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BWX Technologies, Inc.
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BWXT of Ohio, Inc.
1 Mound Road
P.O. Box 3030
Miamisburg, Ohio 45343-3030
(937) 865-4020

ER-015/01
July 24, 2001

01-TC/07-24

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

ATTENTION: Robert S. Rothman

SUBJECT: Contract No. DE-AC24-97OH20044
POTENTIAL RELEASE SITE (PRSs) 118, 119, 120, and 121 - PACKAGE PUBLIC REVIEW DRAFT

REFERENCE: Statement of Work Requirement C.7.1e—Regulator Reports

Dear Mr. Provencher:

Enclosed is the Public Review Draft of the PRSs 118, 119, 120 and 121 Package. The public review period is expected to be July 25 through August 27

The release of this document to USEPA, OEPA, ODH, MMCIC and the public reading room has been authorized by Rob Rothman of MEMP.

Please advise if additional copies are required. If you require further information, please contact Dave Rakel at extension 4203.

Sincerely,

Monte A. Williams
Project Manager, Environmental Restoration

MAW/DAR:jdg

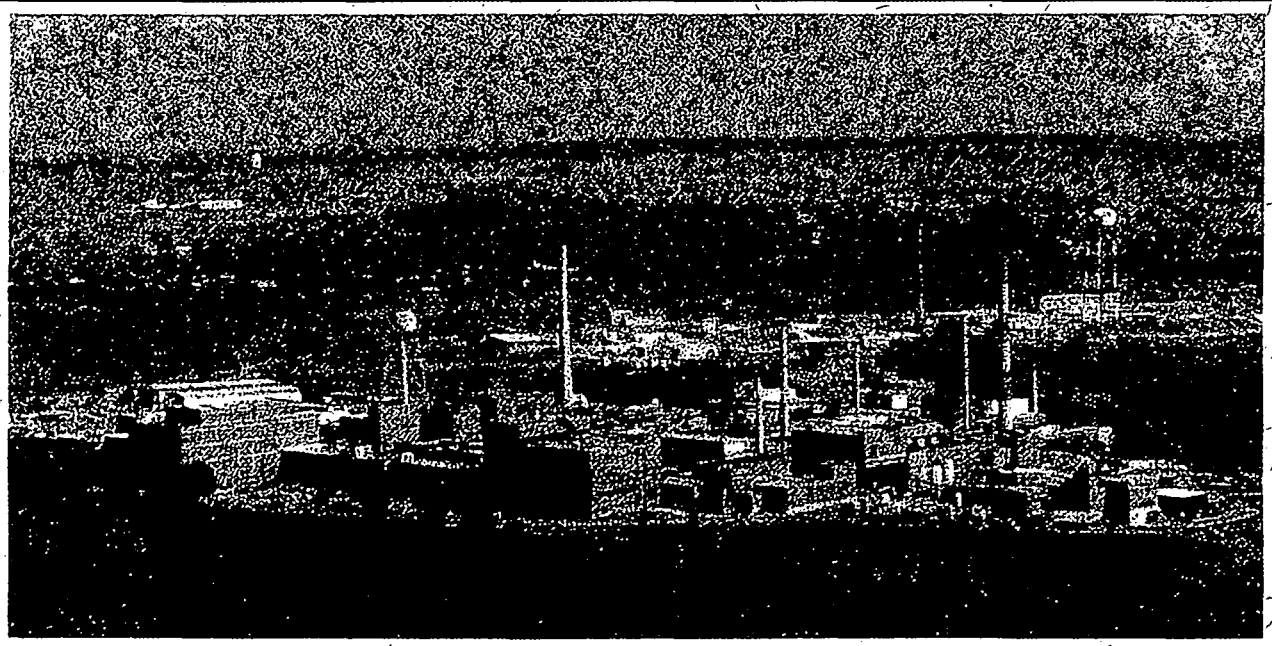
cc: Tim Fischer, USEPA, (1) w/attachments
Brian Nickel, OEPA, (2) w/attachments
Ruth Vandegrift, ODH, (1) w/attachments
Dann Bird, MMCIC, (2) w/attachments
Paul Lucas, MEMP, (1) w/attachment
Monte Williams, BWXT of Ohio, (2) w/attachment
Public Reading Room, (5) w/attachments
DCC

3001-0302190001

MOUND

Environmental
Restoration
Program

MOUND PLANT
Potential Release Site Package
PRS #118, 119, 120, 121



PRS 118, 119, 120, 121

REV	DESCRIPTION	DATE
WORKING DRAFT		**Jan. 20, 2001**
DRAFT	Working Draft reviewed as Draft at Core Team meeting of 2/210/01. PRS Data Package binned NFA, with comments. Resolution of comments to result in Draft Proposed Final version.	**Feb. 20, 2001**
DRAFT PROPOSED FINAL	Regulator comments incorporated.	**May 15, 2001**
PUBLIC REVIEW DRAFT	Public review July 25 to August 27, 2001	**July 25, 2001**
FINAL		

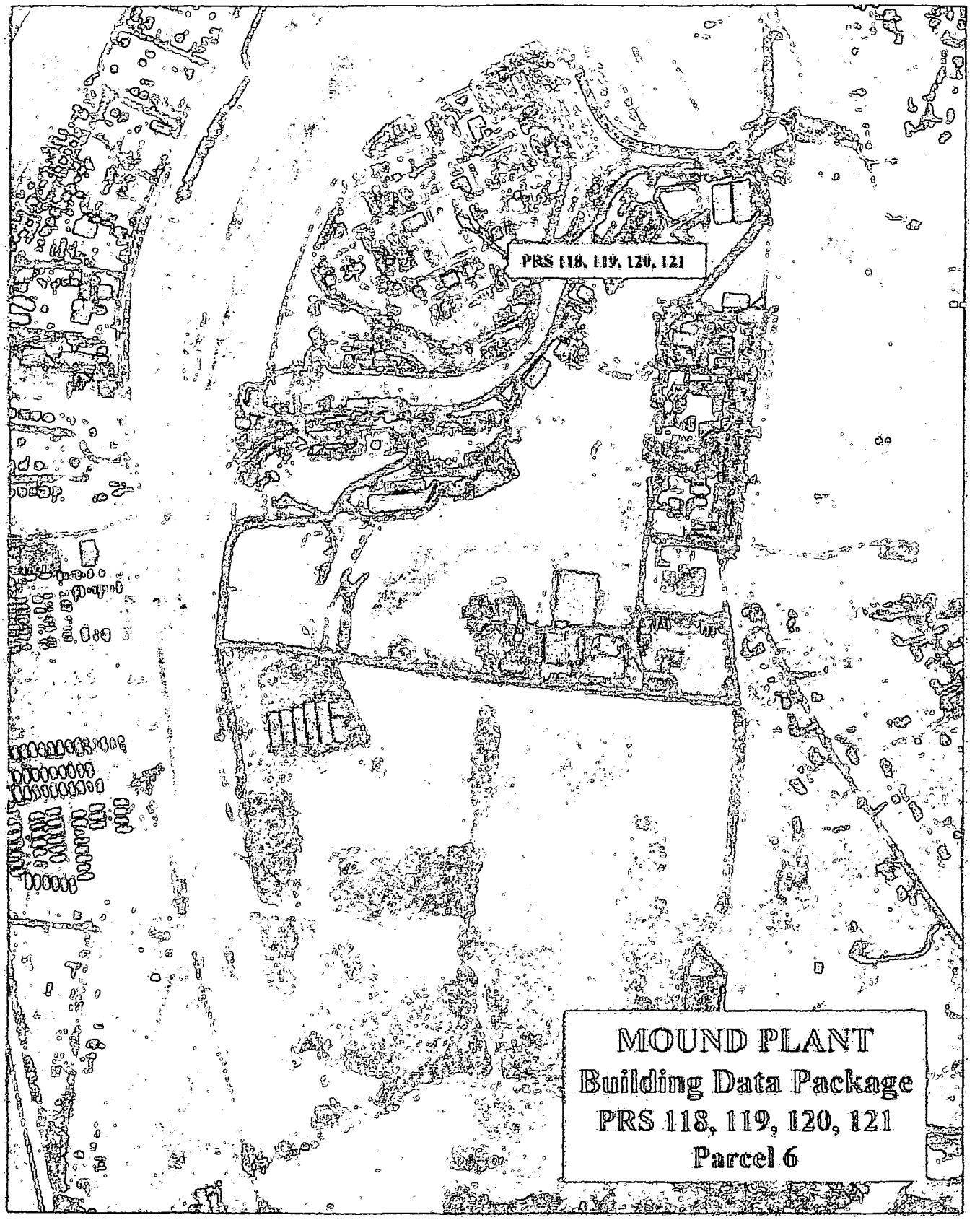
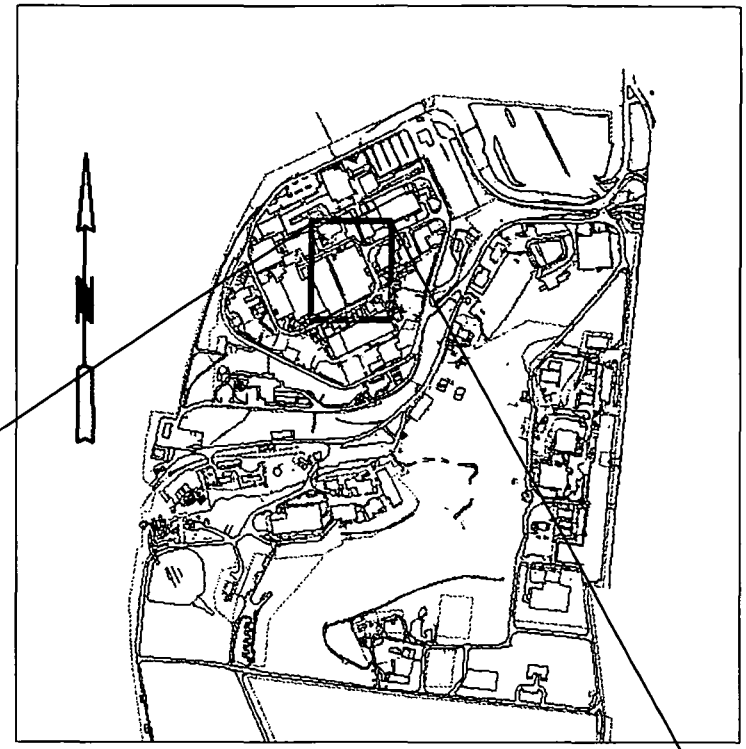


Figure 1. Location of PRSs 118, 119, 120, & 121 at Mound Site

Mound Plant
PRS 118, 119, 120, 121

PRS 118: M Bldg. Soils
PRS 119: Metal Plating Rinse Water Sump
PRS 120: Metal Plating Rinse Water Sump
PRS 121: Vapor Degreasers

On the map below:
- Building number and location shown in black
- PRS locations and numbers shown in blue
- Surrounding buildings shown in tan
- Fencing shown in red
- Elevation contours shown in brown



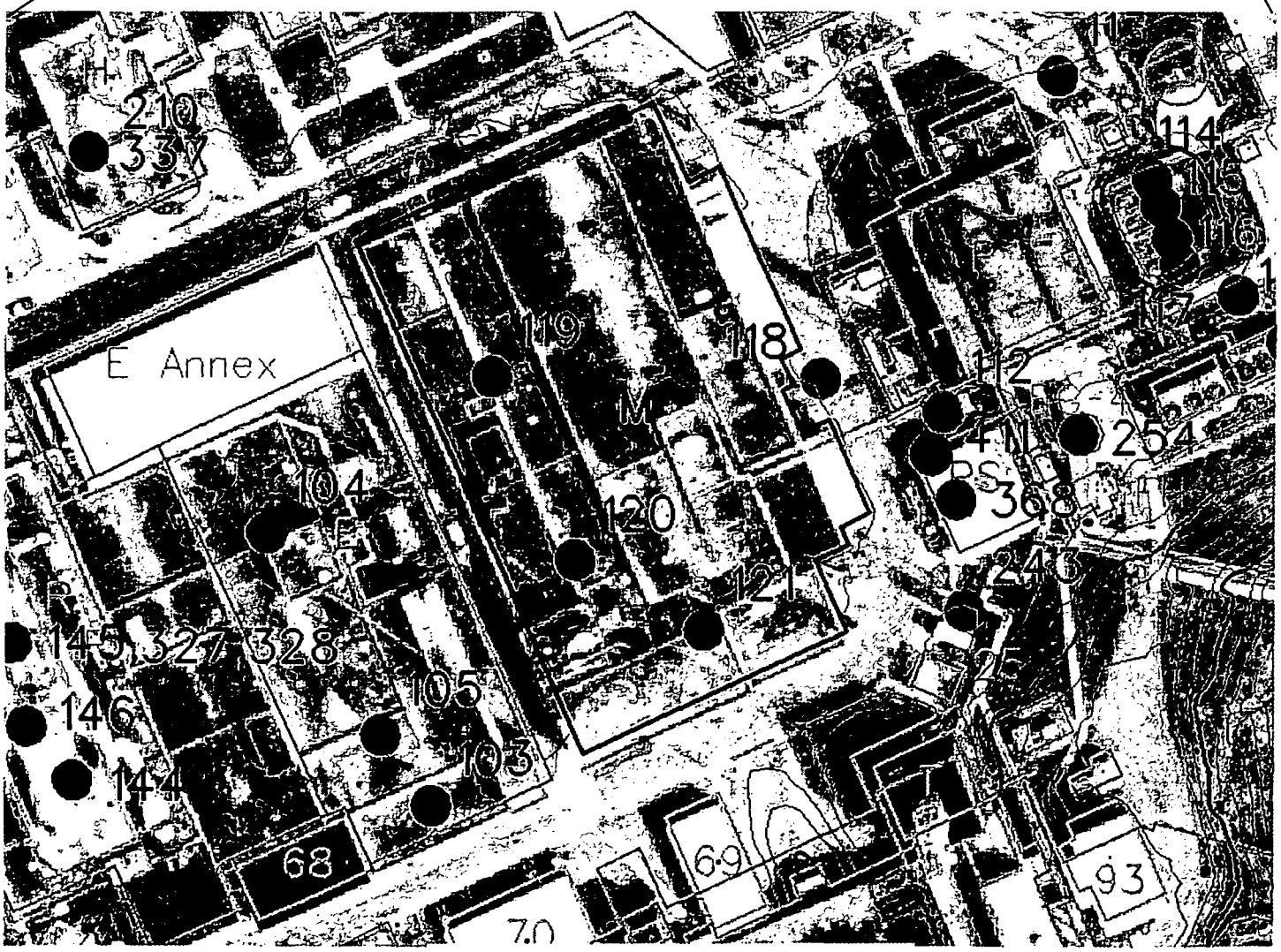


Figure 2: PRS Locations

PRSs 118, 119, 120, 121

PRS HISTORY:

Potential Release Site (PRS) 118 is identified as M Building related soils, under and adjacent to the building slab. PRSs 119 and 120 are identified as M Building Metal Plating Rinse Water Sumps (tanks), previously resident in the subject soils. PRS 121 is identified as two vapor degreasers, one each formerly located in the building in Rooms 47 and 108. The degreasers were removed as part of the building demolition process.

Figure 2 presents a graphical depiction of M Building and PRS locations. Table 1 presents the resolution of the subject PRSs accomplished with the M Building demolition. M Building demolition summary information (excerpts) can be found in References 1 and 2 of this PRS Data Package. These excerpts are derived from the pre-demolition M Building Data Package (BDP) and post-demolition Close Out Report, respectively.

Table 1. PRS Identification and Resolution

PRS #	CERCLA or Building Related	Comments	Resolution
118	M Building related.	M Building soils	Soils characterized and disposed of accordingly
119	M Building related.	Room M-38 Metal Plating Rinse Water Sump (Tank 225)	Tank removed and surrounding areas characterized and handled accordingly with PRS 118.
120	M Building related.	Room M-108 Metal Plating Rinse Water Tank (Tank 119)	Tank removed and surrounding areas characterized and handled accordingly with PRS 118.
121	M Building related.	Vapor Degreasers (2)	Degreasers drained, cleaned, and removed. Surrounding areas characterized and handled accordingly with PRS 118.

BACKGROUND:

Historical information researched prior to the M Building demolition suggested potential contamination issues as noted below in Table 2. After building demolition in the period February 1999 to December 1999, soils characterization field work, to include areas potentially affected by PRSs 118, 119, 120, and 121, was accomplished during the period February 2000 to March 2000.

Table 2. M Building PRS Related Contaminants of Concern (Prior to Demolition)

Description	Contaminant(s) of Concern	Measured Results (mg/kg)	Soil Screening Guideline Values [a] (mg/kg)	Background (mg/kg)
PRS 118 M Building Soils	Copper Cyanide, Silver Cyanide, Machine Oils, Solvents	No analysis results exceeding comparison values for organics or radionuclides.		
PRS 119 M-38 Metal Plating Rinse Water Sump (Tank 225)	Nickel, Cadmium, Silver, Gold, Manganese, Cyanide, Aluminum, Sodium Hydroxide, Potassium Permanganate	Aluminum = 21,300 Beryllium = 0.74 Cadmium = 149 Chromium VI = 5,970 Cobalt = 146 Copper = 28,400 Iron = 127,000 Lead = 21,100 Nickel = 22,500 Silver = 306 Sodium = 4,370 Molybdenum = 121 Tin = 963	21,000 0.7 210 1,100 NA 7,900 NA NA 4,300 1,100 NA NA 130,000	19,000 1.3 2.1 20 19 26 35,000 48 32 1.7 240 27 20
PRS 120 M-108 Metal Plating Rinse Water Sump (Tank 119)	Copper, Gold, Nickel, Aluminum, Uranium	No analysis results exceeding comparison values for metals, cyanide, or radionuclides with the exception of Thallium at 2.2 mg/kg.		Thallium = 0.46
PRS 121 Vapor Degreasers	Perclene D (perchloroethylene)	The vapor degreasers are out of service. They have been drained and cleaned.		

a = Most Stringent: Construction Worker or Site Employee
NA = Not Applicable

CONTAMINATION:

Original soil sampling information attained by the post-demolition characterization fieldwork for constituents exceeding guideline criteria or background values is presented in Tables 3, 4, and 5. Table 3 includes the results of additional, supplementary characterization conducted on 11/09/2000 at a "hot spot" north of the M Building slab (location M-01). The PRS 421 vapor degreasers were dispositioned as stated in Table 1.

Table 3. Sampling Information, PRS 118 - M Building Soils

Contaminant	Maximum Concentration Detected	Guideline Criteria (10^{-6})	Background Value
Benzo(a)pyrene	890 ug/kg	410 ug/kg	NA
Magnesium	92,100 mg/kg	NA	40,000 mg/kg
Potassium	4,430 mg/kg	NA	1,900 mg/kg
Sodium	850 mg/kg	NA	240 mg/kg
Thallium	1.6 mg/kg	NA	0.46 mg/kg
Lithium	37.3 mg/kg	NA	26 mg/kg
Radium-226 + D	3.05 pCi/g	0.13 pCi/g	2.0 pCi/g
Thorium-230+D [3]	0.445 pCi/g [3]	0.12 pCi/g	1.9 pCi/g
Uranium-238 + D	1.68 pCi/g	0.12 pCi/g	1.2 pCi/g

NA = Not Applicable

Table 4. Sampling Information, PRS 119 - Room M-38 Metal Plating Rinse Water Sump (Tank 225)

Contaminant	Maximum Concentration Detected	Guideline Criteria (10^{-6})	Background Value
Copper	358 mg/kg	7900 mg/kg	26 mg/kg
Magnesium	44,600 mg/kg	NA	40,000 mg/kg
Sodium	324 mg/kg	NA	240 mg/kg
Chromium VI	25.9 mg/kg	1,100 mg/kg	20 mg/kg

NA = Not Applicable

For additional information and detailed sampling results regarding PRS 119 concerning both sediment prior to sump removal and subsequent sampling of soil and infiltrating water following sump removal, see Reference 2, Appendix C.

Table 5. Sampling Information, PRS 120 - Room M-108 Metal Plating Rinse Water Sump (Tank 119)

Contaminant	Maximum Concentration Detected	Guideline Criteria (10^{-6})	Background Value
Magnesium	53,800 mg/kg	NA	40,000 mg/kg
Potassium	4,490 mg/kg	NA	1,900 mg/kg
Sodium	625 mg/kg	NA	240 mg/kg
Lithium	36.4 mg/kg	NA	26 mg/kg

NA = Not Applicable

READING ROOM REFERENCES:

1) *Mound Plant Building Data Package, M Building*, Final, November 1999 (Excerpt)

2) *Close Out Report, Demolition of M Building (And PRS Resolution)*, Final, September 2000 (Excerpt)
3) *M Building Soil Sample Results at M-01,* November 9, 2000.

