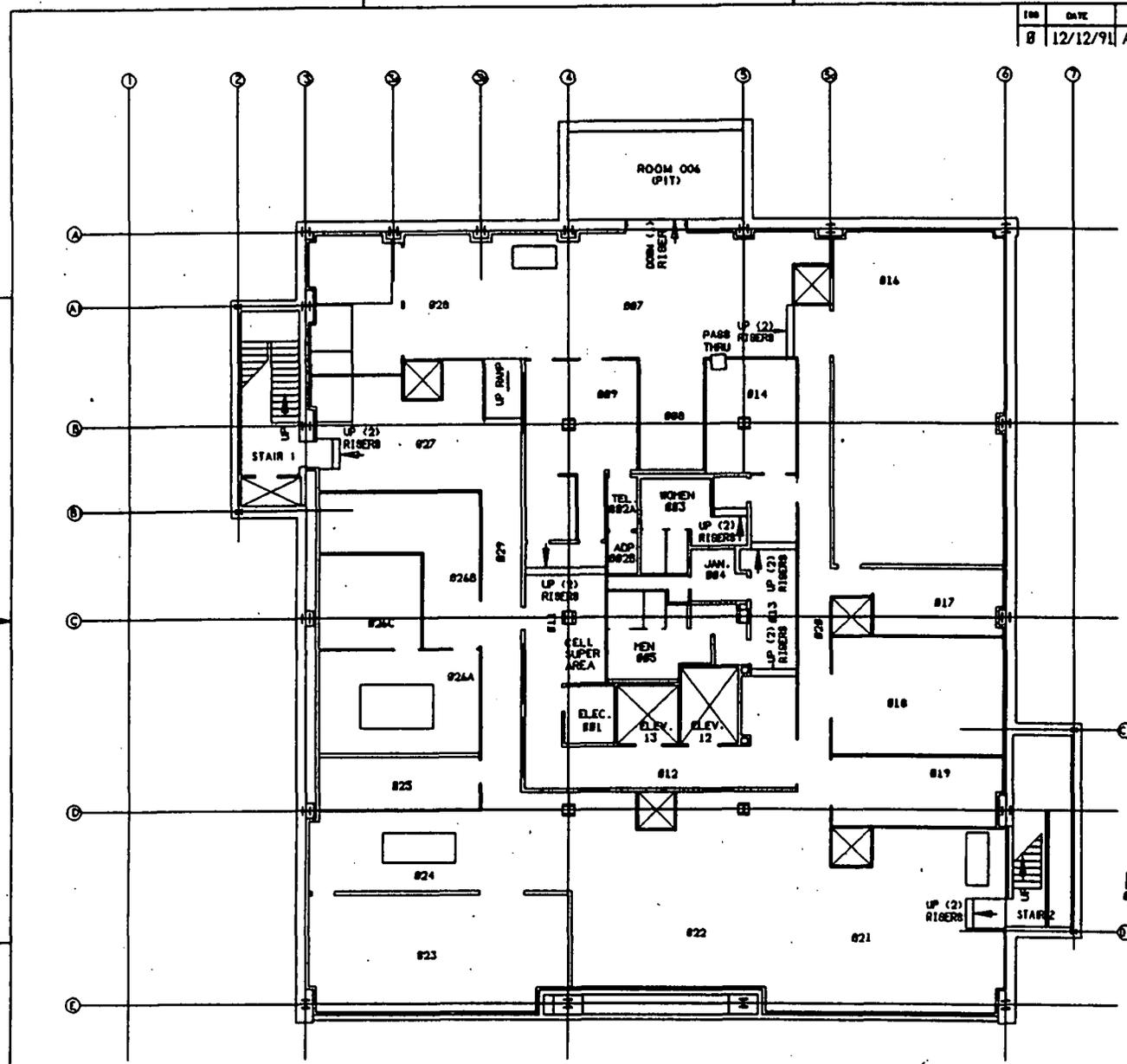
**Map of Montgomery County**

Appendix C

Site Plan

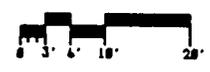
**Appendix D**  
**Building Drawings**

ISS	DATE	REVISION	BY	CHK	CHK	CHK	CHK	CHK	CHK
8	12/12/91	ASBUILT ISSUE	DCW						DVD



UNCLASSIFIED & NON-SENSITIVE  
 Reviewed by Mound Declassification  
 Office. Reviewer Initials: *SLC/*

*5/4/98*



**COS BLDG  
 BASEMENT  
 BLDG CODE:3544**

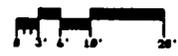
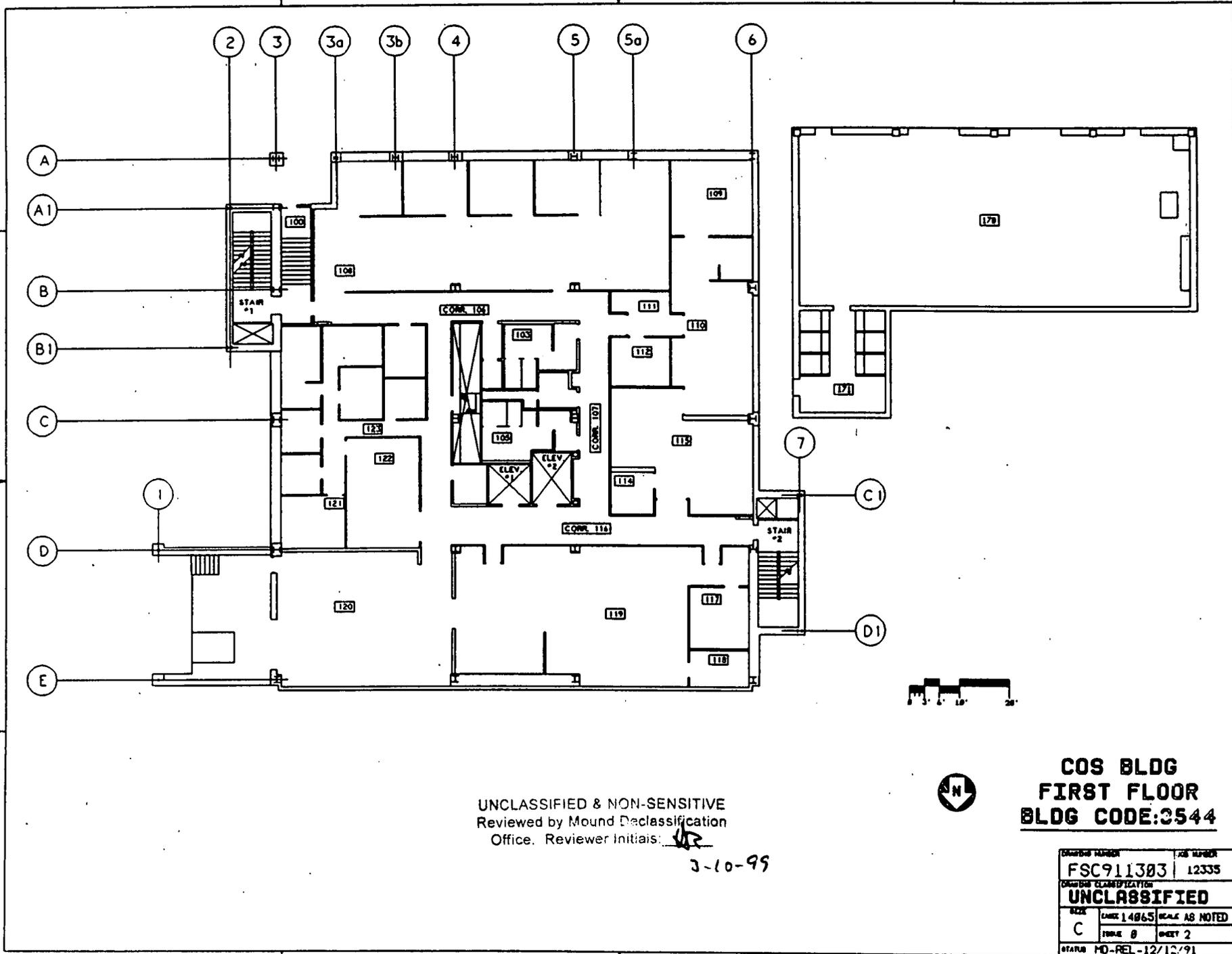
APPROVALS:	DATE:
SAFETY COMMITTEE REQUIRED:	
NONE _____ TRUCOC _____ TERCOC _____ DBOC _____	
TECH. RESP. _____	
SR. PER. _____	
TRUCOC _____	
TERCOC _____	
DBOC _____	

**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 2148). APPROVAL BY THE DEPARTMENT  
 OF ENERGY PRIOR TO RELEASE IS REQUIRED.

DESIGN DR	PROJ DR
WORK	ENR REV
UP & E	PLAN REV
REV DR	
DATE	

SHEET	1	2	3	4	5	6	TITLE	(U) TITLE CLASSIFICATION
1	8	8	8	8	8	8	COS BLDG FLOOR PLANS	
PART CLASSIFICATION								
DRAWING CLASSIFICATION								
<b>UCNI</b>								
C FSC911303								JOB NUMBER 12335
DWG TYPE SFP FROM COS BLDG CASE 14865 (SCALE AS NOTED) SHEET 1 OF 6								
STATUS MD-REL-12/12/91								ORIGIN MD-BR3-V3.8

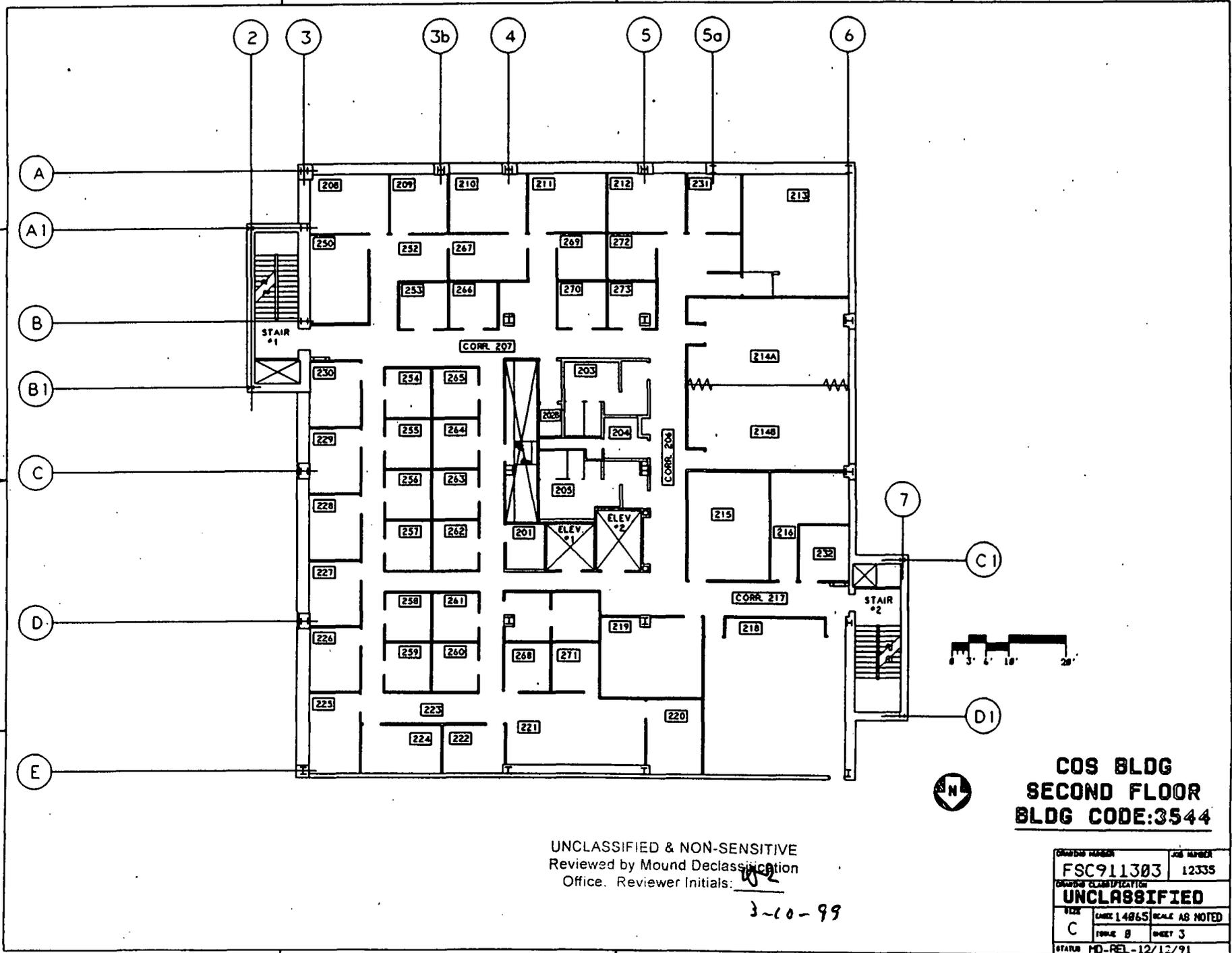


**COS BLDG  
FIRST FLOOR  
BLDG CODE: 2544**

UNCLASSIFIED & NON-SENSITIVE  
Reviewed by Mound Declassification  
Office. Reviewer Initials: *SR*

3-10-99

DRAWING NUMBER		JOB NUMBER	
FSC911303		12335	
DRAWING CLASSIFICATION			
<b>UNCLASSIFIED</b>			
SIZE	DATE	SCALE	AS NOTED
C	14865		
	FIGURE 0		SHEET 2
STATUS: NO-REL-12/12/91			

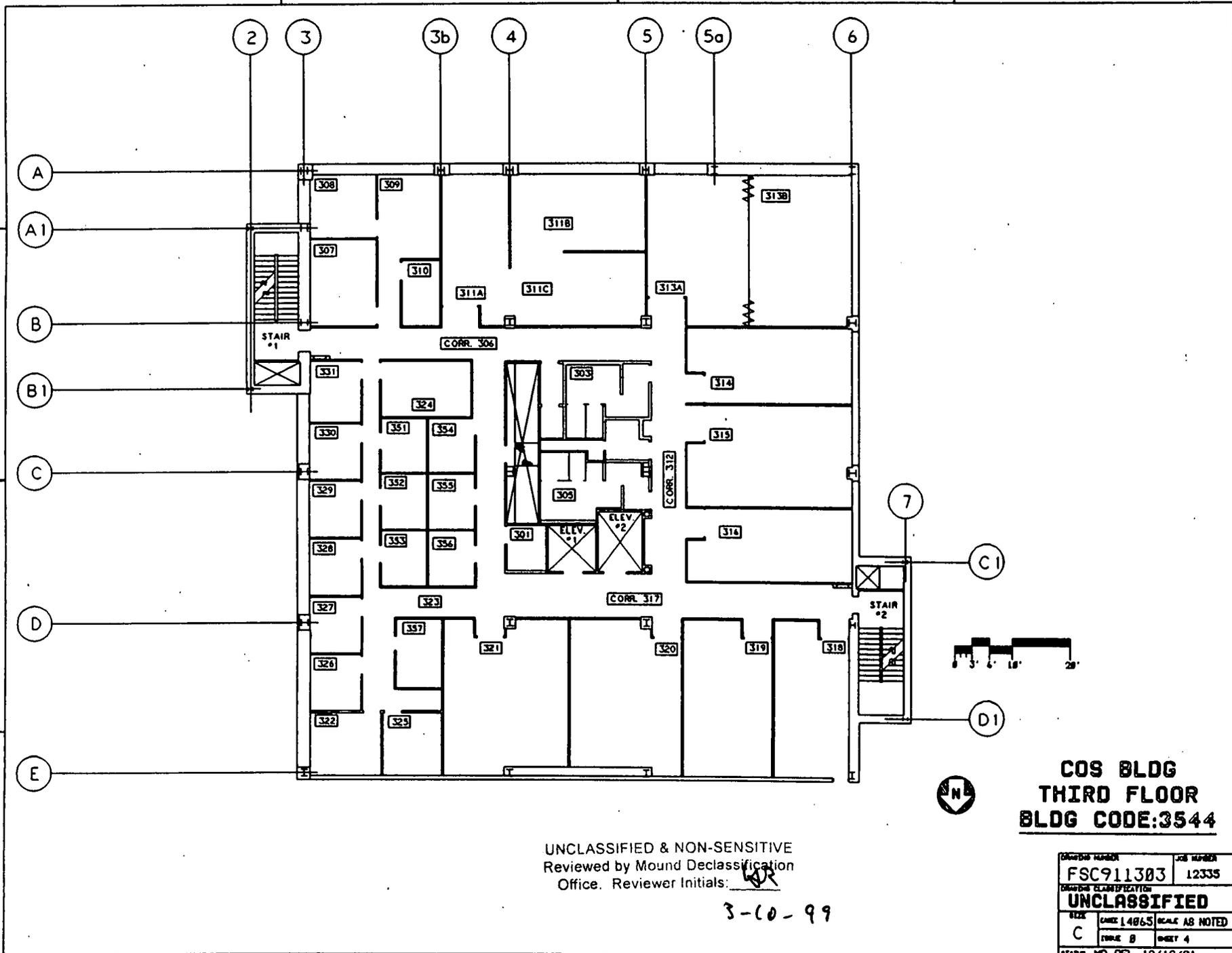


**COS BLDG  
SECOND FLOOR  
BLDG CODE:3544**

UNCLASSIFIED & NON-SENSITIVE  
Reviewed by Mound Declassification  
Office. Reviewer Initials: *WJ*

3-10-99

DRAWING NUMBER	FSC911303	JOB NUMBER	12335
DRAWING CLASSIFICATION			
<b>UNCLASSIFIED</b>			
SIZE	C	SCALE 1:4865	SCALE AS NOTED
FORM	B	SHEET 3	
STANDARD: HO-REL-12/12/91			

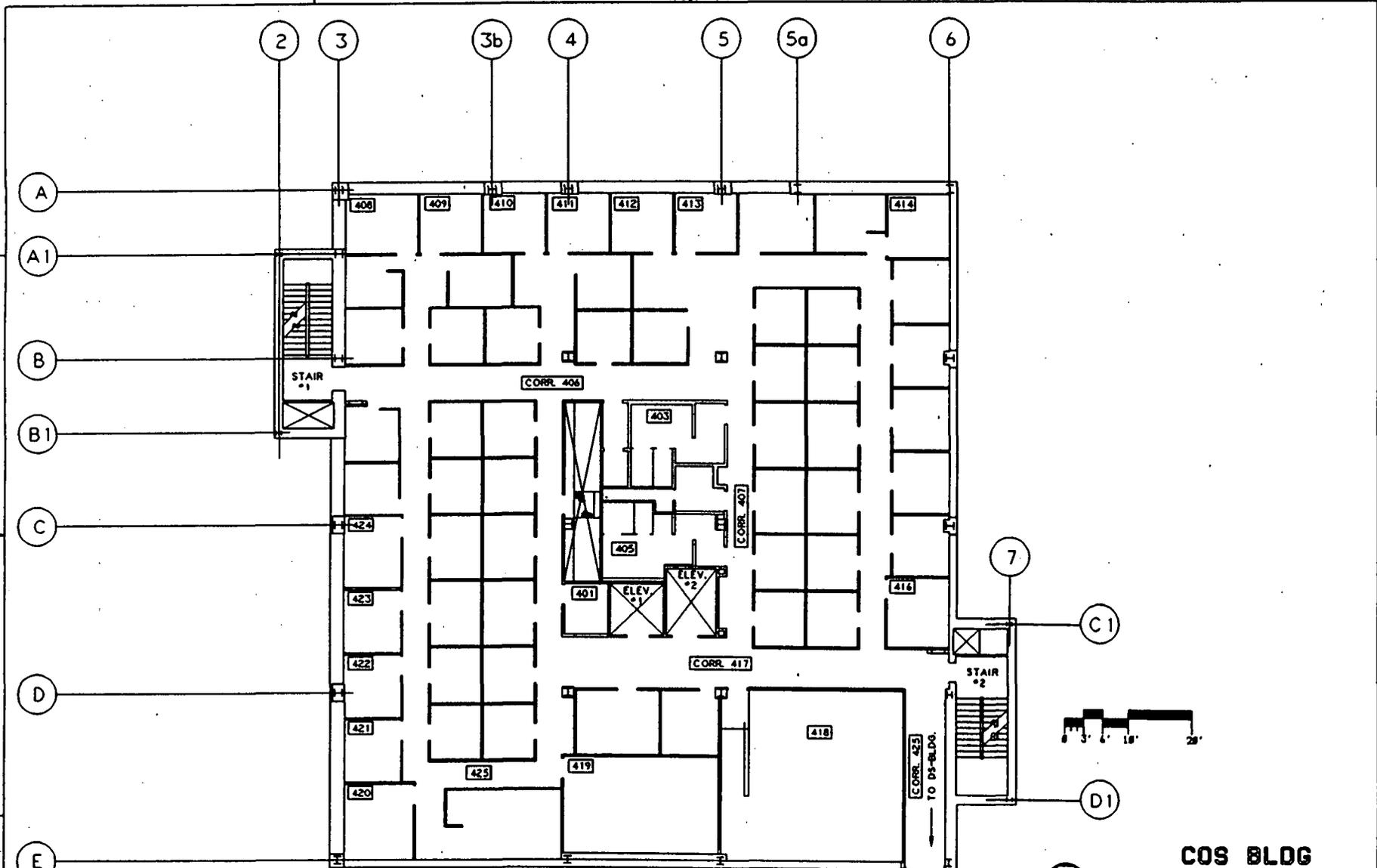


**COS BLDG  
THIRD FLOOR  
BLDG CODE:3544**

UNCLASSIFIED & NON-SENSITIVE  
Reviewed by Mound Declassification  
Office. Reviewer Initials: *WJ*

3-10-99

CONTROL NUMBER	FSC911303	JOB NUMBER	12335
CLASSIFICATION	UNCLASSIFIED		
SIZE	CASE 14865	SCALE AS NOTED	
	FORM B	SHEET 4	
STATUS	FO-REL-12/12/91		

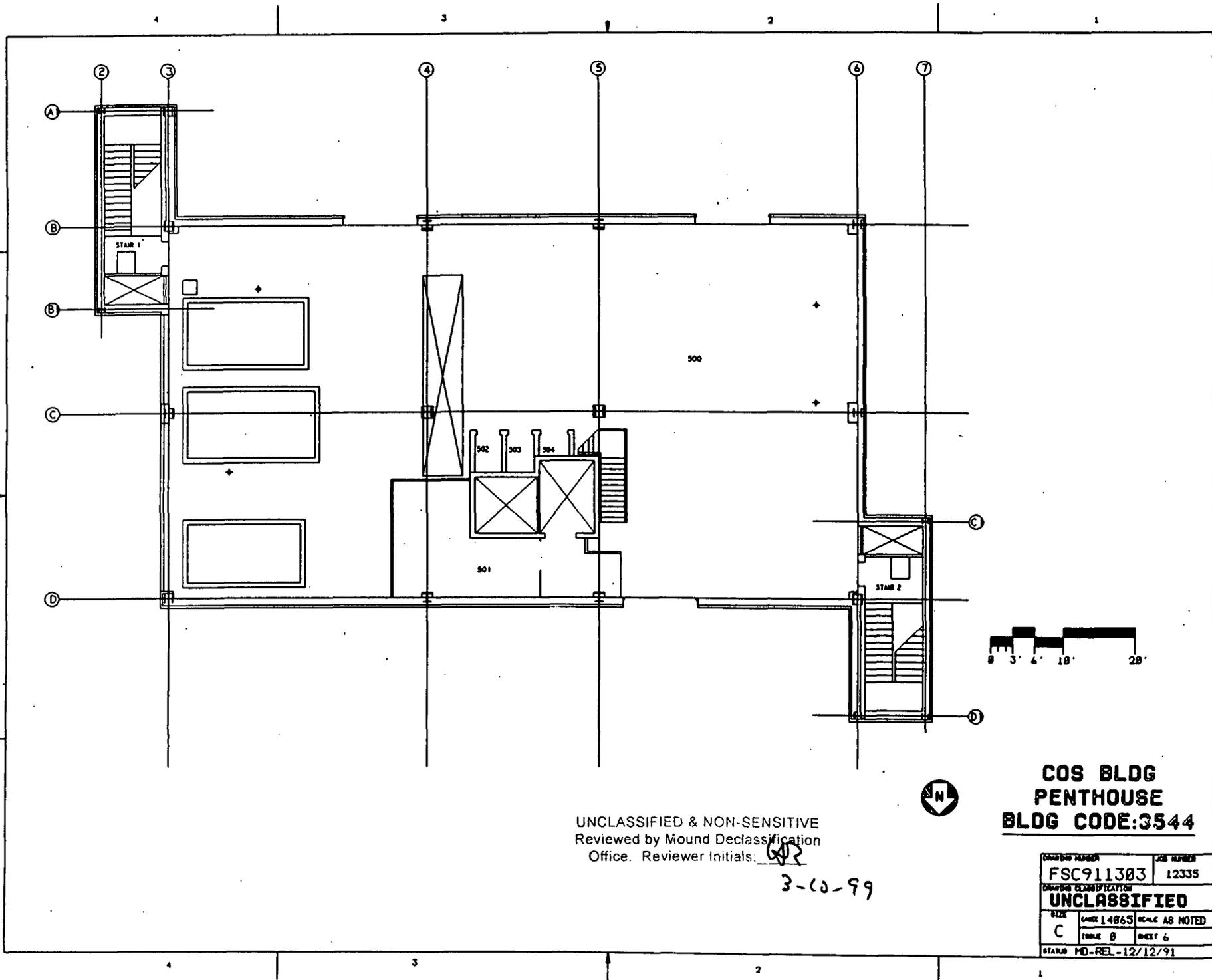


**COS BLDG  
FOURTH FLOOR  
BLDG CODE: 3544**

UNCLASSIFIED & NON-SENSITIVE  
Reviewed by Mound Declassification  
Office. Reviewer Initials: *MC*

3-10-99

CONTROL NUMBER	JOB NUMBER
FSC911303	12335
CLASSIFICATION	
<b>UNCLASSIFIED</b>	
SIZE	SCALE AS NOTED
C	SCALE 1/8" = 1'-0"
TABLE B	SHEET 5
STATUS MD-REL-12/12/91	



UNCLASSIFIED & NON-SENSITIVE  
 Reviewed by Mound Declassification  
 Office. Reviewer Initials: *WJR*

3-10-99

**COS BLDG  
 PENTHOUSE  
 BLDG CODE:3544**

CONTROL NUMBER	JOB NUMBER	
FSC911303	12335	
CLASSIFICATION		
<b>UNCLASSIFIED</b>		
SIZE	CHECK 14865	SCALE AS NOTED
C	TUBE 8	SHEET 6
STARBU MD-REL-12/12/91		



**Appendix E**  
**Aerial Photographs**

Appendix F

Environmental Appraisal Report of the Mound Plant (Extract)

# Environmental Appraisal of the Mound Plant

## 9.4 BUILDING COS

### 9.4.1 Scope of Building COS 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.

A team of environmental professionals did not perform an environmental appraisal on Building COS because it is a leased building.

### 9.4.2 Description of Building COS

Building COS is a 64,654-square-foot building that was used for production support for weapons components including explosives laboratories, a standards lab, and a robotics lab. The building is bordered by Building DS to the north, a hillside to the west, Building HH to the south, and a roadway to the east. Location is shown in Attachment 1 (Section 9.4.4.1).

The building was leased in 1995. The building had been used for the same purpose since construction and is now being used by several small businesses. The building may be slightly contaminated with energetic material (*Mound Facility Physical Characterization*, 12-1-93). It should not be contaminated with radioactive material because there is no known documented history of radiological processes.

### 9.4.3 Summary of Findings

Photographs were taken to document the building. They are included as Attachment 2 (Section 9.4.4.2).

Building COS has undergone Safe Shutdown which includes removal of wastes and other materials plus equipment which cannot be released. A Health Physics safety determination and a liabilities assessment were made. ESA's (ASTM E 1527-94 or ASTM E 1528-93) were not conducted. The building has been leased by DOE to the City of Miamisburg, which accepted the liabilities assessment. The General Purpose Lease between the DOE and the City of Miamisburg requires the sub-lessee to obtain and comply with regulatory agency permits.

Since the building has been leased, an Environmental Appraisal Checklist (EAC) was not prepared and no further action was taken concerning this building.

**Appendix G**

**Radiological Summary/Information**

# RADIOLOGICAL SURVEY DATA SHEET

41  
C60

LOCATION: (BLDG./AREA/ROOM) <b>COS</b>	SURVEY NO. <b>R-239-96</b>
PURPOSE: <b>Safe shutdown</b>	RWP NO. <b>N/A</b>
	DATE: <b>2-27-96</b>
	TIME: <b>AM</b>

## MAP/DRAWING

# COPY

MATC #	Description	Wipe #
4564	Chair	1-2
4576	Cabinet	3-6
4582	File	7-10
4580	Desk	11-14
4581	Desk	15-18
4579	Chair	19-21
4578	Chair	22-24
<del>CS</del> 2323	Desk	25-28
2324	Credenza	29-32
2325	Cabinet	33-36
2326	Cabinet	37-39
2327	Chair	40-42
2328	Chair	43-45
<u>2313</u>	<u>Cabinet</u>	<u>46-49</u>
2318	Cabinet	50-53
2312	Desk	54-57
2316	Chair	58-60

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



= mrem/hr neutron



= air sample number



= swipe number



or  $\beta$  = direct cont. measurement in dpm/100cm<sup>2</sup>

### INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
NF Electron	5305/5316	7-9-96
<del>N</del>	<del>N</del>	<del>N</del>
<del>A</del>	<del>A</del>	<del>A</del>

Completed by: (Signature/HP#)	<b>4695</b>	Date:	<b>2-27-96</b>
Completed by: (Signature/HP#)	<b>2272</b>	Date:	<b>2-28-96</b>
Reviewed/Approved by: (Signature/HP#)	<b>5711</b>	Date:	<b>2-29-96</b>

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

Charge Authorization No. \_\_\_\_\_

<input checked="" type="checkbox"/> Removable Contamination <input type="checkbox"/> Airborne Activity (check one)				
Swipes (dpm/100cm <sup>2</sup> ) or Airborne (μCi/cc)				
Sample #	βγ	Alpha	Tritium	Comments
1				See front for description
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

<input type="checkbox"/> Removable Contamination <input type="checkbox"/> Airborne Activity (check one)				
Swipes (dpm/100cm <sup>2</sup> ) or Airborne (μCi/cc)				
Sample #	βγ	Alpha	Tritium	Comments
31				See front for description
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
(47)			○	
48				
49				
50				
51				
52				
53				
54				
55				
56				
57				
58				
59				
60				

COMMENTS:

All direct readings N/D  
 N/D = Non Detectable

Max. Activity on Large Area Wipe (dpm)	Tritium Airborne Activity (μCi/m <sup>3</sup> )
N/A	N/A

- NOTES:
- LSC results #3 corresponds to Sample #1 on this RSDS.
  - See MD-80036 10002 for calculations of WB, extremity and skin dose rates
  - To request RO Count Room analysis for βγ, 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.
  - Annotate special sample type (e.g. soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

# Smear Analysis

Unit Type: LB4100/W  
 Counting Unit ID: Aqua  
 Data file name: SMEAR012  
 Batch Ended: 2/28/96 10:25

Alpha activity action level (DPM): 2.00E+01  
 Alpha efficiency logfile: PU238AB

Beta activity action level (DPM): 2.00E+02  
 Beta efficiency logfile: SR90AB

Certainty level for MDA and flags: 95.00%  
 High Voltage Mode: Simultaneous

Alpha Activity Multiplier: 1.00E+00  
 Beta Activity Multiplier: 1.00E+00

Crosstalk correction performed.

Application Revision: 0  
 Application Version: Standard

Batch ID: C.SOUERS COS/R-239-96/2-27-96(60) FMK

Detector ID	Sample ID	Alpha Activity				Beta Activity			
		DPM	$\sigma$	flags	MDA	DPM	$\sigma$	flags	MDA
A1	1	1.88	2.05	<AL	6.972E+00	0.00	1.19	<MDA	8.329E+00
A2	2	0.00	2.01	<MDA	6.215E+00	0.00	1.19	<MDA	8.330E+00
A3	3	0.00	2.05	<MDA	7.306E+00	0.00	1.33	<MDA	8.998E+00
A4	4	0.00	2.08	<MDA	6.978E+00	0.00	1.31	<MDA	9.201E+00
B1	5	0.00	1.99	<MDA	6.531E+00	1.67	2.00	<MDA	7.856E+00
B2	6	0.00	1.94	<MDA	6.512E+00	0.00	1.17	<MDA	8.422E+00
B3	7	1.89	2.07	<AL	7.157E+00	2.95	2.54	<AL	8.829E+00
B4	8	0.00	1.97	<MDA	6.424E+00	0.00	1.27	<MDA	8.932E+00
C1	9	0.00	2.06	<MDA	6.513E+00	1.40	2.00	<MDA	8.202E+00
C2	10	0.00	2.04	<MDA	6.364E+00	0.00	1.19	<MDA	8.838E+00
C3	11	0.00	2.12	<MDA	7.299E+00	1.73	2.18	<MDA	8.677E+00
C4	12	0.00	2.09	<MDA	7.048E+00	0.00	1.29	<MDA	9.382E+00
D1	13	0.00	2.01	<MDA	7.241E+00	1.65	1.92	<MDA	7.451E+00
D2	14	0.00	2.16	<MDA	7.116E+00	0.14	1.67	<MDA	8.534E+00
D3	15	0.00	2.07	<MDA	7.094E+00	0.00	1.23	<MDA	8.392E+00
D4	16	0.00	2.03	<MDA	6.660E+00	0.48	1.75	<MDA	8.535E+00
A1	17	0.00	2.05	<MDA	6.986E+00	0.00	1.19	<MDA	8.160E+00
A2	18	0.00	2.01	<MDA	6.215E+00	0.00	1.19	<MDA	8.330E+00
A3	19	0.00	2.06	<MDA	7.405E+00	0.60	1.87	<MDA	8.997E+00
A4	20	0.00	2.08	<MDA	6.978E+00	0.00	1.31	<MDA	9.201E+00
B1	21	0.00	1.96	<MDA	6.193E+00	0.00	1.16	<MDA	7.856E+00
B2	22	0.00	1.94	<MDA	6.638E+00	0.00	1.17	<MDA	8.422E+00
B3	23	0.00	2.07	<MDA	7.169E+00	3.09	2.54	<AL	8.651E+00
B4	24	0.00	1.98	<MDA	6.584E+00	0.34	1.80	<MDA	8.932E+00
C1	25	0.00	2.06	<MDA	6.513E+00	1.40	2.00	<MDA	8.202E+00
C2	26	0.00	2.08	<MDA	6.763E+00	1.09	2.06	<MDA	8.838E+00
C3	27	0.00	2.11	<MDA	7.181E+00	0.47	1.78	<MDA	8.677E+00
C4	28	0.00	2.09	<MDA	7.048E+00	0.00	1.29	<MDA	9.382E+00
D1	29	0.00	1.99	<MDA	6.923E+00	0.00	1.11	<MDA	7.452E+00
D2	30	0.00	2.25	<MDA	7.801E+00	2.51	2.37	<MDA	8.534E+00
D3	31	0.00	2.07	<MDA	6.982E+00	0.00	1.23	<MDA	8.392E+00
D4	32	0.00	2.04	<MDA	6.828E+00	1.72	2.15	<MDA	8.534E+00
A1	33	0.00	2.05	<MDA	6.856E+00	0.00	1.20	<MDA	8.160E+00
A2	34	0.00	2.01	<MDA	6.215E+00	0.00	1.19	<MDA	8.330E+00

COPY

# Smear Analysis

Unit Type: LB4100/W  
 Counting Unit ID: Aqua  
 Data file name: SMEAR012  
 Batch Ended: 2/28/96 10:25

Alpha activity action level (DPM): 2.00E+01  
 Alpha efficiency logfile: PU238AB

Beta activity action level (DPM): 2.00E+02  
 Beta efficiency logfile: SR90AB

Certainty level for MDA and flags: 95.00%  
 High Voltage Mode: Simultaneous

Alpha Activity Multiplier: 1.00E+00  
 Beta Activity Multiplier: 1.00E+00

Crosstalk correction performed.

Application Revision: 0  
 Application Version: Standard

Batch ID: C.SOUERS COS/R-239-96/2-27-96(60) FMK

Detector ID	Sample ID	Alpha Activity				Beta Activity			
		DPM	$\sigma$	flags	MDA	DPM	$\sigma$	flags	MDA
A3	35	0.00	2.05	<MDA	7.306E+00	0.00	1.33	<MDA	8.998E+00
A4	36	0.00	2.09	<MDA	7.124E+00	0.34	1.85	<MDA	9.201E+00
B1	37	0.00	1.96	<MDA	6.193E+00	0.00	1.16	<MDA	7.856E+00
B2	38	0.00	1.97	<MDA	6.870E+00	1.30	2.02	<MDA	8.422E+00
B3	39	0.00	2.04	<MDA	6.674E+00	0.00	1.27	<MDA	8.652E+00
B4	40	0.00	1.98	<MDA	6.584E+00	0.34	1.80	<MDA	8.932E+00
C1	41	0.00	2.06	<MDA	6.513E+00	1.40	2.00	<MDA	8.202E+00
C2	42	0.00	2.04	<MDA	6.364E+00	0.00	1.19	<MDA	8.838E+00
C3	43	0.00	2.12	<MDA	7.299E+00	1.73	2.18	<MDA	8.677E+00
C4	44	0.00	2.14	<MDA	7.548E+00	3.95	2.89	<AL	9.382E+00
D1	45	0.00	2.00	<MDA	7.139E+00	0.54	1.56	<MDA	7.452E+00
D2	46	0.00	2.11	<MDA	6.701E+00	0.00	1.18	<MDA	8.534E+00
D3	47	0.00	2.07	<MDA	7.094E+00	0.00	1.23	<MDA	8.392E+00
D4	48	0.00	2.03	<MDA	6.660E+00	0.48	1.75	<MDA	8.535E+00
A1	49	0.00	2.09	<MDA	7.443E+00	4.08	2.67	<AL	8.159E+00
A2	50	0.00	2.01	<MDA	6.215E+00	0.00	1.19	<MDA	8.330E+00
A3	51	0.00	2.07	<MDA	7.500E+00	1.93	2.30	<MDA	8.997E+00
A4	52	1.92	2.08	<AL	6.803E+00	0.00	1.31	<MDA	9.389E+00
B1	53	0.00	1.98	<MDA	6.370E+00	0.52	1.63	<MDA	7.856E+00
B2	54	0.00	1.94	<MDA	6.638E+00	0.00	1.17	<MDA	8.422E+00
B3	55	0.00	2.06	<MDA	7.055E+00	1.82	2.20	<MDA	8.651E+00
B4	56	0.00	1.98	<MDA	6.584E+00	0.34	1.80	<MDA	8.932E+00
C1	57	0.00	2.03	<MDA	6.163E+00	0.00	1.16	<MDA	8.202E+00
C2	58	3.98	2.90	<AL	6.517E+00	0.00	1.68	<MDA	9.211E+00
C3	59	0.00	2.10	<MDA	6.924E+00	0.00	1.26	<MDA	8.678E+00
C4	60	0.00	2.14	<MDA	7.548E+00	3.95	2.89	<AL	9.382E+00

COPY

Protocol #: 4

Pw H3 20cc #403728

User : 84c

Time: 2.00

Data Mode: DPM

Nuclide: PW-3H-UG

Quench Set: PW\_3H\_UG

Background Subtract: 1st Via:

	LL	UL	LDR	2SX	BKG
Region A:	0.5 - 18.6		0	0.0	9.10
Region B:	2.0 - 18.6		0	0.0	8.70
Region C:	0.0 - 0.0		0	0.0	0.00

GDP

Quench Indicator: tSIE/AEC

Ext Std Terminator: Count

HENDERSON WDA-260-96 (Hi-H24) 2/27/96 DA

Luminescence Correction On

Coincidence Time(ns): 18

Delay Before Burst(ns): Normal

Protocol Data Filename: c:\data\PROT4.DAT

Count Data Filename: c:\data\SDATA4.DAT

Spectrum Data Drive &amp; Path: c:\data

S#	SMPL_ID	TIME	CPMA	LUM	FLAG	tSIE	DPM1	2Sigma
1		10.00	9.10	1	B	689.99		0.00
2		2.00	272.40	0		365.90	828.32	161.29
3		2.00	0.00	0		680.36	0.00	0.00
4		2.00	0.00	0		662.43	0.00	0.00
5		2.00	0.00	0		662.06	0.00	0.00
6		2.00	0.00	0		671.57	0.00	0.00
7		2.00	0.40	0		641.16	0.82	9.75
8		2.00	0.00	0		594.59	0.00	0.00
9		2.00	1.40	0	E	683.49	2.76	9.81
10		2.00	0.90	0		632.42	1.86	10.04
11		2.00	0.00	0		621.95	0.00	0.00
12		2.00	0.00	0		637.56	0.00	0.00
13		2.00	1.40	0		654.52	2.84	10.08
14		2.00	0.00	0		607.64	0.00	0.00
15		2.00	0.90	0		654.26	1.82	9.86
16		2.00	0.00	0		657.60	0.00	0.00
17		2.00	0.00	0		662.70	0.00	0.00
18		2.00	0.00	0		674.13	0.00	0.00
19		2.00	0.90	0		681.10	1.78	9.63
20		2.00	2.90	0		637.34	5.96	10.86
21		2.00	0.00	0		595.40	0.00	0.00
22		2.00	0.00	0		577.40	0.00	0.00
23		2.00	0.00	0		675.49	0.00	0.00
24		2.00	0.00	0		625.23	0.00	0.00
25		2.00	1.40	0		630.10	2.90	10.29
26		2.00	0.00	0		676.18	0.00	0.00
27		2.00	0.00	0		662.22	0.00	0.00
28		2.00	0.00	0		640.73	0.00	0.00
29		2.00	5.90	0		663.87	11.87	11.85
30		2.00	19.40	0		660.47	39.14	17.12
31		2.00	3.40	0		676.55	6.76	10.70
32		2.00	0.00	0		651.29	0.00	0.00
33		2.00	0.00	0		642.83	0.00	0.00
34		2.00	0.00	0		644.04	0.00	0.00
35		2.00	0.00	0		629.51	0.00	0.00
36		2.00	0.00	0		663.25	0.00	0.00

S#	SMPL ID	TIME	CPMA	LUM FLAG	tsIE	DPM1	2Sigma
37		2.00	59.90	0	611.23	125.82	33.23
38		2.00	0.00	0	660.65	0.00	0.00
39		2.00	0.00	0	668.45	0.00	0.00
40		2.00	1.40	0	617.47	2.93	10.39
41		2.00	0.00	0	645.63	0.00	0.00
42		2.00	1.90	0	633.02	3.92	10.47
43		2.00	47.40	0	608.82	99.76	28.60
44		2.00	0.00	0	674.93	0.00	0.00
45		2.00	0.00	0	594.22	0.00	0.00
46		2.00	0.00	0	555.77	0.00	0.00
47		2.00	0.00	0	679.99	0.00	0.00
48		2.00	0.00	0	552.42	0.00	0.00
49		2.00	623.90	1	665.30	1253.62	229.76
50		2.00	0.00	0	612.38	0.00	0.00
51		2.00	0.00	0	600.08	0.00	0.00
52		2.00	0.90	0	598.56	1.91	10.33
53		2.00	0.00	0	566.19	0.00	0.00
54		2.00	0.00	0	597.57	0.00	0.00
55		2.00	0.00	0	560.00	0.00	0.00
56		2.00	3.90	0	620.88	8.13	11.43
57		2.00	1.40	0	661.33	2.82	10.02
58		2.00	0.40	0	676.03	0.80	9.46
59		2.00	2.40	0	658.36	4.85	10.46
60		2.00	0.40	0	645.63	0.82	9.72
61		2.00	0.00	0	599.21	0.00	0.00
62		2.00	0.00	0	674.74	0.00	0.00

Protocol #: 4      Name: Fw H3 #401387      29-Feb-96    07:03  
 Region A: LL-UL= 0.5-18.6    Lcr= 0    Bkg= 0.00    %2 Sigma=0.00  
 Region B: LL-UL= 2.0-18.6    Lcr= 0    Bkg= 0.00    %2 Sigma=0.00  
 Region C: LL-UL= 0.0- 0.0    Lcr= 0    Bkg= 0.00    %2 Sigma=0.00  
 Time = 2.00      QIP = tSIE/AEC      ES Terminator = Count  
 SOURERS R-239-96 [2-27-96] C47    JC  
 Conventional DPM  
 Nuclide 1 =      S00  
 Luminescence Correction On

S#	TIME	LUM	EFFA	FLAG	CFMA	CFMB	tSIE	DFM1	2Sigma
1	10.00	8	0.000	B	8.70	8.40	673.		0.00
2	2.00	1	0.418		320.80	308.60	557.	768.09	126.79
3	2.00	0	0.449		1.80	2.10	647.	<u>4.01</u>	11.03

Re count of high wipe.

Survey # R-239-96

COPIED

002305		Chair, Secretary, Arms, blue	AHD	COS-222	0	
002333		Safe, 2 drawer	AHD	COS-224	0	
002334		Desk, executive, tan	AHD	COS-224	0	
002335		Desk, executive, tan	AHD	COS-224	0	
002336		Bookcase, 4 shelf	AHD	COS-224	0	
002337		Cabinet, File, 5 drawer, tan	AHD	COS-224	0	
002338		Desk, Small, tan	AHD	COS-224	0	
002339		Chair, Secretary, Arms, gray	AHD	COS-224	0	
002340		Chair, Secretary, Arms, gray	AHD	COS-224	0	
002329		Table, conference w/4 chairs	AHD	COS-225	0	
002330	107541	Cabinet, 4 drawer, 1 shelf, wood	AHD	COS-225	0	
002331		Desk, Small	AHD	COS-225	0	
002332		Chair, Secretary, Arms, melon	AHD	COS-225	0	
- 002323		Desk, executive, wood	AHD	COS-226	0	
- 002324		Credenza, wood	AHD	COS-226	0	
- 002325		Cabinet, File, legal, 5 drawer, blk	AHD	COS-226	0	
- 002326		Cabinet, File, letter, 2 drawer, tan	AHD	COS-226	0	
- 002327		Chair, Secretary, Arms, gray	AHD	COS-226	0	
- 002328		Chair, Secretary, Arms, orange	AHD	COS-226	0	
- 004576	79972	Cabinet, File	Kevric	COS-227	0	
- 004577	107228	Computer, IBM-XT	IBM	Kevric	COS-227 Comp?	
- 004578		Chair	Kevric	COS-227	0	
- 004579		Chair	Kevric	COS-227	0	
- 004580		Desk	Kevric	COS-227	0	
- 004581		Desk	Kevric	COS-227	0	
- 004582		File, Lateral	Kevric	COS-227	0	
- 002206		Chair, Secretary, Arms, blue	MEAG	COS-228	0	
- 002207		Chair, Secretary, Arms, blue	MEAG	COS-228	0	
- 002208		Chair, Secretary, Arms, blue	MEAG	COS-228	0	
- 002209		Desk, Small, tan	MEAG	COS-228	0	
- 002210		Desk, executive, tan	MEAG	COS-228	0	
- 002211		Desk, executive, tan	MEAG	COS-228	0	
- 002212		Cabinet, File, 5 shelf, tan	MEAG	COS-228	0	
- 002213		Bookcase, 6 shelf, tan	MEAG	COS-228	0	
- 002194		Cabinet, 3 shelf, tan	MEAG	:OS-229/23	0	
- 002195		Chair, Secretary, 2 Arms, blue	MEAG	:OS-229/23	0	
- 002196		Chair, Secretary, 2 Arms, blue	MEAG	:OS-229/23	0	
- 002197		Chair, Secretary, 2 Arms, blue	MEAG	:OS-229/23	0	
002198		Chair, Secretary, 2 Arms, blue	MEAG	:OS-229/23	0	
- 002199		Chair, Secretary, 2 Arms, blue	MEAG	:OS-229/23	0	
- 002200		Table, Round	MEAG	:OS-229/23	0	
- 002201		Desk, Small	MEAG	:OS-229/23	0	
- 002202		Desk, executive, tan	MEAG	:OS-229/23	0	
002203		Desk, Small	MEAG	:OS-229/23	0	
- 002204		Cabinet, 5 drawer, tan	MEAG	:OS-229/23	0	
- 002205		Cabinet, 5 drawer, tan	MEAG	:OS-229/23	0	
004240		Cabinet, File	MATC	COS-231	0	
004241		Desk	MATC	COS-231	0	
004242		Desk	MATC	COS-231	0	
004243		Chair	MATC	COS-231	0	
004198		Desk	MATC	COS-251	0	
004199		Desk	MATC	COS-251	0	
004200		Chair	Shaw Walker	MATC	COS-251	0
004201		Cabinet, File	MATC	COS-251	0	

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1/061

# RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM)	COS 4th Floor	SURVEY NO.	R-339-96
PURPOSE:	Safe Shutdown	RWP NO.	N/A
<b>COPY</b>		DATE:	3-19-96
		TIME:	PM

MAP/DRAWING		
Matc #	Description	Wipe #
5206	Chair	1-3
2423	File cabinet	4-9
2424	File cabinet	10-16
5209	Desk	17-23
5210	Desk	24-29
5241	Desk	30-36
5240	Desk	37-41
5237	Desk	42-48
2433	File	49-53
5238	Desk	54-60

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

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

$\odot$  # = swipe number  
 #/ $\beta$  or #/ $\alpha$  = direct cont. measurement in dpm/100cm<sup>2</sup>

INSTRUMENTS USED		
Instrument	Serial Number	Cal. Due Date
NE Floor 4	5316/4305	8-9-96
N / A	N / A	N / A
N / A	N / A	N / A

Completed by: (Signature/HP#)	6035	Date:	3-19-96
	8490	Date:	3/19/96
Reviewed/Approved by: (Signature/HP#)	578	Date:	3/22/96

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

Charge Authorization No. 4638

<input checked="" type="checkbox"/> Removable Contamination <input type="checkbox"/> Airborne Activity (check one)			
Swipes (dpm/100cm <sup>2</sup> ) or Airborne (μCi/cc)			
Sample #	<u>βγ</u>	<u>Alpha</u>	<u>Tritium</u>
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			

See front for description

<input checked="" type="checkbox"/> Removable Contamination <input type="checkbox"/> Airborne Activity (check one)			
Swipes (dpm/100cm <sup>2</sup> ) or Airborne (μCi/cc)			
Sample #	<u>βγ</u>	<u>Alpha</u>	<u>Tritium</u>
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			
43			
44			
45			
46			
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56			
57			
58			
59			
60			

See front for description

COMMENTS:  
 All α + β direct readings are non detectable

Max. Activity on Large Area Wipe (dpm)	Tritium Airborne Activity (μCi/m <sup>3</sup> )
N/A	N/A
N/A	N/A

- NOTES:
- LSC results #3 corresponds to Sample #1 on this RSDS.
  - See MD-80036 10002 for calculations of WB, extremity and skin dose rates
  - To request RO Count Room analysis for βγ, 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.
  - Annotate special sample type (e.g. soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

### Health Physics Counting Lab -- Wipe / Air Filter Analysis

Date: 03/20/96  
 Counting Unit Id: 2  
 Data file name: C:\LBXL\UNIT2\WIP2\F002.XLD  
 Batch Ended: 03/19/96 20:01  
 Crosstalk Correction: Applied

Alpha activity action level (DPM): 20.00  
 Beta activity action level (DPM): 200.00  
 System Serial #: 15764-2

Batch ID: SABLICH R-339-96 [60] DA

Carrier	Sample	Alpha Activity			Beta Activity			Count time (min)	Completion Date - Time
		DPM	$\sigma$	flags	DPM	$\sigma$	flags		
121	1	1.853	2.08	<AL	0.00	2.11	<MDA	1.50	03/19/96 18:01
139	2	0.000	2.09	<MDA	2.15	4.17	<MDA	1.50	03/19/96 18:03
80	3	0.000	2.08	<MDA	0.07	3.61	<MDA	1.50	03/19/96 18:05
93	4	0.000	2.09	<MDA	2.15	4.17	<MDA	1.50	03/19/96 18:07
40	5	0.000	2.11	<MDA	10.45	5.91	<AL	1.50	03/19/96 18:09
75	6	0.000	2.08	<MDA	0.00	2.11	<MDA	1.50	03/19/96 18:11
5	7	0.000	2.08	<MDA	0.00	2.96	<MDA	1.50	03/19/96 18:13
126	8	0.000	2.08	<MDA	0.07	3.61	<MDA	1.50	03/19/96 18:15
96	9	0.000	2.10	<MDA	6.30	5.11	<AL	1.50	03/19/96 18:17
82	10	0.000	2.08	<MDA	0.00	2.96	<MDA	1.50	03/19/96 18:19
103	11	0.000	2.08	<MDA	0.00	2.96	<MDA	1.50	03/19/96 18:21
70	12	0.000	2.09	<MDA	2.15	4.17	<MDA	1.50	03/19/96 18:23
15	13	0.000	2.10	<MDA	8.38	5.52	<AL	1.50	03/19/96 18:25
70	14	0.000	2.08	<MDA	0.00	2.96	<MDA	1.50	03/19/96 18:27
141	15	0.000	2.09	<MDA	2.15	4.17	<MDA	1.50	03/19/96 18:29
149	16	0.000	2.09	<MDA	4.22	4.66	<MDA	1.50	03/19/96 18:31
25	17	0.000	2.08	<MDA	0.00	2.13	<MDA	1.50	03/19/96 18:33
48	18	0.000	2.10	<MDA	6.30	5.11	<AL	1.50	03/19/96 18:35
12	19	0.000	2.08	<MDA	0.07	3.61	<MDA	1.50	03/19/96 18:37
6	20	0.000	2.08	<MDA	0.07	3.61	<MDA	1.50	03/19/96 18:39
30	21	0.000	2.08	<MDA	0.00	2.96	<MDA	1.50	03/19/96 18:41
61	22	0.000	2.08	<MDA	0.07	3.61	<MDA	1.50	03/19/96 18:43
117	23	0.000	2.08	<MDA	0.00	2.96	<MDA	1.50	03/19/96 18:45
16	24	0.000	2.09	<MDA	4.22	4.66	<MDA	1.50	03/19/96 18:47
76	25	0.000	2.08	<MDA	0.00	2.11	<MDA	1.50	03/19/96 18:49
48	26	0.000	2.08	<MDA	0.00	2.13	<MDA	1.50	03/19/96 18:51
53	27	0.000	2.08	<MDA	0.07	3.61	<MDA	1.50	03/19/96 18:53
32	28	0.000	2.08	<MDA	0.00	2.96	<MDA	1.50	03/19/96 18:55
141	29	0.000	2.08	<MDA	0.00	2.11	<MDA	1.50	03/19/96 18:57

## Health Physics Counting Lab -- Wipe / Air Filter Analysis

Date: 03/20/96  
 Counting Unit id: 2  
 Data file name: C:\LBXL\UNIT2\WIP2\F002.XLD  
 Batch Ended: 03/19/96 20:01  
 Crosstalk Correction: Applied

Alpha activity action level (DPM): 20.00  
 Beta activity action level (DPM): 200.00  
 System Serial #: 15764-2

Batch ID: SABLICH R-339-96 [60] DA

Carrier	Sample	Alpha Activity			Beta Activity			Count time (min)	Completion Date - Time
		DPM	$\sigma$	flags	DPM	$\sigma$	flags		
94	30	0.000	2.09	<MDA	4.22	4.66	<MDA	1.50	03/19/96 18:59
7	31	0.000	2.41	<MDA	132.99	18.35	<AL	1.50	03/19/96 19:01
71	32	0.000	2.08	<MDA	0.07	3.61	<MDA	1.50	03/19/96 19:03
54	33	0.000	2.08	<MDA	0.00	2.96	<MDA	1.50	03/19/96 19:05
38	34	0.000	2.08	<MDA	0.00	2.11	<MDA	1.50	03/19/96 19:07
81	35	0.000	2.08	<MDA	0.00	2.13	<MDA	1.50	03/19/96 19:09
40	36	1.841	2.08	<AL	0.00	2.96	<MDA	1.50	03/19/96 19:11
149	37	0.000	2.09	<MDA	2.15	4.17	<MDA	1.50	03/19/96 19:13
69	38	0.000	2.08	<MDA	0.00	2.96	<MDA	1.50	03/19/96 19:15
7	39	0.000	2.09	<MDA	2.15	4.17	<MDA	1.50	03/19/96 19:17
75	40	0.000	2.10	<MDA	8.38	5.52	<AL	1.50	03/19/96 19:19
28	41	0.000	2.08	<MDA	0.00	2.11	<MDA	1.50	03/19/96 19:21
8	42	0.000	2.08	<MDA	0.00	2.13	<MDA	1.50	03/19/96 19:23
95	43	0.000	2.08	<MDA	0.07	3.61	<MDA	1.50	03/19/96 19:25
6	44	0.000	2.08	<MDA	0.07	3.61	<MDA	1.50	03/19/96 19:27
60	45	0.000	2.08	<MDA	0.07	3.61	<MDA	1.50	03/19/96 19:29
24	46	0.000	2.08	<MDA	0.00	2.96	<MDA	1.50	03/19/96 19:31
39	47	0.000	2.09	<MDA	4.22	4.66	<MDA	1.50	03/19/96 19:33
96	48	0.000	2.10	<MDA	8.38	5.52	<AL	1.50	03/19/96 19:35
62	49	0.000	2.08	<MDA	0.07	3.61	<MDA	1.50	03/19/96 19:37
36	50	1.841	2.08	<AL	0.00	2.96	<MDA	1.50	03/19/96 19:39
66	51	0.000	2.10	<MDA	6.30	5.11	<AL	1.50	03/19/96 19:41
12	52	0.000	2.08	<MDA	0.00	2.96	<MDA	1.50	03/19/96 19:43
51	53	1.816	2.09	<AL	2.00	4.17	<MDA	1.50	03/19/96 19:45
76	54	0.000	2.08	<MDA	0.07	3.61	<MDA	1.50	03/19/96 19:47
70	55	0.000	2.08	<MDA	0.00	2.11	<MDA	1.50	03/19/96 19:49
21	56	0.000	2.08	<MDA	0.00	2.96	<MDA	1.50	03/19/96 19:51
42	57	0.000	2.08	<MDA	0.00	2.11	<MDA	1.50	03/19/96 19:53
38	58	0.000	2.08	<MDA	0.07	3.61	<MDA	1.50	03/19/96 19:55

**Health Physics Counting Lab – Wipe / Air Filter Analysis**

Date: 03/20/96

Counting Unit id: 2

Alpha activity action level (DPM): 20.00

Data file name: C:\LBXL\UNIT2\WIP2F002.XLD Beta activity action level (DPM): 200.00