PREPARED BY:

Mary B. England, Member of BWXT of Ohio Technical Staff
Joseph C. Geneczko, Member of BWXT of Ohio Technical Staff
Nita M. Grice, Member of BWXT of Ohio Technical Staff
Stephen S. Pawel, Member of BWXT of Ohio Technical Staff
Robert C. Ransbottom, Member of BWXT of Ohio Technical Staff

MOUND PLANT

PRS #118, 119, 120, 121

RECOMMENDATION:

Potential Release Sites (PRSs) 118, 119, 120 and 121 are specified as associated with M Building. PRS 118 is identified as M Building related soils, and PRSs 119 and 120 are identified as building sumps resident in, and potentially impacting these soils. PRS 121 is identified as vapor degreasers resident within the building. The demolition of M Building included the removal of the degreasers and the sumps, and soil characterization activities designed to determine the potential presence and levels of residual PRS contamination.

The Core Team has determined that PRSs 118, 119, 120, and 121 have been adequately addressed through the M Building demolition process. In addition, after reviewing the post-demolition characterization results, the Core Team has determined that the soil in the M Building area is protective of human health and the environment for industrial use.

Therefore, PRSs 118, 119, 120, and 121require NO FURTHER ASSESSMENT.

Concurrence:

DOE/MEMP: _____ Feb. 20th 2001
Robert S. Rothman, Remedial Project Manager (date)

USEPA: _____ 2/27/01
Timothy J. Fischer, Remedial Project Manager (date)

OEPA: _____ 2/20/2001
Brian K. Nickel, Project Manager (date)

SUMMARY OF COMMENTS AND RESPONSES:

Comment period from _____ to _____

☐ No comments were received during the comment period.

☐ Comment responses can be found on page _____ of this package.

REFERENCE MATERIAL

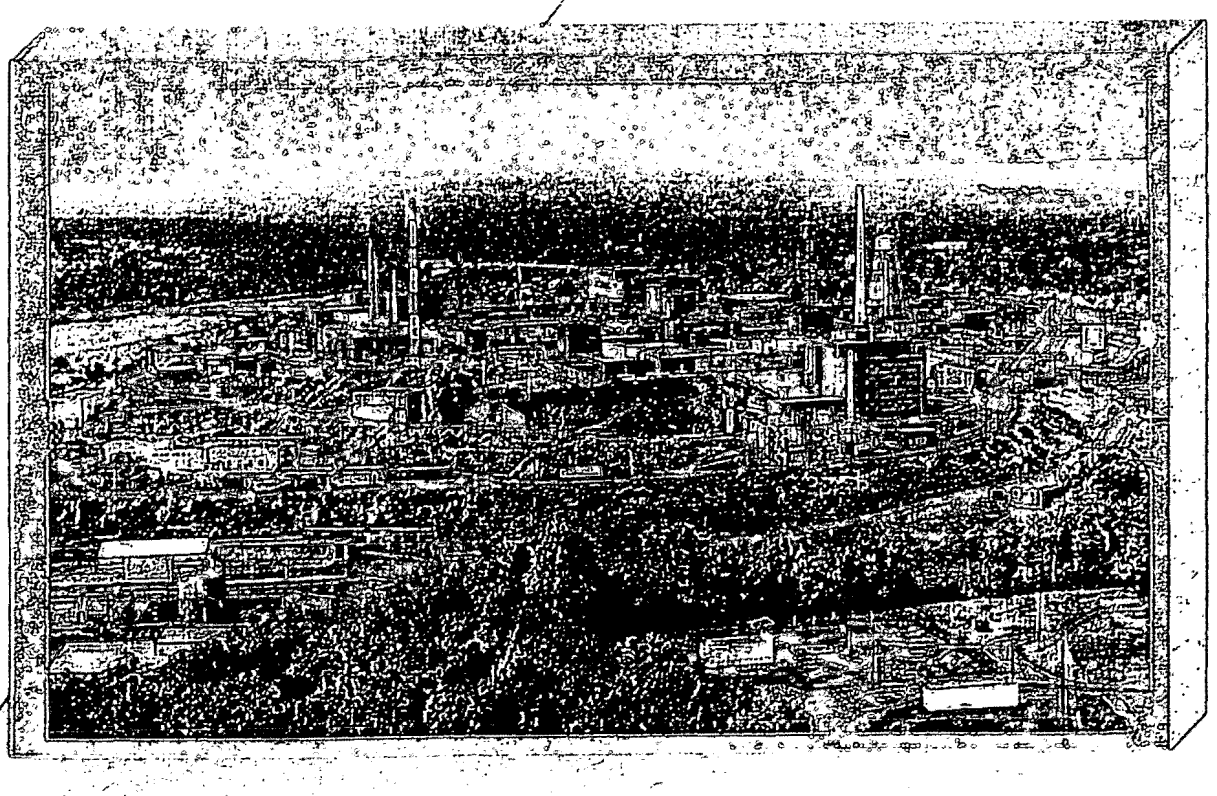
PRS s 118, 119, 120, 121

Reference 1

MOUND

Environmental Restoration Program

MOUND PLANT
Building Data Package
M Building



BDP M Building

REV	DESCRIPTION	DATE
WORKING DRAFT		July 13, 1999
DRAFT	DOE comments incorporated. External building radiological data incorporated.	July 14, 1999
DRAFT PROPOSED FINAL		July 14, 1999
PUBLIC REVIEW DRAFT		July 14, 1999
FINAL		July 14, 1999
FINAL, Rev. 1	MMCIC comments received. Comments and responses incorporated.	Nov. 1, 1999

BUILDING DATA PACKAGE (BDP)

M BUILDING

(Non-CERCLA Demolition)

DOE MOUND PLANT

MIAMISBURG, OHIO 45343

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Appendix B Map of Montgomery County
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Appendix E Aerial Photographs
Appendix F Environmental Appraisal Report of the Mound Plant (Extract)
Appendix G Radiological Summary/Information
Appendix H Radon Summary/Information
Appendix I Asbestos Summary/Information
Appendix J Lead Summary/Information (There is no lead summary/information available.)
Appendix K Chemical Summary/Information
Appendix L Noted Soil Sampling, Vicinity
Appendix M Occurrence Reports
Appendix N PRS/REC Information
Appendix O Work Plan
Appendix P Operable Unit 9, Site Scoping Report: Volume 11 - Spills and Response Actions

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.

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 the 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 M 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 M 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 BWO personnel.

This report used a variety of previous assessments completed by BWO and/or its subcontractors. The reports used were as follows:

- OU-9 Site Scoping Report, Volumes 1-12
- Mound Facility Physical Characterization, December 1992
- Active Underground Storage Plan, November 1994.
- EDR Report - Radius Map
- Building Prints
- MD-222153, Mound Site Radionuclides By Location, July 1995
- Contaminant Surveys
- Environmental Appraisal Report of the Mound Plant, March 1996
- Appropriate Potential Release Site (PRS) Documents
- Title Search
- Phase I Environmental Site Assessment of DOE Mound, M Building
- M Building Historic American Building Survey
- Operable Unit 9, Site Scoping Report: Volume 11 - Spills and Response Actions

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 M Building, the soil beneath, and a 15-foot wide perimeter around the Building. M Building contains 56,000 square feet. It was constructed in 1948.

2.1 Current Uses of M Building

M Building is currently inactive.

2.2 Past Uses of M Building

M Building is the former machine shop and housed electroplating operations. These functions are no longer accomplished in M Building. Most recently, the building served as an excess material staging and storage area. No research activities using radioactive or energetic materials have occurred in the building. However, Uranium (U-238) was machined in M Building.

2.3 Summary of Environmental Concerns and Findings - M Building

DESCRIPTION	COMMENT	RESOLUTION
Lead Paint	Due to the age of the building, lead paint is expected.	Leave the paint intact on the building surfaces. When structure is demolished the debris which has the lead paint will not be hazardous waste and will therefore be disposed of as construction debris at a local landfill.
Chemicals	Plating shop and machining chemicals were used in the building.	All chemicals were removed from the building.
Fluorescent Lamps	Fluorescent lamps were utilized in the building.	All fluorescent lamps will be removed prior to demolition.
Asbestos	The building does contain asbestos-containing materials.	Abatement of ACMs has been accomplished.
Drainage Sumps	Sediment in M-38 plating shop sump had elevated radiological and heavy metal readings.	Sump will be removed during demolition and surrounding soils will be characterized.
Lead	Lead Electrical Conduit	Will be removed as construction debris.
HVAC	N/A	
Mercury	N/A	
Radiological	Several fixed contamination areas were identified.	Fixed contamination removed/will be removed as part of decontamination/demolition process.
Septic Systems	N/A	
Waste Water	N/A	
Stains & Corrosion	N/A	
Space	N/A	
Storage Tanks	N/A	
Solid Waste Disposal	N/A	
Migratory Hazards	N/A	
Radon	N/A	
REC - See Appendix N. PRS 118 - M Building Soils	Elevated VOCs - Soil Gas Survey. Copper cyanide, silver cyanide, machine oils, solvents.	Soils will be characterized and disposed of accordingly.

REC - See Appendix N. PRS 119 - Room M-38 Metal Plating Rinse Water Sump Tank (Tank 225)	Rinse water from plating operations. Inactive tank still connected to sanitary sewer system.	Tank will be removed and surrounding areas will be characterized and handled accordingly.
REC - See Appendix N. PRS 120 - Room M-108 Metal Plating Rinse Water Tank (Tank 119)	Rinse water from plating operations. Inactive tank still connected to sanitary sewer system.	Tank will be removed and surrounding areas will be characterized and handled accordingly.
PRS 121 - Vapor Degreasers See Appendix N.	Plating Shop Parts Cleaning	Degreasers cleaned. Will be removed and surrounding areas will be characterized and handled accordingly.
REC - See Appendix N. Oil leaks on wood block floor	Possible saturation of floor and concrete with machine oils and solvents.	Wood block floor removed.
REC - See Appendix N. Integrity of concrete slab beneath the oil quench tank	Possible fractured slab and resultant soil contamination	Slab will be removed and surrounding areas will be characterized and handled accordingly.
REC - See Appendix N. Ventilation/exhaust duct work and related equipment	Potential residual plating compounds, machine oils, and milled metal dust	Inspection revealed no contamination. Duct work to be removed.
REC - See Appendix N. Stored Cylinders	Should be checked for proper storage and labeling procedures. Verify content.	Cylinders properly marked and stored. Will be removed.
REC - See Appendix N. PCB containing electrical transformers/fluorescent light ballasts	Should be inspected and cleaned as required and disposed of as required.	Items will be removed and disposed of as required.
REC - See Appendix N. Room 42 beryllium copper plating and/or milling	Exhaust collector may contain residual beryllium dust. Safety and health protocols should be followed.	Safety and health protocols will be followed. Inspection reveals no beryllium dust.
REC - See Appendix N. Uranium milling or machining, exact location unknown.	D&D activities must be researched. Appropriate actions must be taken.	Uranium found on wood block floor. Floor removed.
REC - See Appendix N. Pressing/canning of lithium deuteride	D&D activities must be researched. Appropriate actions must be taken.	Inspection revealed no evidence of this contamination.
REC - See Appendix N. Reported lithium hydride deuteride and tritide operations.	D&D activities must be researched. Appropriate actions must be taken.	Inspection revealed no evidence of this contamination.

REC: Recognized Environmental Condition. Note paragraph 1.1 and Appendix N.

2.4 Radiological Characterization Summary For M Building

Interior					
TYPE	RSDS	LOCATION	SURVEY RESULTS (dpm/100 cm²)	Surface Contamination Guidelines (dpm/100 cm²) (Note 2)	COMMENTS
Highest Alpha Smearable Activity	98-M-005	Room 8 High Bay (N)	17.42	20	
Highest Alpha Fixed Activity	Note 1	Note 1	<100	100	
Highest Beta Smearable Activity	98-M-013	Room 8 High Bay (S)	156.55	1,000	
Highest Beta Fixed Activity	Note 1	Note 1	<5,000	5,000	
Highest Tritium Smearable Activity	99-M-060	Room 31	1,383	10,000	

Exterior					
TYPE	RSDS	LOCATION	SURVEY RESULTS (dpm/100 cm²)	Surface Contamination Guidelines (dpm/100 cm²) (Note 2)	COMMENTS
Highest Alpha Smearable Activity	99-M-264	High Bay Roof Area 2	8.84	20	
Highest Alpha Fixed Activity	Note 1	Note 1	<100	100	
Highest Beta Smearable Activity	99-M-290	Roof Area 5 P.H. 250 P	12.60	1,000	
Highest Beta Fixed Activity	Note 1	Note 1	<5,000	5,000	
Highest Tritium Smearable Activity	99-M-288	High Bay Roof Area 2	41.04	10,000	

Note 1: All RSDS associated with the confirmatory survey were <100 dpm/100 cm² alpha and <5,000 dpm/100 cm² beta.

Note 2: Core Team determined values.

RSDS: Data sheet that provides radiological monitoring survey results.

Comment:: See Appendix G, Attachments 1 and 2 (interior) for RSDS associated with building release. See Appendix G, Attachments 3 and 4 (exterior) for RSDS associated with building release.

2.5 Associated PRS Table for M Building

PRS #	CERCLA or BLDG. RELATED	BINNING STATUS	COMMENTS
PRS 118	M Building related	TBD	M Building soils
PRS 119	M Building related	TBD	Room M-38 Metal Plating Rinse Water Sump (Tank 225)
PRS 120	M Building related	TBD	Room M-108 Metal Plating Rinse Water Tank (Tank 119)
PRS 121	M Building related	TBD	Vapor Degreasers

3.0 Site Description

3.1 Site/Vicinity Location and Characteristics

M 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 is constantly diminishing as buildings are decommissioned and either sold or demolished). The original 182-acre site, purchased by the Manhattan Engineer District in 1946, consists of two hills and an intervening valley that runs approximately east and west. M Building is located on the Main Hill of the Plant 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 M Building

The subject property consists of the Mound Plant M Building footprint, the soil beneath, and a 15-foot wide perimeter around the building. M Building contains 56,000 square feet. It was constructed in 1948.

There are no other structures, roads, or improvements that would impact the environmental condition of the building. Above ground brine and electrical lines are in proximity to the building. They will remain in place. Also remaining in place is an electrical substation located at the north end of the building.

3.3 Current and Past Uses of Buildings In Proximity To M Building

See Introductory Maps and Appendix C.

Proximity to M Building	Building Area (Sq. Ft.)	Current Use	Past Use	Direction From Building
E Building (and E Annex)	47,755	Offices	Analytical Services, Production, Offices	W
PS Building	2,288	Removed	Paint Shop	E
P Building	15,143	Power House (Steam, Brine, Air)	Power House (Steam, Brine, Air)	E
Building 40	12,227	Print Shop	Print Shop	NE

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 a hazardous waste storage facility 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 M Building in quantities above the regulatory thresholds.

The Mound Plant 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 19 Release Blocks containing over 400 Potential Release Sites (PRSs) with approximately 200 concerned with potentially contaminated soils, and the balance with potential contamination in or associated primarily with building operations.

4.2 Specific Record Sources

4.2.1 Occurrence Reports

Six occurrence reports were generated against M Building. No occurrences resulted in negative impacts on environmental safety and health. See Appendix M.

4.2.2 Spills and Releases

Two events involving fire protection/suppression systems occurred: one in 1990 and one in 1995. See occurrence reports ALO-DA-EGGM-EGGMAT04-1990-0012 and OH-MB-EGGM-EGGMAT04-1995-0003 in Appendix M. Additionally, reference is made to Appendix P, Operable Unit 9, Site Scoping Report: Volume 11 - Spills and Response Actions. M Building events are noted on pages 2-8, 2-9, 2-10, 2-16, and 2-17.

4.2.3 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 BWO have tabulated all the Potential Release Sites identified under the various regulatory programs in effect at the site. Of these 420 PRSs, PRSs 118, 119, 120, and 121 are attributed to M Building. See paragraph 2.5 and Appendix N.

4.3 Review of Building Prints

Building prints were reviewed and are included in Appendix D.

4.4 Aerial Photographs

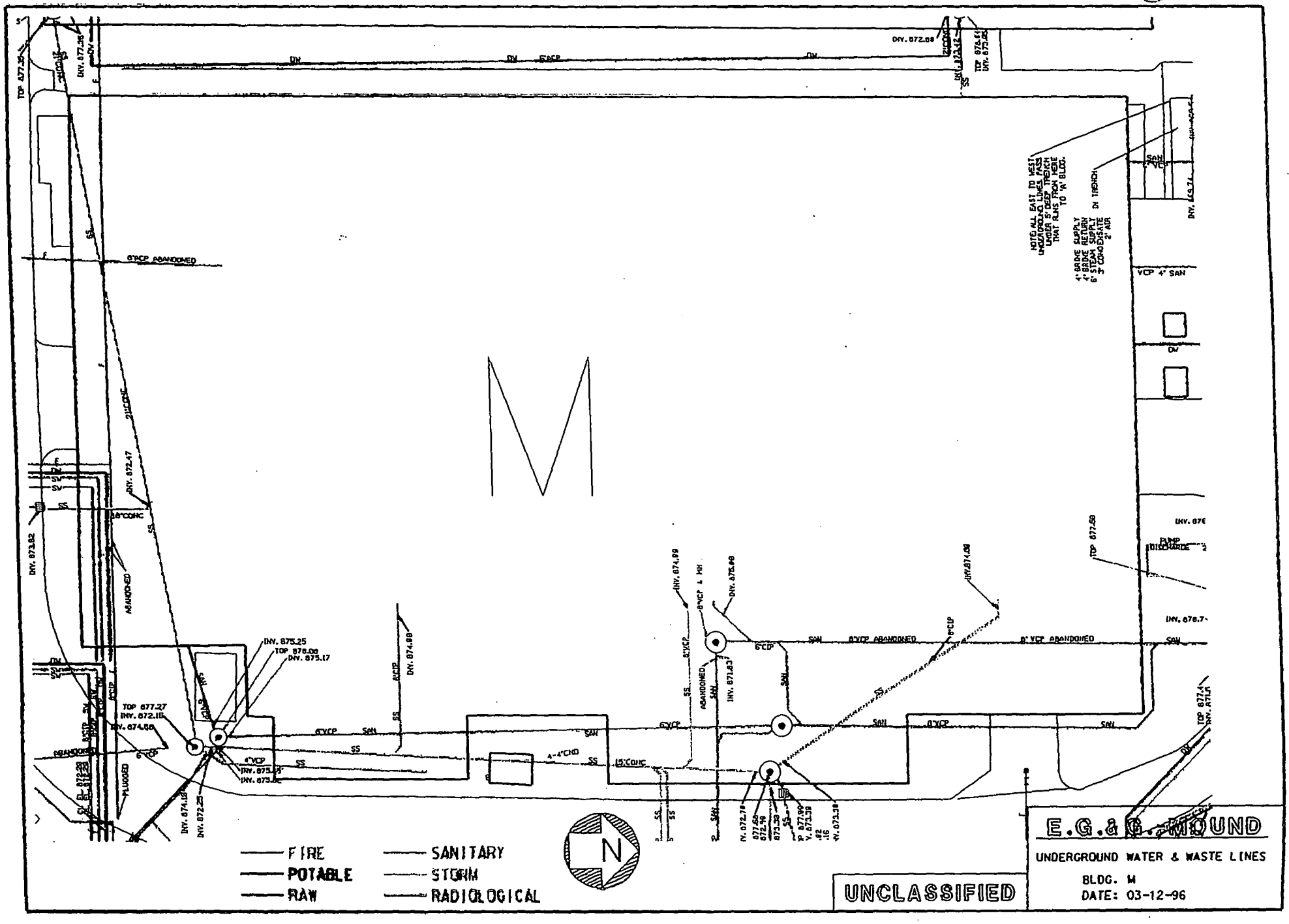
Aerial photographs from 1994, 1983, 1973, 1968, 1965, 1959, and 1949 were reviewed and copies are found in Appendix E.

4.5 Interviews

The Building Manager, Gary Weidenbach, was interviewed using a building manager questionnaire. See Appendix F.

Appendix D

Building Drawings


M
FIRE
POTABLE
RAW
SANITARY
STORM
RADIOLOGICAL
N
UNCLASSIFIED
E.G.&G. MOUND
UNDERGROUND WATER & WASTE LINES
BLDG. M
DATE: 03-12-96

Appendix L

Noted Soil Sampling, Vicinity

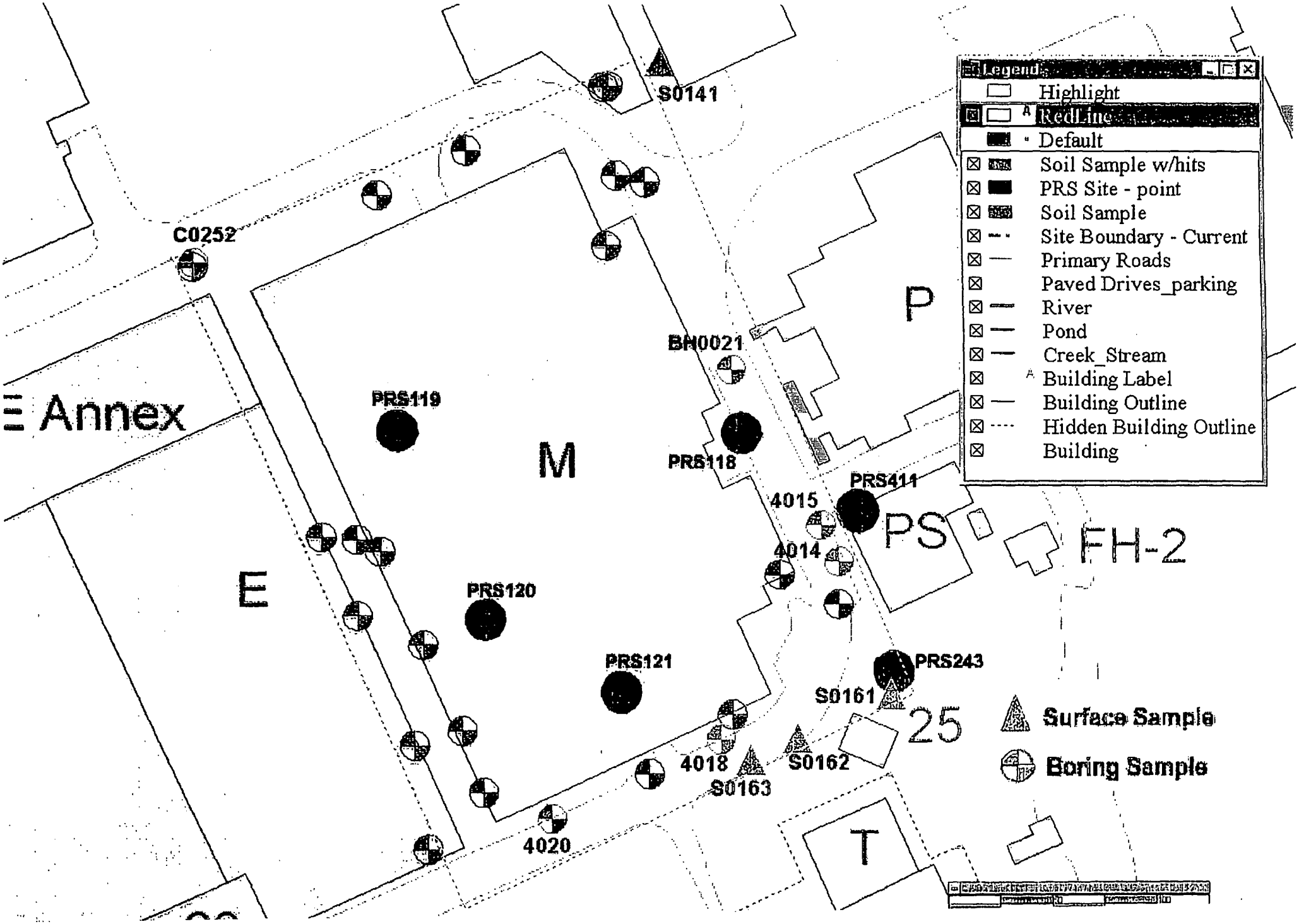
This Appendix L consists of three elements.

Element one is a graphic depiction of soil sampling in and around the subject property. Triangles signify surface sampling and circles denote boring (at dept) 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 comparison value. Basis identification is found on the last page of the element three table, and is again, listed here:

Comparison Value Basis Number:	Comparison Value Basis Definition
1	10E-6 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 Hazard Index


Legend
Highlight
RedLine
Default
Soil Sample w/hits
PRS Site - point
Soil Sample
Site Boundary - Current
Primary Roads
Paved Drives_parking
River
Pond
Creek_Stream
Building Label
Building Outline
Hidden Building Outline
Building
Surface Sample
Boring Sample
S0141
C0252
BH0021
PRS119
PRS118
PRS411
4015
4014
PRS120
PRS121
PRS243
S0161
S0162
S0163
4018
4020
Annex
M
P
PS
FH-2
E
25
T

Location_n	Sample_id	Location_typ	Collection_date	Media	Value_name	Measured_va	Value_uni	Detectio	Chem_class	Start_	End_d	Depth	Cas_number	Lab_	Project_code	Data	Comments
4014	4014-0002.5	Borehole	19940421	Other	1,1,1-Trichloroethane	5263.2	PPB		ORVOA	2.5	2.5	FT	71-55-6		SVROU2		
4014	4014-0002.5	Borehole	19940421	Other	1,1-Dichloroethane	12098.8	PPB		ORVOA	2.5	2.5	FT	75-34-3		SVROU2		
4014	4014-0002.5	Borehole	19940421	Other	1,2-cis-Dichloroethene	5808.1	PPB		ORVOA	2.5	2.5	FT	156-59-2		SVROU2		
4014	4014-0002.5	Borehole	19940421	Other	1,2-trans-Dichloroethene	6818.2	PPB		ORVOA	2.5	2.5	FT	156-60-5		SVROU2		
4014	4014-0002.5	Borehole	19940421	Other	Toluene	789.5	PPB		ORVOA	2.5	2.5	FT	108-88-3		SVROU2		
4014	4014-0002.5	Borehole	19940421	Other	Total VOC's	42027.7	PPB		ORVOA	2.5	2.5	FT	TVOC		SVROU2		
4014	4014-0002.5	Borehole	19940421	Other	Trichlorofluoromethane	11250	PPB		ORVOA	2.5	2.5	FT	75-69-4		SVROU2		
4014	4014-0005.0	Borehole	19940421	Other	Total VOC's	8394.5	PPB		ORVOA	5	5	FT	TVOC		SVROU2		
4014	4014-0005.0	Borehole	19940421	Other	Trichlorofluoromethane	5892.9	PPB		ORVOA	5	5	FT	75-69-4		SVROU2		
4015	4015-0005.0	Borehole	19940425	Other	Total VOC's	5844.4	PPB		ORVOA	5	5	FT	TVOC		SVROU2		
4015	4015-0005.0	Borehole	19940425	Other	Trichlorofluoromethane	3571.4	PPB		ORVOA	5	5	FT	75-69-4		SVROU2		
4015	4015-0007.5	Borehole	19940425	Other	1,1,1-Trichloroethane	2280.7	PPB		ORVOA	7.5	7.5	FT	71-55-6		SVROU2		
4015	4015-0007.5	Borehole	19940425	Other	1,1-Dichloroethane	3456.8	PPB		ORVOA	7.5	7.5	FT	75-34-3		SVROU2		
4015	4015-0007.5	Borehole	19940425	Other	1,2-cis-Dichloroethene	2020.2	PPB		ORVOA	7.5	7.5	FT	156-59-2		SVROU2		
4015	4015-0007.5	Borehole	19940425	Other	Total VOC's	26449.6	PPB		ORVOA	7.5	7.5	FT	TVOC		SVROU2		
4015	4015-0007.5	Borehole	19940425	Other	Trichlorofluoromethane	15892.9	PPB		ORVOA	7.5	7.5	FT	75-69-4		SVROU2		
4015	4015-0009.2	Borehole	19940425	Other	1,1-Dichloroethane	1975.3	PPB		ORVOA	9.2	9.2	FT	75-34-3		SVROU2		
4015	4015-0009.2	Borehole	19940425	Other	Total VOC's	12566.9	PPB		ORVOA	9.2	9.2	FT	TVOC		SVROU2		
4015	4015-0009.2	Borehole	19940425	Other	Trichlorofluoromethane	8571.4	PPB		ORVOA	9.2	9.2	FT	75-69-4		SVROU2		
4018	4018-0002.5	Borehole	19940428	Other	Toluene	526.3	PPB		ORVOA	2.5	2.5	FT	108-88-3		SVROU2		
4018	4018-0002.5	Borehole	19940428	Other	Total VOC's	4812	PPB		ORVOA	2.5	2.5	FT	TVOC		SVROU2		
4018	4018-0002.5	Borehole	19940428	Other	Trichlorofluoromethane	4285.7	PPB		ORVOA	2.5	2.5	FT	75-69-4		SVROU2		
4018	4018-0005.0	Borehole	19940428	Other	Tetrachloroethene	3235.3	PPB		ORVOA	5	5	FT	127-18-4		SVROU2		
4018	4018-0005.0	Borehole	19940428	Other	Total VOC's	3761.6	PPB		ORVOA	5	5	FT	TVOC		SVROU2		
4020	4020-0002.5	Borehole	19940428	Other	1,1,1-Trichloroethane	3333.3	PPB		ORVOA	2.5	2.5	FT	71-55-6		SVROU2		
4020	4020-0002.5	Borehole	19940428	Other	1,2-cis-Dichloroethene	3787.9	PPB		ORVOA	2.5	2.5	FT	156-59-2		SVROU2		
4020	4020-0002.5	Borehole	19940428	Other	1,2-trans-Dichloroethene	4292.9	PPB		ORVOA	2.5	2.5	FT	156-60-5		SVROU2		
4020	4020-0002.5	Borehole	19940428	Other	Toluene	1052.6	PPB		ORVOA	2.5	2.5	FT	108-88-3		SVROU2		
4020	4020-0002.5	Borehole	19940428	Other	Total VOC's	34966.8	PPB		ORVOA	2.5	2.5	FT	TVOC		SVROU2		
4020	4020-0002.5	Borehole	19940428	Other	Trichlorofluoromethane	22500	PPB		ORVOA	2.5	2.5	FT	75-69-4		SVROU2		
4020	4020-0005.0	Borehole	19940428	Other	Toluene	789.5	PPB		ORVOA	5	5	FT	108-88-3		SVROU2		
4020	4020-0005.0	Borehole	19940428	Other	Total VOC's	9730.9	PPB		ORVOA	5	5	FT	TVOC		SVROU2		
4020	4020-0005.0	Borehole	19940428	Other	Trichlorofluoromethane	3750	PPB		ORVOA	5	5	FT	75-69-4		SVROU2		
4020	4020-0007.5	Borehole	19940428	Other	1,2-cis-Dichloroethene	1767.7	PPB		ORVOA	7.5	7.5	FT	156-59-2		SVROU2		
4020	4020-0007.5	Borehole	19940428	Other	Toluene	789.5	PPB		ORVOA	7.5	7.5	FT	108-88-3		SVROU2		
4020	4020-0007.5	Borehole	19940428	Other	Total VOC's	13684.5	PPB		ORVOA	7.5	7.5	FT	TVOC		SVROU2		
4020	4020-0007.5	Borehole	19940428	Other	Trichlorofluoromethane	9107.1	PPB		ORVOA	7.5	7.5	FT	75-69-4		SVROU2		
4020	4020-0012.5	Borehole	19940428	Other	1,1,1-Trichloroethane	1403.5	PPB		ORVOA	12.5	12.5	FT	71-55-6		SVROU2		
4020	4020-0012.5	Borehole	19940428	Other	Total VOC's	7832.1	PPB		ORVOA	12.5	12.5	FT	TVOC		SVROU2		
4020	4020-0012.5	Borehole	19940428	Other	Trichlorofluoromethane	6428.6	PPB		ORVOA	12.5	12.5	FT	75-69-4		SVROU2		
4020	4020-0015.0	Borehole	19940428	Other	Total VOC's	8885.5	PPB		ORVOA	15	15	FT	TVOC		SVROU2		
4020	4020-0015.0	Borehole	19940428	Other	Trichlorofluoromethane	5714.3	PPB		ORVOA	15	15	FT	75-69-4		SVROU2		
4020	4020-0017.5	Borehole	19940428	Other	1,2-cis-Dichloroethene	2777.8	PPB		ORVOA	17.5	17.5	FT	156-59-2		SVROU2		
4020	4020-0017.5	Borehole	19940428	Other	Total VOC's	10333.7	PPB		ORVOA	17.5	17.5	FT	TVOC		SVROU2		
4020	4020-0017.5	Borehole	19940428	Other	Trichlorofluoromethane	5535.7	PPB		ORVOA	17.5	17.5	FT	75-69-4		SVROU2		
BH0021	93101423	Borehole	19931014	Soil	Plutonium-238	26	PCI/G		RAD	0	0	FT	13981-16-3		SCRDATA		Exceeds soil 10-6 GV. Exceeds background value. Exceeds other criteria.
BH0021	93101424	Borehole	19931014	Soil	Plutonium-238	29	PCI/G		RAD	0	0	FT	13981-16-3		SCRDATA		Exceeds soil 10-6 GV. Exceeds background value. Exceeds other criteria.
C0252	8400	Borehole	19941201	Soil	Plutonium-238	0.13	PCI/G	0.01	RAD	3	3	FT	13981-16-3		RSS		
S0141	6179	Surface loca	19940801	Soil	Plutonium-238	0.68	PCI/G	0.01	RAD	0	0	FT	13981-16-3		RSS		Exceeds background value.
S0161	3093	Surface loca	19931001	Soil	Plutonium-238	1.19	PCI/G	0.01	RAD	0	0	FT	13981-16-3		RSS		Exceeds background value.
S0162	6206	Surface loca	19940801	Soil	Plutonium-238	0.62	PCI/G	0.01	RAD	0	0	FT	13981-16-3		RSS		Exceeds background value.
S0163	6207	Surface loca	19940801	Soil	Plutonium-238	0.34	PCI/G	0.01	RAD	0	0	FT	13981-16-3		RSS		Exceeds background value.

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	205-99-2	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		1.7 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		4.2 MG/KG
2	72-55-9	4,4'-DDE		4.3 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	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	1.4	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	0.11	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	0.004	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	0.2	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	7782-49-2	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	PCI/L
5	14596-10-2	Americium-241	1.2	PCI/L
5	13982-38-2	Bismuth-207	1200	PCI/L
5	10045-97-3	Cesium-137	120	PCI/L
5	10198-40-0	Cobalt-60	400	PCI/L
5	13981-16-3	Plutonium-238	1.6	PCI/L
5	13982-63-3	Radium-226	4	PCI/L
5	10098-97-2	Strontium-90	40	PCI/L
5	14274-82-9	Thorium-228	16	PCI/L
5	14269-63-7	Thorium-230	12	PCI/L
5	7440-29-1	Thorium-232	2	PCI/L
5	10028-17-8	Tritium	20000	PCI/L
5	U-233	Uranium-233	20	PCI/L
5	13966-29-5	Uranium-234	20	PCI/L
5	15117-96-1	Uranium-235	24	PCI/L
5	24678-82-8	Uranium-238	24	PCI/L
6	7440-47-3	Chromium	1.10E+03	MG/KG
6	7440-36-0	Antimony	8.50E+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	75-27-4	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 N

PRS/REC* Information

* Extract from Phase I Environmental Site Assessment of DOE Mound, M Building (HOK/K)

Of these 345 PRSs, four were attributed to operations at Building M (refer to Figure 2 for locations):

- PRS 118 - M Building Soils: Elevated VOCs were detected in soils (plotted on the east side of Building M) in soil gas surveys conducted in 1993. Potential hazardous substances for this PRS were listed as copper cyanide, silver cyanide, machine oils, and solvents. The Site Summary Report did not provide a rationale or confirmation as to why the M Building soils were shown to be outside an exit door on the east side of the building. The original document detailing the soil gas surveys was not readily available during our research of the DOE documents. It was also not explained as to why the cyanides were listed when these are not generally considered to be volatile compounds detectable by soil gas survey. (Refer to Exhibit C and to Photograph 1 presented in Exhibit D).

- PRS 119 - Room M-38 Metal Plating Rinse Water Sump Tank (Tank 225): Rinsewater from cascade rinse steps of the old plating operations in Building M were directed to the sanitary sewer system by first passing through this sump tank (Refer to Figure 2). It is little more than a deep manhole, measuring approximately 15 feet in depth, according to Mr. George Jones, and 350 gallons in volume. The tank is apparently still connected to the sanitary sewer line leading north of the building to a main sanitary trunk line passing east-west on the north side of Building M. However, the tank is now inactive. DOE/EG&G have indicated in the Site Summary Report that there is no evidence of release associated with this tank and that no further action is required. Tank data from the Active Underground Storage Tank Plan (November 1994) is provided in Exhibit E.

- PRS 120 - Room M-108 Metal Plating Rinse Water Tank (Tank 119): This sump tank is very similar to Tank 225, except that it is reportedly only 10 feet deep and is 250 gallons in capacity. Cascade rinsewater from the new plating operations at the south end of the building is directed first to this sump and from there to the sanitary sewer line. The tank is currently in service, although plating operations in the southern part of the site building terminated about a year ago. Mr. Jones reported that the effluent from this tank was checked daily by the plating staff, and EG&G personnel sampled the effluent monthly pursuant to the Mound Plant NPDES permit. Mr. Jones recalled that the only sampling and analysis violations of the permit of which he was aware were elevated levels of copper. OEPA suspected that this result indicated that Mound was plating with copper cyanide, according to Mr. Jones. However, Mr. Jones and Mr. Koeller indicated that this was not the case, that copper cyanide solution had not been used at Building M, but speculated that the acidic solutions were leaching out the copper from the copper piping installed in the building. Refer to Exhibit E for additional tank data.

- PRS 121 - Vapor Degreasers: Two vapor degreasers were installed for parts cleaning in the new plating shop. One is located in Room 108, and a much older one (dating from the 1950s) is located adjacent to Room 47. Both apparently used tetrachloroethylene (Perclene-D) as a solvent. Vapors from the degreasers are routed to ventilation hoods which are exhausted to air emission stacks on the roof. A 1993 OEPA air permit for these vapor degreasers was tacked to the wall of the plating shop during HOK/K's site visit; however, EG&G did not include such a permit in the package of current regulatory permits requested by HOK/K for this assessment. Presumably this is because the plating shop is no longer in operation.

4.1.3 In compliance with permit requirements under RCRA, the Clean Water Act (CWA), the Safe Drinking Water Act (SDWA), and the Clean Air Act (CAA), the Mound has applied for or has received permits for its surface water discharges, air emissions, and hazardous waste program. The Mound has submitted both a RCRA Part A and Part B Permit application and operates as a RCRA hazardous waste treatment and storage facility under interim status. Mound also maintains a NPDES surface water discharge permit with facility I.D. Number OH009857. 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. The Mound also submits annual Emergency and Hazardous Chemical Inventory Forms to the OEPA, pursuant to SARA Title III, the Emergency Planning and Community Right-to-Know Act. The 1995 version of this report indicated that nitric acid, argon, helium, and sulfuric acid are stored at Building M in quantities above regulatory thresholds.

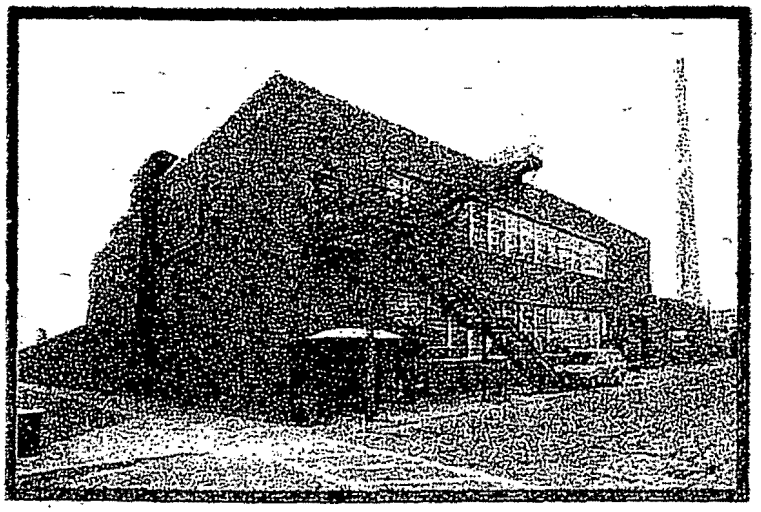
4.1.4 DOE has legal authority derived from the Atomic Energy Act of 1954 (AEA) to conduct routine operations at Mound involving, among other things, underground tanks, equipment and other facilities. "Routine operations" include both the operation of currently active sites and the Decontamination & Decommissioning (D&D) of surplus sites. DOE has authority under the AEA to respond to any environmental contamination known or discovered for both active and inactive tanks. Because DOE has signed an FFA, it also has authority and responsibility derived from CERCLA and the FFA. The authorities of the AEA and CERCLA overlap, but CERCLA explicitly recognizes the integration of the overlapping authorities. At Mound, a D&D/ER Program agreement was established April 26, 1991, to define the soil activity responsibilities between the two programs.

Reference 2

Main Hill Project

CLOSE OUT REPORT

Demolition of M Building (And PRS Resolution)



MOUND PLANT

Miamisburg, Ohio

September 2000

Final

BWXT of Ohio, Inc.