Batch Ended: 03/19/96 20:01

System Serial #: 15764-2

Crosstalk Correction: Applied

Batch ID: SABLICH R-339-96 [60] DA

Carrier	Sample	Alpha Activity			Beta Activity			Count time (min)	Completion Date - Time
		DPM	$\sigma$	flags	DPM	$\sigma$	flags		
16	59	0.000	2.08	<MDA	0.07	3.61	<MDA	1.50	03/19/96 19:57
30	60	0.000	2.09	<MDA	4.22	4.66	<MDA	1.50	03/19/96 19:59
83	61	0.000	2.08	<MDA	0.00	2.13	<MDA	1.50	03/19/96 20:01

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Protocol #: 6 Name: Pw H3 #401387 20-Mar-96 09:17  
Region A: LL-UL= 0.5-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00  
Region B: LL-UL= 2.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00  
Region C: LL-UL= 0.0- 0.0 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00  
Time = 2.00 QIP = tSIE/AEC ES Terminator = Count  
SABLICH R-339-96 [D1-D61] 3-19-96  
Conventional DPM  
Nuclide 1 = 800  
Luminescence Correction On

S#	TIME	LUM	EFFA	FLAG	CPMA	CPMB	tSIE	DPM1	2Sigma
1	10.00	2	0.000	B	8.80	8.70	703.		0.00
2	2.00	1	0.487		510.20	485.80	685.	1047.76	108.86
3	2.00	0	0.000		0.00	0.00	689.	0.00	0.00
4	2.00	8	0.000		0.00	0.00	657.	0.00	0.00
5	2.00	11	0.000		0.00	0.00	671.	0.00	0.00
6	2.00	27	0.000		0.00	0.00	664.	0.00	0.00
7	2.00	6	0.000		0.00	0.00	661.	0.00	0.00
8	2.00	0	0.494		3.70	2.80	698.	7.49	10.83
9	2.00	0	0.000		0.00	0.00	685.	0.00	0.00
10	2.00	14	0.483		1.20	2.30	678.	2.48	11.24
11	2.00	0	0.492		0.20	0.30	694.	0.41	9.43
12	2.00	6	0.480		0.20	0.80	672.	0.42	10.10
13	2.00	11	0.000		0.00	0.30	688.	0.00	0.00
14	2.00	12	0.000		0.00	0.00	685.	0.00	0.00
15	2.00	0	0.493		0.20	0.30	696.	0.41	9.42
16	2.00	0	0.000		0.00	0.00	666.	0.00	0.00
17	2.00	0	0.486		1.70	1.30	684.	3.50	10.19
18	2.00	10	0.000		0.00	0.00	694.	0.00	0.00
19	2.00	0	0.000		0.00	0.00	673.	0.00	0.00

R 104

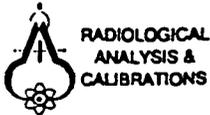
Protocol #: 6                      Name: Pw H3 #401387                      20-Mar-96    10:49  
Region A: LL-UL= 0.5-18.6    Lcr= 0    Bkg= 0.00    %2 Sigma=0.00  
Region B: LL-UL= 2.0-18.6    Lcr= 0    Bkg= 0.00    %2 Sigma=0.00  
Region C: LL-UL= 0.0- 0.0    Lcr= 0    Bkg= 0.00    %2 Sigma=0.00  
Time = 2.00                      QIP = tSIE/AEC                      ES Terminator = Count  
SABLICH R-339-96 [D1-D61] 3-19-96  
Conventional DPM  
Nuclide 1 = 800  
Luminescence Correction On

S#	TIME	LUM	EFFA	FLAG	CPMA	CPMB	tSIE	DPM1	2Sigma
20	2.00	0	0.000		0.00	0.00	652.	0.00	0.00
21	2.00	0	0.000		0.00	0.00	690.	0.00	0.00
22	2.00	7	0.000		0.00	0.00	666.	0.00	0.00
23	2.00	7	0.000		0.00	0.00	697.	0.00	0.00
24	2.00	5	0.486		1.70	1.30	683.	3.50	10.61
25	2.00	0	0.000		0.00	0.00	662.	0.00	0.00
26	2.00	11	0.000		0.00	0.30	656.	0.00	0.00

K 104

Protocol #: 6                      Name: Pw H3 #401387                      20-Mar-96    11:38  
 Region A: LL-UL= 0.5-18.6    Lcr= 0    Bkg= 0.00    %2 Sigma=0.00  
 Region B: LL-UL= 2.0-18.6    Lcr= 0    Bkg= 0.00    %2 Sigma=0.00  
 Region C: LL-UL= 0.0- 0.0    Lcr= 0    Bkg= 0.00    %2 Sigma=0.00  
 Time = 2.00                      QIP = tSIE/AEC                      ES Terminator = Count  
 SABLICH R-339-96 [D1-D61] 3-19-96  
 Conventional DPM  
 Nuclide 1 = 800  
 Luminescence Correction On

S#	TIME	LUM	EFFA	FLAG	CPMA	CPMB	tSIE	DPM1	2Sigma
27	2.00	7	0.000		0.00	0.00	696.	0.00	0.00
28	2.00	0	0.490		2.20	1.80	691.	4.49	10.31
29	2.00	5	0.494		2.20	1.80	698.	4.46	10.63
30	2.00	16	0.000		0.00	0.30	681.	0.00	0.00
31	2.00	0	0.000		0.00	0.00	700.	0.00	0.00
32	2.00	0	0.489		0.70	0.00	699.	1.43	9.70
33	2.00	0	0.478		3.20	2.30	668.	6.70	11.00
34	2.00	0	0.492		9.20	0.00	695.	0.41	9.42
35	2.00	0	0.502		2.20	1.30	714.	4.38	10.07
36	2.00	11	0.000		0.00	0.00	705.	0.00	0.00
37	2.00	4	0.496		3.20	3.80	702.	6.45	10.97
38	2.00	0	0.481		1.70	0.30	673.	3.54	10.30
39	2.00	6	0.479		0.20	0.00	670.	0.42	10.12
40	2.00	14	0.000		0.00	0.00	686.	0.00	0.00
41	2.00	8	0.000		0.00	0.00	678.	0.00	0.00
42	2.00	0	0.000		0.00	0.00	673.	0.00	0.00
43	2.00	5	0.493		0.20	0.80	697.	0.41	9.83
44	2.00	25	0.000		0.00	0.00	693.	0.00	0.00
45	2.00	13	0.000		0.00	0.00	686.	0.00	0.00
46	2.00	14	0.000		0.00	0.00	692.	0.00	0.00
47	2.00	5	0.492		2.20	0.80	694.	4.47	10.67
48	2.00	8	0.000		0.00	0.00	673.	0.00	0.00
49	2.00	5	0.490		2.70	2.80	690.	5.51	10.91
50	2.00	0	0.495		2.70	1.80	699.	5.46	10.42
51	2.00	0	0.493		1.20	0.80	697.	2.43	9.84
52	2.00	0	0.000		0.00	0.00	690.	0.00	0.00
53	2.00	11	0.000		0.00	0.00	688.	0.00	0.00
54	2.00	5	0.491		2.70	2.80	692.	5.50	10.89
55	2.00	0	0.000		0.00	0.00	696.	0.00	0.00
56	2.00	7	0.489		5.70	4.80	690.	11.65	12.39
57	2.00	6	0.000		0.00	0.00	702.	0.00	0.00
58	2.00	8	0.000		0.00	0.00	674.	0.00	0.00
59	2.00	9	0.000		0.00	0.00	655.	0.00	0.00
60	2.00	0	0.000		0.00	0.00	698.	0.00	0.00
61	2.00	16	0.000		0.00	0.80	671.	0.00	0.00
62	2.00	6	0.490		0.20	0.00	691.	0.41	9.90
63	2.00	13	0.000		0.00	0.00	692.	0.00	0.00



PH 5. Unit 6

1 of 3

COPY

### Health Physics Counting Laboratories Request for Analysis and Health Physics Data Sheet

To be filled out by submitter

Name: <span style="background-color: black; color: black;">[REDACTED]</span>	HP#: 5416	RWP#: NO RWP
Isotope: All	Analysis Required: <input checked="" type="checkbox"/> Alpha <input checked="" type="checkbox"/> Beta <input checked="" type="checkbox"/> H	
Type of Sample: <input checked="" type="checkbox"/> Paper Wipe <input type="checkbox"/> Glass Fiber Filter <input type="checkbox"/> Other: Explain _____	<input type="checkbox"/> Q-tip <input type="checkbox"/> Oil (i.e. Hazardous Waste)	<input type="checkbox"/> Millipore Filter <input type="checkbox"/> Water
Description: <input type="checkbox"/> Air Sample <input checked="" type="checkbox"/> Structural Sample <input type="checkbox"/> Equipment Sample	<input type="checkbox"/> Personnel Sample <input type="checkbox"/> Other: Explain _____	(HP#) _____
Time and Date sample was taken: AM : 1 23/95	Pre-screened: <input checked="" type="checkbox"/> yes <input type="checkbox"/> no	Number of Samples: 104

Remarks: COS cold bldg. shut down! survey

To be filled out by Counting Facility Technician

Sample ID#	Sample Description	Alpha Inst. Results	Alpha Inst. Identification	Beta Inst. Results	Beta Inst. Identification
Background	Background Check Standard				
WIPES#1	Room-22 wipe 1				
2	2				
3	3				
4	4				
5	5				
6	6				
7	7				
8	8				
9	9				
10	10				
11	Room-21 wipe 1				
12	2				
13	3				
14	4				
15	5				
16	6				
17	7				
18	8				
19	9				
20	10				
21	11				
22	12				
23	Room-23 1				
24	2				
25	3				

Remarks: \_\_\_\_\_

Counting Facility Technician's Signature [REDACTED] HP # 5268

Date Submitted: 1/23/95 Date Completed: 1/29/95

Reviewed By: [REDACTED] HP# 5787 Date: 1-30-95



Health Physics Counting Laboratories  
Request for Analysis and Health Physics Data Sheet Addendum

COPY

To be filled out by Counting Facility Technician

Sample ID#	Sample Description	Alpha Inst. Results	Alpha Inst. Identification	Beta Inst. Results	Beta Inst. Identification
wipes 26	Room-24 wipe 1				
27	↓ 2				
28	↓ 3				
29	Room-25 wipe 1				
30	↓ 2				
31	↓ 3				
32	Room-26A wipe 1				
33	↓ 2				
34	↓ 3				
35	Room-26B wipe 1				
36	↓ 2				
37	↓ 3				
38	Room-26C wipe 1				
39	↓ 2				
40	↓ 3				
41	Room-27 wipe 1				
42	↓ 2				
43	↓ 3				
44	Room-28 wipe 1				
45	↓ 2				
46	↓ 3				
47	↓ 4				
48	↓ 5				
49	↓ 6				
50	Room-29 wipe 1				
51	↓ 2				
52	↓ 3				
53	↓ 4				
54	↓ 5				
55	Room-11 1				
56	↓ 2				
57	↓ 3				
58	Room-12 1				
59	↓ 2				
60	↓ 3				
61	Room-01 1				
62	↓ 2				
63	Room-20 1				
64	↓ 2				
65	↓ 3				
66	↓ 4				
67	↓ 5				
68	↓ 6				
69	Room-19 1				
70	↓ 2				

Remarks: COS cold bldg. shut down survey!

Counting Facility Technician's Signature: [Redacted] HP# 5268

Date Submitted: 1/23/95 Date Completed: 1/29/95

Reviewed By: [Redacted] HP# 5781 Date: 1-30-95



Health Physics Counting Laboratories  
Request for Analysis and Health Physics Data Sheet Addendum

To be filled out by Counting Facility Technician

Sample ID#	Sample Description	Alpha Inst. Results	Alpha Inst. Identification	Beta Inst. Results	Beta Inst. Identification
Wipes 71	Room 19 - 3				
72	Room 18 wipe 1				
73	↓ 2				
74	↓ 3				
75	↓ 4				
76	Room 17 wipe 1				
77	↓ 2				
78	↓ 3				
79	Room 16 wipe 1				
80	↓ 2				
81	↓ 3				
82	↓ 4				
83	↓ 5				
84	Room 14 wipe 1				
85	↓ 2				
86	Room 07 wipe 1				
87	↓ 2				
88	↓ 3				
89	Room 08 wipe 1				
90	↓ 2				
91	↓ 3				
92	Room 09 wipe 1				
93	↓ 2				
94	↓ 3				
95	Room 2B ADP - 1				
96	Room 02 TEL - 1				
97	Room 04 Janitor 1				
98	↓ 2				
99	Room 03 Women - 1				
100	↓ 2				
101	↓ 3				
102	Room 05 Men - 1				
103	↓ 2				
104	↓ 3				

Remarks: COS cold bldg shut down survey!

Counting Facility Technician's Signature: [Redacted] HP # 5268

Date Submitted: 1/23/95 Date Completed: 1/29/95

Reviewed By: [Redacted] HP# 5787 Date: 1-30-95

**Health Physics Counting Lab – Wipe Analysis**

Date: 01/27/95  
 Counting Unit id: 2  
 Data file name: C:\LBXL\UNIT2\WIP2D004.XLD  
 Batch Ended: 01/27/95 14:11  
 Crosstalk Correction: Applied  
 Alpha activity action level (DPM): 20.00  
 Beta activity action level (DPM): 200.00

Batch ID: S. BRINKMEIER-COS BLDG. #1-50

Carrier	Sample	Alpha Activity			Beta Activity			Count time (min)	Completion Date - Time
		DPM	$\sigma$	flags	DPM	$\sigma$	flags		
28	1	7.104	3.82	<AL	2.23	3.52	<MDA	1.50	01/27/95 12:33
72	2	0.000	1.93	<MDA	1.45	3.04	<MDA	1.50	01/27/95 12:35
82	3	0.000	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 12:37
70	4	0.000	1.95	<MDA	3.20	3.52	<MDA	1.50	01/27/95 12:39
25	5	0.000	1.92	<MDA	0.00	2.49	<MDA	1.50	01/27/95 12:41
40	6	1.433	1.93	<MDA	1.20	3.04	<MDA	1.50	01/27/95 12:43
98	7	0.000	1.93	<MDA	1.45	3.04	<MDA	1.50	01/27/95 12:45
134	8	0.000	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 12:47
79	9	0.000	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 12:49
98	10	1.436	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 12:51
73	11	0.000	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 12:53
14	12	0.000	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 12:55
56	13	1.435	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 12:57
57	14	0.000	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 12:59
64	15	1.435	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 13:01
76	16	3.326	2.69	<AL	0.00	1.76	<MDA	1.50	01/27/95 13:03
38	17	0.000	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 13:05
54	18	0.000	1.95	<MDA	3.20	3.52	<MDA	1.50	01/27/95 13:07
76	19	0.000	1.93	<MDA	1.45	3.04	<MDA	1.50	01/27/95 13:09
91	20	0.000	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 13:11
96	21	0.000	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 13:13
11	22	0.000	1.93	<MDA	1.45	3.04	<MDA	1.50	01/27/95 13:15
97	23	0.000	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 13:17
30	24	0.000	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 13:19
44	25	0.000	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 13:21
80	26	0.000	1.92	<MDA	0.00	2.49	<MDA	1.50	01/27/95 13:23
47	27	0.000	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 13:25
40	28	1.436	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 13:27
7	29	0.000	1.93	<MDA	1.45	3.04	<MDA	1.50	01/27/95 13:29

### Health Physics Counting Lab – Wipe Analysis

Date: 01/27/95  
 Counting Unit Id: 2  
 Data file name: C:\LBXL\UNIT2\WIP2D004.XLD  
 Batch Ended: 01/27/95 14:11  
 Crosstalk Correction: Applied  
 Alpha activity action level (DPM): 20.00  
 Beta activity action level (DPM): 200.00

Batch ID: S. BRINKMEIER-COS BLDG. #1-50

Carrier	Sample	Alpha Activity			Beta Activity			Count time (min)	Completion Date - Time
		DPM	$\sigma$	flags	DPM	$\sigma$	flags		
52	30	1.433	1.93	<MDA	1.20	3.04	<MDA	1.50	01/27/95 13:31
89	31	0.000	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 13:33
69	32	0.000	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 13:35
59	33	0.000	1.93	<MDA	1.45	3.04	<MDA	1.50	01/27/95 13:37
20	34	0.000	1.92	<MDA	0.00	2.49	<MDA	1.50	01/27/95 13:39
65	35	0.000	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 13:41
21	36	1.435	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 13:43
38	37	0.000	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 13:45
10	38	0.000	1.92	<MDA	0.00	2.49	<MDA	1.50	01/27/95 13:47
36	39	0.000	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 13:49
22	40	0.000	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 13:51
4	41	0.000	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 13:53
122	42	0.000	1.93	<MDA	1.45	3.04	<MDA	1.50	01/27/95 13:55
25	43	0.000	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 13:57
106	44	0.000	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 13:59
75	45	0.000	1.92	<MDA	0.00	2.49	<MDA	1.50	01/27/95 14:01
99	46	0.000	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 14:03
36	47	0.000	1.92	<MDA	0.00	2.49	<MDA	1.50	01/27/95 14:05
43	48	0.000	1.92	<MDA	0.00	2.49	<MDA	1.50	01/27/95 14:07
35	49	0.000	1.92	<MDA	0.00	2.49	<MDA	1.50	01/27/95 14:09
126	50	0.000	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 14:11

**Health Physics Counting Lab – Wipe Analysis**

Date: 01/28/95  
 Counting Unit Id: 1  
 Data file name: C:\LBXLUNIT1\WIP1J004.XLD  
 Batch Ended: 01/27/95 16:57  
 Crosstalk Correction: Applied

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

Batch ID: S. BRINKMEIER-COS COLD BLDG. #51-100

Carrier	Sample	Alpha Activity			Beta Activity			Count time (min)	Completion Date - Time
		DPM	$\sigma$	flags	DPM	$\sigma$	flags		
76	1	0.000	1.93	<MDA	3.28	2.42	<AL	1.50	01/27/95 14:53
79	2	0.000	1.85	<MDA	0.00	1.10	<MDA	1.50	01/27/95 14:55
78	3	0.000	1.87	<MDA	0.05	1.54	<MDA	1.50	01/27/95 14:57
76	4	0.000	1.85	<MDA	0.00	1.10	<MDA	1.50	01/27/95 14:59
77	5	0.000	1.85	<MDA	0.00	1.10	<MDA	1.50	01/27/95 15:01
11	6	0.000	1.87	<MDA	0.05	1.54	<MDA	1.50	01/27/95 15:03
10	7	0.000	1.89	<MDA	1.13	1.88	<MDA	1.50	01/27/95 15:05
49	8	0.000	1.85	<MDA	0.00	1.10	<MDA	1.50	01/27/95 15:07
44	9	0.000	1.87	<MDA	0.05	1.54	<MDA	1.50	01/27/95 15:09
70	10	0.000	1.85	<MDA	0.00	1.10	<MDA	1.50	01/27/95 15:11
88	11	0.000	1.87	<MDA	0.05	1.54	<MDA	1.50	01/27/95 15:13
28	12	0.000	1.87	<MDA	0.05	1.54	<MDA	1.50	01/27/95 15:15
40	13	0.000	1.87	<MDA	0.05	1.54	<MDA	1.50	01/27/95 15:17
49	14	1.695	1.87	<AL	0.00	1.54	<MDA	1.50	01/27/95 15:19
68	15	0.000	1.85	<MDA	0.00	1.10	<MDA	1.50	01/27/95 15:21
59	16	0.000	1.85	<MDA	0.00	1.10	<MDA	1.50	01/27/95 15:23
76	17	0.000	1.85	<MDA	0.00	1.10	<MDA	1.50	01/27/95 15:25
9	18	0.000	1.87	<MDA	0.05	1.54	<MDA	1.50	01/27/95 15:27
53	19	0.000	1.85	<MDA	0.00	1.10	<MDA	1.50	01/27/95 15:29
131	20	0.000	1.89	<MDA	1.13	1.88	<MDA	1.50	01/27/95 15:31
124	21	0.000	1.89	<MDA	1.13	1.88	<MDA	1.50	01/27/95 15:32
84	22	0.000	1.85	<MDA	0.00	1.10	<MDA	1.50	01/27/95 15:35
7	23	0.000	1.85	<MDA	0.00	1.10	<MDA	1.50	01/27/95 15:37
29	24	0.000	1.87	<MDA	0.05	1.54	<MDA	1.50	01/27/95 15:38
10	25	0.000	1.87	<MDA	0.05	1.54	<MDA	1.50	01/27/95 15:40
39	26	0.000	1.89	<MDA	1.13	1.88	<MDA	1.50	01/27/95 15:42
7	27	0.000	1.89	<MDA	1.13	1.88	<MDA	1.50	01/27/95 15:44
33	28	0.000	1.87	<MDA	0.05	1.54	<MDA	1.50	01/27/95 15:46
65	29	0.000	1.85	<MDA	0.00	1.10	<MDA	1.50	01/27/95 15:48

### Health Physics Counting Lab – Wipe Analysis

Date: 01/28/95  
 Counting Unit Id: 1  
 Data file name: C:\LBXL\UNIT1\WIP1J004.XLD  
 Batch Ended: 01/27/95 16:57  
 Crosstalk Correction: Applied

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

Batch ID: S. BRINKMEIER-COS COLD BLDG. #51-100

Carrier	Sample	Alpha Activity			Beta Activity			Count time (min)	Completion Date - Time
		DPM	$\sigma$	flags	DPM	$\sigma$	flags		
83	30	0.000	1.87	<MDA	0.05	1.54	<MDA	1.50	01/27/95 15:50
45	31	0.000	1.85	<MDA	0.00	1.10	<MDA	1.50	01/27/95 15:52
25	32	0.000	1.89	<MDA	1.13	1.88	<MDA	1.50	01/27/95 15:54
60	33	0.000	1.89	<MDA	1.13	1.88	<MDA	1.50	01/27/95 15:56
42	34	0.000	1.87	<MDA	0.05	1.54	<MDA	1.50	01/27/95 15:58
44	35	0.000	1.87	<MDA	0.05	1.54	<MDA	1.50	01/27/95 16:00
38	36	0.000	1.89	<MDA	1.13	1.88	<MDA	1.50	01/27/95 16:02
50	37	0.000	1.85	<MDA	0.00	1.10	<MDA	1.50	01/27/95 16:04
50	37	0.000	1.87	<MDA	0.05	1.54	<MDA	1.50	01/27/95 16:06
50	37	0.000	1.85	<MDA	0.00	1.10	<MDA	1.50	01/27/95 16:08
50	37	0.000	1.87	<MDA	0.05	1.54	<MDA	1.50	01/27/95 16:10
50	37	0.000	1.85	<MDA	0.00	1.10	<MDA	1.50	01/27/95 16:12
50	37	0.000	1.85	<MDA	0.00	1.10	<MDA	1.50	01/27/95 16:14
50	37	0.000	1.85	<MDA	0.00	1.10	<MDA	1.50	01/27/95 16:16
50	37	1.635	1.91	<AL	2.02	2.17	<MDA	1.50	01/27/95 16:18
50	37	0.000	1.85	<MDA	0.00	1.10	<MDA	1.50	01/27/95 16:20
50	37	0.000	1.85	<MDA	0.00	1.10	<MDA	1.50	01/27/95 16:22
50	37	0.000	1.87	<MDA	0.05	1.54	<MDA	1.50	01/27/95 16:24
50	37	1.725	1.86	<AL	0.00	1.10	<MDA	1.50	01/27/95 16:26
50	37	0.000	1.87	<MDA	0.05	1.54	<MDA	1.50	01/27/95 16:28
50	37	0.000	1.89	<MDA	1.13	1.88	<MDA	1.50	01/27/95 16:30
50	37	0.000	1.85	<MDA	0.00	1.10	<MDA	1.50	01/27/95 16:32
70	38	0.000	1.89	<MDA	1.13	1.88	<MDA	1.50	01/27/95 16:34
37	39	0.000	1.87	<MDA	0.05	1.54	<MDA	1.50	01/27/95 16:35
23	40	0.000	1.85	<MDA	0.00	1.10	<MDA	1.50	01/27/95 16:37
92	41	0.000	1.87	<MDA	0.05	1.54	<MDA	1.50	01/27/95 16:39
72	42	0.000	1.89	<MDA	1.13	1.88	<MDA	1.50	01/27/95 16:41
109	43	0.000	1.85	<MDA	0.00	1.10	<MDA	1.50	01/27/95 16:43
45	44	0.000	1.85	<MDA	0.00	1.10	<MDA	1.50	01/27/95 16:45

**Health Physics Counting Lab -- Wipe Analysis**

Date: 01/28/95  
 Counting Unit id: 1  
 Data file name: C:\LBXL\UNIT1\WIP1J004.XLD  
 Batch Ended: 01/27/95 16:57  
 Crosstalk Correction: Applied

Alpha activity action level (DPM): 20.00

Beta activity action level (DPM): 200.00

Batch ID: S. BRINKMEIER-COS COLD BLDG. #51-100

Carrier	Sample	Alpha Activity			Beta Activity			Count time (min)	Completion Date - Time
		DPM	$\sigma$	flags	DPM	$\sigma$	flags		
54	45	0.000	1.85	<MDA	0.00	1.10	<MDA	1.50	01/27/95 16:47
12	46	0.000	1.89	<MDA	1.13	1.88	<MDA	1.50	01/27/95 16:49
11	47	0.000	1.85	<MDA	0.00	1.10	<MDA	1.50	01/27/95 16:51
78	48	0.000	1.89	<MDA	1.13	1.88	<MDA	1.50	01/27/95 16:53
36	49	0.000	1.91	<MDA	2.20	2.17	<MDA	1.50	01/27/95 16:55
67	50	0.000	1.85	<MDA	0.00	1.10	<MDA	1.50	01/27/95 16:57

**Health Physics Counting Lab – Wipe Analysis**

Date: 01/28/95  
 Counting Unit Id: 2  
 Data file name: C:\LBXL\UNIT2\WIP2D005.XLD  
 Batch Ended: 01/27/95 15:01  
 Crosstalk Correction: Applied

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

Batch ID: S. BRINMEIER-COS COLD BD. -#101-104

Carrier	Sample	Alpha Activity			Beta Activity			Count time (min)	Completion Date - Time
		DPM	$\sigma$	flags	DPM	$\sigma$	flags		
121	1	1.434	1.92	<MDA	0.00	2.49	<MDA	1.50	01/27/95 14:55
26	2	0.000	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 14:57
25	3	1.434	1.92	<MDA	0.00	2.49	<MDA	1.50	01/27/95 14:59
37	4	0.000	1.91	<MDA	0.00	1.76	<MDA	1.50	01/27/95 15:01

Protocol #: 5

Pw H3 20cc UG HPCL#6

User : HP #5268B

Time: 2.00

Data Mode: DPM

Nuclide: PW-3H-UG

Quench Set: PW\_3H\_UG

Background Subtract: 1st Vial

	LL	UL	LCR	2S%	BKG
Region A:	0.5 - 18.6		0	0.0	8.50
Region B:	2.0 - 18.6		0	0.0	8.00
Region C:	0.0 - 0.0		0	0.0	0.00

COPY

Quench Indicator: tSIE/AEC

Ext Std Terminator: Count

S. BRINKMEIER-COS COLD #3-106

Luminescence Correction On

Coincidence Time(ns): 18

Delay Before Burst(ns): Normal

Protocol Data Filename: c:\data\Prot1.dat

Count Data Filename: c:\data\SDATA5.DAT

Spectrum Data Drive & Path: c:\data

S#	SMPL_ID	TIME	CPMA	LUM	FLAG	tSIE	DPM1	2Sigma
1		10.00	8.50	5	B	643.64		0.00
2		2.00	253.00	0		332.08	793.50	156.40
3		2.00	0.00	0	E	660.39	0.00	0.00
4		2.00	5.00	0	E	676.33	9.97	11.16
5		2.00	4.00	0	E	670.86	8.01	10.79
6		2.00	0.50	0	E	677.12	1.00	9.25
7		2.00	0.00	0	E	678.96	0.00	0.00
8		2.00	0.00	0	E	663.92	0.00	0.00
9		2.00	0.00	0	E	673.97	0.00	0.00
10		2.00	3.00	0	E	649.89	6.10	10.53
11		2.00	0.00	0	E	679.48	0.00	0.00
12		2.00	3.50	0	E	680.32	6.96	10.50
13		2.00	1.00	0	E	651.50	2.03	9.65
14		2.00	0.50	0	E	670.47	1.00	9.30
15		2.00	3.50	0	E	662.57	7.05	10.64
16		2.00	0.00	0	E	682.32	0.00	0.00
17		2.00	0.00	0	E	648.35	0.00	0.00
18		2.00	0.00	0	E	681.96	0.00	0.00
19		2.00	0.00	0	E	647.06	0.00	0.00
20		2.00	0.00	0	E	676.35	0.00	0.00
21		2.00	0.00	0	E	649.12	0.00	0.00
22		2.00	1.00	0	E	686.69	1.98	9.40
23		2.00	1.50	0	E	604.44	3.16	10.24
24		2.00	2.00	0	E	658.66	4.04	10.03
25		2.00	1.00	0	E	671.45	2.00	9.51
26		2.00	1.50	0	E	669.23	3.01	9.74
27		2.00	0.00	0	E	679.90	0.00	0.00
28		2.00	0.00	0	E	677.97	0.00	0.00
29		2.00	0.00	0	E	673.72	0.00	0.00
30		2.00	0.00	0	E	679.76	0.00	0.00
31		2.00	0.00	0	E	631.77	0.00	0.00
32		2.00	0.00	0	E	669.36	0.00	0.00
33		2.00	1.00	0	E	641.92	2.05	9.72
34		2.00	1.00	0	E	664.18	2.01	9.56
35		2.00	0.00	0	E	666.42	0.00	0.00
36		2.00	1.00	0	E	683.74	1.98	9.42