Department of Energy

Close Out Report For Demolition

Of

M Building (And PRS Resolution)

DOE Mound Plant

Miamisburg, Ohio 45343-3020

Prepared for:

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

Prepared by:

BWXT of Ohio

September 2000

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Executive Summary

This is the final report documenting the demolition of M Building, as initially defined in the Building Data Package (BDP) introduced in July 1999. Demolition of the structure was completed in November 1999, and the removal of the pad, foundation, and footers was completed in July 2000. This documentation serves as the record of the demolition action and reports final costs, schedule, waste disposition information, method of demolition, final disposition of associated Potential Release Sites, and any unusual findings. Photographs and references to pertinent documents are also included. This demolition effort was considered a standard industrial construction demolition and was not considered a removal under CERCLA and was not designated as a HAZWOPER site.

M Building was built in 1948 as a two-story steel frame structure with brick masonry block walls with industrial steel sash windows. It was constructed as a maintenance shop and included machine shops, metal plating facilities, sheet metal shops, carpenters' shops, and a glass blowing facility. Later additions included areas for office space and electrical maintenance. The Main Hill Project of BWXT of Ohio demolished the building and concrete pad per planning developed for the project. See reference documents noted in Paragraph 4 of this Close Out report.

All preparation and demolition activities were performed in accordance with detailed Work Plans to include structure characterization, safe shutdown, utilities isolation, site access control, interior decontamination and demolition requirements, structure demolition, and debris removal. Potential Release Sites (PRSs) 118, 119, 120, and 121 were addressed and dispositioned as requiring No Further Assessment (NFA), as described in Appendix C.

The M Building superstructure, slab, and foundation were successfully demolished. Demolition material and debris were dispositioned as noted in Table 2 of this document. Post demolition sampling confirms that established PRS clean up goals were achieved.

It is recommended to the Department of Energy that the scope of work relating to this building be considered complete.

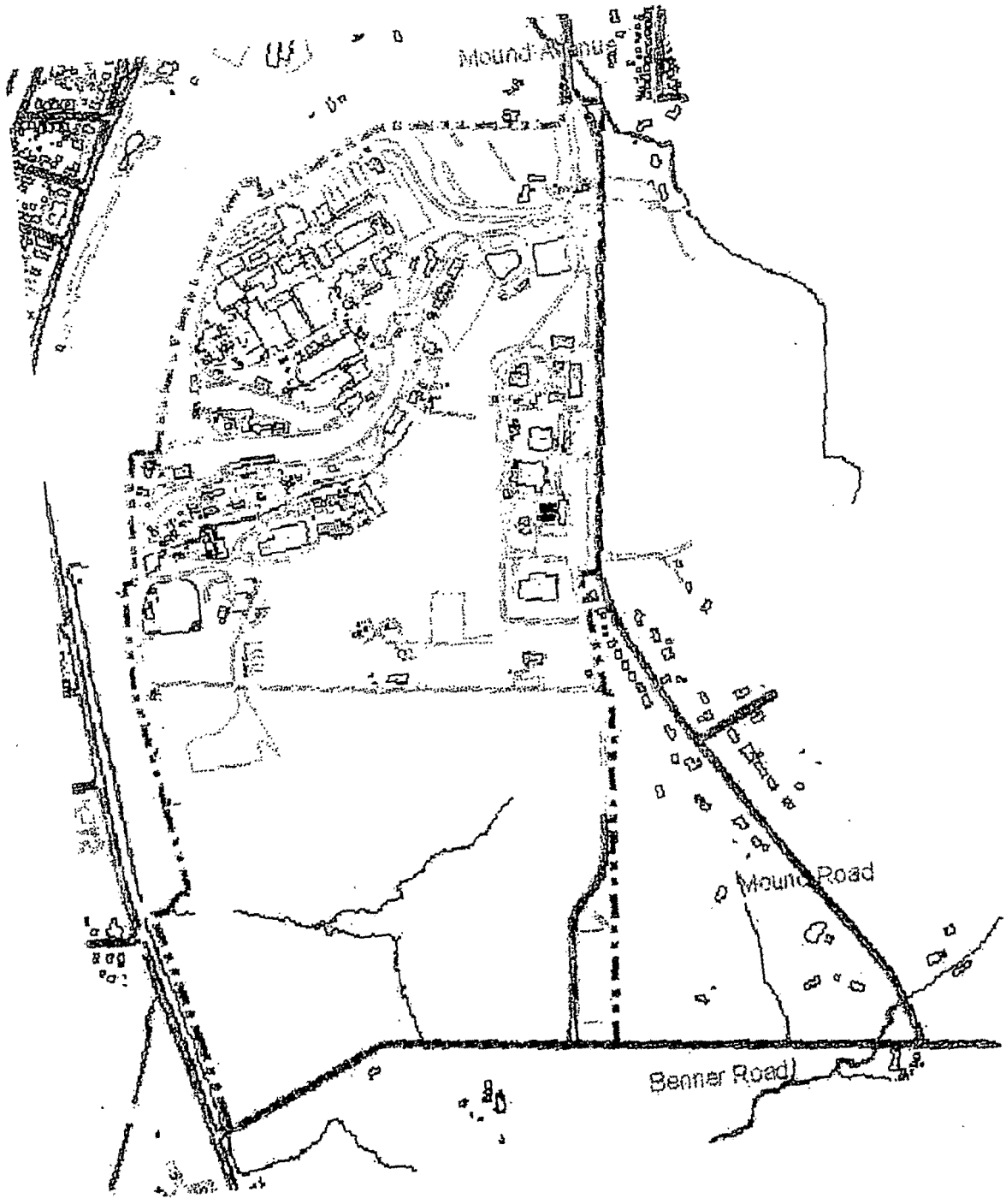


Figure 1. Mound Plant Site Location

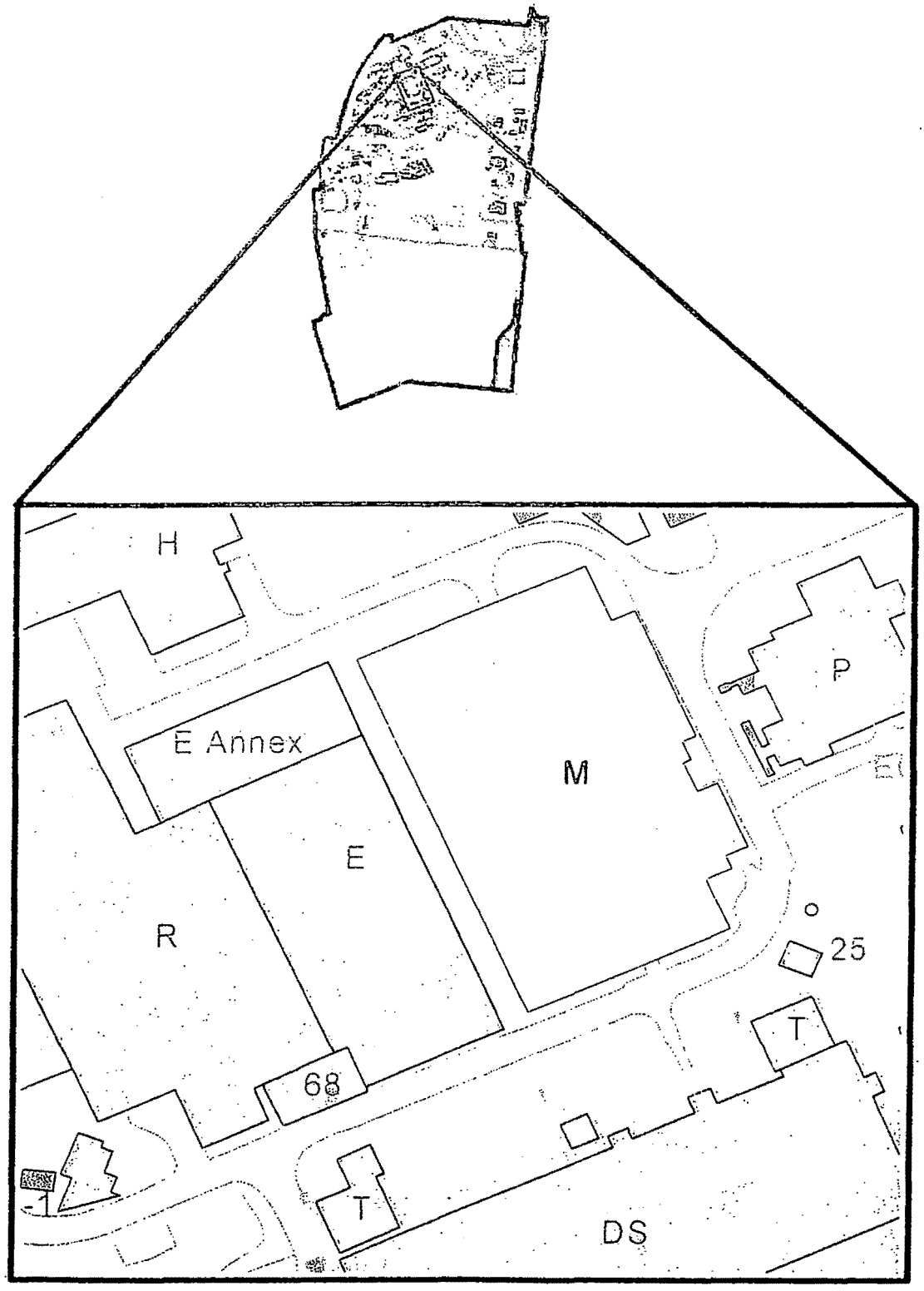


Figure 2. Demolition Site Location

1.0 SUMMARY OF EVENTS

1.1 Objectives of Demolition Activities

M Building was removed in support of the Mound Plant Exit Project. The removal was accomplished as a standard industrial construction demolition as noted by the Building Data Package (BDP).

1.2 Personnel Organization For The Demolition

See Table 1, Personnel Organization For The Demolition.

Table 1. Personnel Organization for the Demolition

Agencies or Parties Involved	Contact	Description of Participation
US EPA HSRM-6J 77 W. Jackson Chicago, IL 60604 312-886-5787	Tim Fischer	Federal agency responsible for Mound Plant oversight.
Ohio EPA 410 E. Fifth Street Dayton, OH 45402-2911 937-285-6468	Brian Nickel	State agency responsible for Mound Plant oversight.
DOE/MEMP P.O. Box 66 1 Mound Road Miamisburg, OH 45343-0066 937-865-4020	Frank Schmaltz	DOE/MEMP Project Manager responsible for project oversight and success.
BWXT of Ohio, Inc. Main Hill Project P.O. Box 3030 1 Mound Road Miamisburg, OH 45343-3030 937-865-4020	Budd Thompson	Provided the DOE/MEMP Project Manager with technical assistance, administrative support, sampling, decontamination, photo and site documentation, site safety, and report preparation.
BWXT of Ohio, Inc. General Superintendent and Equipment Manager P.O. Box 3030 1 Mound Road Miamisburg, OH 45343-3030 937-865-4020	Dave Armstrong	Provided the personnel and equipment necessary for the demolition.

1.3 Chronological Narrative of Key Demolition Activities

February 3, 1999	Started radiological surveys.
February 24, 1999	Started decontamination of fixed contamination areas.
March 8, 1999	Building disposition was changed from transition to demolition.
March 10, 1999	Building posted as RMMA - started RMMA rollback surveys.
April 14, 1999	Removed HEPA filters from glovebox in M-27. Developed historical report for National Parks Service.
May 19, 1999	Started removing lights and PCB ballasts.
June 9, 1999	Completed decontamination of fixed contamination areas.
June 9, 1999	Completed removing lights and PCB ballasts.
June 23, 1999	Started asbestos abatement.
July 7, 1999	Completed asbestos abatement.
July 14, 1999	Completed RMMA rollback surveys with exception of the roof areas. (Fixed contamination found on rusted metal on roof.)
July 20, 1998	Started wood block floor removal.
July 21, 1999	Isolated air and steam lines to the building.
August 18, 1999	Removed the brine line bridge between M Building and the Power House.
August 24, 1999	Completed wood block floor removal.
August 25, 1999	Installed bracing for northeast corner stanchion support.

August 25, 1999	Removed canopies on east side of building.
August 25, 1999	Completed isolation of all above ground utilities.
September 1, 1999	Started demolition of the superstructure.
November 16, 1999	Completed demolition of the superstructure.
December 15, 1999	Disposed of the fixed contamination roof material.
February 14, 2000	Started field work for the soils characterization.
March 3, 2000	Completed field work for the soils characterization.
March 13, 2000	Started removal of the building pad.
July 29, 2000	Completed removal of M Building pad.
August 24, 2000	Completed pad backfill with crushed material.

1.4 Listing of Resources Committed

Table 2 shows materials and their disposition. Table 3 includes the demolition total cost summary.

Table 2. Materials and Disposition

Material	Quantity	Method	Location
Construction Debris (concrete/masonry)	1635 cubic yards (as of 5/11/00)	To be crushed later and reused	Mound site: to be used as fill material
Construction Debris (metals)	4,870 cubic yards	Recycled	Franklin Metals
Construction Debris (mixed/miscellaneous)	8,270 cubic yards	Landfill	Koogler/Stoney Hollow
Asbestos	110 cubic yards	Landfill	Koogler/Stoney Hollow

Table 3. Demolition Project Total Cost Summary

Activity	Cost ($)
Historical D&T Costs	170,735
Historical Preservation Report Preparation	9,295
Work Planning	105,442
Safe Shutdown	154,111
Characterization	299,929
Decontamination & Demolition	657,491
Total Actual Cost (unburdened)	1,388,109
Total Actual Cost (burdened)	2,264,941

2.0 EFFECTIVENESS OF THE DEMOLITION

M Building structure and foundation were successfully demolished per the Work Plans. Field work and supporting activities were accomplished by BWXT of Ohio personnel and subcontractors. This demolition and subsequent evaluation of completed work addresses four PRSs resident in or near M Building. Post demolition evaluation results in verification that PRSs 118, 199, 120, and 121 require No Further Assessment (NFA). See Appendix C.

3.0 RECOMMENDATION

The M Building superstructure, slab, and foundation have been demolished and debris removed in accordance with documentation made available to the Mound 2000 Core Team. (See references following.) It is recommended to the Department of Energy that BWXT of Ohio's contractual obligations for the scope of work relating to this building be considered complete.

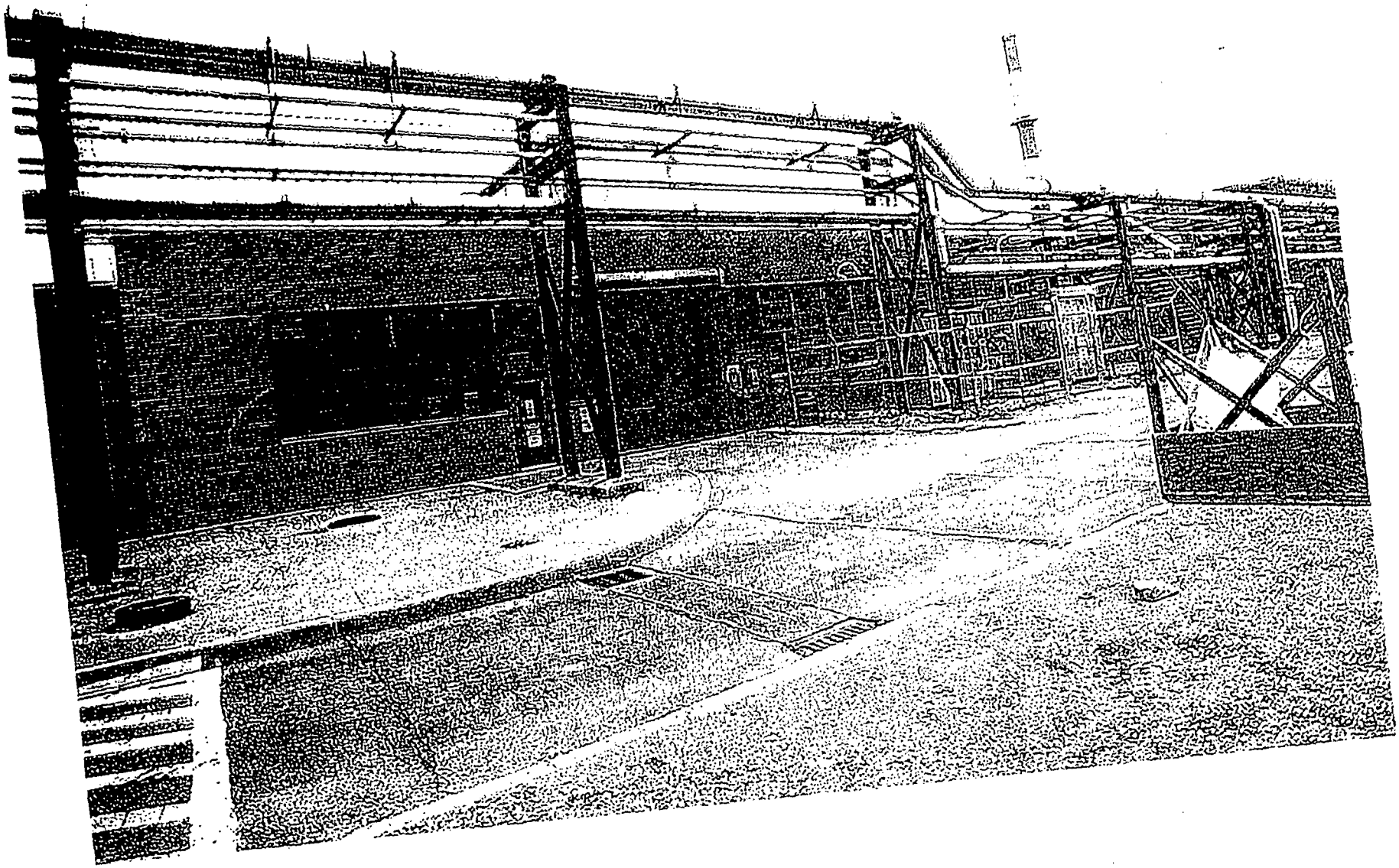
4.0 REFERENCE LIST OF SUPPLEMENTARY DOCUMENTS

Contact Mark Becker, BWXT of Ohio, Public Relations, at (937) 865-4450 to request access to these supplemental documents.

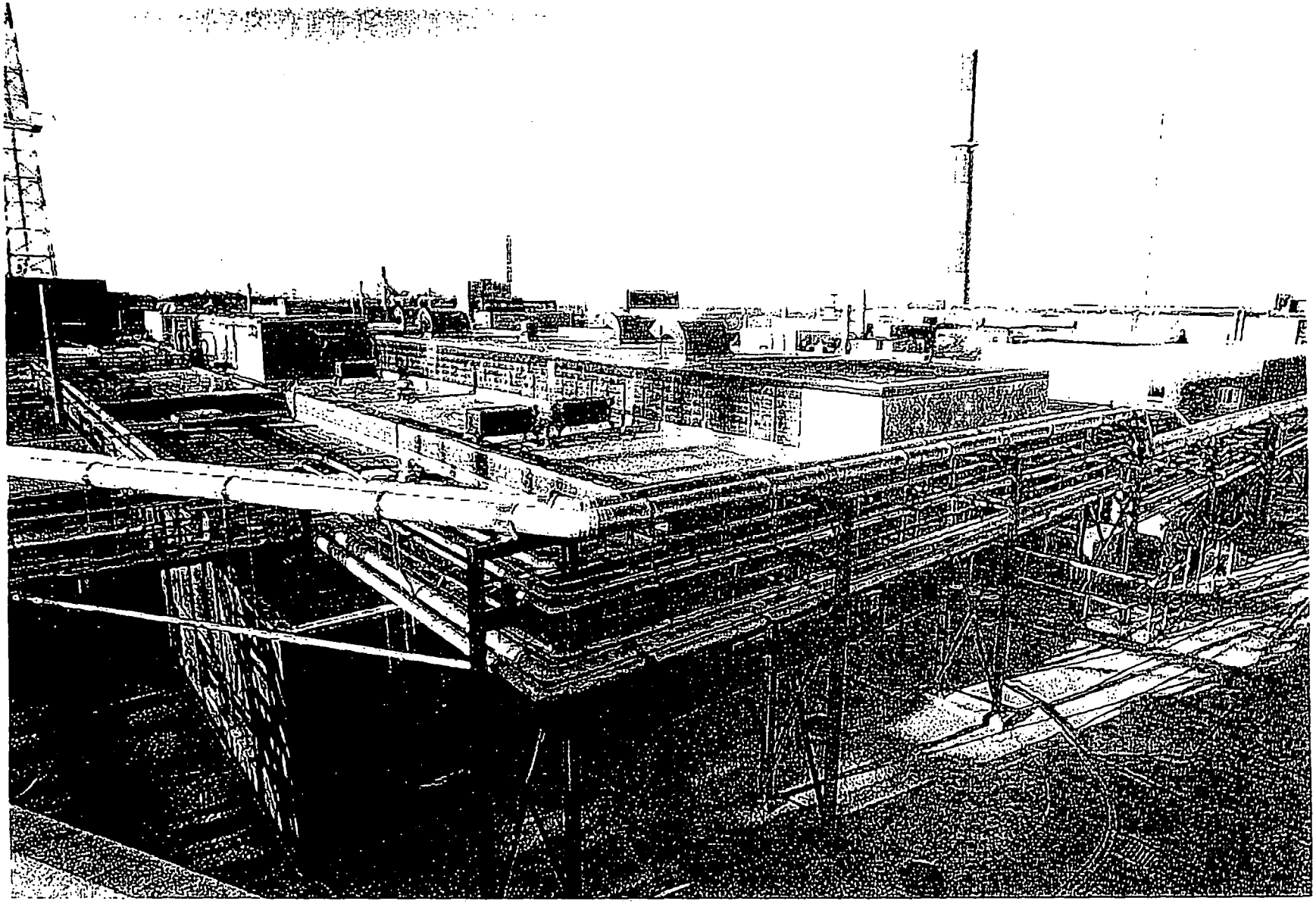
- Mound Plant Building Data Package, M Building, November 1, 1999
- JSWP, MH-99-06, M Building Demolition
- JSWP, MH-99-04, M Building Slab and Foundation Removal
- M Building Process and Architectural History, Department of Energy, Mound Plant Site, Miamisburg, Ohio, September 14, 1999.
- Report - M Building, Final, Revision 0, Mound Plant Site, Miamisburg, Ohio, July 2000. (Soil Characterization Report)

APPENDIX A

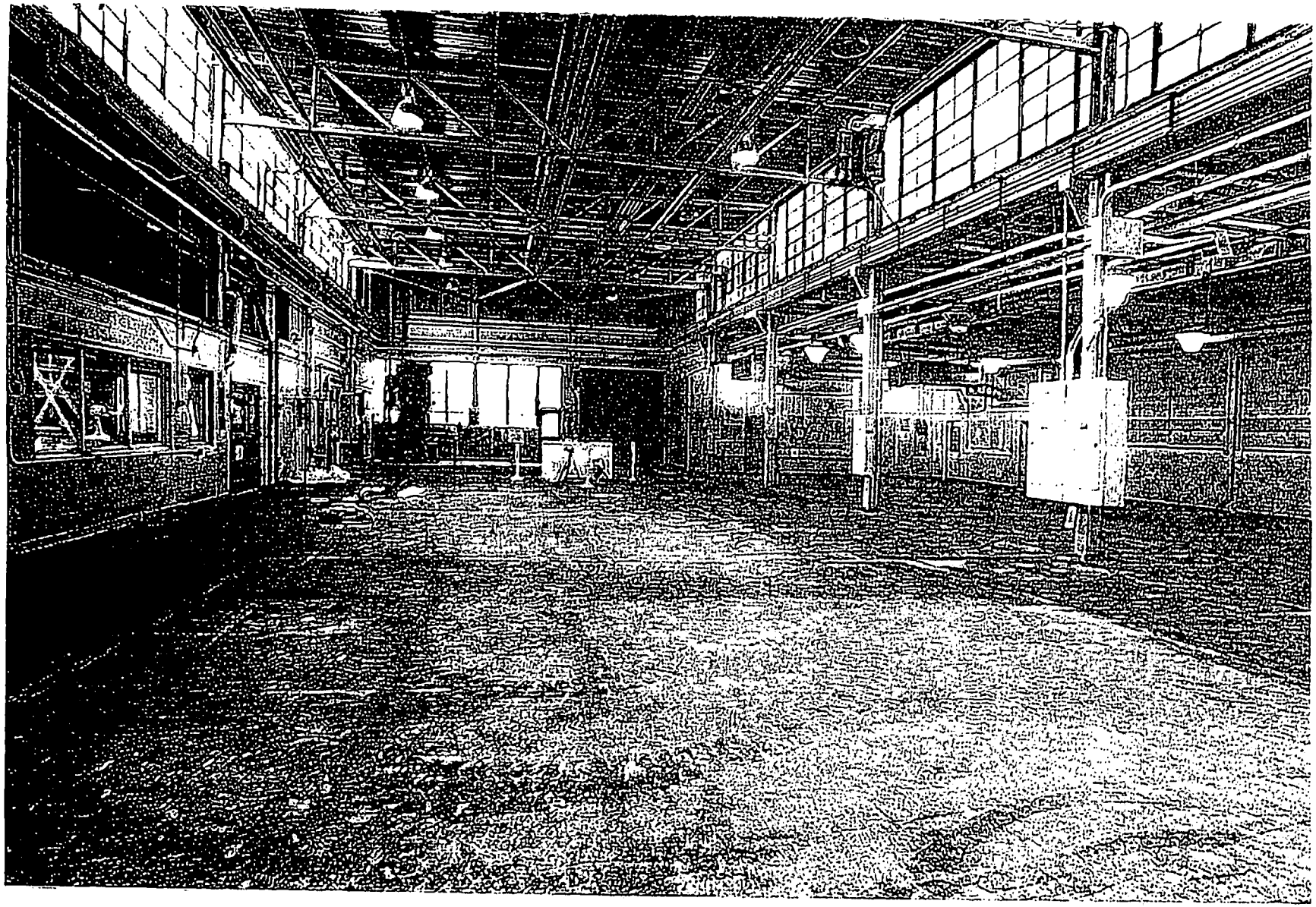
PHOTOGRAPHIC DOCUMENTATION



03/15/99 M bldg., north side *990828

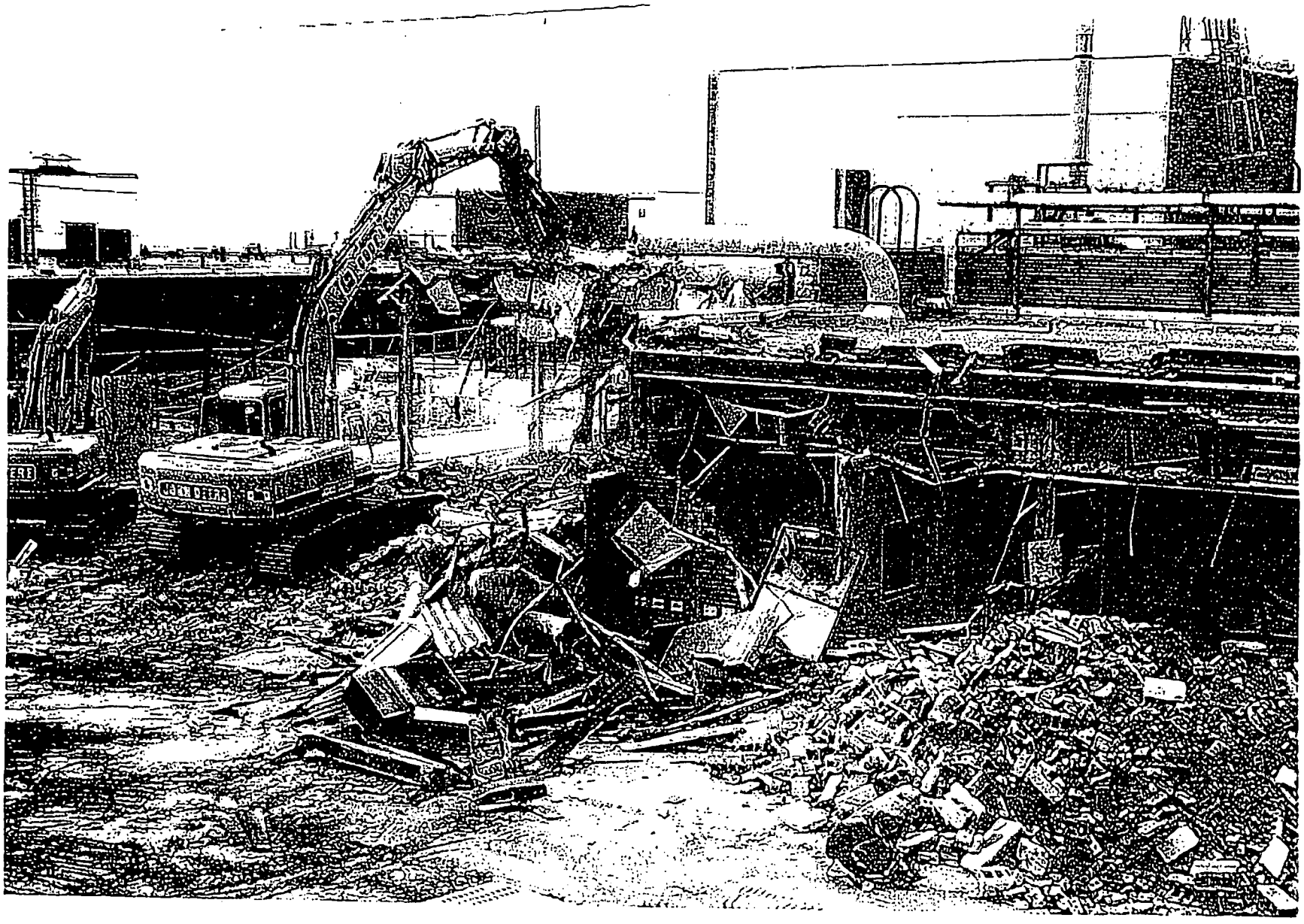


05/12/99 M Bldg., roof, from northeast corner *991466

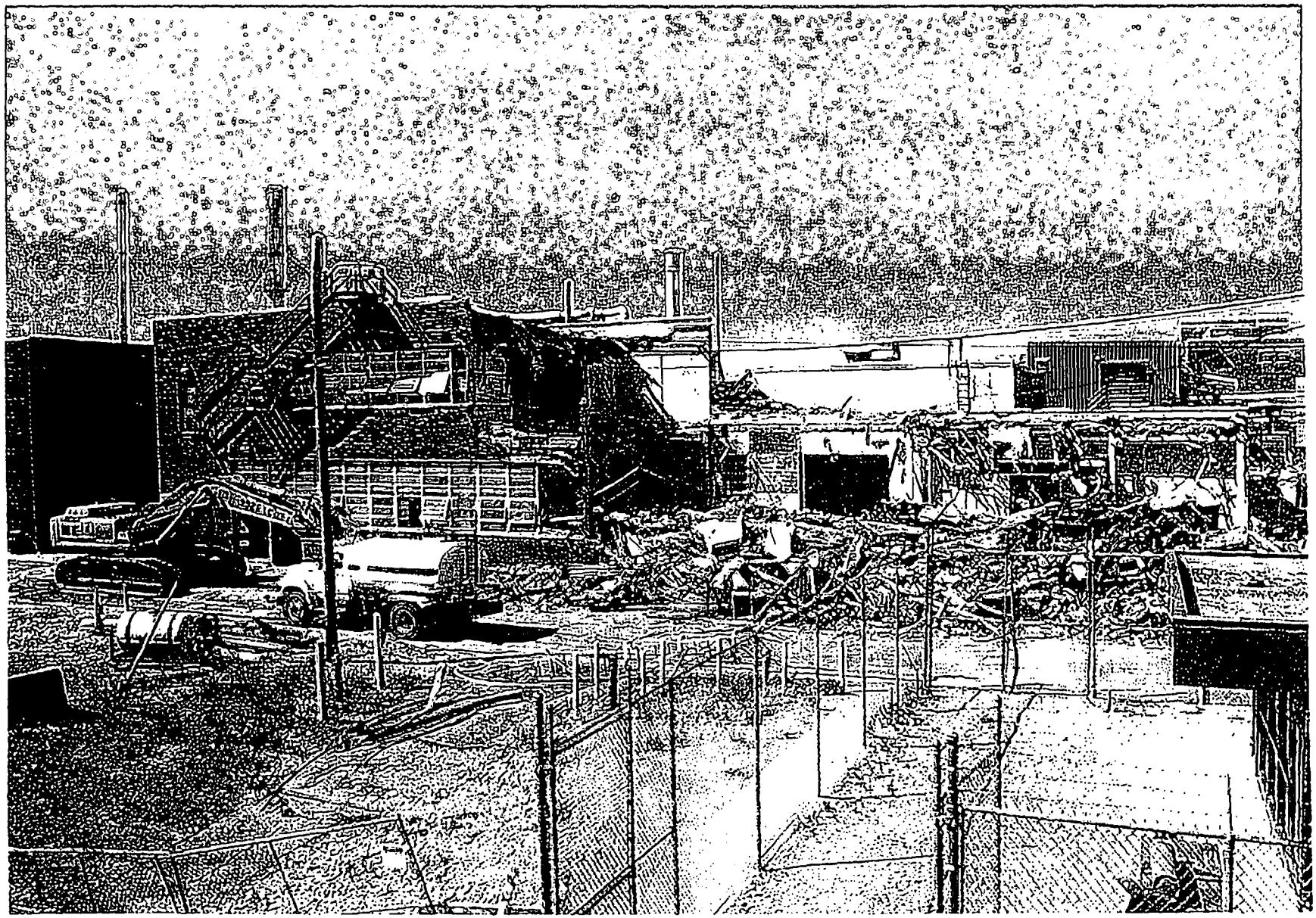


02/24/99 M Bldg., room 8, looking north *990519

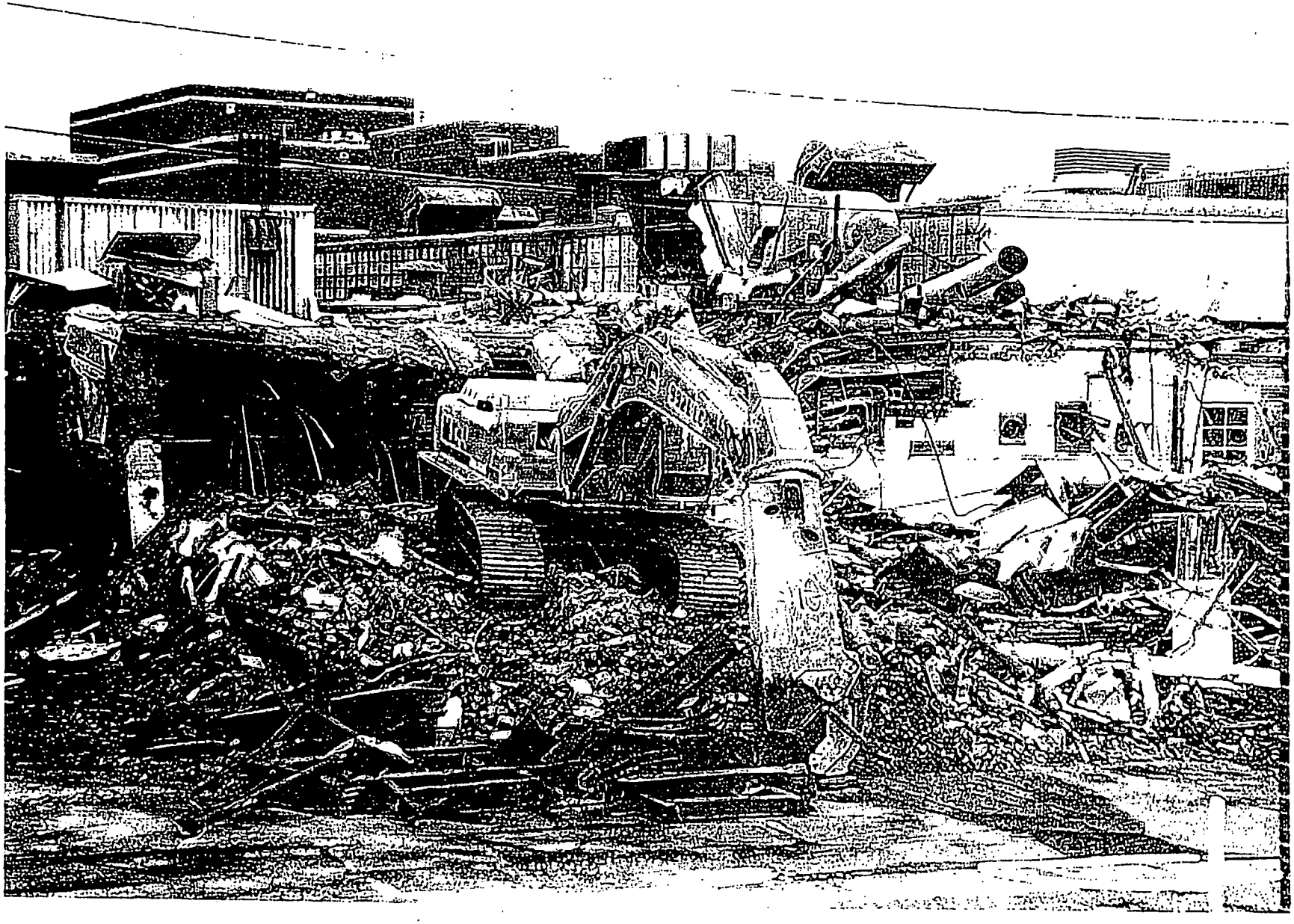
08/13/98 M Bldg., removal of wood floor blocks *981699