Protocol #: 5

Pw H3 20cc UG HPCL#6

User : HP #5268E

S#	SMPL_ID	TIME	CPMA	LUM	FLAG	tSIE	DPM1	2Sigma
37		2.00	2.00	0	E	692.42	3.94	9.78
38		2.00	0.00	0	E	686.52	0.00	0.00
39		2.00	0.00	0	E	672.74	0.00	0.00
40		2.00	0.50	0	E	685.64	0.99	9.19
41		2.00	0.50	0	E	675.51	1.00	9.26
42		2.00	0.00	0	E	673.44	0.00	0.00
43		2.00	1.50	0	E	681.30	2.98	9.65
44		2.00	0.00	0	E	686.61	0.00	0.00
45		2.00	0.00	0	E	608.52	0.00	0.00
46		2.00	1.00	0	E	662.84	2.02	9.57
47		2.00	0.00	0	E	673.09	0.00	0.00
48		2.00	3.00	0	E	675.78	5.99	10.33
49		2.00	1.00	0	E	664.35	2.01	9.56
50		2.00	3.00	0	E	678.14	5.98	10.31
51		2.00	1.00	0	E	687.90	1.98	9.39
52		2.00	0.50	0	E	611.87	1.05	9.72
53		2.00	0.00	0	E	658.73	0.00	0.00
54		2.00	0.00	0	E	659.74	0.00	0.00
55		2.00	0.00	0	E	656.23	0.00	0.00
56		2.00	0.50	0	E	645.01	1.02	9.48
57		2.00	4.50	0	E	669.20	9.02	11.01
58		2.00	0.00	0	E	660.61	0.00	0.00
59		2.00	2.50	0	E	662.77	5.04	10.22
60		2.00	0.00	0	E	652.71	0.00	0.00
61		2.00	1.00	0	E	656.03	2.03	9.62
62		2.00	0.00	0	E	631.49	0.00	0.00
63		2.00	0.50	0	E	621.51	1.04	9.65
64		2.00	1.50	0	E	589.13	3.20	10.37
65		2.00	0.00	0	E	603.91	0.00	0.00
66		2.00	156.50	0	E	688.53	309.33	65.06
67		2.00	0.00	0	E	678.55	0.00	0.00
68		2.00	2.50	0	E	680.95	4.97	10.08
69		2.00	0.50	0	E	682.80	0.99	9.21
70		2.00	0.00	0	E	687.40	0.00	0.00
71		2.00	0.50	0	E	680.23	0.99	9.23
72		2.00	0.00	0	E	680.72	0.00	0.00
73		2.00	0.50	0	E	682.87	0.99	9.21
74		2.00	0.50	0	E	678.03	1.00	9.24
75		2.00	0.00	0	E	677.69	0.00	0.00
76		2.00	0.00	0	E	671.74	0.00	0.00
77		2.00	0.00	0	E	688.47	0.00	0.00
78		2.00	1.50	0	E	666.42	3.01	9.76
79		2.00	0.00	0	E	628.69	0.00	0.00
80		2.00	0.00	0	E	661.15	0.00	0.00
81		2.00	1.00	0	E	655.54	2.03	9.62
82		2.00	1.50	0	E	682.87	2.98	9.64
83		2.00	0.00	0	E	667.16	0.00	0.00
84		2.00	0.00	0	E	662.06	0.00	0.00
85		2.00	0.00	0	E	657.30	0.00	0.00
86		2.00	1.50	0	E	654.02	3.04	9.85
87		2.00	0.00	0	E	652.71	0.00	0.00
88		2.00	3.50	0	E	684.71	6.94	10.47
89		2.00	0.00	0	E	651.91	0.00	0.00
90		2.00	0.00	0	E	680.47	0.00	0.00
91		2.00	1.00	0	E	678.47	1.99	9.46
92		2.00	2.00	0	E	680.84	3.98	9.87

Protocol #: 5

Pw H3 20cc UG HPCL#6

User : HP #5268B

S#	SMPL_ID	TIME	CPMA	LUM	FLAG	tSIE	DPM1	2Sigma
93		2.00	0.00	0	E	685.44	0.00	0.00
94		2.00	2.50	0	E	662.63	5.04	10.22
95		2.00	0.50	0	E	656.90	1.01	9.39
96		2.00	0.50	0	E	670.62	1.00	9.29
97		2.00	0.50	0	E	664.57	1.01	9.34
98		2.00	0.00	0	E	670.62	0.00	0.00
99		2.00	0.00	0	E	629.22	0.00	0.00
100		2.00	2.50	0	E	644.80	5.11	10.36
101		2.00	0.00	0	E	633.22	0.00	0.00
102		2.00	1.50	0	E	659.68	3.03	9.81
103		2.00	0.00	0	E	664.11	0.00	0.00
104		2.00	0.00	0	E	674.86	0.00	0.00
105		2.00	0.00	0	E	677.00	0.00	0.00
106		2.00	0.00	0	E	650.37	0.00	0.00

**Appendix H**  
**Radon Summary/Information**

**UNC Geotech**

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

April 12, 1990

Dennis Murphy  
EG&G Mound Applied Technologies  
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	Avg Duplicate		Monitor		Comments		
			Radon pCi/l	Radon pCi/l	Monid	Dupld		Install Date	Retrieve Date
	R BUILDING	163 NEXT TO NORTH WALL	.5	.5	1668533	1668816	12/13/89	2/16/90	
101		ROOM 5 ON SOUTH WEST WALL IN OFFSET	.5		1671208		12/12/89	2/19/90	
	*8" 175	175 WEST WALL	.5		1678048		12/12/89	2/16/90	
36		ELECTRICAL PANEL RM IN ELECTRONICS	.5		1678062		12/12/89	2/19/90	
40		100	.5		1654488		12/13/89	2/16/90	
43		1 EAST WALL OVER WATER DISPENSER	.5		1678076		12/12/89	2/20/90	
44		ON BULLETIN BOARD	.5		1678047		12/12/89	2/16/90	
47		102 MIDDLE OF EAST WALL	.5		1678059		12/12/89	2/16/90	
50		CELL 113	.5		1681582		12/13/89	2/19/90	
79		CENTRAL HALLWAY WEST OF DOOR TO RMT	.5		1681605		12/18/89	2/16/90	
89		101 NEAR BACK CORNER BY ROOF GRATE	.5		1678079		12/15/89	2/19/90	
91		1ST FLOOR	.5		1661525		12/15/89	2/16/90	
91		2ND FLOOR OUTSIDE RM215	.5		1681593		12/15/89	2/16/90	
92		HALLWAY RIGHT OFF ROOM 8	.5		1661509		12/12/89	2/19/90	
94		BAY 2 NORTH WALL	.5		1654477		12/12/89	2/19/90	
	A	215 WEST WALL	.5		1681572		12/14/89	2/16/90	
	A	1080 WEST WALL	.5		1681580		12/14/89	2/16/90	
	COS	119 N WALL NEAR PUNCH PRESS	.5		1654456		12/12/89	2/19/90	
	COS	319 WALL CABINET TO RIGHT OF SINK	.5		1681590		12/12/89	2/19/90	
	E BUILDING	159 WEST WALL	.5		1678033		12/14/89	2/16/90	
	E BUILDING	103 WEST WALL	.5		1678072		12/14/89	2/16/90	
	E ANNEX	E 212 NORTH WALL	.5		1681587		12/19/89	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		1681571		12/12/89	2/16/90	
	HH	MH-8	.5		1671269		12/19/89	2/19/90	
	I BUILDING	BASEMENT LEFT CRAWL SPACE DOOR	.5		1671260		12/12/89	2/19/90	
	M BUILDING	M 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	
	OSW	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	
	OSW	319	.5		1678069		12/13/89	2/16/90	
	OSW	2ND FLOOR	.5		1681611		12/12/89	2/16/90	
	POWER HOUSE PH-1	STATIONARY BOARD CORNER	.5		1678073		12/12/89	2/19/90	
	R BUILDING	145 WEST WALL ABOVE BALANCE	.5		1654538		12/14/89	2/16/90	
	SM/R TRITIUM COMPLEX	128 OVER LARGE METAL FLOOR DISC	.5		1678019		12/12/89	2/16/90	
	N BLDG	M135 WEST CENTRAL WALL	.5		1671293		12/12/89	2/16/90	
	WD BLDG	WDA 110	.5		1671301		12/16/89	2/16/90	
	*8" 124	EAST WALL	.5		1667189		12/12/89	2/16/90	
	OSE	113 BULLETIN BOARD OPPOSITE ELEVATO	.5		1678027		12/15/89	2/16/90	
TF-2		114 EAST WALL CENTER OF ROOM	.4		1678064		12/12/89	2/19/90	
	HH	MH-24	.4		1667187		12/14/89	2/19/90	
	OS BUILDING	CORRIDOR 7 NEXT TO ROOM 216	.4		1661614		12/13/89	2/19/90	
	GP 81	1A MIDDLE OF WEST WALL	.4	.5	1672135	1661542	12/12/89	2/19/90	
105	PARTS MACHINING BUILDING	136 QC OFFICE	.4		1678017		12/12/89	2/19/90	
27		CELL 8 - HALL	.4		1681583		12/12/89	2/19/90	
28	CERAMIC PRODUCTION	101	.4		1672061		12/12/89	2/19/90	
29		HALLWAY	.4		1672105		12/14/89	2/19/90	
	TEST FIRE BUILDING 3	3-315	.4		1672036		12/12/89	2/19/90	
38	PP BLDG	PP CORR 16/BAY 2 WALL	.4		1681570		12/14/89	2/19/90	
39		BREAK RM	.4		1678050		12/14/89	2/19/90	
42		101 B EAST WALL	.4		1678031		12/13/89	2/19/90	

Radon Monitor Results for 00 Hound Facility

Bldg	Bldg Description	Room	Avg Radon pCi/l	Duplicate Radon pCi/l	Monid	Dupid	Monitor		Comments
							Install Date	Retrieve Date	
45		WORK STATION AREA	.4		1681568		12/14/89	2/19/90	
46		#1 EAST MALL	.4		1672670		12/12/89	2/19/90	
49		HALL OUTSIDE RM 125	.4		1678020		12/14/89	2/19/90	
51		107 TOP OF FUME HOOD	.4		1681575		12/12/89	2/19/90	
63		ROOM 134	.4		1672059		12/13/89	2/20/90	
63M		RM 4	.4		1678078		12/14/89	2/19/90	
65		ROOM 10 CONFERENCE ROOM	.4		1671284		12/14/89	2/19/90	
66		OFFICE AREA	.4		1681554		12/12/89	2/19/90	
68		EAST MALL 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 MALL	.4		1678041		12/12/89	2/19/90	
88		ROOM 116	.4		1671295		12/12/89	2/19/90	
95	SN/PP	95- BLD-ROOM#1	.4		1661531		12/12/89	2/20/90	
	DS BUILDING	CORRIDOR 2 - 6 FT. ABOVE FLOOR	.4		1678071		12/13/89	2/19/90	
	I	I HALLWAY	.4		1667184		12/12/89	2/19/90	
	N BUILDING	N 21 WEST MALL	.4		1678057		12/15/89	2/20/90	
	POWER HOUSE PH-1	OFFICE SUPERVISOR	.4		1678036		12/12/89	2/19/90	
	R BUILDING	12 SOUTH MALL	.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

**Appendix I**

**Asbestos Summary/Information**

**From:** Christopher Ahlquist  
**To:** GENEJC  
**Date:** 6/7/00 3:13pm  
**Subject:** COS Asbestos Is Bad For You -Reply

Joe -

I reviewed the records available to IH and found no references to asbestos-containing materials associated with COS Building. My review included the 2 site asbestos surveys which were accomplished in 1989 and 1992 as well as individual IH building files. Neither of these 2 site surveys included an inspection of COS at the time they were accomplished.

To my knowledge, COS has never been characterized for asbestos-containing building materials. It may be possible that the original architect and/or construction engineer for COS specified non-asbestos materials in its construction and that documentation of such may be available.

Thanks for consulting with the IH Group on this matter. Please call with any questions or concerns.

Respectfully,

Chris Ahlquist  
Industrial Hygiene  
x3737

**CC:** MNDCONT.MNDPO(FARMBM, HACKKR, PAULRP),

USE CATEGORY

**C**

ML-9771A

This procedure shall be available to workers, though not necessarily at the work location. This procedure may be performed without referring to the procedure; however, the user is still responsible for adhering to the procedure.

# TECHNICAL MANUAL

## MD-10391, ISSUE 5

### ASBESTOS PROGRAM MANUAL

## MOUND

ML-5872(1-89)

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- Technical Manuals, OSW-327

**CHANGES INCORPORATED**

- Replace Pages 1, 2, 15, 16, 17, 18, 23, 24, 55, 56, 59, 60, 77 and 78
- Insert (New Pages)
- Remove
- Complete Reprint

This issue has been reviewed and approved for publication by TR, Evan Kirk.

*Evan Kirk*      2/23/99  
Date

All appropriate reviews were conducted. This issue is authorized for use by Advance Change Order on file in Technical Manuals.

M. D. Miller, Manager      11-12-98  
Industrial Safety & Health

**TABLE 1  
BUILDING INFORMATION FOR EG&G MOUND FACILITY**

Compiled by: Mound Industrial Hygiene

BUILDING NAME	YEAR CONSTRUCTED	SQUARE FOOTAGE	ACBM <sup>(1)</sup> ?
A	1948	55,582	Yes
B	1948	27,735	Yes
C	1948	13,403	Yes
COS	1986	64,654	Suspected <sup>(2)</sup>
DS	1965	47,810	Yes
E	1948	47,755	Yes
EG1	1973	240	Suspected <sup>(2)</sup>
EG2	1973	240	Suspected <sup>(2)</sup>
EG4	1958	148	Suspected <sup>(2)</sup>
EG6	1975	240	Suspected <sup>(2)</sup>
EG7	1972	80	Suspected <sup>(2)</sup>
FH1	1948	400	No
FH2	1948	400	No
G	1948	7,518	Yes
GH	1948	5,347	Yes
GH44	1963	365	Assumed <sup>(3)</sup>
GIS	1948	166	Yes
GP-1	1949	7,792	Yes
GP44	1971	365	Assumed <sup>(3)</sup>
GW	1968	9,782	Yes
H	1948	17,334	Yes
HH	1948	15,276	Yes

TECHNICALLY RESPONSIBLE  
Timothy J. Eilers

DATE  
8-31-95

MANUAL NUMBER  
MD-10391

NOTES CHANGE

BUILDING NAME	YEAR CONSTRUCTED	SQUARE FOOTAGE	ACBM <sup>(1)</sup> ?
I	1948	25,736	Yes
M	1948	56,018	Yes
OSE	1986	90,072	Assumed <sup>(3)</sup>
OSW	1974	54,280	Yes
P	1948	15,143	Yes
PH	1948	646	Yes
PS	1963	2,288	Yes
R	1948	55,003	Yes
SD	1948	1,593	Yes
SST	1973	590	Suspected <sup>(2)</sup>
SW	1951	43,066	Yes
T	1948	172,963	Yes
W	1948	32,484	Yes
WD	1948	16,216	Yes
WDA	1966	5,000	Yes
WH1	1960	374	No
WH2	1960	374	No
WH3	1960	128	No
1	1957	986	Yes
2	1959	6,291	Yes
3	1964	12,391	Yes
5	1948	314	No
6	1948	90	No
7	1986	387	No
8	1986	66	No

TECHNICALLY RESPONSIBLE  
Timothy J. Eilers

DATE  
8-31-95

MANUAL NUMBER  
MD-10391

UNNOTES CHANGE

BUILDING NAME	YEAR CONSTRUCTED	SQUARE FOOTAGE	ACBM <sup>(1)</sup> ?
10	1986	66	No
11	1986	372	No
13	1960	47	Suspected <sup>(2)</sup>
14	1986	53	Suspected <sup>(2)</sup>
16	1960	480	Yes
17	1961	1,120	Yes
19	1963	4,480	No
20	1986	303	No
21	1966	4,069	Suspected <sup>(2)</sup>
22	1966	9,090	No
23	1966	3,422	Yes
24	1966	840	Yes
25	1966	430	Yes
26	1965	800	Assumed <sup>(3)</sup>
27	1968	5,285	Yes
28	1966	11,329	Yes
29	1964	6,601	Yes
30	1964	740	Yes
31	1966	8,740	Suspected <sup>(2)</sup>
33	1965	1,344	Yes
34	1965	1,100	No
35	----	2,500	Yes
36	1968	4,255	Yes
37	1968	2,463	Yes
38	1968	44,327	Yes

TECHNICALLY RESPONSIBLE  
Timothy J. Eilers

DATE  
8-31-95

MANUAL NUMBER  
MD-10391

NOTES CHANGE

BUILDING NAME	YEAR CONSTRUCTED	SQUARE FOOTAGE	ACBM <sup>(1)</sup> ?
39	1967	3,515	No
40	1968	12,227	Yes
42	1969	2,892	Yes
43	1969	1,516	Yes
44	1969	2,480	Yes
45	1970	2,775	Yes
46	1969	2,439	Yes
47	1969	3,611	Yes
48	1970	7,950	Yes
49	1970	14,929	Yes
50	1971	14,849	Yes
51	1972	3,541	Assumed <sup>(3)</sup>
52	1973	78	No
53	1986	239	No
54	1986	331	No
55	1973	330	No
56	1973	613	Yes
57	1975	510	Yes
58	1977	6,110	No
59	1978	668	Suspected <sup>(2)</sup>
60	1980	3,958	Yes
61	1983	45,490	Suspected <sup>(2)</sup>
62	1980	290	Yes
63	1981	16,461	Assumed <sup>(3)</sup>
64	----	72	No

TECHNICALLY RESPONSIBLE  
Timothy J. Eilers

DATE  
8-31-95

MANUAL NUMBER  
MD-10391

NOTES CHANGE

BUILDING NAME	YEAR CONSTRUCTED	SQUARE FOOTAGE	ACBM <sup>(1)</sup> ?
65	1979	2,400	Assumed <sup>(3)</sup>
66	1979	600	Suspected <sup>(2)</sup>
67	1982	3,787	Assumed <sup>(3)</sup>
68	1979	1,990	Suspected <sup>(2)</sup>
69	1981	1,620	Suspected <sup>(2)</sup>
70	1982	3,366	Suspected <sup>(2)</sup>
71	1983	800	Suspected <sup>(2)</sup>
72	1983	2,400	No
73	1983	2,200	Suspected <sup>(2)</sup>
74	1986	400	Suspected <sup>(2)</sup>
79	1983	1,650	Suspected <sup>(2)</sup>
80	1986	314	No
81	1986	314	No
82	1986	314	No
83	1986	314	No
84	1986	314	No
85	1988	3,160	No
87	1988	38,882	No
88	1983	7,200	Assumed <sup>(3)</sup>
89	1984	4,830	Assumed <sup>(3)</sup>
90	1983	656	Suspected <sup>(2)</sup>
91	1984	8,065	Suspected <sup>(2)</sup>
92	1984	1,600	Suspected <sup>(2)</sup>
93	1984	2,936	Suspected <sup>(2)</sup>
94	1984	1,240	Assumed <sup>(3)</sup>

# MOUND TECHNICAL MANUAL

PROCEDURE TITLE <b>Asbestos Program Manual</b>	USE CATEGORY <b>C</b>	PROCEDURE	MANUAL NUMBER <b>MD-10391</b>	PAGE <b>15 of 90</b>	ISSUE <b>5</b>
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BUILDING NAME	YEAR CONSTRUCTED	SQUARE FOOTAGE	ACBM <sup>(1)</sup> ?
95	1985	2,000	Suspected <sup>(2)</sup>
96	----	432	Suspected <sup>(2)</sup>
98	1988	8,517	Suspected <sup>(2)</sup>
99	1989	11,412	Suspected <sup>(2)</sup>
100	1989	6,292	Suspected <sup>(2)</sup>
101	1986	1,815	Suspected <sup>(2)</sup>
102	1987	10,982	Suspected <sup>(2)</sup>
104	----	1,800	Suspected <sup>(2)</sup>
105	----	38,027	Suspected <sup>(2)</sup>
106	----	180	Suspected <sup>(2)</sup>
107	----	70	Suspected <sup>(2)</sup>
112	----	785	Suspected <sup>(2)</sup>
113	----	547	Suspected <sup>(2)</sup>
114	----	432	Suspected <sup>(2)</sup>
119	----	350	Suspected <sup>(2)</sup>
120	----	350	Suspected <sup>(2)</sup>

- NOTES:**
- (1) ACBM - Asbestos-containing building materials.
  - (2) Building is noted to contain "suspect" asbestos-containing building materials. Industrial hygiene building files lack building construction or asbestos survey information.
  - (3) Building is noted to contain "suspect" asbestos-containing flooring tile or sheet goods.

# HOWALD FIREPROOFING, INC. ELLIS/NAEYAERT/GENHEIMER ASSOCIATES, INC.

ARCHITECTS

ENGINEERS

DATE RECEIVED NOV 1985

*the 1/2" min 1/2" of concrete covered at the present time. This project is for...*



Applicators of:  
**COMMERCIAL & INDUSTRIAL  
 SPRAY-ON FIREPROOFING & INSULATION**

October 28, 1985

B.G. Danis Co.  
 P.O. Box 1510  
 Dayton, Ohio 45401

Re: Found Laboratory  
 Central Operational Support  
 Segment B  
 Spray-on-Fireproofing

Gentlemen:

The spray-on-fireproofing material to be used will be CAFCO type Dc/f as manufactured by the U.S. Mineral Products Co. This material has been tested at the Underwriters' Laboratories, Inc. in accordance with ASTM-E-119 and each bar will bear the U.L. Label. The following U.L. Design assemblies are to be followed.

Columns-1½ & 2 hr.: U.L. Design X818, with 1½ CAFCO Dc/f following the contour.

Floor Assembly-1½ hr.: U.L. Design D858, with ½ & 3/8" CAFCO Dc/f on the beams and deck respectively.

Roof Assembly-1 hr. with 1½ hr. girders: U.L. Design p-816, with 1½", 7/8" and 1½" CAFCO Dc/f on the girders, beams and deck respectively.

**NOTE**  
 Spray-on fire proofing shall be tamped & sealed in areas exposed to view. respectfully,

*Paul L. Howald*  
 Paul L. Howald, President

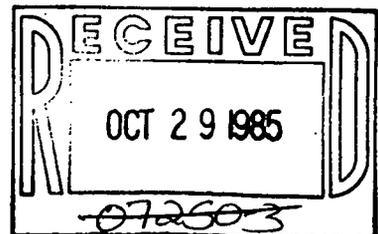
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APPROVED FOR SUBMITTAL  
 B. G. Danis Company Building Division  
 Job #1124  
 Spec. # 07250  
 Date: OCT. 29 1985  
 DE-AC04-85ALI8874

ROUTE	DEPARTMENT	BY	DATE
	DESIGN		
	ARCHITECTURAL	CH	11/1/85
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	STRUCTURAL		
	ELECTRICAL		
	MECHANICAL		
	SPECIFICATION		
	INDUSTRIAL ENG.		

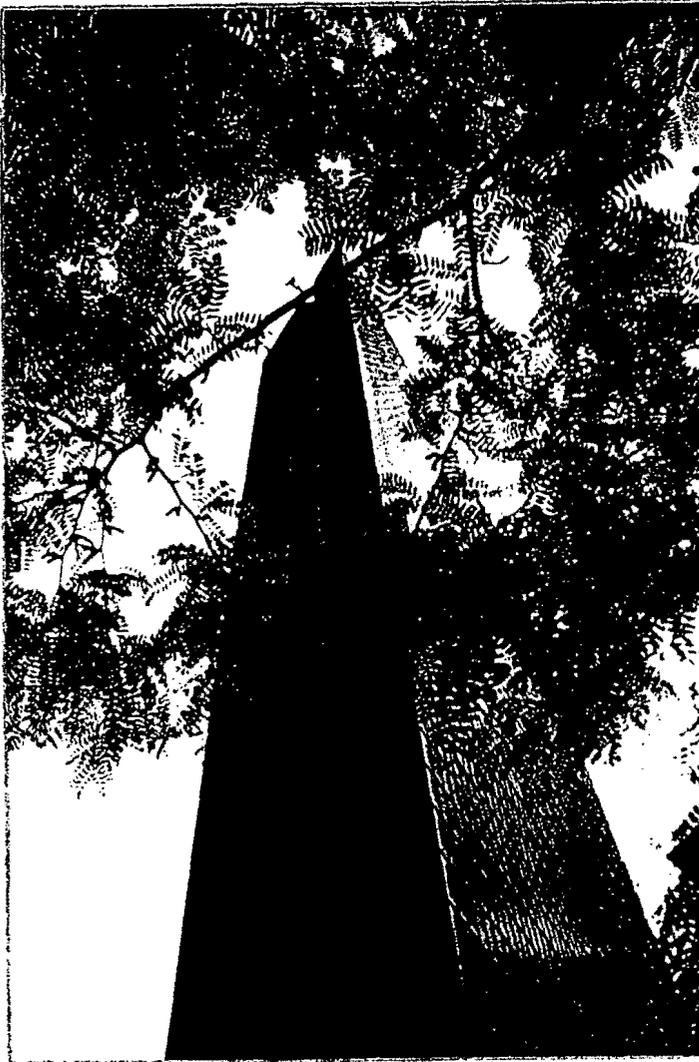
REVIEWING IS ONLY FOR CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS TO BE CONFIRMED AND CORRELATED AT THE JOB SITE; FOR INFORMATION THAT PERTAINS SOLELY TO THE FABRICATION PROCESSES OR TO MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES OF CONSTRUCTION; AND FOR COORDINATION OF THE WORK OF ALL TRADES.

APPROVED  
 APPROVED AS CORRECTED  
 REVISE AND RESUBMIT  
 NOT APPROVED  
 BY: *[Signature]* DATE: 11/1/85





# THE PROOF IN FIREPROOFING



UNITED STATES MINERAL



PRODUCTS COMPANY

APPROVED FOR SUBMITTAL  
B. G. Danis Company Building Division  
Job #1124

Spec. # 07250

Date: OCT. 29 1985

DE-AC04-85AL18874



# ABSOLUTELY ASBESTOS-FREE

PP/PRODUCT PRESENTATION

## CAFCO® ... The Proof in Fireproofing

CAFCO® Fireproofing Products are designed to meet the rigid standards that architects, owners and contractors require. No other products offer the same combination of features for dependability, versatility and safety:

**All CAFCO products contain no vermiculite and are absolutely asbestos-free.**

- Provide excellent fire resistant performance
- Offer a high level of physical performance properties
- Feature low-cost, fast spray application
- Eliminate most scaffolding requirements and leave no slippery overspray on floors
- Add the benefits of thermal insulation and acoustical control
- Are fully tested and classified for use in a broad range of construction combinations

Licensed CAFCO contractors are selected by USM on the basis of their qualifications and ability to work with our products toward the goal of providing solutions to construction problems. USM offers training and field support to this network of skilled contractors.

Our Technical Staff provides detailed specifications, product selection recommendations and other technical support to architects and contractors. USM's Sales Force is well trained and capable of offering technical assistance.

This combination of safe, dependable and economical product installed by trained, licensed contractors and supported by a knowledgeable sales and technical team results in the assurance of consistent, high quality fireproofing applications.

*This is why CAFCO is the most widely used and specified absolutely asbestos-free sprayed fireproofing in America and why CAFCO is THE PROOF IN FIREPROOFING.*

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Representative Installations	8
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## DT/DOCUMENT

This catalog contains general and technical information describing spray applied CAFCO products for structural fireproofing. This data is provided to help designers and contractors satisfy their needs for quality products in these areas.

# SPRAYED FIREPROOFING PRODUCTS

7.14/Uns



## OP/OVERALL PRODUCT

### Fire Test Performance

CAFECO® Fireproofing Products: BLAZE-SHIELD® and DECK-SHIELD® (U.L.I. Designations "Type DC/F" and "Type C/F," respectively), have been tested for fire endurance by Underwriter's Laboratories, Inc., and Underwriter's Laboratories of Canada in accordance with ASTM E119 (UL 263, ULC S101). These tests have developed ratings of up to 4 hours for floor/ceiling, beam, column and roof/ceiling assemblies. A complete reference guide to designs utilizing CAFECO fireproofing products is available upon request.

Underwriter's Laboratories, Inc. lists the following Surface Burning Characteristics for BLAZE-SHIELD and DECK-SHIELD:

Flame Spread .....	10
Smoke Developed .....	0

CAFECO products have also been tested for structural fire protection at the following prominent fire testing stations:

- Fire Research Station—FIRTO—UK
- Centre Scientifique et Technique du Batiment—Paris, France
- Institut für Baustoffkunde und Stahlbetonbau—Braunschweig, West Germany

### Physical Performance

While fire ratings are important, they are only one measure of performance for a fire protection material. Architects and owners should also expect a product application to endure other exposures during the construction cycle and throughout the building's life.

In recent years, ASTM developed test methods to approximate the various forces which act upon fireproofing materials in these exposures. These testing methods are nationally recognized as the acceptable means for determining:

- Bond Strength (Adhesion/Cohesion)
- Compressive Strength
- Deflection
- Bond Impact
- Air Erosion Resistance
- Corrosion Resistance

CAFECO BLAZE-SHIELD and DECK-SHIELD have been tested for these properties by independent laboratories. Owners, architects and contractors can have confidence in the high level of performance demonstrated by these test results for CAFECO products.

CAFECO's strength in all these tests is the result of an exclusive blend of mineral fibers and cementitious binders. The fibers interlock in a unique manner holding the fireproofing mat to the steel and to itself, further enhancing this inherent durability. This fiber network gives the applied product unusual strengths where vibration, excessive deflection and seismic occurrences are a concern.

### Health and Safety

CAFECO BLAZE-SHIELD and CAFECO DECK-SHIELD are among the safest products available for use in construction today.

**USM certifies that all CAFECO products contain absolutely NO asbestos fibers. NO asbestos-contaminated vermiculite and are NOT subject to asbestos contamination during manufacture.**

This certification is supported by independent laboratory analysis, which utilized the latest and most sophisticated asbestos detection techniques, including transmission electron microscopy (to a magnification of 15,000X). The report of this analysis concluded "asbestos is absent in this product." (This report is available upon request.) Not all manufacturers can provide such a certification with comparable laboratory results.

This is important because the regulations of EPA and OSHA do not prohibit the presence of asbestos in sprayed fireproofing and insulation materials. The current regulations merely control that amount of asbestos which can be present in products or to which workmen can be exposed during the application of these products.

Because some products which are formulated without asbestos can be produced with asbestos-contaminated raw materials and still comply with the current federal regulations, it is important to understand that CAFECO fireproofing products are absolutely free of asbestos.

The application of CAFECO materials is performed with electrically powered pneumatic spraying equipment. This alleviates any concern for fumes typically experienced when installing products with gasoline- or diesel-powered equipment. Most applications are performed from the floor eliminating the potential hazards of scaffolding. Furthermore, the sprayed fiber composition of CAFECO is such that overspray on the floors is minimal and not slippery.

**FIRE TEST PERFORMANCE,  
PHYSICAL PERFORMANCE,  
SAFETY, VERSATILITY AND  
ECONOMY MAKE CAFECO®  
PRODUCTS THE LOGICAL  
CHOICE IN FIREPROOFING.**

# 100% ASBESTOS-FREE STRUCTURAL FIREPROOFING

7.14/Uns

TABLE OF PHYSICAL PROPERTIES

Characteristic	ASTM Standard	Acceptable Performance**	Tested Performance
Cohesion/Adhesion	E736	100 p.s.f. (4.8 kPa)	over 100 p.s.f. (cover 4.8 kPa)
Deflection	E759	No Cracks or Delaminations	No Cracks or Delaminations
Bond Impact	E760	No Cracks or Delaminations	No Cracks or Delaminations
Compressive Strength	E761	500 p.s.f. (23.9 kPa)	over 500 p.s.f. (over 23.9 kPa)
Air Erosion	E859	Less than 0.025 grams/s.f. (less than 0.27 grams/m <sup>2</sup> )	Less than 0.025 grams/s.f. (less than 0.27 grams/m <sup>2</sup> )

\*\*USM suggested performance levels based on nationally recognized standards.

All values are the result of independent laboratory tests performed by International Testing Laboratories, Inc., Newark, New Jersey on BLAZE-SHIELD® and DECK-SHIELD®. Reports are available upon request.



## Thermal Properties

Because of their mineral fiber based formulations, CAFCO® BLAZE-SHIELD® and DECK-SHIELD® are highly effective thermal insulators. This benefit is important to architects and engineers concerned with heat loss, particularly through roofs. The tested thermal performance of CAFCO fireproofing is as follows:

PRODUCT	CONDUCTIVITY (k)	RESISTANCE (R/inch)
BLAZE-SHIELD	29 @ 75°F (0.042 W/mK @ 24°C)	3.45
DECK-SHIELD	31 @ 75°F (0.045 W/mK @ 24°C)	3.23

## Acoustical Performance

The mineral fiber formulations of CAFCO fireproofing products contribute acoustical correction in addition to fire resistance and thermal insulating properties. This benefit can add value to the application of CAFCO fireproofing in mechanical equipment rooms, parking garages, etc. Tests performed with BLAZE-SHIELD and DECK-SHIELD have yielded the following acoustical results:

PRODUCT	THICKNESS	BASE	NRC RATING
BLAZE-SHIELD	½ inch (13mm)	Deck & Beam	.85
BLAZE-SHIELD	¾ inch (19mm)	Solid	.65
DECK-SHIELD	¾ inch (19mm)	Solid	.75

## CC/CODES, CERTIFICATIONS

### Code Compliances

CAFCO fireproofing products satisfy the requirements of the following building code organizations:

- SBCCI—Southern Building Code Congress International (Report No. 8441)
- ICBO—International Conference of Building Officials (Report No. 1244)
- BOCA—Building Officials and Code Administrators International

### Major Specifications

BLAZE-SHIELD and DECK-SHIELD also comply with the requirements of the following specifications:

- U.S. Government Federal Specification: SS-S-111B
- General Services Administration (GSA): PBS:4-09200
- U.S. Environmental Protection Agency (EPA): Regulation 40 C.F.R. Chapter 1, Subsection 61:22E
- Veterans Administration (VA): H-08-1

Consult individual code compliance listings for required thicknesses, densities, etc., or contact your CAFCO representative for details.



OP/OVERALL PRODUCT

**Fireproofing With CAFCO\***

CAFCO\* produces and markets two high-quality sprayed fireproofing materials: BLAZE-SHIELD\* and DECK-SHIELD\* (U.L.I. Designations "Type DC/F" and "Type C/F," respectively). Both products are capable of providing excellent fire resistance to structural members and assemblies with safety, permanence and economy.

CAFCO BLAZE-SHIELD is best suited for application to floor-ceiling assemblies, utilizing fluted and cellular steel decks, with or without electrification; structural beams and columns; concrete assemblies and roof systems.

CAFCO DECK-SHIELD was originally formulated for application to semi-flexible roof systems. DECK-SHIELD can also be used for floor-ceiling assemblies with fluted decking; structural beams and columns and wall assemblies.

Consult USM's Technical Staff or your CAFCO Representative for assistance in product and design selection.

**Features**

- Designed for direct spray application to steel members, floor and roof decks, and wall assemblies
- One-coat application
- Added benefits of acoustical control and thermal insulation
- Fast, reliable, economical installation requiring minimal clean-up
- Absolutely asbestos-free

BLAZE-SHIELD and DECK-SHIELD have proven themselves to be highly effective, versatile and absolutely asbestos-free fireproofing materials. These high quality fire protection products are specially formulated of mineral fibers and cementitious binders for spray application to steel and concrete assemblies requiring fire endurance ratings.

In addition to providing high levels of fire protection, BLAZE-SHIELD and DECK-SHIELD offer excellent thermal and acoustical properties. These features often eliminate the need and expense of supplemental acoustical ceiling applications and additional insulation thickness on roofs protected with CAFCO fireproofing.

The safety aspects of CAFCO's fireproofing products are without equal. In addition to their absolutely asbestos-free formulations, BLAZE-SHIELD and DECK-SHIELD can be handled and used safely. The fast, economical application of CAFCO fireproofing is performed using electrically-powered, pneumatic spraying equipment. This eliminates the fumes and storage problems usually associated with fireproofing operations requiring gas- or diesel-powered equipment. Typical CAFCO applications can be accomplished without costly, and potentially hazardous scaffolding. And, overspray on the floors is minimal and not slippery. Clean up and removal can be carried out quickly, at any stage of the application.

BLAZE-SHIELD and DECK-SHIELD master the toughest fireproofing challenges by completely enveloping the members and assemblies to be rated with a strong, yet flexible, blanket of protection against fire and heat. Under typical end-use conditions, CAFCO fireproofing can be expected to remain in place and provide the required measure of fire protection for the life of the construction. The table of physical properties (on the next page) illustrates CAFCO's excellent performance characteristics when tested according to recognized standards to approximate the types of conditions against which fireproofing materials should be expected to perform.





# YOUR FIRST CHOICE IN

## UA/USES, APPLICATIONS

### Typical Fire Resistance Ratings

The following table lists U.L. designs\* which classify CAFCO® fireproofing for many typical construction combinations. These are the most commonly used listings. Our technical staff and representatives can assist you in determining suitable designs for your project.

SYSTEM OR COMPONENT	RATING(HR.)	U.L. DESIGN	DESIGN DETAILS
Protected Floor Assemblies	2,3 1,1½,2 1,1½,2,3,4 1,1½,2,3 2 2	D832 D847 D858 D859 D861 F816**	
Unprotected Floor Assemblies	2 1,1½,2,3 1½,2,3	D840 D902 D904	
Beams	1,2,3,4 1,1½,2,3 1,1½,2,3,4	N805 N815 N816	
Roof Assemblies (with board insulation)	1,1½,2 1,1½ 1 1,1½,2 1,1½,2	P801 P803 P814 P815 P816	
Roof Assemblies (with insulating concrete)	1½,2 1½,2 1½,2 1,1½,2	P902 P908 P920 P922	
Columns W6x16 or larger W8x28 or larger W10x49 or larger W14x228 or larger	1,1½,2,3 2,3,4 2,3,4 2,3,4	X821 X822/X525 X818/X801 X807	

\* In all cases, consult the actual design listing for beam sizes, deck profiles, electrification details, roof coverings and other construction details.  
 \*\* Refers to Underwriters Laboratories of Canada List of Equipment and Materials.

TS/TECHNICAL SUPPORT

Guide Specification

1.0 SCOPE

- 1.1 Work Included  
Provide all labor, materials and equipment necessary for and incidental to the complete and proper installation of all sprayed fireproofing and related work as shown on the drawings, or where specified herein, and in accordance with all applicable requirements of the Contract Documents.
- 1.2 The material and installation shall conform to the applicable building code requirements of all authorities having jurisdiction.

2.0 PRODUCTS

- 2.1 The sprayed fireproofing materials shall be asbestos free CAFCO® BLAZE-SHIELD® or CAFCO DECK-SHIELD® (U.L. Designations "Type DC/F" or "Type C/F," respectively), as manufactured by United States Mineral Products Company (marketed abroad by CAFCO International Limited). Materials shall be free of all forms of asbestos and asbestos contamination, and manufacturer shall provide certification of same, signed by an officer, upon request.
- 2.2 Materials shall be delivered to the project site in manufacturer's unopened packages, fully identified as to trade name, type, grade, or other identifying data, and bearing the U.L. label, where required. The material shall be stored off the ground and under cover, and in a location which shall be protected from the weather.
- 2.3 Potable water shall be used for the application of sprayed fireproofing materials.

3.0 STANDARDS OF PERFORMANCE

- 3.1 The sprayed fireproofing materials shall have been tested and reported by Underwriters Laboratories, Inc., or Underwriter's Laboratories of Canada (ULC) in accordance with the procedures of ASTM E119.
- 3.2 Materials shall meet the requirements of Federal Specification SS-S-111B, Type II, factory mixed mineral fibers with integral inorganic binders, except as modified herein, and having the following characteristics:
- 3.3 *Deflection:* when tested in accordance with ASTM E759, the material shall not crack or delaminate from the surface to which it was applied.
- 3.4 *Bond Impact:* when tested in accordance with ASTM E760, the material shall not crack or delaminate from the surface to which it was applied.

- 3.5 *Adhesion/Cohesion (bond strength):* when tested in accordance with ASTM E736, the material applied over uncoated or galvanized steel shall have a minimum average bond strength of 100 lbs./sq. ft. (4.8 kPa).
- 3.6 *Air Erosion:* when tested in accordance with ASTM E859, the material shall not be subject to losses from the finished application greater than 0.025g/ft.<sup>2</sup> (0.269g/m<sup>2</sup>).
- 3.7 *Compressive Strength:* when tested in accordance with ASTM E761, the material shall not deform more than 10 percent when subjected to a crushing force of 500 lbs./sq. ft. (23.9 kPa).
- 3.8 *Corrosion Resistance:* bare, shop-coated and galvanized steel sheets with applied fireproofing shall be tested in accordance with ASTM E937.
- 3.9 *Non-Combustibility:* when tested in accordance with ASTM E136-73, material shall be non-combustible.
- 3.10 *Surface Burning Characteristics:* when tested in accordance with ASTM E84 (tunnel test), the material shall exhibit the following surface burning characteristics:  
FLAME SPREAD ..... 10  
SMOKE DEVELOPED ..... 0
- 3.11 *Density:* when tested in accordance with ASTM E605, the material shall meet the minimum individual and average density values as listed in the appropriate U.L. design, or as required by the authority having jurisdiction.
- 3.12 The sprayed fireproofing shall be installed at the required thickness and density to achieve the following ratings:  
Floor Assembly \_\_\_\_\_ hr.  
Roof Assembly \_\_\_\_\_ hr.  
Beams \_\_\_\_\_ hr.  
Girders \_\_\_\_\_ hr.  
Columns \_\_\_\_\_ hr.

4.0 PREPARATION

- 4.1 All surfaces to receive sprayed fireproofing shall be free of oil, mill scale, dirt, grime, grease, dust, loose rust, paint or other foreign materials which would impair satisfactory bonding to the surface. Any cleaning required shall be accomplished just prior to the application of the sprayed fireproofing.
- 4.2 Clips, hangers, supports, sleeves and other attachments to the substrate are to be placed by others, prior to the application of sprayed fireproofing.
- 4.3 The installation of ducts, piping, conduit or other suspended equipment shall not take place until the application of sprayed fireproofing is complete in an area.

- 4.4 The application of sprayed fireproofing shall not commence until certification has been received by the General Contractor indicating that surfaces to receive sprayed fireproofing have been inspected by the applicator and are acceptable to receive sprayed fireproofing.

5.0 APPLICATION

- 5.1 Equipment, mixing and application shall be in accordance with the manufacturer's written application instructions, and the materials shall be installed by a firm licensed or otherwise approved to apply the material by the manufacturer.
- 5.2 Sprayed fireproofing shall not be applied to steel floor decks prior to the completion of concrete work on that floor.
- 5.3 The application of sprayed fireproofing to the underside of roof deck assemblies shall not commence until after the completion of roofing applications and after roof traffic has ceased.
- 5.4 When the prevailing outdoor temperature at the building is less than 40°F (4°C), interior substrate temperature of 40°F (4°C) shall be maintained for 24 hours before, during and 24 hours after application of sprayed fireproofing. If necessary for job progress, provide enclosures with heat to maintain temperatures.
- 5.5 Provisions shall be made for natural ventilation to properly dry the sprayed fireproofing after it has been applied.
- 5.6 All patching of and repair to sprayed fireproofing, due to damage by other trades shall be executed under this section and paid for by the trade responsible for the damage.

6.0 CLEAN UP

- 6.1 After the completion of the work of this section in any area, application equipment shall be removed from floors, and other surfaces not to be sprayed shall be cleaned of all deposits of fireproofing material. All floor areas shall be sufficiently broom-cleaned.

7.0 INSPECTION AND TESTING

- 7.1 The sprayed fireproofing shall be tested for thickness and density in accordance with one of the following procedures:
  - 7.1.1 ASTM E605: "Standard Test Method for Thickness of Sprayed Fire Resistive Material Applied to Structural Members."
  - 7.1.2 AWC1: "Inspection Procedure for Field-Applied Sprayed Fire Protection Materials."
  - 7.1.3 U.B.C. Standard No. 43-8: "Thickness and Density Determination for Spray-Applied Fireproofing."



# THE PROOF IN FIREPROOFING

## Representative Installations

CAFCO® Fireproofing Products are the most widely used, absolutely asbestos-free sprayed fireproofing materials in America.

Many prominent steel frame structures are protected with CAFCO materials. The 60 story John Hancock Office Tower in Boston (shown on the cover) gives testimony to the merits of CAFCO products. Chosen by the owner and architect to provide the safest and healthiest work environment to the employees of John Hancock, the installation of CAFCO Fireproofing (performed in 1971-72) has answered the need for safe, dependable fire protection and has been virtually maintenance free.

From coast to coast and around the world, on thousands of large buildings and small, CAFCO is providing the safety, durability and versatility that the construction industry has come to expect from all CAFCO products.

A listing of prominent installations of CAFCO Fireproofing Products is available upon request from USM.

## MR/MANUFACTURER

Since 1875, UNITED STATES MINERAL PRODUCTS COMPANY has been a pioneer in providing high caliber products to the construction industry.

Our commitment to providing products and systems which solve problems in the construction industry is the driving force behind extensive research and product development efforts. These efforts have produced a number of technological advances in product design, manufacturing processes and product applications which set USM products and systems apart from those of competitive materials.

The manufacturing and marketing accomplishments of USM's Mineral Fiber Technology Group have resulted in an extensive line of products:

- CAFCO BLAZE-SHIELD® and CAFCO DECK-SHIELD®—spray applied fireproofing for commercial and institutional buildings,
- CAFCO HEAT-SHIELD®—spray applied thermal insulation for structures,
- CAFCO SOUNDCOTE™ and CAFCO SOUND-SHIELD®—sprayed acoustical treatments,
- CAFCO Curtain Wall Insulation, CAFCO Safing Insulation and CAFCO Sound Control Blankets—semi-rigid insulation boards,
- CAFCOTE® 560, CAFCOTE 800 and CAFCO DECK-SHIELD 460—spray applied fireproofing for industrial applications and other high abuse areas,
- CAFCO CERAMOSPRAY® Products—spray applied high temperature insulation for industrial equipment,
- USM Cryogenic Fiber—low temperature insulation,
- USM CeramaFiber® Pouring and Blowing Wool—products for residential insulation applications.

USM also distributes these products to specialized architectural and industrial markets worldwide through our subsidiary, CAFCO INTERNATIONAL LIMITED.

## AC/AVAILABILITY, COST

### Product Availability

CAFCO Fireproofing Products are available to over 600 USM licensed contractors in America and around the world from six strategically located production and distribution points in the U.S. and Europe and through licensed manufacturers in three foreign countries.

Our representatives are available through Sweet's BUYLINE, or by calling USM at (800) 631-9600, or (800) 562-0256 (in N.J.).

The performance data herein reflects USM's expectation based on tests conducted in accordance with recognized standard methods. The sale of these products shall be subject to the Terms and Conditions of Sale, including those limiting warranties, set forth in USM's invoices.

No agent, employee, or representative of USM or its subsidiary or affiliated companies is authorized to modify this disclaimer.

UNITED STATES MINERAL  
PRODUCTS COMPANY  
Stanhope, New Jersey 07874  
Telephone (800) 631-9600  
In N.J. (800) 562-0256  
Telex: 136439 CAFCO STPE



CAFCO INTERNATIONAL LIMITED  
Stanhope, New Jersey 07874/USA  
Telex: WUI 6853182 CAFCO UW  
Telephone: (201) 347-1200



**Johns-Manville  
Sales Corporation**

10390 Taconic Terrace  
Post Office Box 15010  
Cincinnati, Ohio 45215  
513 771-6426

November 19, 1985

Rieck Mechanical Systems  
2611 Salem Avenue  
Dayton, Ohio 45406

Attention: Larry Crable

RE: Submittals on Central Operational Support Building

Larry,

Here are our submittals for the insulation on the mechanical systems and a list of material to be used of the following H.V.A.C. Systems.

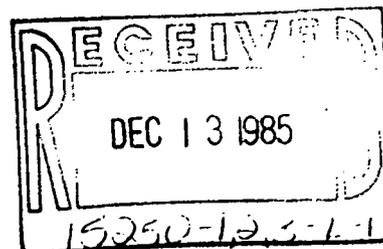
- |  |   |                      |
|--|---|----------------------|
| All exposed Duct and Condensate Reciever | - | 800 Series Spinglass |
| All concealed Duct                       | - | R-Series Micro-Lite  |
| Chill Water Pumps                        | - | Foam Glass           |
| W. H. #2                                 | - | Pipe and Tank        |
| All plumbing and H.V.A.C. Piping Systems | - | Micro-Lok-AP-T       |

If there are any questions, please call.

Sincerely,

Johns-Manville Sales Corporation

Scott B. Crow  
Contract Sales Rep.



APPROVED FOR SUBMITTAL  
B. G. [unclear] Building Division

15250

DEC 12 1985

35418374

RIECK MECHANICAL SERVICES, INC.  
THIS SUBMITTAL HAS BEEN CHECKED  
AND IT IS OUR BELIEF THAT THE  
EQUIPMENT OR MATERIAL SHOWN  
THEREON FULFILLS THE INTENT OF  
THE PLANS AND SPECIFICATIONS.  
DATE 12-9-85 *lc*

# Manville

# Insulation Systems

# 800 Series Spin-Glas® Fiber Glass Insulation

JOHNS-MANVILLE  
P. O. Box 15010  
CINCINNATI, OH 45215

**Type:** Flexible & Non-Flexible

**Temp. Limit:** Unfaced 450°F (232°C)  
Faced 450°F (232°C)

### Description

800 Series Spin-Glas insulation is manufactured from long, inorganic glass fibers bonded by a thermosetting resin. Light, strong and resilient, it is easier to apply than most heavier density duct insulations.

### Available Forms

Made in sheet and roll form, it is available in a variety of densities and with a choice of vapor barrier facings for a wide range of service requirements. Please refer to the table of Densities, Thicknesses and Facings, on the reverse side.

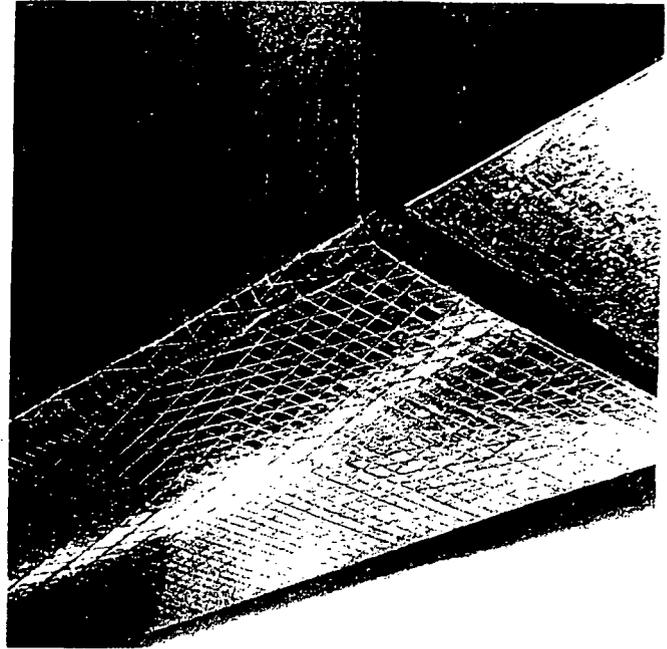
### Uses

800 Series Spin-Glas insulation can be used in plain or faced form for heating ducts and equipment, with faced material used for below ambient applications. It is ideal for commercial and industrial heating, air conditioning, and power and process equipment. These products are not designed for use inside air distribution duct work or equipment where the insulation will be exposed directly to an air stream.

### Advantages

**High Thermal Performance.** The glass fibers in Spin-Glas insulation create an enormous number of minute air spaces, making the insulation highly resistant to the passage of heat.

**Fire Safety.** 800 Series Spin-Glas insulation, with FSK and AP facings, meets the requirements of NFPA 90A and 90B Standards and FHA on a composite basis (insulation, adhesive and facing) as well as in plain form. The surface burning characteristics of the composite are shown on the back page.



**Strong and Durable.** Glass fibers are incombustible and resistant to the effects of moisture, oil, grease and most acids. The highly resilient glass fibers resist settling, breakdown or sagging from vibration and yield readily to impact. Types 814, 815 and 817 provide neat, square corners for improved, finished appearance of duct and equipment systems.

**Easy to Handle and Apply.** The inherent physical properties of 800 Series Spin-Glas insulation assure ease of application. It can be readily cut with an ordinary knife, and secured with mechanical fasteners or adhesives.

# Manville

## Insulation Systems

### Micro-Lok® AP-T Plus

**Fiber Glass  
Pipe Insulation**

Type: **Pipe Insulation**

Temperature Limit: 850°F (454°C)

#### Description

Micro-Lok AP-T Plus is a rigid, one-piece fiber glass pipe insulation that offers superior insulating capabilities in applications to 850°F. It is made from long, flame-attenuated glass fibers bonded with a thermosetting resin. It is light-weight, easy to work with, and has a one-piece "hinged" construction for easy installation.

Micro-Lok is produced in 3-foot sections for IPS ½" through 30", and CT sizes from ⅝" through 12⅞", depending on thickness.

#### Jacket Type

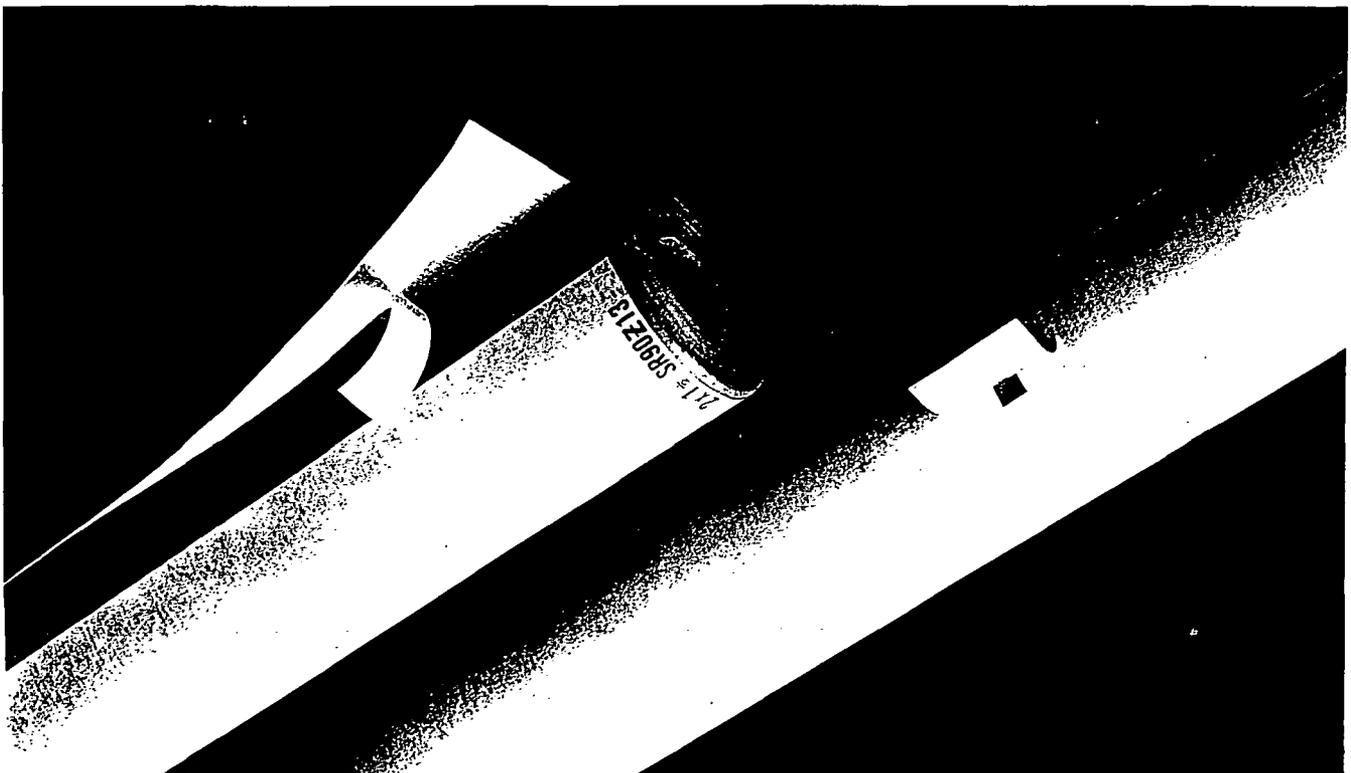
##### AP-T Plus (Pressure Sensitive Lap Sealing System)

**Jacket.** The longitudinal lap of the AP-T Plus jacket has a pressure sensitive tape lap sealing system. A vastly improved adhesive permits installation in cold weather conditions down to 15°F and will not soften or separate when heat and humidity are high. The adhesive is protected by a strip of easy-lift release paper with a "dry edge" to permit easy

removal during installation. Matching pressure sensitive tape butt strips using the same adhesive and a quick release paper strip are furnished in order to totally seal the system.

#### Uses

Micro-Lok AP-T Plus pipe insulation is suitable for heating applications up to 850°F in commercial, power, and process piping applications (see "Qualifications for Use"). AP-T Plus jacket is designed for use where fire safety and the utmost in appearance are desired. Micro-Lok AP-T Plus can also be used on cold and chilled water lines, brine, refrigerant and special process lines when the joints are sealed to prevent moisture migration. A weather protective jacket is required for outdoor applications.



# Manville

system

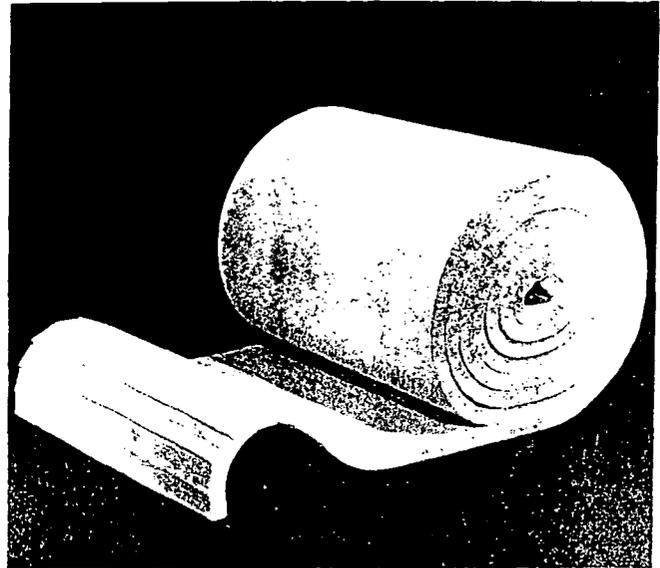
**Type:** Jacketed, Flexible Pipe & Tank Insulation  
**Temp Limit:** 450°F (232°C)

Pipe and Tank Insulation is made from a high temperature fiber glass bonded to a flexible jacketing. The semi-rigid fiber glass board, shipped in a roll form, has a unique fiber orientation, perpendicular to the board surface. Due to this fiber orientation, the net effect is a product with the compressive strength of high density insulation. This permits the insulation to closely conform to rounded surfaces without reducing the thickness of insulation which would cause a loss in insulating efficiency.