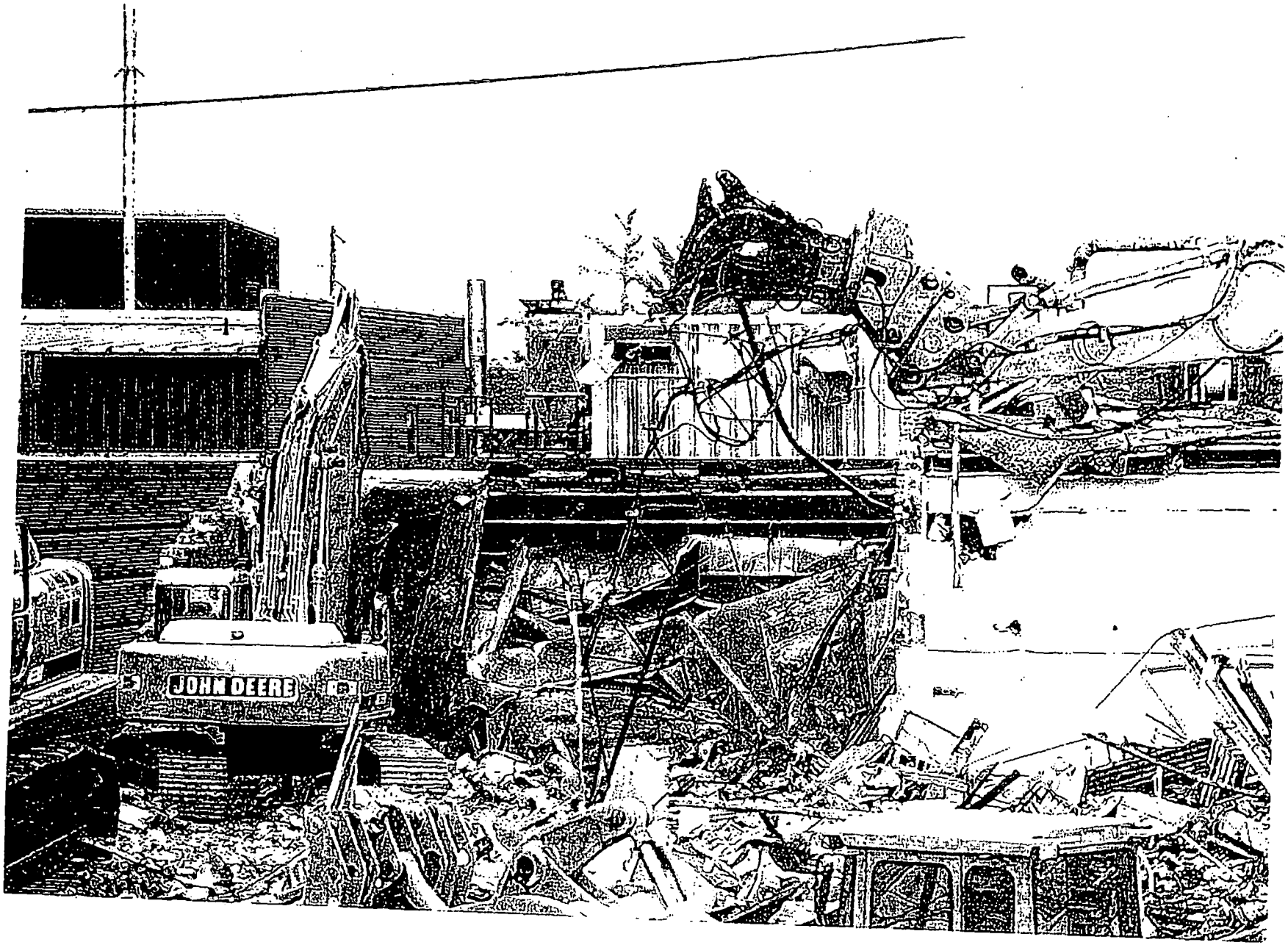
09/08/99 M Bldg. demolition *992560



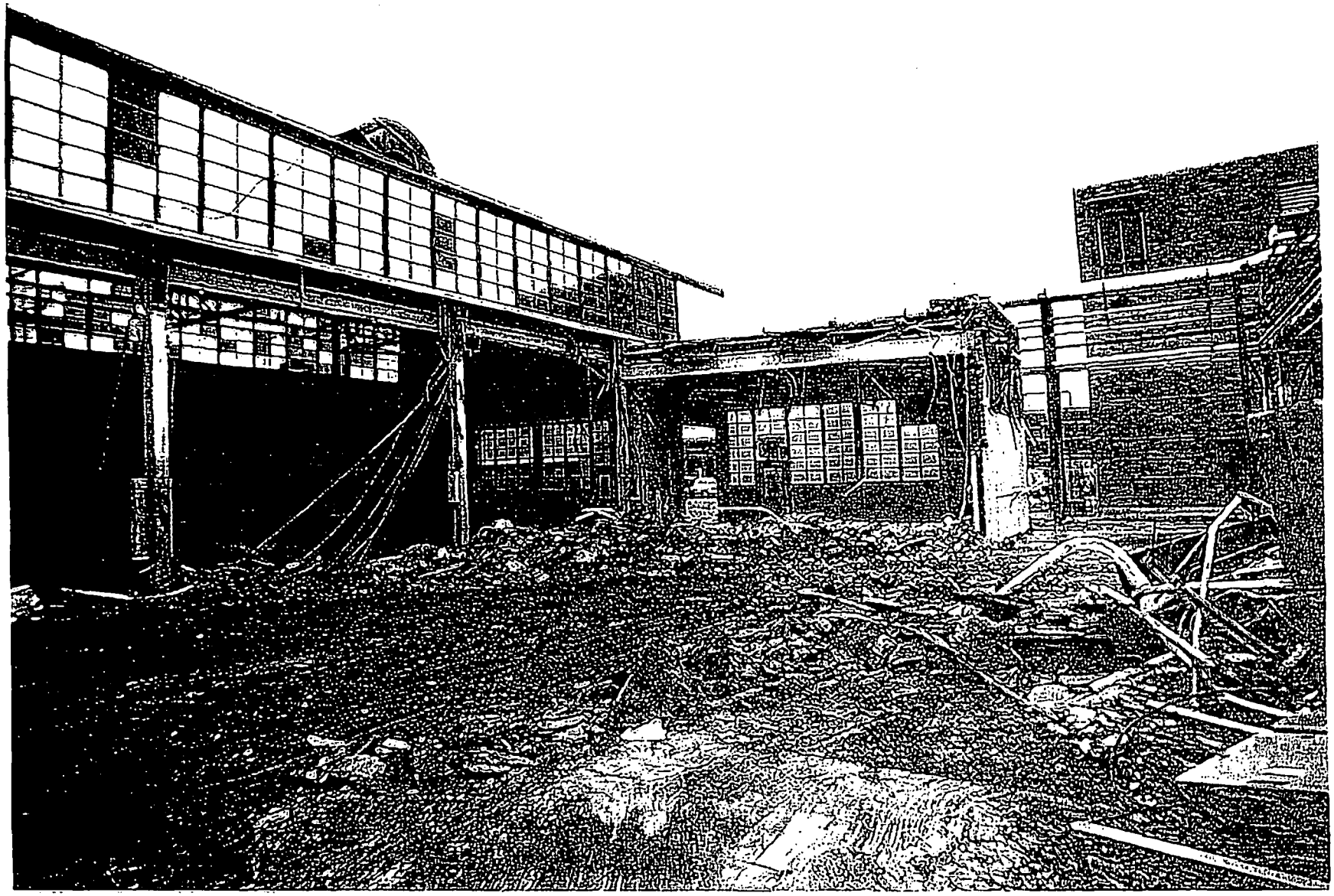
09/14/99 M Bldg. demolition *992624



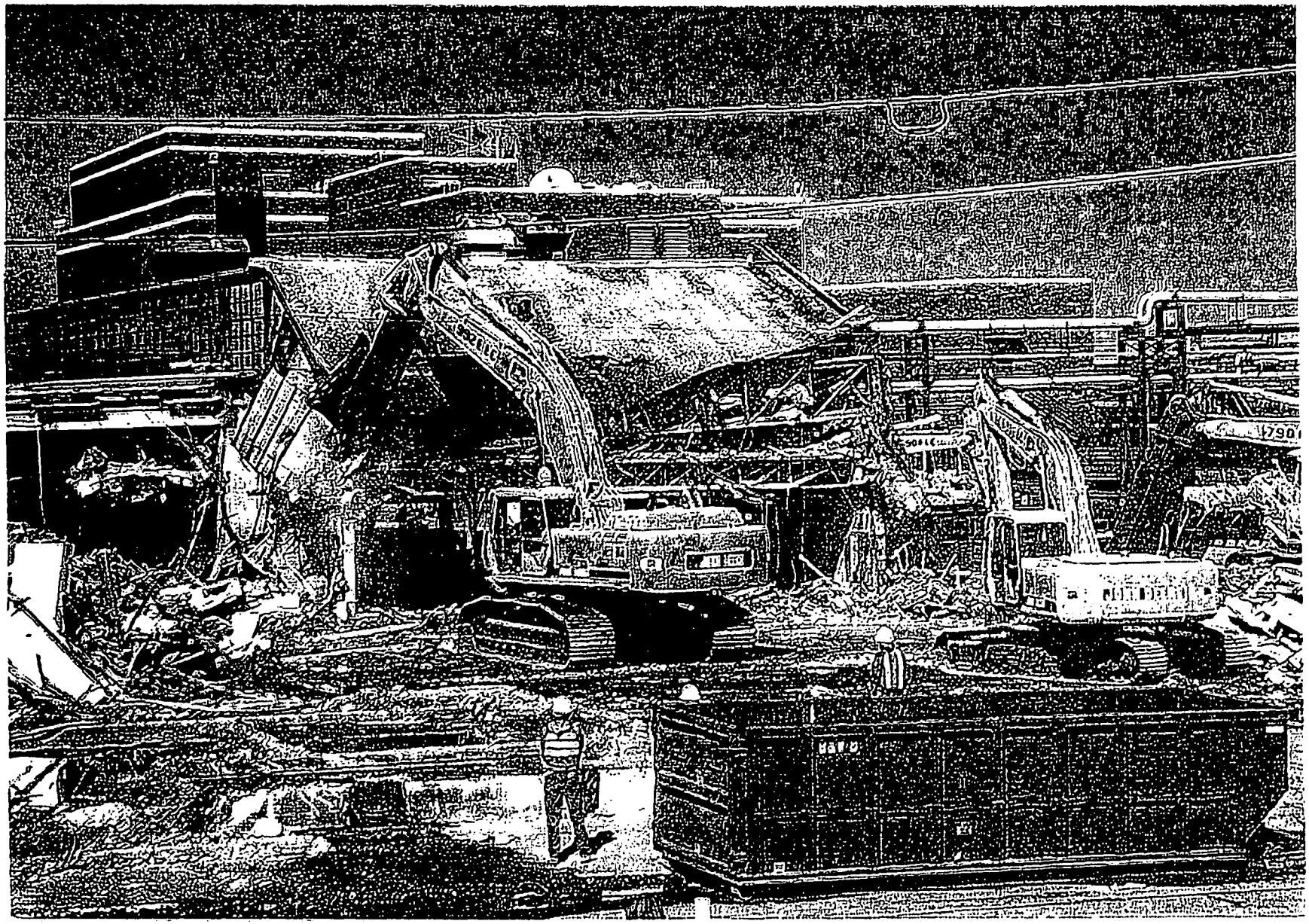
09/17/99 M Bldg. demolition *992687



09/27/99 M Bldg. demolition *992799

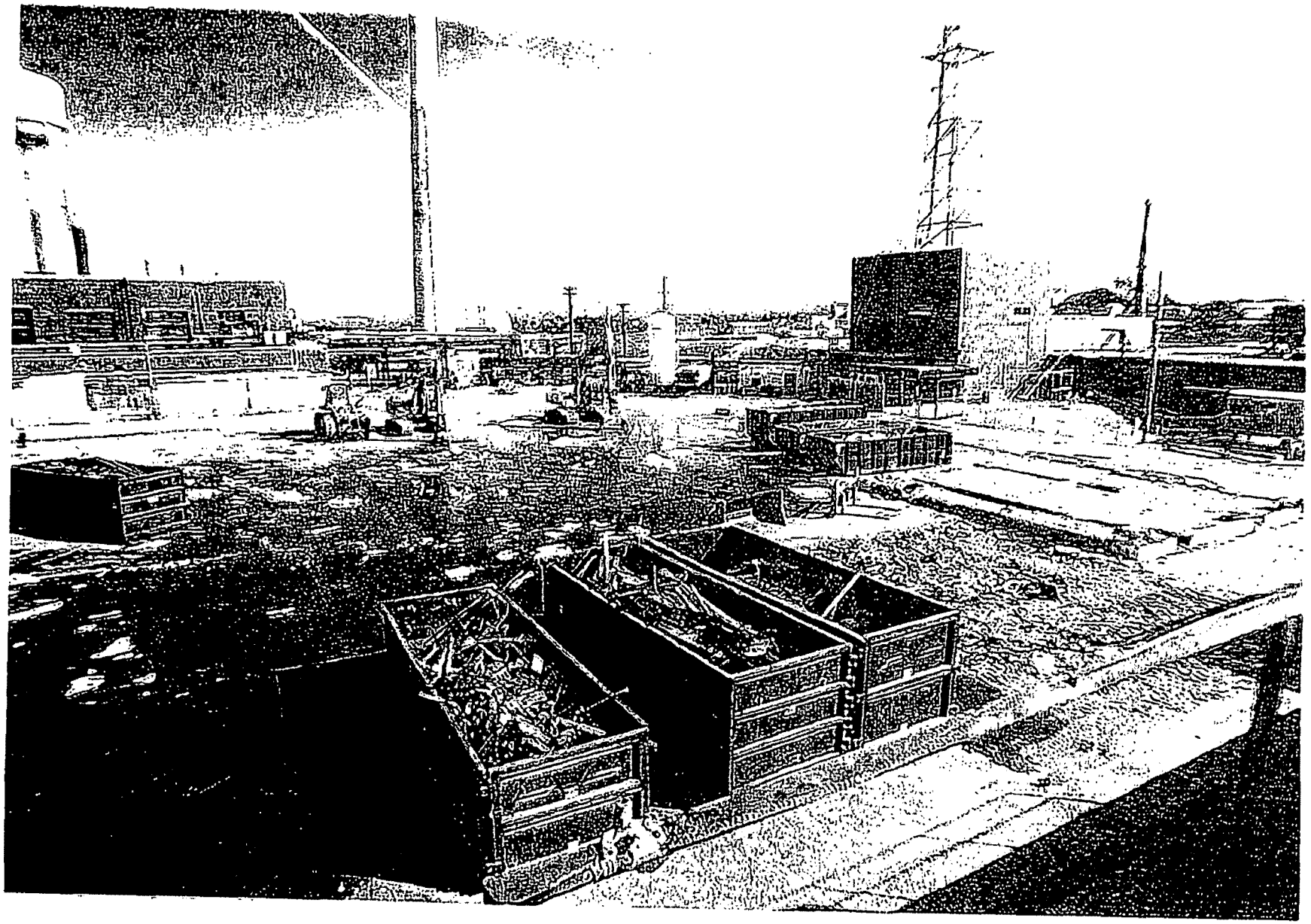


10/04/99 M Bldg. demolition "992838



10/14/99 M Bldg. demolition *992934

M Building Demolition



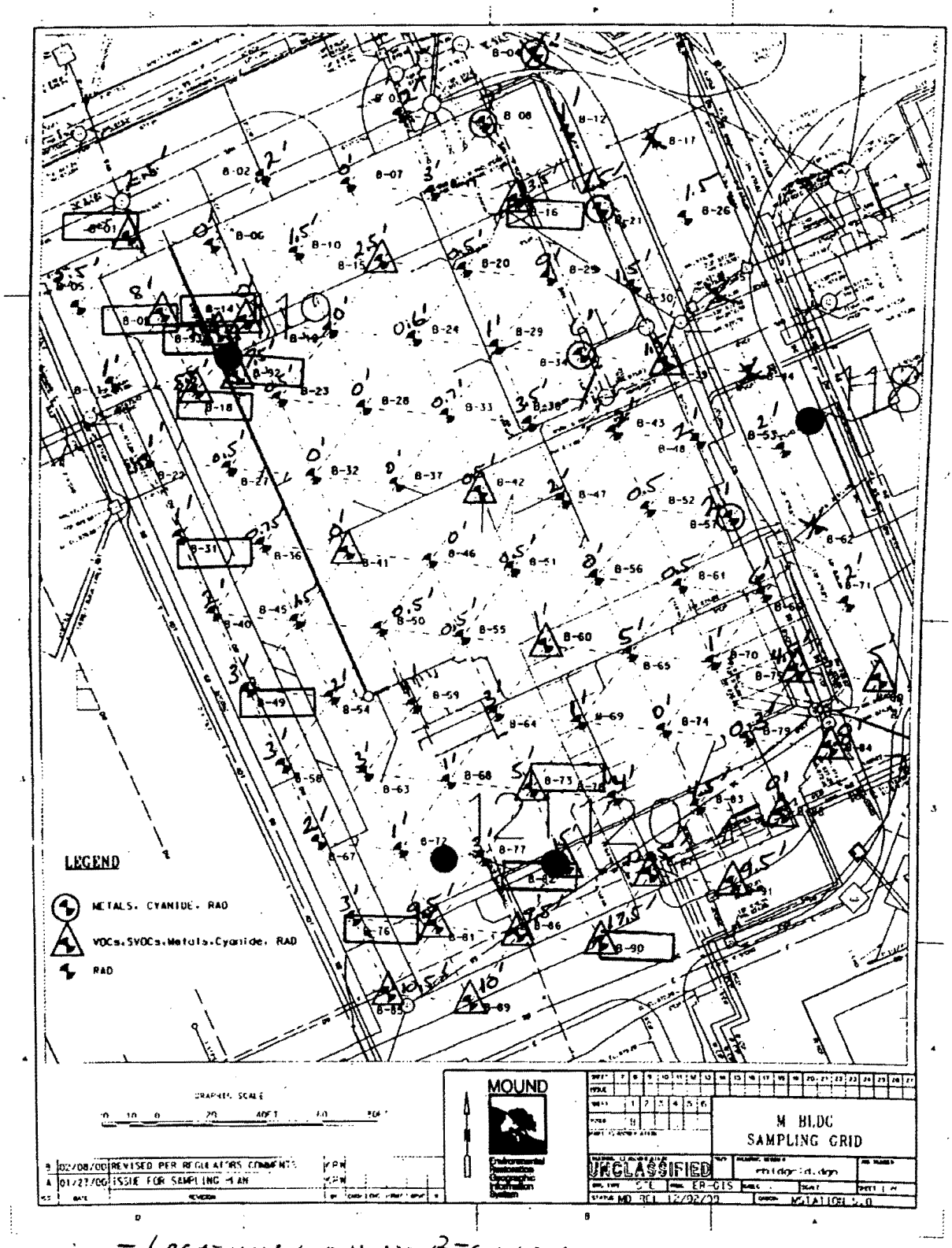
11/01/99 M Bldg. demolition *992975

11/18/99 Former site of M Bldg. looking southeast *993215

APPENDIX B

SAMPLING/CHARACTERIZATION INFORMATION

Figure 3-1 Location of Borings



– LOCATIONS WITH NO RECOVERY

☐ – LOCATIONS FOR TRITIUM IS SOILS ANALYSIS

M Building Soils Characterization
Results Exceeding Comparison Criteria (ug/Kg)

Volatiles

Contaminant	Mound Background ug/kg	Mound Risk-Based Cleanup GV ug/kg	Sample Location and Depth ug/kg
Chloromethane	NS	NS	BGV
Methylene Chloride	NS	NS	BGV
Acetone	NS	21,000,000	BGV
Carbon Disulfide	NS	280,000	BGV
1,2-Dichloroethene (total)	NS	4,300,000	BGV
2-Butanone	NS	9,300,000	BGV
Trichloroethene	NS	125,000	BGV
Tetrachloroethene	NS	2,100,000	BGV
Toluene	NS	250,000	BGV
Ethylbenzene	NS	480	BGV
Styrene	NS	NS	BGV
Xylene (total)	NS	430,000,000	BGV
1,1,2-Trichlorotrifloroethane	NS	NS	BGV

NS - Not Set
BGV - Below Guideline Value

M Building Soils Characterization
Results Exceeding Comparison Criteria (ug/Kg)

Semivolatiles

Contaminant	Mound Background ug/kg	Mound Risk-Based Cleanup GV ug/kg	Sample Location and Depth ug/kg
Naphthalene	NS	NS	BGV
2-Methylnaphthalene	NS	NS	BGV
Acenapthylene	NS	NS	BGV
Dibenzofuran	NS	NS	BGV
Diethylphalate	NS	NS	BGV
Fluorene	NS	NS	BGV
Phenanthrene	NS	NS	BGV
Anthracene	NS	64,000,000	BGV
Carbazole	NS	Ns	BGV
Di-n-butylphalate	NS	21,000,000	BGV
Fluoranthene	NS	8,500,000	BGV
Pyrene	NS	6,400,000	BGV
Butylbenzylphthalate	NS	43,000,000	BGV
Benzo (a) anthracene	NS	4,100	BGV
Chrysene	NS	410,000	BGV
Bis (2-rthylhexl) phthalate	NS	215,000	BGV
Di-n-octyl phthalate	NS	43,000,000	BGV
Benzo (b) fluoranthene	NS	4,100	BGV
Benzo (k) fluoranthene	NS	41,000	BGV
Benzo (a) pyrene	NS	**410**	**B91(0-4): 890**
Indeno (1,2,3-cd) pyrene	NS	4,100	BGV
Dibenz (a,h) anthracene	NS	410	BGV
Benzo (g,h,I) perylene	NS	NS	BGV

NS - Not Set
BGV - Below Guideline Value

M Building Soils Characterization
Results Exceeding Comparison Criteria (mg/kg)

Metals/Cyanide

Contaminant	Mound Background mg/kg	Mound Risk-Based Cleanup GV mg/kg	B01 (0-3) mg/kg	B08 (0-4) mg/kg	B08 (4-7) mg/kg	B09 (0-4) mg/kg	B18 (4-8) mg/kg	B34 (0-4) mg/kg	B39 (0-2) mg/kg	B57 (0-2) mg/kg
Aluminium	19,000	NS								
Antimony	Data Rejected	85								
Arsenic	8.6	64								
Barium	180	15,000								
Beryllium	1.3	1,100								
Cadmium	**2.1**	210								
Calcium	310,000	NS								
Chromium	**20**	**0.7**								
Cobalt	19	NS								
Copper	**26**	NS								
Iron	**35,000**	NS								
Lead	48	NS								
Magnesium	**40,000**	NS		53,500	48,600			56,700	92,100	
Manganese	1,400	27,000								
Mercury	NC	64								
Nickel	**32**	4,300								
Potassium	**1,900**	NS		3,850		2,480				
Selenium	NC	NS								
Silver	1.7	1,100								
Sodium	**240**	NS	707 B							
Thallium	**0.46**	NS							355 B	255 B
Vanadium	25	1,500							0.95	
Zinc	140	64,000								
Lithium	**26**	NS								
Cyanide	NC	4,300								

BGV - *Below Guideline Value*

NC - Not computed due to the large number of non-detects in the sample set

B - Indicates that the parameter was between the Instrument Detection Limit and the Contract Required Detection Limit

M Building Soils Characterization
Results Exceeding Comparison Criteria (mg/kg)

Metals/Cyanide (Cont.)

Contaminant	Mound Background mg/kg	Mound Risk-Based Cleanup GV mg/kg	B73 (0-1) mg/kg	B75 (0-4) mg/kg	B80 (0-4) mg/kg	B08 (4-7) mg/kg	B81 (4-8) mg/kg	B81 (8-10) mg/kg	B82 (0-4) mg/kg	B82 (4-8) mg/kg
Aluminium	19,000	NS								
Antimony	Data Rejected	85								
Arsenic	8.6	64								
Barium	180	15,000								
Beryllium	1.3	1,100								
Cadmium	2.1	210								
Calcium	310,000	NS								
Chromium	20	0.7				87.9				
Cobalt	19	NS								
Copper	26	NS			39.5					
Iron	35,000	NS								
Lead	48	NS								
Magnesium	**40,000**	NS		43,400	41,200					
Manganese	1,400	27,000							53,800	
Mercury	NC	64								
Nickel	32	4,300								
Potassium	**1,900**	NS			2,340		3,810	2,590		3,360
Selenium	NC	NS								
Silver	1.7	1,100								
Sodium	**240**	NS	321 B	254 B	784 B	279 B	665 B			625 B
Thallium	**0.46**	NS			0.79 B					
Vanadium	25	1,500								
Zinc	140	64,000								
Lithium	**26**	NS								
Cyanide	NC	4,300					28.1			

BGV - Below Guideline Value

NC - Not computed due to the large number of non-detects in the sample set

B - Indicates that the parameter was between the Instrument Detection Limit and the Contract Required Detection Limit

M Building Soils Characterization
Results Exceeding Comparison Criteria (mg/kg)

Metals/Cyanide (Cont.)