For use on bare pipe or add-on insulation when additional insulation is required. Because of its highly flexible characteristics, Pipe and Tank insulation can be easily applied to rounded shapes, such as pipes, tanks, ducts, fittings, drains, vessels, and similar rounded and/or irregular shapes. This ease of fit is particularly helpful on retro-fit installations where existing insulation results in non-standard outside diameters.

## Types

Pipe and Tank Insulation is available faced with AP (All Purpose) jacketing. Special facing orders are available through your local Manville District Sales Office. AP jacketing is intended for indoor use and is a laminate of white kraft and aluminum foil, reinforced with fiber glass, chemically treated for fire and smoke safety.

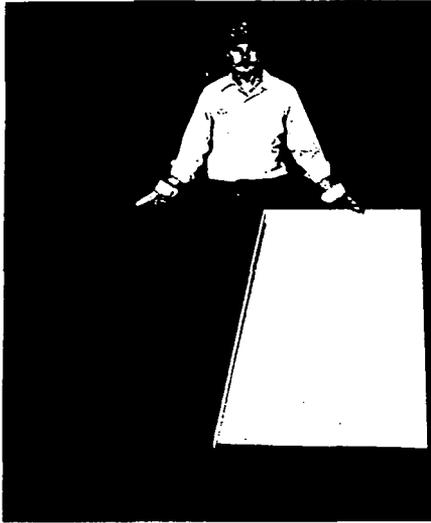


**Easy to Apply.** For most applications only a ruler, knife, Zeston Z-Glu<sup>®</sup> spray contact adhesive, 3" wide AP tape and a stapler are needed. When applying simply determine the circumference of the piece being insulated (remember to add twice the thickness of insulation being used to the diameter). Add 2" to 4" for lap seam, and cut to length. Remove two segments to provide for the lap. Lap seams should be glued for vapor barrier applications then stapled with the outward clinching staples placed on maximum 4" centers. The staples must be dabbed with mastic for a complete vapor barrier seal. For some applications banding may be required.

**Easy to stock and install.** A few rolls, offering a selection of insulation thicknesses, meet both pipe and tank insulation needs, thus eliminating the need to stock an assortment of individual pipe sizes.

**Fire and Smoke Safety.** Pipe and Tank Insulation has a composite Surface Burning Characteristics rating not exceeding SBC 25/50 as tested per ASTM E-84, NFPA 255, or UL 723.

# Koppers **R<sub>x</sub>**™ Roof Insulation



## Benefits

- Most aged R value per inch
- Low smoke development rating
- Low flame spread rating
- Good dimensional stability
- Cost effective

This phenolic foam insulation provides the most "aged R" per inch of any product on the market. Equally important, Rx Insulation maintains its insulation value (see chart below). Koppers Rx Roof Insulation is also dimensionally stable, has low flame spread and low smoke development ratings as determined in ASTM test method E-84.

**Rx Roof Insulation is available with asphalt-emulsion coated fiber glass facers on both sides for built-up and all**

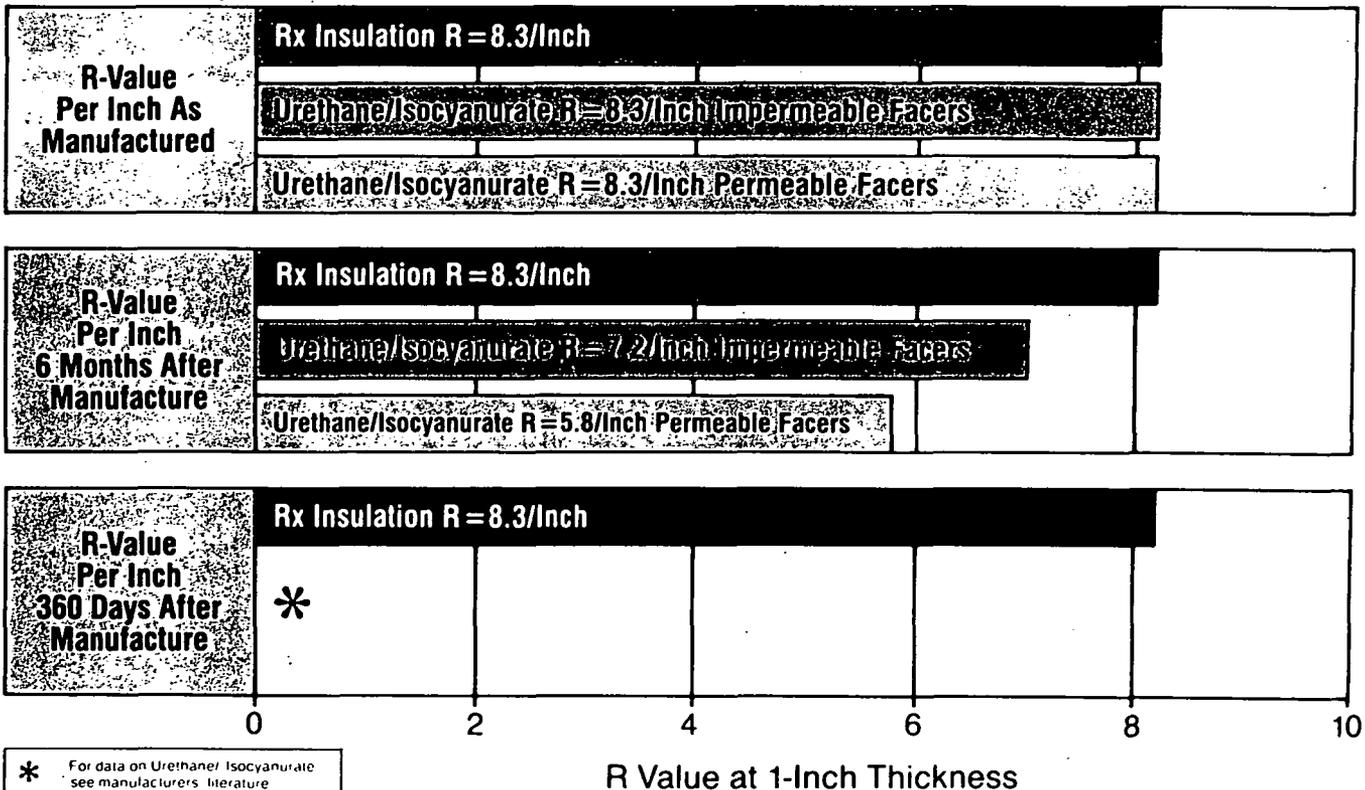
attached roofing; and with an aluminum foil facer (top) and asphalt-emulsion coated fiber glass (bottom) for loose-laid ballasted single-ply roofing systems.

The dimensional stability of Rx Insulation exceeds the industry standard for urethane and isocyanurate as published by the Thermal Insulation Manufacturers Association (TIMA). We invite comparison of Rx Insulation with competitive foam insulations. The best news of all is that these benefits are available at a cost-effective price.

When specifying insulation, aged R value is the prime factor to consider because the higher the R value of an insulation the greater the thermal resistance and insulating power.

Koppers Rx Roof Insulation provides the highest R value per inch on the market today.

## Thermal Insulation Performance



When designing a building, specifiers are more concerned with energy conservation considerations and how insulation can affect the total cost of a building through its *projected life*. Rx Insulation is the most thermally efficient insulation on the market today based on its aged R value per inch. As reflected in the chart above, Rx Insulation exceeds the aged

thermal values established under the RIC/TIMA test program.

When you specify Rx Insulation you get additional benefits from its exceptional R value per inch—from reduced heating/air conditioning equipment requirements,

reduction in energy consumption, and savings in perimeter nailer thickness.

Rx Insulation's low flame spread and smoke development ratings could potentially result in lower insurance costs for your building.

Considering all of the above benefits, can you specify anything but Koppers Rx Roof Insulation?

***"Most 'R' per inch"***

**Appendix J**

**Lead Summary/Information**

**(There is no lead summary/information available.)**

## **Appendix K**

### **Chemical Summary/Information**

**(Data removed due to potential proprietary information conflict)**

**Appendix L**

**Noted Soil Sampling, Vicinity**

This Appendix L consists of three elements.

Element One is a graphic depiction of soil sampling in and around the subject property. Triangles signify surface sampling and circles denote boring (at depth) samples. The magenta color denotes a detection. A gray colored triangle or circle indicates a non-detection. Sampling detections are assigned a location alpha-numeric identifier.

Element Two is a spreadsheet detailing the element one detections. Detections (magenta colored symbols) identified in element one are listed. The first or left-most column entries of the element two spreadsheet can be matched to the element one identifiers. Sample detections that exceed comparison values are highlighted by bold text in the "Measured Value" column of the spreadsheet. Additionally, these comparison values are also identified in the "Comments" column of element two.

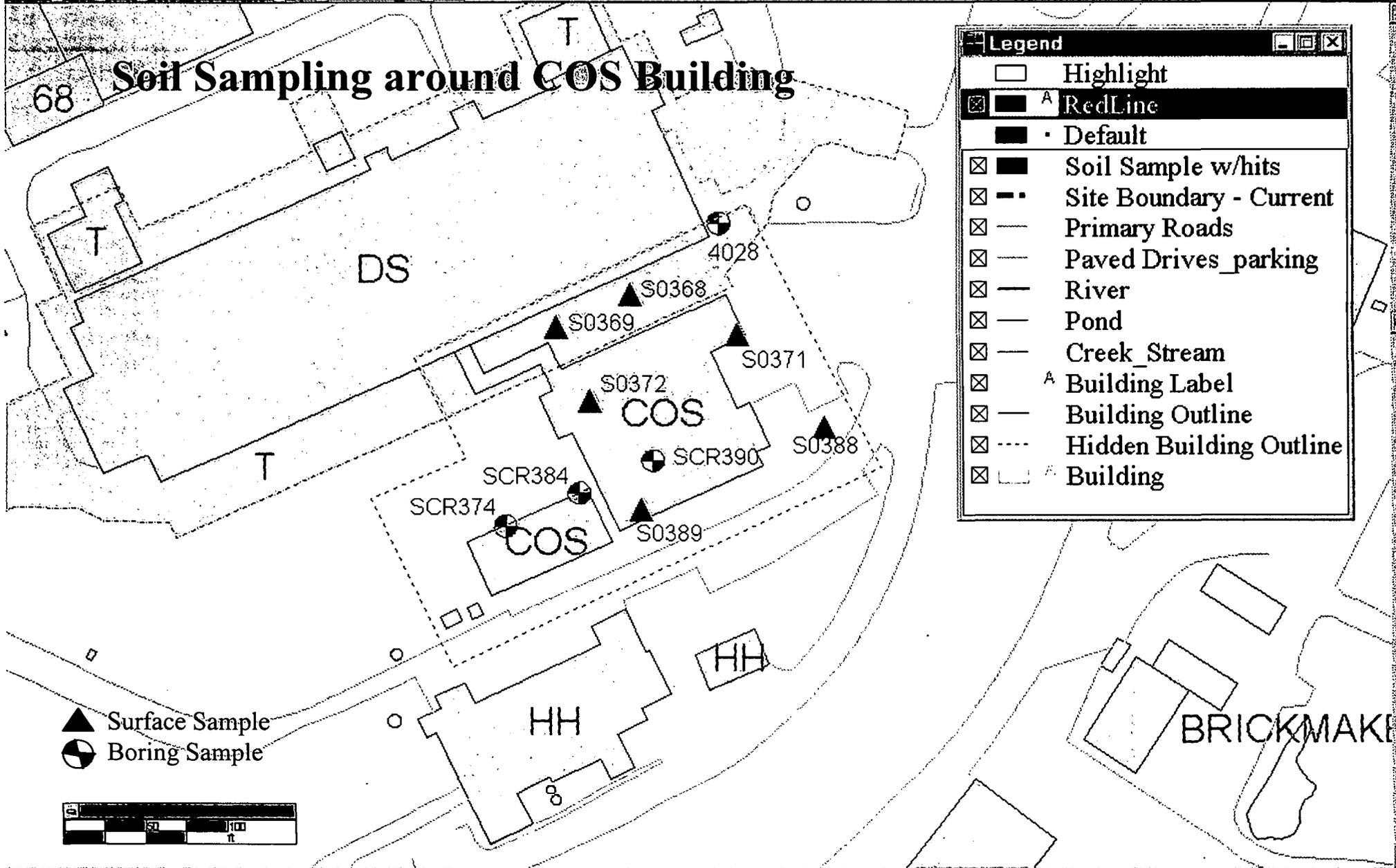
Element three is a table of comparison values. The constituent of concern can be found in the center column of this table; identified as "parameter name." Comparison values are located to the immediate right of these constituents. The first or left-most column of the element three table contains a single digit number identifying the basis of the comparison value. Basis identification is found on the last page of the element three table, and is again listed here.

<u>Comparison Value Basis Number</u>	<u>Comparison Value Basis Definition</u>
1	10E <sup>-6</sup> Risk-Based Guideline Value
2	Soil Background Value (OU9)
3	Other Criteria, such as Mound Plant Plutonium/Thorium Protocol
5	MCL Value
6	Guideline Value Based on Hazardous Index



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# Soil Sampling around COS Building



▲ Surface Sample  
 ● Boring Sample



**Legend**

- Highlight
- A RedLine
- Default
- Soil Sample w/hits
- Site Boundary - Current
- Primary Roads
- Paved Drives\_parking
- River
- Pond
- Creek\_Stream
- A Building Label
- Building Outline
- Hidden Building Outline
- B Building

Location_n	Sample_id	Location_t	Collection_d	Media	Value_name	Measured	Value_unit	Detect	Chem_c	Star	End	Dep	Cas_number	Lab	Project_cof	Data	Comments
4028	4028-0005	Borehole	19940421	Other	1,1,2-Trichloro-1,2,2-trifl	25974.00	PPB		ORVOA	5	5	FT	76-13-1		SVROU2		
4028	4028-0005	Borehole	19940421	Other	Total VOC's	25974.00	PPB		ORVOA	5	5	FT	TVOC		SVROU2		
4028	4028-0007	Borehole	19940421	Other	1,1,2-Trichloro-1,2,2-trifl	49480.50	PPB		ORVOA	8	8	FT	76-13-1		SVROU2		
4028	4028-0007	Borehole	19940421	Other	Total VOC's	49480.50	PPB		ORVOA	8	8	FT	TVOC		SVROU2		
S0368	6230	Surface loc	19840801	Soil	Plutonium-238	1.22	PCI/G	0.01	RAD	0	0	FT	13981-16-3		RSS		2-Exceeds background value.
S0369	6229	Surface loc	19840801	Soil	Plutonium-238	0.15	PCI/G	0.01	RAD	0	0	FT	13981-16-3		RSS		2-Exceeds background value.
S0371	3066	Surface loc	19831001	Soil	Plutonium-238	0.07	PCI/G	0.01	RAD	0	0	FT	13981-16-3		RSS		
S0372	3067	Surface loc	19831001	Soil	Plutonium-238	0.57	PCI/G	0.01	RAD	0	0	FT	13981-16-3		RSS		2-Exceeds background value.
S0372	3067	Surface loc	19831001	Soil	Tritium	44.98	PCI/ML		RAD	0	0	FT	10028-17-8		RSS		
S0388	3076	Surface loc	19831001	Soil	Plutonium-238	0.88	PCI/G	0.01	RAD	0	0	FT	13981-16-3		RSS		2-Exceeds background value.
S0389	3075	Surface loc	19831001	Soil	Plutonium-238	0.74	PCI/G	0.01	RAD	0	0	FT	13981-16-3		RSS		2-Exceeds background value.
SCR374	17828	Borehole	19871120	Soil	Plutonium-238	34.00	PCI/G		RAD	12	12	FT	13981-16-3		SCRDATA		1-Exceeds soil 10-6 GV. 2-Exceeds background value. 3-Exceeds other criteria.
SCR374	17829	Borehole	19871120	Soil	Plutonium-238	31.00	PCI/G		RAD	16	16	FT	13981-16-3		SCRDATA		1-Exceeds soil 10-6 GV. 2-Exceeds background value. 3-Exceeds other criteria.
SCR374	17829	Borehole	19871120	Soil	Thorium-232	2.00	PCI/G		RAD	16	16	FT	7440-29-1		SCRDATA		2-Exceeds background value.
SCR374	17855	Borehole	19871120	Soil	Plutonium-238	30.00	PCI/G		RAD	16	16	FT	13981-16-3		SCRDATA		1-Exceeds soil 10-6 GV. 2-Exceeds background value. 3-Exceeds other criteria.
SCR384	88051123	Borehole	19880511	Soil	Plutonium-238	26.00	PCI/G		RAD	3	3	FT	13981-16-3		SCRDATA		1-Exceeds soil 10-6 GV. 2-Exceeds background value. 3-Exceeds other criteria.
SCR384	8807142	Borehole	19880714	Soil	Plutonium-238	27.00	PCI/G		RAD	0	0	FT	13981-16-3		SCRDATA		1-Exceeds soil 10-6 GV. 2-Exceeds background value. 3-Exceeds other criteria.
SCR390	88060756	Borehole	19880607	Soil	Thorium-232	2.10	PCI/G		RAD	3	3	FT	7440-29-1		SCRDATA		2-Exceeds background value.
SCR390	8806091	Borehole	19880609	Soil	Plutonium-238	26.00	PCI/G		RAD	4	4	FT	13981-16-3		SCRDATA		1-Exceeds soil 10-6 GV. 2-Exceeds background value. 3-Exceeds other criteria.
SCR390	8806092	Borehole	19880609	Soil	Plutonium-238	26.00	PCI/G		RAD	4	4	FT	13981-16-3		SCRDATA		1-Exceeds soil 10-6 GV. 2-Exceeds background value. 3-Exceeds other criteria.

\*\*\*Other\*\* is any media other than: soil, sediment, air, biota, waste material, surface water, groundwater, quality control, asphalt, concrete, point slaps, or treated water.

comp_no	par_code	parameter name	comparison	
			value	units
1	7440-41-7	Beryllium	7.00E-01	MG/KG
1	7440-43-9	Cadmium	5.00E-04	MG/KG
1	7440-47-3	Chromium	7.50E+03	MG/KG
1	121-82-4	RDX	2.70E+01	UG/KG
1	72-55-9	4,4'-DDE	9.00E+00	MG/KG
1	50-29-3	4,4'-DDT	9.00E+00	MG/KG
1	12672-29-6	Aroclor-1248	3.85E-01	MG/KG
1	11096-82-5	Aroclor-1260	3.85E-01	MG/KG
1	319-85-7	Beta-BHC	1.65E+00	MG/KG
1	60-57-1	Dieldrin	1.85E-01	MG/KG
1	56-55-3	Benzo(a)anthracene	4.10E+00	MG/KG
1	50-32-8	Benzo(a)pyrene	4.10E-01	MG/KG
1	295-99-2	Benzo(b)fluoranthene	4.10E+00	MG/KG
1	207-08-9	Benzo(k)fluoranthene	4.10E+01	MG/KG
1	117-81-7	Bis(2-ethylhexyl)phthalate	2.15E+02	MG/KG
1	218-01-9	Chrysene	4.10E+02	MG/KG
1	53-70-3	Dibenz(a,h)anthracene	4.10E-01	MG/KG
1	193-39-5	Indeno(1,2,3-cd)pyrene	4.10E+00	MG/KG
1	78-59-1	Isophorone	3.15E+03	MG/KG
1	86-30-6	N-Nitrosodiphenylamine	6.00E+02	MG/KG
1	87-86-5	Pentachlorophenol	2.50E+01	MG/KG
1	107-06-2	1,2-Dichloroethane	1.10E+01	MG/KG
1	71-43-2	Benzene	3.20E+01	MG/KG
1	75-27-4	Bromodichloromethane	4.80E+01	MG/KG
1	75-25-2	Bromoform	3.75E+02	MG/KG
1	56-23-5	Carbon tetrachloride	1.20E+01	MG/KG
1	67-66-3	Chloroform	1.55E+01	MG/KG
1	124-48-1	Dibromochloromethane	3.55E+01	MG/KG
1	75-09-2	Dichloromethane	3.95E+02	MG/KG
1	79-01-6	Trichloroethene	1.25E+02	MG/KG
1	AC-227	Actinium-227	1.00E+00	PCI/G
1	14596-10-2	Americium-241	4.95E+00	PCI/G
1	13982-38-2	Bismuth-207	1.75E-01	PCI/G
1	BI-207	Bismuth-207	1.75E-01	PCI/G
1	10045-97-3	Cesium-137	4.60E-01	PCI/G
1	10198-40-0	Cobalt-60	1.00E-01	PCI/G
1	13981-16-3	Plutonium-238	5.50E+00	PCI/G
1	15117-48-3	Plutonium-239	5.50E+00	PCI/G
1	PU239/240	Plutonium-240	5.50E+00	PCI/G
1	13982-63-3	Radium-226	1.40E-01	PCI/G
1	10098-97-2	Strontium-90	3.00E+00	PCI/G
1	14274-82-9	Thorium-228	8.50E-01	PCI/G
1	14269-63-7	Thorium-230	4.40E+01	PCI/G
1	7440-29-1	Thorium-232	5.00E+01	PCI/G
1	10028-17-8	Tritium	2.35E+04	PCI/G
1	U-233	Uranium-233	3.70E+01	PCI/G
1	13966-29-5	Uranium-234	3.75E+01	PCI/G
1	15117-96-1	Uranium-235	3.35E+00	PCI/G
1	24678-82-8	Uranium-238	1.10E+01	PCI/G
2	7429-90-5	Aluminum	19000	MG/KG

comp_no	par_code	parameter name	comparison	
			value	units
2	7440-38-2	Arsenic		8.6 MG/KG
2	7440-39-3	Barium		180 MG/KG
2	7440-69-9	Bismuth	ND	MG/KG
2	7440-41-7	Beryllium		1.3 MG/KG
2	7440-43-9	Cadmium		2.1 MG/KG
2	7440-70-2	Calcium		310000 MG/KG
2	7440-47-3	Chromium		20 MG/KG
2	7440-48-4	Cobalt		19 MG/KG
2	7440-50-8	Copper		26 MG/KG
2	57-12-5	Cyanide	ND	MG/KG
2	7439-89-6	Iron		35000 MG/KG
2	7439-92-1	Lead		48 MG/KG
2	7439-93-2	Lithium		26 MG/KG
2	7439-95-4	Magnesium		40000 MG/KG
2	7439-96-5	Manganese		1400 MG/KG
2	7439-97-6	Mercury	ND	MG/KG
2	7439-98-7	Molybdenum		27 MG/KG
2	7440-02-0	Nickel		32 MG/KG
2	7440-09-7	Potassium		1900 MG/KG
2	7440-22-4	Silver		17 MG/KG
2	7782-49-2	Selenium	ND	MG/KG
2	7440-23-5	Sodium		240 MG/KG
2	7440-28-0	Thallium		0.46 MG/KG
2	7440-31-5	Tin		20 MG/KG
2	7440-62-2	Vanadium		25 MG/KG
2	7440-66-6	Zinc		140 MG/KG
2	72-54-8	4,4'-DDD		42 MG/KG
2	72-55-9	4,4'-DDE		3 MG/KG
2	50-29-3	4,4'-DDT		13 MG/KG
2	309-00-2	Aldrin	ND	MG/KG
2	5103-71-9	Alpha-Chlordane	ND	MG/KG
2	319-84-6	Alpha-BHC	ND	MG/KG
2	12672-29-6	Aroclor-1248	ND	MG/KG
2	11097-69-1	Aroclor-1254		58 MG/KG
2	11096-82-5	Aroclor-1260	ND	MG/KG
2	319-85-7	Beta-BHC	ND	MG/KG
2	60-57-1	Dieldrin	ND	MG/KG
2	959-98-8	Endosulfan I	ND	MG/KG
2	1031-07-8	Endosulfan Sulfate	ND	MG/KG
2	72-20-8	Endrin	ND	MG/KG
2	7421-93-4	Endrin Aldehyde	ND	MG/KG
2	53494-70-5	Endrin Ketone	ND	MG/KG
2	5103-74-2	Gamma-Chlordane	ND	MG/KG
2	58-89-9	Gamma-BHC (Lindane)	ND	MG/KG
2	76-44-8	Heptachlor	ND	MG/KG
2	1024-57-3	Heptachlor Epoxide	ND	MG/KG
2	72-43-5	Methoxychlor		30 MG/KG
2	77-47-4	Hexachlorocyclopentadiene	ND	MG/KG
2	14596-10-2	Americium-241	ND	MG/KG
2	13982-38-2	Bismuth-207	ND	MG/KG

comp_no	par_code	parameter name	comparison value	units
2	BI-207	Bismuth-207	ND	MG/KG
2	BI-210M	Bismuth-210m	ND	MG/KG
2	10045-97-3	Cesium-137	0.42	PCI/G
2	13981-16-3	Plutonium-238	0.13	PCI/G
2	13966-00-2	Potassium-40	37	PCI/G
2	13982-63-3	Radium-226	2.5	PCI/G
2	10098-97-2	Strontium-90	0.72	PCI/G
2	14274-82-9	Thorium-228	1.5	PCI/G
2	14269-63-7	Thorium-230	1.9	PCI/G
2	7440-29-1	Thorium-232	14	PCI/G
2	10028-17-8	Tritium	1.6	PCI/G
2	13966-29-5	Uranium-234	1.1	PCI/G
2	15117-96-1	Uranium-235	0.1	PCI/G
2	24678-82-8	Uranium-238	1.2	PCI/G
3	7439-92-1	Lead	400	MG/KG
3	13982-63-3	Radium-226	5	PCI/G
3	13981-16-3	Plutonium-238	25	PCI/G
3	7440-29-1	Thorium-232	5	PCI/G
5	7440-36-0	Antimony	0.0006	MG/L
5	7440-38-2	Arsenic	0.05	MG/L
5	7440-39-3	Barium	2	MG/L
5	7440-41-7	Beryllium	0.001	MG/L
5	7440-43-9	Cadmium	0.005	MG/L
5	7440-47-3	Chromium	0.1	MG/L
5	7440-50-8	Copper	1.3	MG/L
5	57-12-5	Cyanide	0.5	MG/L
5	7439-92-1	Lead	0.015	MG/L
5	7439-97-6	Mercury	0.002	MG/L
5	7440-02-0	Nickel	0.1	MG/L
5	782-49-2	Selenium	0.05	MG/L
5	7440-28-0	Thallium	0.002	MG/L
5	16984-48-8	Flouride	4	MG/L
5	NO3	Nitrate	10	MG/L
5	NO2	Nitrite	1	MG/L
5	57-74-9	Chlordane	0.002	MG/L
5	72-20-8	Endrin	0.002	MG/L
5	76-44-8	Heptachlor	0.0004	MG/L
5	1024-57-3	Heptachlor Epoxide	0.0002	MG/L
5	72-43-5	Methoxychlor	0.04	MG/L
5	8001-35-2	Toxaphene	0.003	MG/L
5	120-82-1	1,2,4-Trichlorobenzene	0.07	MG/L
5	95-95-4	2,4,5-Trichlorophenol	0.05	MG/L
5	50-32-8	Benzo(a)pyrene	0.002	MG/L
5	118-74-1	Hexachlorobenzene	0.001	MG/L
5	77-47-4	Hexachlorocyclopentadiene	0.05	MG/L
5	87-86-5	Pentachlorophenol	0.001	MG/L
5	71-55-6	1,1,1-Trichloroethane	0.2	MG/L
5	79-00-5	1,1,2-Trichloroethane	0.005	MG/L
5	75-35-4	1,1-Dichloroethene	0.007	MG/L
5	156-59-2	1,2-cis-Dichloroethene	0.07	MG/L

comp_no	par_code	parameter name	comparison	
			value	units
5	107-06-2	1,2-Dichloroethane	0.005	MG/L
5	78-87-5	1,2-Dichloropropane	0.005	MG/L
5	106-46-7	1,4-Dichlorobenzene	0.075	MG/L
5	108-90-7	Chlorobenzene	0.1	MG/L
5	96-12-8	Dibromochloropropane	0.0002	MG/L
5	106-93-4	1,2-Dibromoethane	0.00005	MG/L
5	95-50-1	1,2-Dichlorobenzene	0.6	MG/L
5	75-09-2	Dichloromethane (Methylene Chloride)	0.005	MG/L
5	88-85-7	Dinoseb	0.007	MG/L
5	1746-01-6	Dioxin	0.00000003	MG/L
5	94-75-7	2,4-D	0.07	MG/L
5	156-60-5	1,2-trans-Dichloroethene	0.01	MG/L
5	71-43-2	Benzene	0.005	MG/L
5	75-27-4	Bromodichloromethane	0.008	MG/L
5	75-25-2	Bromoform	0.008	MG/L
5	56-23-5	Carbon Tetrachloride	0.005	MG/L
5	67-66-3	Chloroform	0.008	MG/L
5	100-41-4	Ethylbenzene	0.07	MG/L
5	58-89-9	Gamma-BHC (Lindane)	0.0002	MG/L
5	117-81-7	bis(2-ethylhexyl)phthalate	0.006	MG/L
5	100-42-5	Styrene	0.1	MG/L
5	127-18-4	Tetrachloroethene	0.005	MG/L
5	108-88-3	Toluene	1	MG/L
5	79-01-6	Trichloroethene	0.005	MG/L
5	75-01-4	Vinyl Chloride	0.002	MG/L
5	1330-20-7	Xylenes, Total	10	MG/L
5	AC-227	Actinium-227	0.4	PC/I/L
5	14596-10-2	Americium-241	12	PC/I/L
5	13982-38-2	Bismuth-207	1200	PC/I/L
5	10045-97-3	Cesium-137	120	PC/I/L
5	10198-40-0	Cobalt-60	400	PC/I/L
5	13981-16-3	Plutonium-238	16	PC/I/L
5	13982-63-3	Radium-226	4	PC/I/L
5	10098-97-2	Strontium-90	40	PC/I/L
5	14274-82-9	Thorium-228	16	PC/I/L
5	14269-63-7	Thorium-230	12	PC/I/L
5	7440-29-1	Thorium-232	2	PC/I/L
5	10028-17-8	Tritium	20000	PC/I/L
5	U-233	Uranium-233	20	PC/I/L
5	13966-29-5	Uranium-234	20	PC/I/L
5	15117-96-1	Uranium-235	24	PC/I/L
5	24678-82-8	Uranium-238	24	PC/I/L
6	7440-47-3	Chromium	1.10E+03	MG/KG
6	7440-36-0	Antimony	6.50E+01	MG/KG
6	7440-38-2	Arsenic	6.40E+01	MG/KG
6	7440-39-3	Barium	1.50E+04	MG/KG
6	7440-41-7	Beryllium	1.10E+03	MG/KG
6	7440-43-9	Cadmium	2.10E+02	MG/KG
6	57-12-5	Cyanide	4.30E+03	MG/KG
6	7439-96-5	Manganese	2.70E+04	MG/KG