Contaminant	Mound Background mg/kg	Mound Risk-Based Cleanup GV mg/kg	B82 (8-12) mg/kg	B82 (12-16) mg/kg	B84 (0-4) mg/kg	B84 (4-8) mg/kg	B85 (0-4) mg/kg	B85 (4-8) mg/kg	B85 (8-10) mg/kg	B86 (0-4) mg/kg
Aluminium	19,000	NS								
Antimony	Data Rejected	85								
Arsenic	8.6	64								
Barium	180	15,000								
Beryllium	1.3	1,100								
Cadmium	2.1	210								
Calcium	310,000	NS								
Chromium	**20**	0.7								
Cobalt	19	NS								
Copper	26	NS								
Iron	35,000	NS								
Lead	48	NS								
Magnesium	**40,000**	NS								
Manganese	1,400	27,000								
Mercury	NC	64								
Nickel	32	4,300								
Potassium	**1,900**	NS	4,390	4,490		4,430	2,110	2,210	2,090	2,140
Selenium	NC	NS								
Silver	1.7	1,100								
Sodium	**240**	NS	438 B	314 B		265 B				337 B
Thallium	0.46	NS								
Vanadium	25	1,500								
Zinc	140	64,000								
Lithium	**26**	NS	34.4	36.4	29.5	34.7				
Cyanide	NC	4,300								

BGV - Below Guideline Value
NC - Not computed due to the large number of non-detects in the sample set
B - Indicates that the parameter was between the Instrument Detection Limit and the Contract Required Detection Limit

M Building Soils Characterization
Results Exceeding Comparison Criteria (mg/kg)

Metals/Cyanide (Cont.)

Contaminant	Mound Background mg/kg	Mound Risk-Based Cleanup GV mg/kg	B86 (4-8) mg/kg	B86 (8-10) mg/kg	B87 (0-4) mg/kg	B87 (8-12) mg/kg	B88 (0-4) mg/kg	B88 (4-7) mg/kg	B89 (4-8) mg/kg	B90 (0-4) mg/kg
Aluminium	19,000	NS								
Antimony	Data Rejected	85								
Arsenic	8.6	64								
Barium	180	15,000								
Beryllium	1.3	1,100								
Cadmium	2.1	210								
Calcium	310,000	NS								
Chromium	20	0.7								
Cobalt	19	NS								
Copper	26	NS								
Iron	35,000	NS								
Lead	48	NS						118,000		
Magnesium	**40,000**	NS			48,000					
Manganese	1,400	27,000						58,300		
Mercury	NC	64								
Nickel	32	4,300								
Potassium	**1,900**	NS	2,930	2,250						
Selenium	NC	NS							2,120	2,670
Silver	1.7	1,100								
Sodium	**240**	NS	308 B	242 B	322 B	259 B	342 B	300 B	290 B	850 B
Thallium	0.46	NS				1.6 B	0.96 B	0.67 B		
Vanadium	25	1,500								
Zinc	140	64,000								
Lithium	**26**	NS	33.4							
Cyanide	NC	4,300								29.6

BGV - Below Guideline Value
NC - Not computed due to the large number of non-detects in the sample set
B - Indicates that the parameter was between the Instrument Detection Limit and the Contract Required Detection Limit

M Building Soils Characterization
Results Exceeding Comparison Ctrieria (mg/kg)

Metals/Cyanide (Cont.)

Contaminant	Mound Background mg/kg	Mound Risk-Based Cleanup GV mg/kg	B90 (4-8) mg/kg	B90 (8-12) mg/kg	B90 (12-16) mg/kg	B91 (0-4) mg/kg	B91 (4-8) mg/kg	B91 (8-10) mg/kg	B92 (0-4) mg/kg	B92 (4-8) mg/kg
Aluminium	19,000	NS								
Antimony	Data Rejected	85								
Arsenic	8.6	64								
Barium	180	15,000								
Beryllium	1.3	1,100								
Cadmium	2.1	210								
Calcium	310,000	NS								
Chromium	20	0.7								
Cobalt	19	NS								
Copper	26	NS								
Iron	35,000	NS								358
Lead	48	NS								
Magnesium	40,000	NS								
Manganese	1,400	27,000							40,000	42,200
Mercury	NC	64								
Nickel	32	4,300								
Potassium	**1,900**	NS	2,900	2,060	3,020	2,970	3,660	3,320		56
Selenium	NC	NS								
Silver	1.7	1,100								
Sodium	**240**	NS								
Thallium	0.46	NS					768 B	479 B	241 B	324 B
Vanadium	25	1,500					0.94 B	0.99 B		
Zinc	140	64,000								
Lithium	26	NS	33		27.9	30	37.3	32.5		
Cyanide	NC	4,300								

BGV - Below Guideline Value

NC - Not computed due to the large number of non-detects in the sample set

B - Indicates that the parameter was between the Instrument Detection Limit and the Contract Required Detection Limit

M Building Soils Characterization
Result Exceeding Comparison Criteria (mg/kg)

Metals/Cyanide (Cont.)

Contaminant	Mound Background mg/kg	Mound Risk-Based Cleanup GV mg/kg	B93 (0-4) mg/kg	B93 (4-8) mg/kg						
Aluminium	19,000	NS								
Antimony	Data Rejected	85								
Arsenic	8.6	64								
Barium	180	15,000								
Beryllium	1.3	1,100								
Cadmium	2.1	210		19.1						
Calcium	310,000	NS								
Chromium	20	0.7		25.9						
Cobalt	19	NS								
Copper	26	NS		35						
Iron	35,000	NS								
Lead	48	NS								
Magnesium	40,000	NS	44,600	42,300						
Manganese	1,400	27,000								
Mercury	NC	64								
Nickel	32	4,300		217						
Potassium	**1,900**	NS								
Selenium	NC	NS								
Silver	1.7	1,100								
Sodium	**240**	NS	251 B	318 B						
Thallium	0.46	NS								
Vanadium	25	1,500								
Zinc	140	64,000								
Lithium	26	NS								
Cyanide	NC	4,300								

BGV - Below Guideline Value
NC - Not computed due to the large number of non-detects in the sample set
B - Indicates that the parameter was between the Instrument Detection Limit and the Contract Required Detection Limit

M Building Soils Characterization
Results Exceeding Comarison Criteria (piC/g)

Rad (10% analyzed off site)

Contaminant	Mound Background piC/g	Mound Risk-Based Cleanup GV piC/g	Sample Location and Depth piC/g
Tritium	1.6	23,500	BGV
PU-238	0.13	55	BGV
TH-228	1.5	3	BGV
TH-230	1.9	44	BGV
TH-232	1.4	3	BGV
U-234	1.1	37.5	BGV
U-235	0.11	3.35	BGV
U-238	1.2	11	BGV

BGV - Below Guideline Value

5. Radiological Analytical Results

Table 5 - Detected Radionuclides

Analyte	Mound Risk-Based Cleanup Guideline Values piC/g	Boring: Depth: Sample ID: Units:	B82 12-16 000005 piC/g	B92 4-8 000020 piC/g	B92 4-8 000021 piC/g	B38 0-4 000036 piC/g	B66 0-4 000070 piC/g
Tritium	23,500		0.478 J	1.04 J	0.816 J	0.178 J	0.491 J
Plutonium-238	55		0.0458 U	0.0212 U	0.0176 U	0.00667 U	0.0118 U
Thorium-228	3.0		0.752	0.151 J	0.164 J	0.326 J	0.302 J
Thorium-230	44		0.447 J	0.493 J	0.443 J	0.327 J	0.339 J
Thorium-232	3.0		0.702	0.151 J	0.206 J	0.228 J	0.299 J
Uranium-234	37.5		0.350	0.258	0.251	0.264	0.336
Uranium-235	3.35		0.0348 U	0.0277 J	0.0196 U	0.0274	0.0310 U
Uranium-238	11		0.144	0.284	0.267	0.303	0.327

Analyte	B76 0-3 000093 piC/g	B85 4-8 000099 piC/g	B01 0-3 000106 piC/g	B03 0-2 000107 piC/g	B89 0-4 000108 piC/g	B91 4-8 000123 piC/g
Tritium	0.121 J	0.156 J	0.370 J	0.187 J	0.143 J	0.409 J
Plutonium-238	0.00577 U	0.0205 U	0.0380	0.0124	0.0116	0.0391 U
Thorium-228	0.231 J	0.397 J	0.494 J	0.281 J	0.421 J	0.875
Thorium-230	0.362 J	0.435 J	0.328 J	0.345 J	0.527 J	0.413 J
Thorium-232	0.117 J	0.349 J	0.400 J	0.221 J	0.418 J	0.620
Uranium-234	0.274	0.348	0.231	0.308	0.306	0.277
Uranium-235	0.0181 U	0.0199 U	0.0301 U	0.0250 U	0.0265 U	0.0190 U
Uranium-238	0.308	0.330	0.232	0.259	0.259	0.206

Note: U-Compound was analyzed for but not detected at or above the MDA. The associated numeric value is the MDA.

J-The result is estimated at an activity below the Reporting Limit

M Building Soils Characterization
Results Exceeding Comparison Criteria (pCi/g)

Radionuclide	Detected Levels Exceeding Comparison Criteria (pCi/g)	MDA (pCi/g)	Location-Depth	10^{-6} Risk Based Guideline Value (pCi/g)	Mound Background (pCi/g)
Ac-227	N/A	N/A	N/A	1.0	N/A
Am-241	N/A	N/A	N/A	4.95	N/A
Cs137	N/A	N/A	N/A	.46	.42
Co-60	.11	.04	B-80-05	.1	N/A
Pu-238	*.94*	.7	B-38-04	5.5	.13
Pu-238	*.28*	.2	B-08-07	5.5	.13
Pu-238	*.28*	.2	B-57-02	5.5	.13
Pu-239/240	N/A	N/A	N/A	5.5	N/A
Ra-226	*3.05*	2.1	B-80-04	.14	2
Ra-226	*2.09*	.63	B-39-02	.14	2
Ra-226	*2.06*	.28	B-12-01	.14	2
Th-228	*N/A*	N/A	N/A	.85	1.5
Th-230	*13.03*	9.45	B-01-03	44/3	1.9
Th-230	*5.23*	5.11	B-86-03	44/3	1.9
Th-232	N/A	N/A	N/A	50	1.4
U-234	N/A	N/A	N/A	3.75	1.1
U-235	N/A	N/A	N/A	3.35	.11
U-238	***1.68***	.56	B-03-02	1.1	1.2
U-238	***1.52***	.79	B-91-08	1.1	1.2
U-238	***1.45***	.56	B-85-08	1.1	1.2
U-238	***1.39***	.81	B-91-10	1.1	1.2
U-238	***1.32***	.65	B-89-04	1.1	1.2
U-238	***1.15***	.57	B-92-08	1.1	1.2
U-238	***1.12***	.56	B-82-16	1.1	1.2
U-238	***1.12***	.67	B-82-04	1.1	1.2
Tritium	N/A	N/A	N/A	23,500	1.6

Notes: 1.00 exceeds Guideline Value
1.00 exceeds Background Value
1.00 Background Value exceeds Guideline Value

APPENDIX C

ADDITIONAL SAMPLING INFORMATION – PRS 119

BUILDING M TANK DATA

(TANK 225/PRS119)

Tank No.	225		
Proposed Program ER	Bldg M	Location M-38	Owner U.S.DOE
Status inactive	Installation Date 1969	Estimated Capacity (gallons) 350	
Purpose of Tank metal plating rinse sump			
Tank Material Concrete		Tank Cathodic Protection None	
Inlet of Tank M-Bldg metal rinse water drains		Outlet of Tank Bldg 57, New Sewage Disposal Area	
Evidence of Release No		Spill/Overfill Prevention None	
Substance Current/Last Stored Industrial Wastewater		Tank Site Description Indoor	
Calibration/Maintenance None		Tank Release Detection None	
Piping Release Detection None		Closure Date Last Used 1984	
OU9 Reference No 119		FFA OU OU2	
Primary Regulatory Jurisdiction FFA		Spill Jurisdiction FFA	
Regulatory Status In compliance			
Documents Provided DOE, 1992a; DOE, 1993			
Comments None			

Tank No.	238		
Proposed Program ER	Bldg 59	Location	Owner U.S.DOE
Status removed	Installation Date 1947	Estimated Capacity (gallons) Unknown	
Purpose of Tank historic gasoline storage tank			
Tank Material Unknown		Tank Cathodic Protection Unknown	
Inlet of Tank Unknown		Outlet of Tank Two gasoline pumps	
Evidence of Release No		Spill/Overfill Prevention N/A	
Substance Current/Last Stored Gasoline		Tank Site Description Outdoor	
Calibration/Maintenance N/A		Tank Release Detection N/A	
Piping Release Detection N/A		Closure Date Last Used Unknown	
OU9 Reference No 64		FFA OU OU5	
Primary Regulatory Jurisdiction FFA		Spill Jurisdiction FFA	
Regulatory Status In compliance			
Documents Provided DOE, 1992a; DOE, 1993; UST Inspection Sheet			
Comments Tank is beleived to have been removed and the location has been included in the ER Program OU5			

DAMES & MOORE - INSPECTION & DOCUMENT REVIEW NOTES

CLIENT	JOB NUMBER	DATE
EG&G Mound Applied Technologies	10805-794	4/19/94

JOB TITLE	D&M TEAM
Active Underground Storage Tank Program	Giantelli & Dispirito

TANK NO.	BLDG/LOCATION	EG&G SPONSOR	OWNER
225	M, Room M-3B	ER	U.S. DOE

TANK STATUS	TANK CAPACITY (gallons)	INSTALLATION DATE	INTERVIEWED WITH	INTERVIEW DATE
Not In Use	350	1965	Cloud	2/21/94

TANK DESCRIPTION, Purpose of Tank Concrete sump formerly used to collect rinse water from metal plating operation prior to discharge to sanitary waste treatment at ~~SB~~ Bldg 57

Tank Material
- ___ Bare Steel (unprotected)
- ___ Composite (steel & FRP)
- ___ Fiberglass Reinforced Plastic
- ___ Stainless Steel Lined Concrete
- ___ Steel Lined Concrete
- ✓ Concrete
- ___ Other - Specify
- ___ Unknown

Tank Cathodic Protection
- ___ Internal Lining - Specify
- ___ Sacrificial Anodes
- ___ Impressed Current
- ___ Composite (Steel & FRP)
- ___ Other - Specify
- ___ Unknown
- ✓ None

Inlet of Tank
M-Building metal rinse water drains

Outlet of Tank
~~SB~~ Bldg 57 Sanitary Waste Treatment

History of Spills
No

Spill/Overfill Prevention
- ___ Float Vent Valve
- ___ High Level Alarm
- ___ Auto Shutoff
- ___ Other - Specify
- ✓ None

Piping Material
- ___ Cathodically Protected Steel
- ✓ Bare Steel (unprotected)
- ___ Fiberglass Reinforced Plastic
- ___ Double Walled or Jacketed
- ___ Other - Specify
- ___ Unknown

Substance Currently/Last Stored
- ___ Gasoline
- ___ Diesel
- ___ Kerosene
- ___ Used Oil
- ___ Hazardous Substances - Specify
- ✓ Other - Specify
- ___ Unknown

Industrial wastewater

Tank Site Description
- ✓ Indoor
- ___ Outdoor
- ___ Soil
- ___ Asphalt/Concrete
- ___ Storm Drains, Potential Surface water runoff
- ___ Soil Staining

DOE / AEC / PM No:
None

Calibration Records

Maintenance Records

Tank Release Detection Method
- ___ Inventory Control
- ___ Manual Tank Gauging
- ___ Tank Tightness Testing
- ___ Automatic In-Tank Monitor & Inventory Control
- ___ Vapor Monitoring
- ___ Groundwater Monitoring
- ___ Secondary Containment with Interstitial Monitoring
- ___ Other - Specify
- ✓ None

Piping Release Detection Method
- ___ Pressure Piping Automatic Line Flow Restrictor
- ___ Pressure Piping Automatic Line Shutoff Device
- ___ Line Tightness Test (Pressure Annual, Suction Every 3 yrs)
- ___ Vapor Monitoring
- ___ Groundwater Monitoring
- ___ Approved Suction Piping
- ___ Other - Specify
- ✓ None

Closure

Date of Last use
1984

Intended Replacement

Closure Plan
none

Part of Operable Unit
OU2

Primary Regulatory Jurisdiction
~~CWA~~ FFA

Spill Jurisdiction
~~RCRA~~ FFA

Regulated Units

DOCUMENTS, REFERENCES USED: DOE, 1992a; DOE, 1993

COMMENTS:

Tank included part of a waste water treatment ~~unit~~ system that discharges subject to CWA §402 (NPDES) (OAC 3745-33) regs.

SIGNATURE Adelaide Giantelli

BWX Technologies, Inc.
a McDermott company

BWXT of Ohio, Inc.
1 Mound Road
P.O. Box 3030
Miamisburg, Ohio 45343-3030
(937) 865-4020

MHP-006/00
July 27, 2000

00-TC/07-27

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

ATTENTION: Frank G. Schmaltz

SUBJECT: Contract No. DE-AC24-97OH20044
M BUILDING: SOIL SAMPLE ANALYSIS AND PRS CLOSURE

Dear Mr. Provencher:

This memo is to document the results of sampling and actions taken relating to the M slab removal. This memo will facilitate the closure of the associated Potential Release Sites (PRS).

The non-CERCLA demolition of M Building and the subsequent slab and foundation removal included four building related PRSs: 118 (M Building Soils), 119 (M-38 Sump), 120 (M-108 Sump), and 121 (Vapor Degreasers). Prior to removal of the M slab, soil samples were taken through the slab and samples of the M-38 and M-108 sump sediment were taken. The attached table summarizes sample analyses which exceed either Mound background and/or Mound risk-based guideline values. B92 and B93 soil samples were taken immediately adjacent to M-38 sump.

The only area of concern is the M-38 sump sediment, which served a former plating shop area and shows elevated levels of several metals. Metals that exceed risk-based guideline values are Antimony, Cadmium, and Nickel. Beryllium slightly exceeds the risk-based guideline value at 5 locations, but is still below background. Review of the soil sample boring depths (see attached map) helps confirm that the M-38 sump (locations B-92 and B-93) was cut into the rock. The sump is approximately 8 feet deep while it is surrounded by sample locations no more than 2 feet deep at refusal. The M-38 sump and associated

sump sediment is currently being removed and disposed of as hazardous waste.

PRS 118, 119, and 120 were addressed through the sampling and removal of the slab and sumps. PRS 121 involved vapor degreasers employing chemicals such as perchloroethylene, which would have been released through roof vents. In addition, these degreasers utilized a secondary containment to contain accidental spills, which explains the lack of reported spills involving these units.

In previous Core Team meetings, the conclusion was reached that these chemicals would have volatilized before hitting the ground. Therefore, PRS 121 was considered a non-issue.

After sampling was completed, the M slab was broken up and removed to the spoils area. The on-site rock crusher crushed the concrete, and the resulting gravel was used to backfill where the slab was removed.

Attached is the full set of radiological and chemical analyses for your information. Please advise of any additional questions you may have concerning this matter.

Sincerely,

C.D. Thompson
Project Manager, Main Hill Project

CDT/rcr/mlm

Attachments:
Chemicals Exceeding Background and/or Risk-Based Guideline Values
Comprehensive Tabulation of Potential release Sites
Weston Analysis of M-38 and M-108 Sump Sediment (PRS 119/120)
Radiological Survey Data Sheets 99-M-30 and 00-M-060
Report – M Building Soils (Weston Analysis of M Building Soils)
Boring Locations Map

cc: Tim Fischer, USEPA
Art Kleinrath, DOE/MEMP
Brian Nickel, OEPA
Dave Rakel, BWXTO
Frank Schmaltz, DOE/MEMP
DCC
MHP File – M Building

CHEMICALS EXCEEDING BACKGROUND AND/OR RISK-BASED GUIDELINE VALUES
ANALYTES OF CONCERN

Sample Location	Antimony	Arsenic	Barium	Beryllium	Cadm-ium	Chrom-ium	Cobalt	Copper	Iron	Lead	Nickel	Silver	Vanad-ium	Zinc
Back-ground Value	NS	8.6	180	1.3	2.1	20	19	26	35000	48	32	1.7	25	140
Mound Risk-Based Value	85	64	15000	0.7	210	7500	NS	NS	NS	NS	4300	1100	1500	64000
M-38 Sump Sediment	135	16.3	5380	0.74	1490	5970	146	28400	127000	21100	22500	306	47.8	4710
B82 (4-8)								45						
B82 (8-12)				0.84						607				
B82 (12-16)				0.8										
B92 (4-8)								358			55.9			
B93 (0-4)								48.9						
B93 (4-8)					19.1	25.9		35			217			
B84 (4-8)				0.76										
B81 (4-8)				0.77										
B80 (0-4)								39.5						

Blue - Exceeds Background Values

Red - Exceedes Risk-Based Guideline and Background Values

Green - Exceeds Risk-Based Guideline Value, but not Background Value

State of Ohio Environmental Protection Agency

Southwest District Office

401 East Fifth Street
Dayton, Ohio 45402-2911

TELE: (937) 285-6357 FAX: (937) 285-6249

Bob Taft, Governor
Maureen O'Connor, Lt. Governor
Christopher Jones, Director

September 12, 2000

Mr. Arthur Kleinrath
U.S. DOE MEMP
P.O. Box 66
Miamisburg, Ohio 45343-0066

Review of M-Building Data Report, Draft (June 2000) & The M-38 Sump Removal Test Results Memo

Dear Mr. Kleinrath

The Ohio Environmental Protection Agency and Ohio Department of Health has completed our reviewed of the *M-Building Data Report; Draft : Revision 0 (Date: June 2000) & M-38 Sump Removal Test Results Memo (Date: August 25, 2000)*. We have no comments over the M-Building Data Report.

The review of the *M-38 Sump Removal Test Results Memo* showed that the water sample taken from M-38 sump presented a concern, as to whether MMCIC could start construction on the new parking lot, due to elevated levels of nickel and total chromium. During the September 7, 2000 meeting between DOE, USEPA, MMCIC , BWXTO and Ohio EPA, it was agreed to re-excavate and re-sample the pit water. If elevated metals appears in either the filtered or unfiltered samples, then a monitoring well(s) will be installed. This well(s) will then be used to determined the significance of the levels of metals. During this period, MMCIC will be constructing the parking lot. The soil in this area has been determined to be protective.

Should there be any question concerning the above, please feel free to contact or Mr. Anthony Campbell at (937) 285-6460 or me at (937) 285-6468.

Sincerely,

Mr. Brian Nickel
Mound Project Manager
Office of Federal Facilities Oversight

cc: Tim Fischer, USEPA Region V
Dave Rakel, BWXT of Ohio
Ruth Vandegrift, ODH
Frank Schmaltz, DOE

BWX Technologies, Inc.
a McDermott company

BWXT of Ohio, Inc.
1 Mound Road
P.O. Box 3030
Miamisburg, Ohio 45343-3030
(937) 865-4020

MHP-008/00
September 27, 2000

00-TC/09-27

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

ATTENTION: Frank G. Schmaltz

SUBJECT: Contract No. DE-AC24-97OH20044
M BUILDING: M-38 GROUNDWATER SAMPLE ANALYSIS

REFERENCE: Letter from Brian Nickel to Arthur Kleinrath, Review of M Building Data Report, Draft (June 2000), dated September 12, 2000 (Attached)

Dear Mr. Provencher:

Attached please find a copy of the soil and groundwater analytical results from the original July 27, 2000 sampling of the M-38 sump and the September 12, 2000 resampling of the same. The resample groundwater results show that concentrations of Chromium and Nickel, for both the filtered and non-filtered samples, are below their respective MCLs. We believe that these sample results resolve the issues in the referenced letter.

If you have any questions concerning the results, please contact me at Ext. 4071 or Bob Ransbottom at Ext. 4220.

Sincerely,

C. D. Thompson
Project Manager, Main Hill Project

CDT/rcr/mlm
Attachments – as stated

cc: Tim Fischer, USEPA
Art Kleinrath, DOE/MEMP
Brian Nickel, OEPA
Dave Rakel, BWXTO
Bob Ransbottom, BWXTO
Rob Rothman, DOE/MEMP
Frank Schmaltz, DOE/MEMP
DCC
File

Comparison of
M Building M-38 Sump Sample Results 7/27/00 and 9/12/00
TESTAMERICA

9/25/00

ANALYSIS RESULTS FROM M-38 SUMP SOIL AND WATER

				M Building Sump Pit for old plating shop - Sampled 7/27/00							M Building Sump Pit for old plating shop - Sampled 9/12/00				
				SOIL						WATER		WATER			
Analyte	Background Conc. Mg/kg	Guideline Value[1], mg/kg	Drinking Water (MCL[2]) Value, mg/l	MSUMP1 mg/kg	MSUMP2 mg/kg	MSUMP 3 mg/kg	MSUMP4 mg/kg	MSUMP5 mg/kg	MSUMP 6 mg/kg	MSUMP-GW mg/L	Analyte mg/L	M Sump Pit Unfilter 1	M Sump Pit Unfilter 2	M Sump Pit Filtered 1	M Sump Pit Filtered 2
Aluminum	19000			4,340	5,840	5,750	1,710	5,450	2,740	0.36	Aluminum	0.59	0.54	<0.10	0.15
Antimony		85	0.006	<9.6	<9.7	<9.9	<6.6	<9.8	<6.6	<0.10	Antimony	<0.10	<0.10	<0.10	<0.10
Arsenic	8.6	64	0.05	<13	11.8	<13	<6.6	14.3	7.8	<0.10	Arsenic	<0.10	<0.10	<0.10	<0.10
Barium	180	15,000	2.0	29.9	30.7	24.0	17.8	19.3	31.2	0.049	Barium	0.058	0.063	0.057	0.057
Beryllium	1.3	0.70	0.004	<0.5	<0.5	<0.5	<0.3	<0.5	<0.3	<0.005	Beryllium	<0.005	<0.005	<0.005	<0.005
Boron				20.7	52.5	19.5	6.9	17.7	10.1	0.311	Boron	0.101	0.107	0.116	0.109
Cadmium	2.1	210	0.005	9.9	<2.9	6.0	27.7	7	4.6	<0.030	Cadmium	<0.030	<0.030	<0.030	<0.030
Calcium				132,000	133,000	137,000	95,800	143,000	99,400	357	Calcium	243	251	248	247
Chromium	20	1,100	0.10	105	234	89.8	70.7	72.0	36.0	0.693	Chromium	<0.040	<0.040	<0.040	<0.040
Cobalt	19			7.1	4.3	5.8	5.4	13.6	3.2	<0.020	Cobalt	<0.020	<0.020	<0.020	<0.020
Copper	26		1.3	487	100	160	102	300	1,100	0.119	Copper	0.047	0.049	0.034	0.034
Iron	35000			10,300	8,150	11,500	4,740	12,100	5,430	0.80	Iron	0.62	0.83	<0.10	<0.10
Lead	48		0.015	207	34	50	47.8	59	21.6	<0.080	Lead	<0.080	<0.080	<0.080	<0.080
Magnesium				23,000	33,500	21,100	25,400	19,400	36,100	101	Magnesium	39.2	40.5	40.8	40.7
Manganese	1400	27,000		222	234	260	111	258	202	0.291	Manganese	0.095	0.1	0.072	0.074
Mercury		64	0.002	0.197	0.075	0.090	0.102	0.083	0.029	<0.0002	Mercury	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum				<1.9	<1.9	<2.0	<1.3	<2.0	<1.3	<0.020	Molybdenum	<0.020	<0.020	<0.020	0.02
Nickel	32	4,300	0.1	289	121	227	445	592	138	0.149	Nickel	0.026	0.027	0.018	0.019
Potassium				1,000	839	1420	380	1280	486	44.1	Potassium	56.9	59.1	60.2	60
Selenium			0.05	<13	<9.7	<13	<6.6	<13	<9.9	<0.10	Selenium	<0.10	<0.10	<0.10	<0.10
Silicon				625	477	1,520	309	675	485	5.59	Silicon	4.75	5.71	4.02	4.08
Silver	1.7	1,100		41.4	9	11	14.9	22.9	7.6	<0.040	Silver	<0.040	<0.040	<0.040	<0.040
Sodium				184	235	229	141	200	172	212	Sodium	230	238	244	243
Strontium				98	74	99	68.7	112	53.2	1.06	Strontium	1.02	1.05	1.07	1.07
Thallium	0.46		0.002	<48	<48	<50	<33	<49	<33	<0.50	Thallium	<0.50	<0.50	<0.50	<0.50
Tin				<190	<190	<200	<130	<200	<130	<2.0	Tin	<2.0	<2.0	<2.0	<2.0
Titanium				31	138	37	36.2	28.2	60.1	<0.020	Titanium	<0.020	0.037	<0.020	<0.020
Vanadium	25	1,500		<4.8	7.1	5.2	3.4	5.1	4.7	<0.050	Vanadium	<0.050	<0.050	<0.050	<0.050
Zinc	140	64,000		73.5	37.1	46	51	51.2	32.1	<0.050	Zinc	<0.050	<0.050	<0.050	<0.050
											Alkalinity, Total	38	36	40	48
											Chloride	279	281	276	284
											Sulfate	945	964	1030	882

(1) Most conservative value of either Hazard Index = 1 or 10^{-6} risk based guideline va..e of each contaminant reported for two possible scenarios:
On-Site Construction Worker or Commercial Office Worker as presented in Risk-Based Guideline Values, Mound Plant, DOE 1997.
(2) Maximum Contaminant Levels (MCLs) applicable to public water systems for inorganic contaminants per OAC 3745-81-11.
MSUMP 1 - Sample taken from last soil placed in LSA box
MSUMP 2 - Sample taken from bottom of excavation
MSUMP 3 to 6 - Samples taken from the 4 sides at the bottom of the excavtion
MSUMP-GW from 7/27 was only tested unfiltered

E. Jendrek-Analysis Results
B. Hocks-Guideline/Background Values

Mbldg_~5.xls

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

Mr. Mike Grauwelman
President
Miamisburg Mound Community Improvement Corporation
720 Mound Road
COS Bldg. 4221
Miamisburg, Ohio 45342-6714

Dear Mr. Grauwelman:

The M Building demolition and slab removal are complete. The Mound 2000 Core Team has reviewed the Building Data Package (BDP) for M Building, and the post-demolition sampling results which will be incorporated into the final Close Out (CO) report for M Building. The M Building BDP and Close Out report address four associated Potential Release Sites (PRSs) as follows:

PRS 118 - M Building Soils
PRS 119 - Room M-38 Metal Plating Rinse Water Sump Tank (Tank 225)
PRS 120 - Room M-108 Metal Plating Rinse Water Tank (Tank 119)
PRS 121 - Vapor Degreaser

The Core Team understands that the M Building demolition was accomplished as a "construction" or non-CERCLA event, and the subject PRSs are classified as "D&D" or "Building Related" PRSs. The Core Team has determined that the PRSs have been adequately addressed through the demolition process. In addition, after reviewing the post-demolition soil sampling results, the Core Team has determined that the soil in the M Building area is protective of human health and the environment for an industrial use.

DOE reserves the right to install monitoring wells on the Main Hill, including the M Building area, for any future ground water investigation. If you have any questions, please contact Robert S. Rothman at (937) 865-3823.

Sincerely,

DOE/MEMP: Arthur W. Kleinrath, Remedial Project Manager — Sept 19 2000 (date)

USEPA: Timothy J. Fischer, Remedial Project Manager — 9/19/00 (date)

OEPA: Brian K. Nickel, Project Manager — 9/19/00 (date)

Reference 3

M BUILDING SOIL SAMPLE
RESULTS AT M-01

(PRS 118/SUPPLEMENTAL)

M-01 RESAMPLE FOR THORIUM 230

at 3 foot depth

M Building Resample of M-01 for Thorium 230			
Location	Concen-tration pCi/g	LDL pCi/g	Uncertainty
North	0.441	0.019	0.043
East	0.393	0.005	0.038
South	0.445	0.012	0.041
West	0.429	0.005	0.040

Results from alpha spectroscopy in Mound Environmental Lab

INITIAL RESULTS FROM M-01 SAMPLING

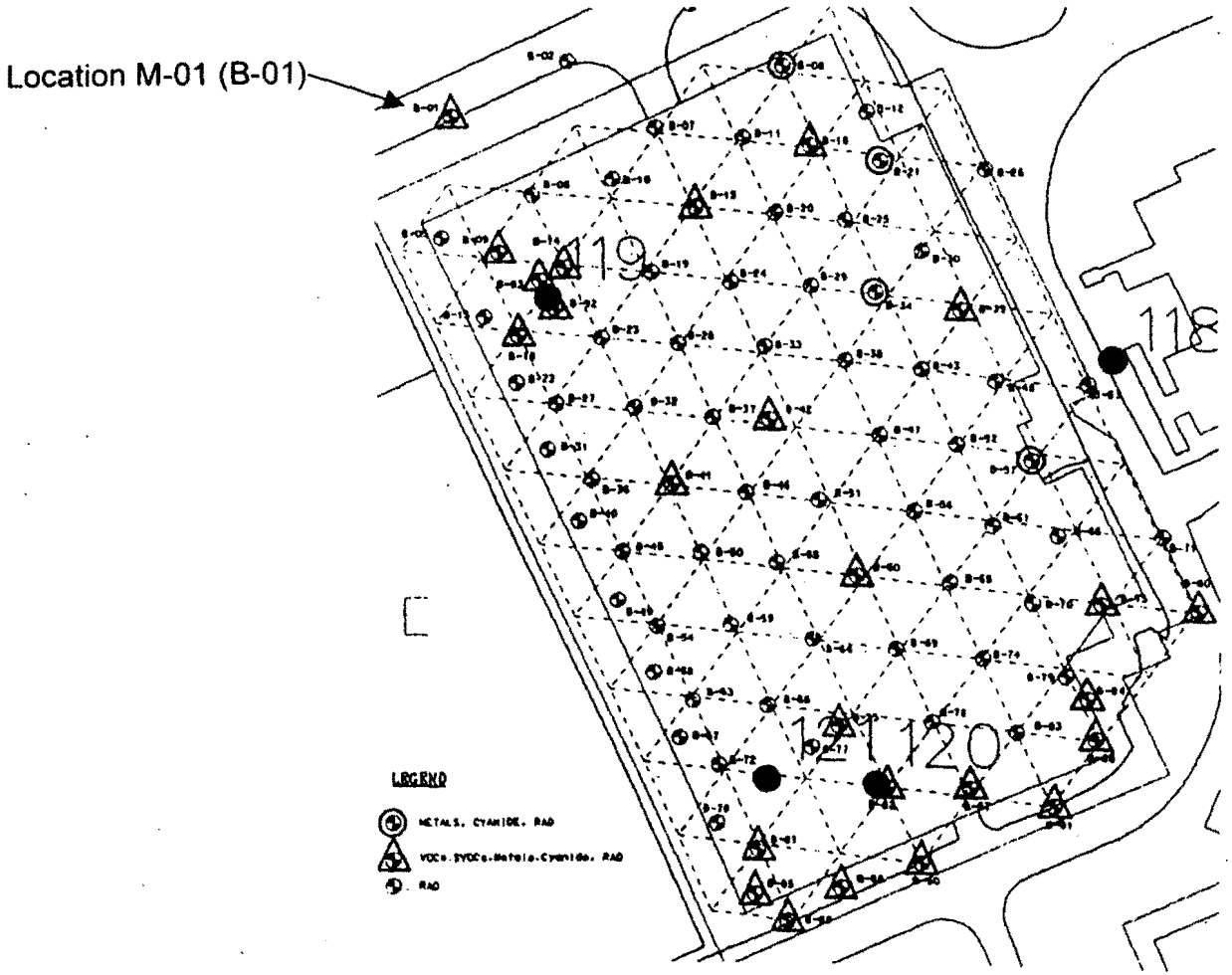
at 3 foot depth

Initial M Building Sample Results of M-01 for Thorium 230

Location	Concen-tration pCi/g	LCL Pci/g
M-01	13.03	9.45

Results from gamma spectroscopy in Mound Soil Sampling Facility

M PAD SOIL SAMPLE LOCATIONS



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Contains Proprietary Information

ISS	DATE	REVISION	BY	CHKR	ENG	LPMEC	APVD	M
Ø	12/12/91	ASBUILT ISSUE	DCW				DVD	

UNCLASSIFIED

DERIVATIVE CLASSIFIER

R D Myers
Name

Sr Class Anal 2/20/96
(Title) (Date)

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

M BLDG
FIRST FLOOR
BLDG CODE:3508

APPROVALS:	DATE:
SAFETY COMMITTEE REQUIRED:	
___NONE ___TRUEDOC ___TEEDOC ___EMBOC	
TECH. REPR.	
GR. MGR.	
TRUEDOC	
TEEDOC	
EMBOC	

DESIGN ENG	PROJ MGR
SPONS	ENG SUPV
LP & EC	PEER REV
ENG MGR	
APVD	DATE

SHEET	1	2	3	4	5	6
ISSUE	Ø	Ø				

PART CLASSIFICATION

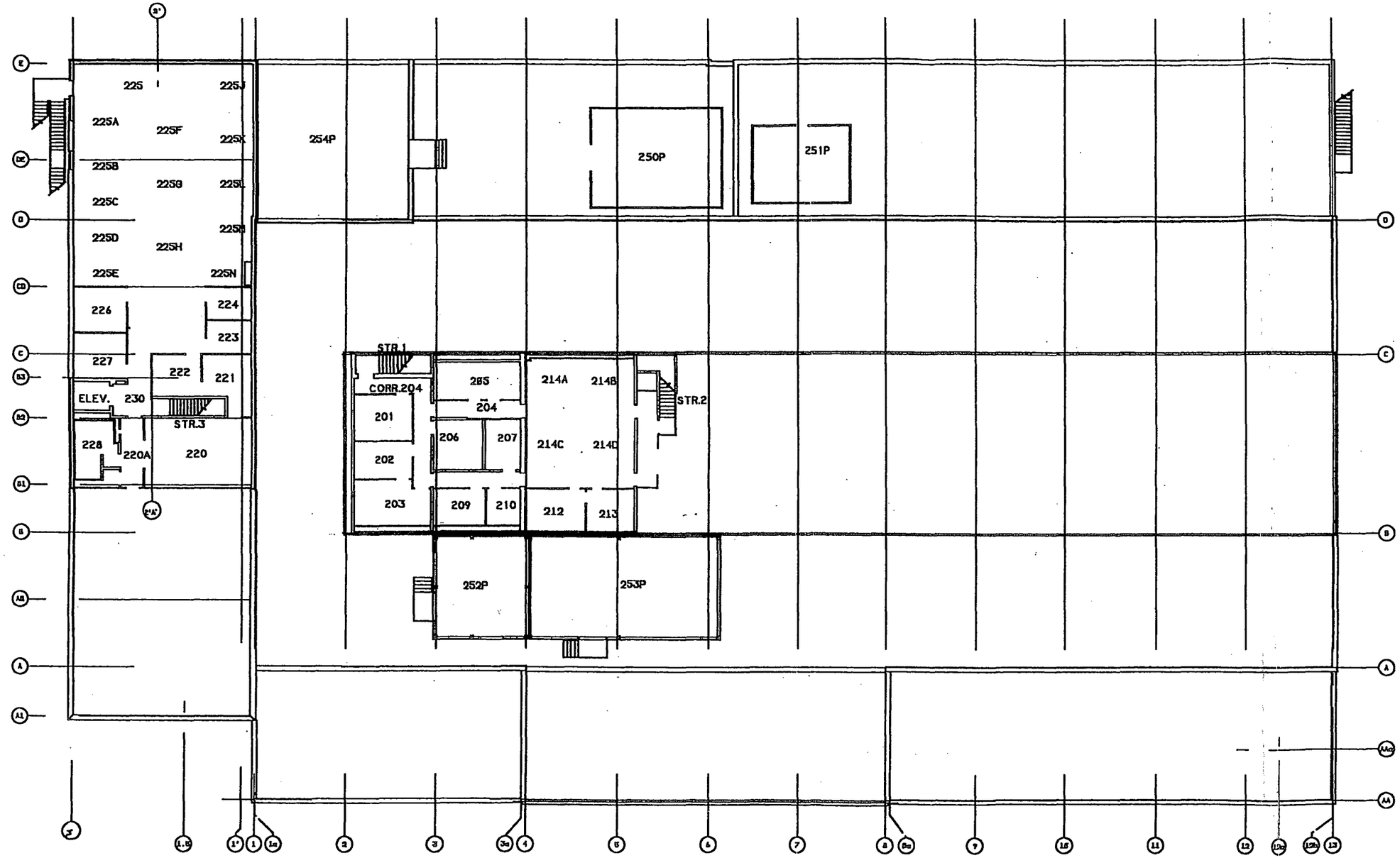
DRAWING CLASSIFICATION UCNI

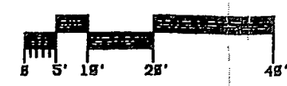
TITLE (U) TITLE CLASSIFICATION
M BLDG
FLOOR PLANS

SIZE	DRAWING NUMBER	JOB NUMBER
D	FSD911314	12335

DWG TYPE SFP | PROM M BLDG | CABEC 14065 | SCALE AS NOTED | SHEET 1 OF 2

STATUS MD-REL-12/12/91 | ORIGIN MD-BR3-V3.Ø





M BLDG
SECOND FLOOR
BLDG CODE:3508

DRAWING NUMBER FSD911314	JOB NUMBER 12335
DRAWING CLASSIFICATION UNCLASSIFIED	
SIZE D	CASE: 14065 / SCALE AS NOTED
	ISSUE 0 / SHEET 2
STATUS MD-REL-12/12/91	