comp_no	par_code	parameter name	comparison	
			value	units
6	7439-97-6	Mercury	6.40E+01	MG/KG
6	7440-02-0	Nickel	4.30E+03	MG/KG
6	7440-22-4	Silver	1.10E+03	MG/KG
6	7440-62-2	Vanadium	1.50E+03	MG/KG
6	7440-66-6	Zinc	6.40E+04	MG/KG
6	2691-41-0	HMX	1.10E+04	UG/KG
6	121-82-4	RDX	6.40E+04	UG/KG
6	50-29-3	4,4'-DDT	1.10E+02	MG/KG
6	11097-69-1	Aroclor-1254	4.30E+00	MG/KG
6	60-57-1	Dieldrin	1.10E+01	MG/KG
6	106-44-5	4-Methylphenol	1.10E+03	MG/KG
6	120-12-7	Anthracene	6.40E+04	MG/KG
6	65-85-0	Benzoic Acid	8.50E+05	MG/KG
6	117-81-7	Bis(2-ethylhexyl)phthalate	4.30E+03	MG/KG
6	85-68-7	Butyl Benzyl Phthalate	4.30E+04	MG/KG
6	84-74-2	Di-n-butyl Phthalate	2.10E+04	MG/KG
6	117-84-0	Di-n-octyl Phthalate	4.30E+03	MG/KG
6	206-44-0	Fluoranthene	8.50E+03	MG/KG
6	78-59-1	Isophorone	4.30E+04	MG/KG
6	87-86-5	Pentachlorophenol	6.40E+03	MG/KG
6	108-95-2	Phenol	1.30E+05	MG/KG
6	129-00-0	Pyrene	6.40E+03	MG/KG
6	75-34-3	1,1-Dichloroethane	7.80E+00	MG/KG
6	156-60-5	1,2-trans-Dichloroethene	4.30E+03	MG/KG
6	108-10-1	2-Methyl-4-pentanone	7.00E+02	MG/KG
6	67-64-1	Acetone	2.10E+04	MG/KG
6	75-27-1	Bromodichloromethane	4.30E+03	MG/KG
6	75-25-2	Bromoform	4.30E+03	MG/KG
6	75-15-0	Carbon Disulfide	2.80E+02	MG/KG
6	56-23-5	Carbon Tetrachloride	1.50E+02	MG/KG
6	75-00-3	Chloroethane	1.60E+02	MG/KG
6	67-66-3	Chloroform	2.10E+03	MG/KG
6	124-48-1	Dibromochloromethane	4.30E+03	MG/KG
6	75-09-2	Dichloromethane	1.00E+03	MG/KG
6	100-41-4	Ethylbenzene	4.80E-01	MG/KG
6	110-54-3	Hexane	9.10E+01	MG/KG
6	127-18-4	Tetrachloroethene	2.10E+03	MG/KG
6	108-88-3	Toluene	2.50E+02	MG/KG
6	75-69-4	Trichlorofluoromethane	7.30E+02	MG/KG
6	1330-20-7	Xylenes, Total	4.30E+05	MG/KG
6	78-93-3	2-Butanone	9.30E+03	MG/KG

1 Value is 10-6 Risk-Based Guide Value

2 Value is OU9 Soil Background Value

3 Value is other criteria, i.e. 5 pCi/g for certain radionuclides  
25 pCi/g plutonium

5 Value is MCL

6 Value is the Guide Value based on the hazard index

**Appendix M**  
**Occurrence Reports**

OCCURRENCE REPORT

Sites and Grounds

-----  
(Name of Facility)

Balance-of-Plant

-----  
(Facility Function)

Mound Plant / EG&G Mound Applied Technologies

-----  
(Name of Laboratory, Site or Organization)

Name: Jon D. Yonko  
Title: Maintenance Manager Telephone No.: (513)865-3151

-----  
(Facility Manager/Designee)

Name: KOEHLER, KATHY G  
Title: SITE GROUNDS MANAGER Telephone No.: (513)865-4886

-----  
(Originator/Transmitter)

Name: Ronald A. Mahan  Date: 12/18/1996

-----  
(Authorized Classifier (AC))

1. OCCURRENCE REPORT NUMBER: OH-MB-EGGM-EGGMAT04-1996-0014  
NPDES Permit Limitation for Copper Exceeded, NPDES Outfall 001
2. REPORT TYPE AND DATE:

	Date	Time
<input type="checkbox"/> Notification	11/07/1996	1810 MTZ
<input type="checkbox"/> Initial Update	12/19/1996	1401 MTZ
<input type="checkbox"/> Latest Update	12/19/1996	1401 MTZ
<input checked="" type="checkbox"/> Final		
3. OCCURRENCE CATEGORY:  
 Emergency     Unusual     Off-Normal     Cancelled
4. NUMBER OF OCCURRENCES: 1 ORIG. OR:
5. DIVISION OR PROJECT: EG&G Mound Applied Technologies
6. SECRETARIAL OFFICE: EM - Environmental Management
7. SYSTEM, BLDG., OR EQUIPMENT:  
NPDES Permit Exceeded, Copper
8. UCNI?: No
9. PLANT AREA: Lower Valley Area
10. DATE AND TIME DISCOVERED:  
11/07/1996 1500 (ETZ)
11. DATE AND TIME CATEGORIZED:  
11/07/1996 1600 (ETZ)

12. DOE NOTIFICATION:

13. OTHER NOTIFICATIONS:

11/07/1996 1830 (ETZ) Fred B. Holbrock DOE/MEMP

14. SUBJECT OR TITLE OF OCCURRENCE:

NPDES Permit Limitation for Copper Exceeded, NPDES Outfall 001

15. NATURE OF OCCURRENCE:

02) Environmental  
E. Agreement/Compliance Activities

16. DESCRIPTION OF OCCURRENCE:

On November 7, 1996, routine analysis conducted the water samples collected from the National Pollutant Discharge Elimination System (NPDES) Outfall 001 and revealed three of the five samples collected during the month of October exceeded permit limitations for copper. The NPDES permit limitation for copper is 120 micrograms per liter. The water samples collected on October 15, 1996, October 22, 1996, and October 29, 1996 had copper concentrations of 167 micrograms per liter, 145 micrograms per liter, and 165 micrograms per liter, respectively. The drinking water action level for copper is 1300 micrograms per liter. The water going through NPDES Outfall 001 is discharged to the Great Miami River.

On November 7, 1996, at approximately 1705 hours (ETZ), a verbal phone notification was made to the NPDES Non-Compliance Hotline to this incident as required by the NPDES permit. A follow-up written report was filed with the Ohio Environmental Protection Agency (OEPA), Southwest District Office within 5 working days. Non-routine reporting to regulatory agencies is a DOE 232.1 "off-normal" occurrence.

This occurrence report was reviewed by an authorized derivative classifier (Ronald A. Mahan on 12/18/96 at 1100 hours (ETZ) and contains no classified or UCNI information.

17. OPERATING CONDITIONS OF FACILITY AT TIME OF OCCURRENCE:

Normal Plant operations

18. ACTIVITY CATEGORY:

Inspection/Monitoring

19. IMMEDIATE ACTIONS TAKEN AND RESULTS:

On November 7, 1996, at approximately 1705 hours (ETZ), a verbal phone notification was made to the NPDES Non-Compliance Hotline to this incident as required by the NPDES permit. A follow-up written report was filed with the Ohio Environmental Protection Agency (OEPA), Southwest District Office.

-----  
19. IMMEDIATE ACTIONS TAKEN AND RESULTS: (continued)

A higher frequency of NPDES sampling was implemented. An investigation of Plant utility systems and other DOE operations will attempt to identify the source of the higher copper concentrations detected in Outfall 001.

-----  
20. DIRECT CAUSE:

- 6) MANAGEMENT PROBLEM
- F. Other Management Problem

21. CONTRIBUTING CAUSE(S):

22. ROOT CAUSE:

- 6) MANAGEMENT PROBLEM
- F. Other Management Problem

-----  
23. DESCRIPTION OF CAUSE:

The direct and root cause of this occurrence is likely due to process waste discharges from a leasee. A manufacturing company that subleases DOE facilities utilizes copper etching/stripping processes. This manufacturing company was believed to have been operating their etching/stripping processes without a pre-treatment unit prior to discharge to the sanitary sewer.

Samples were collected from the discharge side of the etcher/stripper equipment on November 13, 1996. Analysis revealed copper concentrations of 354,100 micrograms per liter. The manufacturer discontinued the discharge of their waste stream to the sewer on November 15, 1996 due to plans to install a new, more efficient, pre-treatment unit by the end of December 1996. The new unit is designed to reduce copper concentrations to less than or equal to 0.5 micrograms per liter.

The copper concentrations measured at Outfall 001 on November 18 and 25th were within permit limitations. The results were 116 micrograms per liter and 95 micrograms per liter respectively. The December results will not be available until the end of the month.

-----  
24. EVALUATION: (By Facility Manager/Designee)

This incident points out the vulnerability of having no pre-treatment standards or monitoring requirements for companies leasing DOE facilities and property. Further communications are planned to inform leasee's of the sensitivity of Mound's sanitary waste treatment plant and the NPDES permit requirements.

-----  
24. EVALUATION: (By Facility Manager/Designee) (continued)

The investigation into high copper concentrations also looked into the corrosive effect on copper piping from the chlorine levels in the potable water. An evaluation by a water chemical expert confirmed that the water chemistry was proper for Mounds influent water quality levels, the daily usage rate, the residual chlorine data, and the bacteria data from various branch potable water loops.

-----  
25. IS FURTHER EVALUATION REQUIRED?: Yes [ ] No [X]

-----  
26. CORRECTIVE ACTIONS:

(\* = Date added/revised since final report was signed off)

- 01) Provide information for DOE to supply to MMCIC and leasee's which emphasizes the need for proper management of sanitary and storm sewer discharges.

TARGET COMPLETION DATE: 01/30/1997 COMPLETION DATE: Not given

-----  
27. IMPACT ON ENVIRONMENT, SAFETY AND HEALTH:

The drinking water action level from is 1300 micrograms per liter. The Ohio Administrative Code from copper inside the mixing zone ranges from 35 micrograms per liter to 180 micrograms per liter. The highest copper concentration observed at Outfall 001 during October and November (1996) was 171 micrograms per liter. No deleterious effects are expected.

-----  
28. PROGRAMMATIC IMPACT:

None

-----  
29. IMPACT UPON CODES AND STANDARDS:

None

-----  
30. LESSONS LEARNED:

Companies leasing facilities at Mound present a vulnerability for compliance with site permits.

-----  
31. SIMILAR OCCURRENCE REPORT NUMBERS:

- 1) None

-----  
32. USER FIELD #1:

33. USER FIELD #2:

-----  
34. DOE FACILITY REPRESENTATIVE INPUT:

Entered by:

Date:

-----  
35. DOE PROGRAM MANAGER INPUT:

Entered by:

Date:

-----  
36. SIGNATURES: (FM's original signature on hardcopy)

Approved by: Jon D. Yonko  
Facility Manager/Designee

Date: 12/19/1996  
Telephone No.: (513)865-3151

Approved by:  
DOE Facility Representative/Designee Telephone No.:

Approved by:  
DOE Program Manager/Designee

Date:  
Telephone No.:



Department of Energy  
Ohio Field Office  
Miamisburg Area Office  
P.O. Box 66  
Miamisburg, Ohio 45343-0066



FEB 6 1997

Michael J. Grauwelman, President  
Miamisburg Mound Community Improvement Corporation  
P.O. Box 232  
Miamisburg, Ohio 45343-0232

Dear Mr. Grauwelman:

**SUBJECT: MOUND PLANT SEWAGE TREATMENT PROCESS**

Enclosed is a write-up, "Sewage Treatment is a Delicate Process," that has been issued in the past to plant personnel. Also attached is the Mound Occurrence Report outlining the October incident of the copper violation at outfall #001. To sensitize tenants to our treatment process and to the possibilities of discharge violations, please send the article and occurrence report to your tenants.

If you should have any questions about this request, please feel free to contact David Porco, of my staff, at (937)865-3984.

Sincerely,

A handwritten signature in cursive script that reads "Nat Brown".

Nat Brown  
Acting Director

Enclosures

cc w/enclosures:  
Randy Tormey, OH  
Oba Vincent, MB  
Trish Brechlin, MB  
David Porco, MB  
Jon Yonko, EG&G  
Tom Bruggeman, EG&G  
Dann Bird, MMCIC

## SEWAGE TREATMENT IS A DELICATE PROCESS

The sanitary wastewater treatment system is a delicate biological process that utilizes bacteria to "eat" the waste products. These "domesticated bugs" work for us as long as they stay healthy. A wide range of chemicals, however, even in small quantities can kill these bugs and thereby upset the wastewater treatment process.

The purpose of this bulletin is to alert you to the fact that we depend on you and your awareness to help us protect Mound's exemplary sanitary sewage processing capability. Everyone at Mound needs to be aware of what they put into the plant drains. Before you discard a liquid or solid into the drains, make sure you know exactly what it is. Read container labels for specific contents. The following chemicals can damage our process:

- Chemicals that contain heavy metals, such as zinc, cadmium, copper and silver. (Some examples include spent photographic developer and plating solutions.)
- Halogenated solvents, which contain bromine, chlorine, or fluorine. (Some examples include Freons, trichlorethylene, and algicides.)
- Phenolic compounds. (Same as some components of two-part adhesive systems.)
- Very acidic or very alkaline solutions in volumes greater than a half gallon. (Some examples might include muriatic acid, acetic acid, and metal cleaners.)

It may not be obvious that dumping a solution will damage our system. Your best guide is to ask yourself if you know exactly what you are discarding and whether it is safe. If you are in doubt, we have experts available to check unknown wastes and to advise on proper waste disposal. Call the Waste Management Hotline at x7838 (STEVE).

Another possible impact to the sewage treatment system is an accidental chemical spill that enters into the sanitary drain system. The floor drains in our buildings are connected to either the storm water piping system or to the sanitary drain system. Any chemical spill that enters a floor drain must be reported immediately since that drain could be tied into the sewage system. In the event of an emergency spill, call 911 and provide the incident details to the security dispatcher. Also, call the Building Manager to report the nature of the spill. After calling 911, try to cover the floor drain or contain the spill if it can be done in a safe manner.

**Appendix N**  
**PRS Information**

**APPENDIX N**

**Table A.1. Comprehensive Tabulation of Potential Release Sites in Geographic Proximity to COS Building**

Description of History and Nature of Waste Handling				Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Status	Potential Hazardous Substances	Releases	Media	Ref	Analytes <sup>a</sup>	Results	Ref
213	T Building Solidification Unit	Historical	Cobalt-60, Polonium-210	None Suspected			No Data		
214	T Building Solid Radioactive Waste Compactor	In service	Low specific activity beta wastes - tritium						
215	Room T-1 Cooling Water Sump (Tank 124)	In service	Single pass non-contact cooling water						
216	T Building, Corridor 2 Sanitary Wastewater Sump (Tank 125)	In service	Sanitary wastewaters from restrooms						
217	Room T-11F Sanitary Wastewater Sump (Tank 126)	In service	Sanitary wastewaters						
218	Room T-15 Sanitary Wastewater Sump (Tank 127)	In service	Sanitary wastewaters from restrooms and non-work area sinks						
219	T Building, Stair 3 Cooling Water Sump (Tank 128)	In service	Single pass cooling water from floor drains in air handling area						
220	Room T-78 Steam Condensate Sump (Tank 129)	In service	Steam condensate from heating system in air handling area						
221	T Building, Corridor 8 Sanitary Wastewater Sump (Tank 130)	In service	Sanitary wastewater from restrooms and non-work area sinks - tritium	(cont.)			(cont.)		
222	Room T-78A Sanitary Wastewater Sump (Tank 131)	In service	Sanitary wastewater from restrooms - tritium						
223	Room T-90 Cooling System Condensate Sump (Tank 132)	In service	Condensation from cooling units in air handling area - tritium						
224	Room T-99 Sanitary Wastewater Sump (Tank 133)	In service	Sanitary wastewater from restrooms - tritium						
225	Room T-23 Beta Wastewater Sump (Tank 227)	Historical	Beta wastewaters	None suspected, Sump underwent removed 1975			No Data		

Description of History and Nature of Waste Handling				Hazardous Conditions and Incidents			Environmental Data		
226	Room T-3 Floor Drain Sump (Tank 228)	Historical Filled with concrete 1985	Wastewater from nonradiological work area floor drains	None Suspected			No Data		
227	Room T-40 Alpha Wastewater Sump (Tank 229)	Historical Filled with concrete	Alpha wastewater from process area floor drains						
228	Room T-41 Alpha Wastewater Sump (Tank 230)	Historical Filled with concrete	Alpha wastewater from process area floor drains	None Suspected			No Data		
229	Room T-50 Alpha Wastewater Sump (Tank 231)	Historical Filled with concrete 1975	Process alpha wastewater						
230	Room T-50 Alpha Wastewater Sump (Tank 232)	Historical Filled with concrete 1975	Process alpha wastewater						
231	T Building, Corridor 8 Alpha Wastewater Sump (Tank 233)	Historical Filled with concrete 1982	Alpha wastewater from process area floor drains	Unknown - filled with concrete			No Data		
232	T Building, Corridor 7 Alpha Wastewater Sump (Tank 234)	Historical Filled with concrete 1982	Alpha wastewater from process area floor drains	Unknown - filled with concrete			No Data		
233	Room T-63 Alpha Wastewater Sump (Tank 235)	Historical Filled with concrete	Alpha wastewater from process area floor drains	Unknown - filled with concrete			No Data		

Description of History and Nature of Waste Handling				Hazardous Conditions and Incidents			Environmental Data		
		1982							
338	Building 29 Septic Tank (Tank 270)	Inactive	Sanitary wastewater	None Suspected (Abandoned in place?)			No Data		
339	T-44 Wastewater Sump (Tank 250)	Historical	Wastewater	Unknown - filled with concrete			No Data		
340	T-16b Wastewater Sump (Tank 251)	Historical	Wastewater	Unknown - filled with concrete			No Data		
341	T-90 Condensate Sump (Tank 269)	In Service	Condensate wastewater	None Suspected			No Data		
342	T-1 Hot Side Fire Water Tank (Tank 271)	In Service	Wastewater/Radioactive wastewater	None Suspected			No Data		
343	T-20 Fire Water Sump (Tank 272)	In Service	Wastewater/Radioactive wastewater	None Suspected			No Data		
344	T-37 Fire Water Sump (Tank 273)	In Service	Wastewater/Radioactive wastewater	None Suspected			No Data		
345	Former Equipment Storage Area see related site 16	Historical	Potential contaminants listed under Hazardous Waste Storage Area	Historically related to site 16	S	7, 18	No Analytical Data		7

\*Analyte List Codes

<sup>b</sup>SGS, Soil Gas Survey

<sup>c</sup>RSS, Radiological Site Survey

1 - Soil Gas Survey - Freon 11, Freon 113, Trans-1,2-Dichloroethylene, Cis-1,2-Dichloroethylene, 1,1,1-Trichloroethane, Perchloroethylene, Trichloroethylene, Toluene

2 - Gamma Spectroscopy - Thorium-228, -230, Cobalt-60, Cesium-137, Radium-224, -226, -228, Americium-241, Actinium-227, Bismuth-207, Bismuth-210m, Potassium-40

3 - Target Analyte List

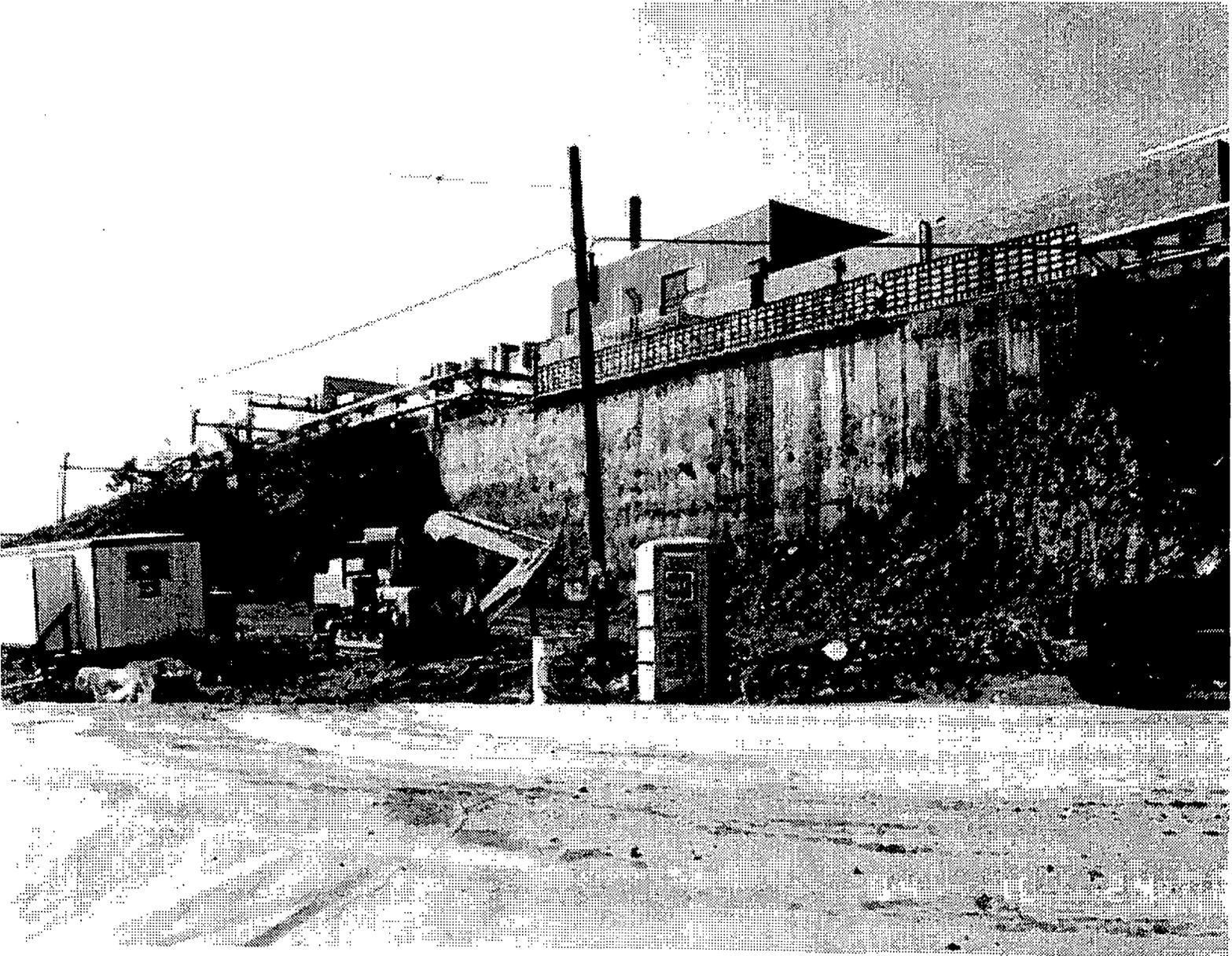
4 - Target Compound List (VOC)

- 5 - Target Compound List (SVOC)
- 6 - Target Compound List (Pesticides/Polychlorinated Biphenyl)
- 7 - Dioxins/Furans
- 8 - Extractable Petroleum Hydrocarbons (EPH)/Total Petroleum Hydrocarbons (TPH)
- 9 - Lithium
- 10 - Nitrate/Nitrite
- 11 - Chloride
- 12 - Explosives
- 13 - Plutonium-238
- 14 - Plutonium-238, Thorium-232
- 15 - Cobalt-60, Cesium-137, Radium-226, Americium-241
- 16 - Tritium

#### **Reference List**

1. DOE 1986 - "Phase I: Installation Assessment Mound (Draft)."
  0. DOE 1992a - "Remedial Investigation/Feasibility Study, Operable Unit 9, Site-Wide Work Plan (Final)."
  3. DOE 1992c - "Mound Plant Underground Storage Tank Program Plan & Regulatory Status Review (Final)."
4. DOE 1993a - "Site Scoping Report: Volume 7 - Waste Management (Final)."
5. EPA 1988a - "Preliminary Review/Visual Site Inspection for RCRA Facility Assessment of Mound Plant"
6. DOE 1993d - "Operable Unit 9, Site Scoping Report: Volume 3 - Radiological Site Survey (Final)."
7. DOE 1993c - "Operable Unit 3, Misc. Sites Limited Field Investigation Report."
8. DOE 1992d - "Reconnaissance Sampling Report Decontamination & Decommissioning Areas, OU6, (Final)."
9. Fentiman 1990 - "Characterization of Mound's Hazardous, Radioactive and Mixed Wastes."
10. DOE 1992f - "Operable Unit 9, Site Scoping Report: Volume 9 - Spills and Response Actions (Final)."
11. Styron and Meyer 1981 - "Potable Water Standards Project: Final Report."
12. DOE 1993b - "Reconnaissance Sampling Report - Soil Gas Survey & Geophysical Investigations, Mound Plant Main Hill and SM/PP Hill (Final)."
13. DOE 1993d - "Operable Unit 9, Site Scoping Report: Volume 3 - Radiological Site Survey (Final)."

14. DOE 1991b - "Main Hill Seeps, Operable Unit 2, On-Scene Coordinator Report for CERCLA Section 104 Remedial Action, West Powerhouse PCB Site."
15. Halford 1990 - "Results of South Pond Sampling."
16. DOE 1993e - "Operable Unit 4, Special Canal Sampling Report, Miami Erie Canal."
17. DOE 1990 - "Preliminary Results of Reconnaissance Magnetic Survey of Mound Plant Areas 2, 6, 7, and C."
18. DOE 1992a - "Remedial Investigation/Feasibility Study, Operable Unit 9, Site-Wide Work Plan (Final)."
19. Rogers 1975 - "Mound Laboratory Environmental Plutonium Study, 1974."
20. DOE 1992h - "Ground Water and Seep Water Quality Data Report Through First Quarter, FY92."
21. Dames and Moore 1976a, b - "Potable Water Standards Project Mound Laboratory" and "Evaluation of the Buried Valley Aquifer Adjacent to Mound Laboratory."
22. DOE 1992i - "Closure Report, Building 34 - Aviation Fuel Storage Tank."
23. DOE 1992j - "Closure Report, Building 51 - Waste Storage Tank."
24. DOE 1994 - "Operable Unit 1, Remedial Investigation Report."
25. EG&G 1994 - "Active Underground Storage Tank Plan."



COS Building Construction Against T-Building South Wall  
Waste Lines Visible

**MOUND PLANT  
PRS 147  
SOIL CONTAMINATION - HH BUILDING**

**RECOMMENDATION:**

Potential Release Site (PRS) 147 was initially identified as a result of the Soil Gas Survey which detected toluene levels ranging from 5 to 23,142 parts per billion (ppb). Of the four (4) samples collected in the area of PRS 147, none were above the calculated soil gas guideline value for toluene of 414,600 ppb. This means that the level of toluene contamination present in soil at PRS 147 cannot adversely affect the quality of groundwater at a potential drinking water source through leaching. No detection of toluene was indicated in the downgradient seep #602, which is approximately 250 feet from PRS 147. Therefore, PRS 147 requires NO FURTHER ASSESSMENT.

**CONCURRENCE:**

DOE/MB: Arthur W. Kleinrath 3/12/96  
Arthur W. Kleinrath, Remedial Project Manager (date)

USEPA: Timothy J. Fischer 3/11/96  
Timothy J. Fischer, Remedial Project Manager (date)

OEPA: Brian K. Nickel 3/14/96  
Brian K. Nickel, Project Manager (date)

**SUMMARY OF COMMENTS AND RESPONSES:**

Comment period from 4/15/96 to 5/15/96

- No comments were received during the comment period.
- Comment responses can be found on page \_\_\_\_\_ of this package.

**Appendix O**

**Mound Facility Physical Characterization (Extract)**



MLM-3791

## **Mound Facility Physical Characterization**

**Prepared by William R. Tonne with  
contributors Barbara M. Alexander,  
Matthew R. Cage, Ernest H. Hase, Mark  
J. Schmidt, Jeanne E. Schneider, William  
Slusher, and James E. Todd**

**December 1, 1993**

# **MOUND**

*Is operated for the*  
**U. S. Department of Energy**  
*under contract No. DE-AC04-88-DP43495*

## COS BUILDING PHYSICAL CHARACTERIZATION

### 1) Current Mission Description

#### a) Facility Capabilities

COS Building is a 64,654-ft<sup>2</sup> building that provides production support for weapons components. It is currently in active use for this purpose.

Specialized facilities in COS Building include:

- Offices

- Conference rooms

- Explosives laboratories

- Tape lab for production of flexible circuits

- Standards lab, including:

  - Large constant-humidity chambers

  - Constant temperature baths

  - Ovens

  - Airflow chamber

- Robotics lab, including:

  - Several robots and controllers

  - Stepper motors

  - Linear slides

  - Computers

  - Video cameras

  - Microscope

  - Image processors

- Machine shop

#### b) Resources Required to Support Operations

Primary Physical Resources:

- Electricity

- Potable water

- Sanitary drainage

- Physical security

- Telecommunication devices

- Fire protection, sprinklers, fire department

- HVAC

Services:

- Human Resources

- Finance and Accounting

- Environmental, Safety, and Health

**Appendix P**

**COS Building Tenants/Locations**

COMPANY	ADDRESS	START	EXP.	BLDG.	ROOMS	POC	PHONE	# EMP.	HAZARDS	Function / SIC
American Home Decorations	PO Box 693 Miamisburg, OH 45343-0693	1-21-98	M2M	COS	224, 225	Cheng Chang	865-3697	1	None reported	SIC = 7389 (7)
American Technologies, Inc.	PO Box 836 Miamisburg, OH 45343-0836	1-3-96	M2M	COS	263	Nancy Pham/Perry Keane	x4422	1	Standard	Environmental and Energy Services SIC = 8711, 8742
B&J Tech Services, Inc. TERMINATED		3-28-98	9-28-99	COS	140					
Chemical Delivery Systems Inc. (CD Systems)	PO Box 292677 Kettering, OH 45429	9-3-97	M2M 8/31/02 8/31/02	DS DS COS	207, 214,217, 202,223, 223 219,220	Victor Craince	x4609	5		Chemical Processing for pharmaceutical and defense industries SIC = 8731
EHS Technology	PO Box 3040 Miamisburg, OH 45343-3040	3-23-98	3-31-03	COS	420	Donald Niedertorn	x3553	18	Compressed air/gas cylinders	Environmental, health and safety consulting SIC = Except
Frontier Electronics	720 Mound Rd. COS 4224 Miamisburg, OH 45342-6714	8-26-98	11-30-02	COS	146	Bruce Hubbard	x3516	1	None reported	Integrated computer systems to area manufactures and research organizations SIC = 7373
Global Manufacturing TERMINATED		7-30-97	10-31-99	3	300, 302- 305, 315, 312, 320- 333					
ICF Kaiser TERMINATED		7-19-96	M2M	COS	255					

Image Industries	PO Box 368 Miamisburg, OH 45343-1311	4-1-99	4-01-04	104		Michael Cunningham	x3337	5	None reported	Commercial printing and specialty advertising SIC = 7319, 7334, 2759
Industrial Imaging Associates TERMINATED		5-7-98	3-31-01	COS	308					
Inorganic Specialists	PO Box 181 Miamisburg, OH 45343-0181	1-8-98	12/31/02	COS	318, 327	David Firsih	x4491	1	None reported	Materials Science - Interdisciplinary problem solving, testing, and materials development. SIC = 8733, 2819
Kinetics TERMINATED		4-30-98	4-30-99	COS	320					
Los Alamos Tech Association		9-8-99	7-31-02	COS	346, 348	William Carvin	x4058	20	None reported	Engineering and technical services. SIC = 8711
MCR Analytical TERMINATED		3-28-98	3/23/04	E	173-173A					
Materials Research Institute	720 Mound Rd. COS 4222 Miamisburg, OH 45342	10-1-98	3-31-02	COS	117-119	Chen Whei Jen Wang	x3182	3	None Reported	Research and Development for polymeric and ceramic materials SIC 8731
Motor Carbon Research, LLC	720 Mound Rd. PO Box 856 Miamisburg, OH 45343-0856	3-1-99	M2M	COS	316	Joseph Hager	x3665	2	Compressed air/gas, toluene, Chemicals: toxic, flammable, corrosive, reactive	Develops and builds carbon pistons. SIC = 3592, 3624

Mound Engineering & Analysis Group (MEAG)	720 Mound Rd., COS 4222 Miamisburg, OH 45342-6714	1-12-98	7-31-02	COS	208-211, 216, 250- 252	C. William Merten	x3522	6	None reported	Mechanical design, non destructive testing, ISO/9000 turn key systems, container design SIC = 8711, 8734
Mound Flextek, Inc.	720 Mound Rd. Miamisburg, OH 45342-6713	3-20-98	3-31-03	DS  COS	119- 122,124, 126,128B,1 27A, 164A, 109-112, 114, 115	Richard McConnell	x4327	7	None reported	Fabricates high volume flex circuits. Supply consumer electronics and computer industries. SIC = 3674, 3572
Mound Laser & Photonics Center, Inc.	PO Box 223 Miamisburg, OH 45343-0223	4-14-98	10-31-03	COS	307, 310, 311, 313, 314, 319, 329, 342	Larry Doser	x4046  885-7261	6		Development and application of laser material processing. SIC = 3845
Mound Manufacturing Center	PO Box 391 Miamisburg, OH 45343-0391	2-2-96	6/30/00	28		Al Hodapp	x4014  848-4874	18	None reported	Precision machinery for aerospace, medical, defense industries. SIC = 3559
Mound Manufacturing TERMINATED		5-21-96								
Mound Metrology, Inc.		2-28-96	M2M	DS  COS	101, 111, 112 140	Warner Gooden	x4169	4	Standard Instr'l	Metrology and Calibration for mass and scale equipment. SIC = 8711
Mound Technical Solutions (MTS)	PO Box 203 Miamisburg, OH 45343-0203	11-12- 97	12-31-02	COS	322, 326,328, 357	Doug McClelland	x3715	5	None reported	Office system design, development and fabrication. SIC = 8742
National Discovery Center	PO Box 792 Miamisburg, OH 45343-0792	7-24-96	User Ag. 6-30-00	COS	108-109	Daniel Foote	x3290	3	Compressed gas cylinders	Surface science, analyzing manufacturing materials problems. SIC = 8733

Perkin Elmer		12-8-94	9-30-00	3,49, 27, 63B, 80- 84		Doug Benner Al Munger	x3544 866-6745	43	Explosives	Ordnance development and manufacturing ignition devices SIC = 2892, 3643
Porter Home, Inc.	720 Mound Rd., COS 4227 Miamisburg, OH 45342	10-27- 98	1/31/03	COS	325	David Parker	x3214	1	None reported	Environmental remediation consulting and training. SIC = Except
Precision Joining Technologies	PO Box 531 Miamisburg, OH 45343-0531	11-26- 97	8-31-02	DS COS	206,215 331	Joe Kwiatkowski	x4051	1	Compressed air/gas, explosive, flammable and corrosive material, (including acetone and alcohol); high voltage, laser and UV.	Advanced welding processes. SIC = 3699
Surface Science TECHNOLOGY								1		
Whatville Technology, Inc.	720 Mound Rd., COS 4233 Miamisburg, OH 45342-6714	3-6-98	1-31-03	COS	328	Richard Carlson	x3664 513-787- 4530	1	Compressed air, mercury, flammable and corrosive material, acetone, ethanol.	Analysis of small particles through IR micro-spectroscopy w/ metal hydrides SIC = 8733

M2M = Month to month



Department of Energy  
Ohio Field Office  
Miamisburg Area Office  
P.O. Box 66  
Miamisburg, Ohio 45343-0066



MAD 7 1996

Mr. Richard L. Higgins, Vice President  
Transition Programs  
EG&G Mound Applied Technologies, Inc.  
P.O. Box 3000  
Miamisburg, OH 45343-3000

Dear Mr. Higgins:

The purpose of this letter is to formally convey the Miamisburg Area Office's decision to allow a "transfer-in-place" of selected items of personal property located in COS Building. As you know, the Miamisburg Mound Community Improvement Corporation (MMCIC) is interested in purchasing this personal property for several commercial businesses located in COS.

Prior to sale of the personal property, EG&G completed high-risk reviews of the subject property, which covered areas such as export control, nonproliferation, radiological protection (i.e., contamination), etc. Some of the personal property in COS Building was found to have been exposed to energetic material, and may still contain some energetic material contamination as a result of its previous use.

Since the MMCIC and its customers (Kinetica, Incorporated; Wheatville Technology; MCK Analytical; and Mound Laser and Photonics) are willing to accept this property in its current condition, and will use the property for essentially the same end-purposes, the Department of Energy exempts EG&G from the need to perform any additional cleaning of energetic materials from the listed property prior to its sale.

This exemption is specifically for energetic material contamination, only. It does not exempt radioactive contaminated personal property, which must be cleaned before any approval for sale.

This exemption is an overall benefit to the government, and avoids the cost of energetic material decontamination. The Ohio Field Office concurred with this "transfer-in-place" decision since the customers willingly accept this personal property as is, and willingly and knowingly accept all liability associated with use of the personal property, as will be noted in the sale documents.

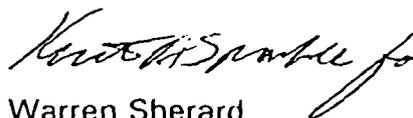
Richard L. Higgins

-2-

MAR 7 1996

The affected rooms are identified in Attachment 1, along with the associated businesses and a contact person. The property is identified in Attachment 2, the EG&G Mound Property Accounting List, dated February 5, 1996. If there are any questions with this decision, please contact Irma Brown at extension 3030, or David Porco at extension 3984.

Sincerely,



Warren Sherard  
Deputy Director

Enclosures

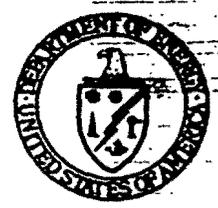
96-525

RECEIVED

Department of Energy

96-82

DEC 9 1996



Ohio Field Office  
Miamisburg Area Office

P.O. Box 66  
Miamisburg, Ohio 45343-0066

DEC 9 1996

cc: T. Bruggeman

RECEIVED

DEC 9 1996

Mr. Jeff Rice  
Vice President, Transition Programs  
EG&G Mound Applied Technologies, Inc.  
P. O. Box 3000  
Miamisburg, Ohio 45343-3000

Action: \_\_\_\_\_  
Reply: \_\_\_\_\_  
Rot: \_\_\_\_\_

Dear Mr. Rice:

**COS Building High-Risk Property Review of New Found Items**

The purpose of this letter is to formally convey the DOE Ohio's decision to allow a "transfer-in-place" of specific personal property located in COS Building. As you know, the Miamisburg Mound Community Improvement Corporation (MMCIC) is interested in this personal property for several commercial businesses located in COS Building.

Prior to sale of the personal property, EG&G conducted high-risk reviews of the subject property, and some of the property was found to have been exposed to energetic materials, and may still contain some energetic material contamination as a result of its previous use.

Since the MMCIC and its customers (Industrial Imaging Associates; Kinetica, Inc; MCK Analytical; and Mound Laser and Photonics) are willing to accept this leased property in its current condition, and will use the property for essentially the same purposes, the Department exempts EG&G from the need to perform any additional cleaning of energetic materials from the listed property.

This exemption is specifically for energetic material contamination only. It does not exempt radioactive contaminated personal property, which must be cleaned before any approval for sale.

This exemption is a benefit to the Department, and avoids the cost of energetic material decontamination. The Ohio Field Office previously concurred with this "transfer-in-place" decision since the customers willingly accept this personal property as is, and willingly and knowingly accept all liability associated with use of this property.

Mr. Jeff Rice

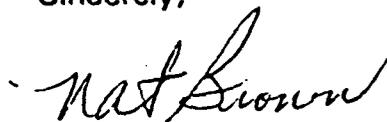
-2-

DEC 9 1996

The affected rooms are identified in Attachment 1, along with the associated businesses and a contact person. The specific personal property is identified in Attachment 2.

If there are any questions with this decision, please contact Irma Brown at (937)865-3030, or David Porco at (937)865-3984.

Sincerely,

A handwritten signature in cursive script that reads "Nat Brown".

Nat Brown  
Acting Director

Enclosures

cc w/enclosures:

I. Brown, OH

ATTACHMENT 1

<u>BUILDING &amp; ROOM</u>	<u>COMPANY</u>	<u>CONTACT</u>
COS 108	INDUSTRIAL IMAGING	WOOTEN
COS 119	KINETICA	PICKARD
COS 311/313/314	MOUND LASER AND PHOTONICS	DOSSER
COS 319	MCK ANALYTICAL	KINARD

## ATTACHMENT 2

DOE NUMBER	LOCATION	DESCRIPTION
57485	COS-314	HOOD FUME #3
76668	COS-313	OLATOR FARADAY ROTATOR
78184	COS-313	GRATING DIFFRACTION
78799	COS-313	SPECTROSCOPE
83210	COS-313	INTERFEROMETER ETALON
83655	COS-313	HEAD AMPLIFIER
85346	COS-311	PUMP VACUUM
92864	COS-313	GRATING DIFFRACTION
93769	COS-311	HP COMPUTER
93912	COS-313	MODULE GATED INTEGRATOR
93913	COS-313	GATED PLUG IN
95035	COS-311	PLOT 50 INTERACTIVE DIGITIZING
98298	COS-313	PUMP MECHANICAL DUD
98299	COS-313	POWER SUPPLY
101130	COS-313	DISCUSSION TUBE STAND
101131	COS-313	STEROMICROSCOPE
101132	COS-313	DISCUSSION TUBE
101901	COS-108	LENS CLOSE UP
103231	COS-313	YAG LASER
106395	COS-311	HEAD DTA MEASURING
107383	COS-311	HEAD DTA MEASURING
107646	COS-313	CIRCULATOR REFRIGERATED BATH

## ATTACHMENT 2 (CONTINUED)

DOE NUMBER	LOCATION	DESCRIPTION
108894	COS-313	DIODE LASER
108896	COS-313	DIODE LASER
108897	COS-313	DIODE LASER
108898	COS-313	DIODE LASER
108900	COS-313	DIODE LASER
108902	COS-313	DIODE LASER
109128	COS-313	NIKON MICROSCOPE
109776	COS-313	MOVER SPECIMEN PEDEMIN
110923	COS-119	CALORIMETER ASSEMBLY
111015	COS-313	COMPUTER, CONTROLLER
112981	COS-319	ANALYZER THERMOGRAVIMETRIC
204836	COS-313	DETECTOR, MERCURY SHORT WAVE



TO: <u>Andre Watson</u> <u>Joseph Concedo</u> <u>Buxton / DE / MENT</u> <u>Miamisburg, OH</u>  PHONE: _____ FAX PHONE: <u>3952</u>	FROM: <u>Dean Bird</u> <u>Planning Dept</u>  DATE: <u>6/1/00</u> PHONE: <u>(937) 865-4266</u> FAX PHONE: <u>(937) 865-4431</u>
--	---

REMARKS:     Urgent     Reply ASAP     For your review  
                   Please Comment     Original to follow

Page 1 of 4

COMMENTS: RE: COS Building Data Package  
Uses and Building locations

Attached is the information you  
requested. Please give me a  
call if you have any question

Dean Bird

Located Within  
 The Mound  
 Advanced  
 Technology Center

# MOUND ADVANCED TECHNOLOGY CENTER

P.O. BOX 232 MIAMISBURG, OH 45343-0232 (513) 865-4462 FAX: (513) 865-4431

## Mound Businesses COS Building

<i>Miamisburg Mound C/C Company</i>	<i>mike Grauwelman</i> <u>Name</u>	<i>4th Floor/Rm 480</i> <u>Location</u>	<i>865-4466</i> <u>Phone</u>
American Home Decorations, Inc.	Cherng Chang	2 <sup>nd</sup> Floor/Rm. 220	865-3697
American Technologies, Inc.	Terry Keane	2 <sup>nd</sup> Floor/Rm. 227	865-4422
CD Systems	Victor Crainich	1 <sup>st</sup> Floor/Room 218	865-4609
EHS Technology Group, LLC	Don Niederkorn	4 <sup>th</sup> Floor/Rm. 420 <i>// 1st Fl 119A</i>	865-3553
Frontier Electronics	Bruce Hubbard	1 <sup>st</sup> Floor/Rm. 146	865-3516
Inorganic Specialists	David Firsich	3 <sup>rd</sup> Floor/Rm. 327	865-4491
Los Alamos Technical Associates, Inc.	Hilda Cornett	3 <sup>rd</sup> Floor, Rm. 346	865-4058
Materials Research Institute	Chen Whei-Jen Wang	1 <sup>st</sup> Floor/Rm. 119	865-3182
MMCIC/MATC	Mike Grauwelman	4 <sup>th</sup> Floor/Rm. 480	865-4462
MotorCarbon, L.L.C.	Joe Hager	3 <sup>rd</sup> Floor/Rm. 316	865-3665
Mound Engr. & Analysis Group, Inc.	Bill Merten	2 <sup>nd</sup> Floor/Suite 250	865-3068
Mound Flextek Inc.	Rick McConnell	1 <sup>st</sup> Floor/Rm. 112	865-4327
Mound Laser & Photonics Center	Larry Dossier	3 <sup>rd</sup> Floor/Rm. 308	865-4481
Mound Technical Solutions	Doug McClelland	3 <sup>rd</sup> Floor/Rm. 326	865-3715
National Discovery Center	Dan Foose	1 <sup>st</sup> Floor/Rm. 108	865-3290
Porter House Inc.	David Porter	3 <sup>rd</sup> Floor/Rm. 325	865-3214
Precision Joining Technologies	Joe Kwiatkowski	3 <sup>rd</sup> Floor/Rm. 331	865-4051
Small Business Development Center	Pat Newcomb	3 <sup>rd</sup> Floor/Rm. 344	865-4050
Wheatville Technology Inc.	Richard Carlson	3 <sup>rd</sup> Floor/Rm. 315	865-3664
<i>Mound Metrology, Inc.</i>	<i>Warner Gooden</i>	<i>1st Floor/Rm 140</i>	<i>865-4169</i>

## Other Buildings

careNOW of Greater Dayton, LLP	Tom Grile	Building 100	859-9904
CD Systems	Victor Crainich	DS Building/Rm. 207, 217	865-4609
PerkinElmer Optoelectronics	Doug Benner	Buildings 49, 27, 63 & 3	865-4621
Image Industries	Mike Cunningham	Building 104	866-3337
Mound Manufacturing Center	Al Hodapp	Building 28	865-4014
Mound Metrology, Inc.	Warner Gooden	DS Bldg., Rm. 111 <del>(205-4)</del>	865-4169
Thaler Machine Company	Greg Donson	Building 105	865-9040

2/3/00

**Mound Advanced Technology Center**  
**Company Listing**

May-00

**American Technologies**

Provides environmental and energy services.

**CD Systems, Inc.**

Provides chemical processing for pharmaceutical and defense industries.

**CareNow of Greater Dayton**

Provides "pathway management" for managed health care systems.

**PerkinElmer Optoelectronics**

Specializes in ordnance development, having built ignition devices for the recent Cassini space mission to Saturn.

**EHS Technology Group, LLC**

Provides environmental, health and safety consulting services.

**Frontier Electronics, Inc.**

Provides specially-configured integrated computer systems to area manufacturers and research organizations.

**Image Industries, Inc.**

Commercial printer and specialty advertiser.

**Inorganic Specialists, Inc.**

Provides interdisciplinary problem-solving, testing and materials development through material science.

**Los Alamos Technical Associates**

Provides engineering and technical services.

**Materials Research Institute**

Provides contract research and development for polymeric and ceramic materials.

**Motor Carbon, Inc.**

Develops and builds carbon pistons.

**Mound Flextek, Inc.**

Fabricates high volume flex circuits supplying consumer electronics and computer industries.

**Mound Engineering & Analysis Group**

Specializes in mechanical design, non-destructive testing and ISO/QS 9000 turn-key systems.

**Mound Laser & Photonics Center**

Specializes in the development and application of laser material processing.

**Mound Manufacturing Center**

Specializes in precision machining for the aerospace, medical and defense industries.

**Mound Metrology, Inc.**

Offers NIST (National Institute of Standards & Technology)-traceable calibration services for a variety of measurement and test equipment.

**Mound Technical Solutions**

Offers system design, development and fabrication.

**National Discovery Center**

Specializes in surface science, providing answers to materials problems in manufacturing.

**Porter House, Inc.**

Provides environmental remediation consulting and training.

**Precision Joining Technologies**

Specializes in advanced welding processes.

**Thaler Machine Company**

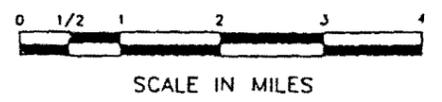
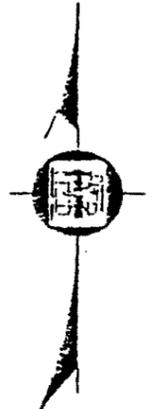
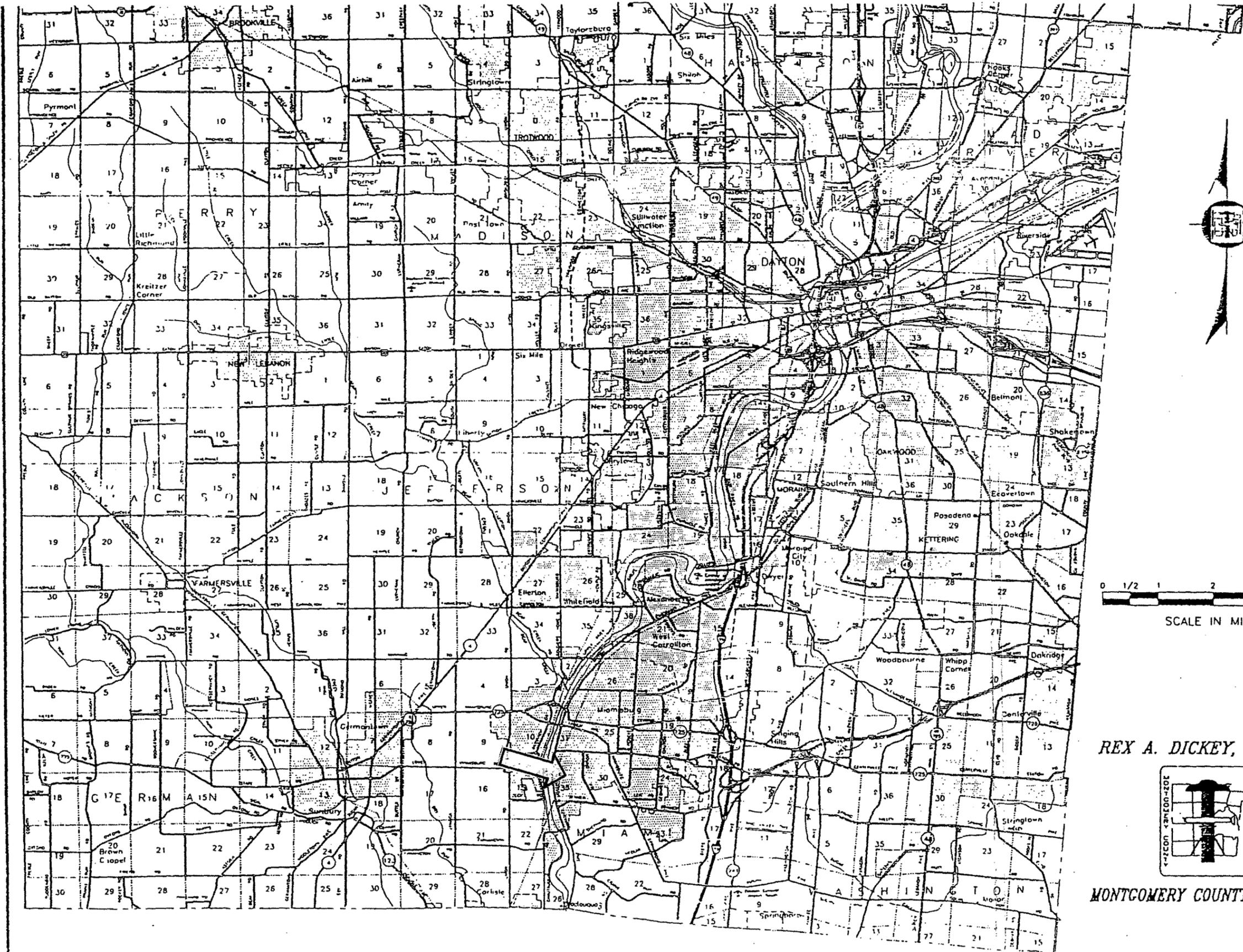
Specializes in precision machining for tool work production and development. An established Dayton firm that expanded operations at MATC.

**Wheatville Technology**

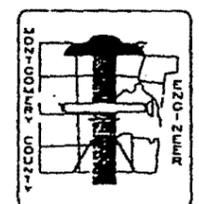
Provides analysis of small particles through IR micro-spectroscopy.

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Information

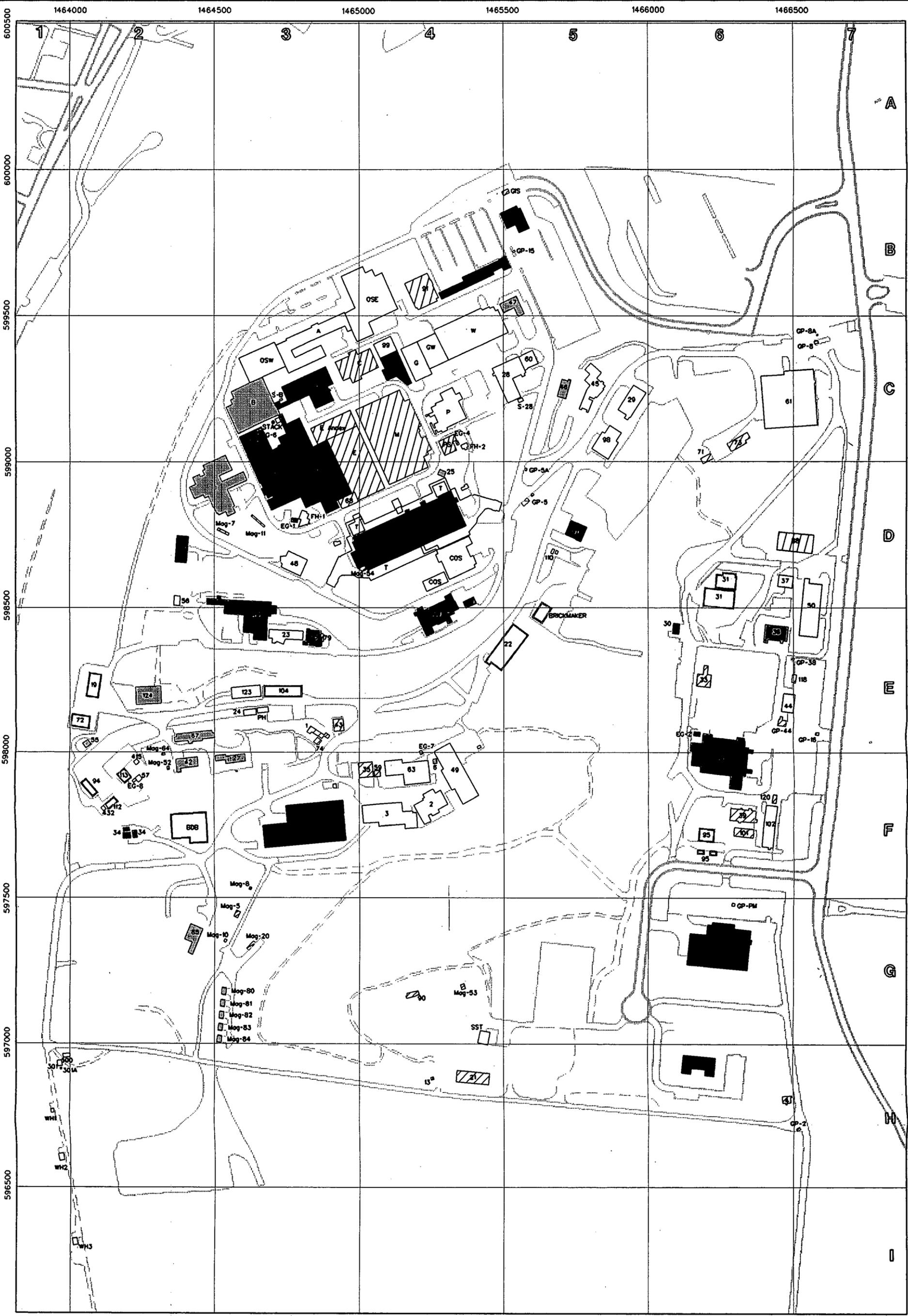


REX A. DICKEY, P.E., P.S.



MONTGOMERY COUNTY ENGINEER

MOUND PLANT LOCATION



**Legend**

- To Be Demolished (CERCLA)
- To Be Demolished (Construction)
- Personal Property
- Hatch: Removed/Demolished
- Transfer (Waiting Evaluation)
- Transfer (NFA)
- Transfer (FA)
- Transfer (RA)

Scale in Feet: 0 100 200 400 600 800

08/15/00 UPDATE MR

ISS	DATE	REVISION	BY	CHKR	ENC	M
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**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															SIZE													
UNCLASSIFIED															D													
DWG TYPE STE															PRMG							CAGEC.						
STATUS															ORIGIN							MSTATION 5.0						

(U) TITLE CLASSIFICATION  
**Building Disposition**  
**Core Team**  
**08/15/00**

JOB NUMBER  
 bldg\_disp.dgn

SHEET 1 OF 1

06/83



04/04/94

