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SM-088/03
November 10, 2003

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

ATTENTION: Paul Lucas

SUBJECT: Contract No. DE-AC24-03OH20152
BUILDING 36, BUILDING DATA PACKAGE, PUBLIC REVIEW DRAFT
Bldg 36 GFS/I: Planning Document Complete – Activity ID EBDEE050AK

REFERENCE: Statement of Work Requirement 055 - Regulator Reports

Dear Mr. Provencher:

Paul Lucas from your office has approved the following document to be released for public and regulator review:

- Building 36, Building Data Package, Public Review Draft

The review period will be from 10 November 2003 until 10 December 2003, and the site contractor will respond to any comments received and incorporate the responses into the final document. If you or members of your staff have any questions regarding the document, or if additional support is needed, please contact Bob Ransbottom at 865-4220.

Sincerely,

K. L. Kehler
SMPP/TFV Project Manager

KLK/VKD

Enclosures

cc: David Seely, USEPA, (1) w/attachments
Brian Nickel, OEPA, (4) w/attachments
Ruth Vandegrift, ODH, (1) w/attachments
Mary Wojciechowski, Tetra Tech, (1) w/attchs
Frank Schmaltz, DOE/MCP, (1) w/attachments
Lisa Rawls, DOE/MCP, w/o attachments
Randy Tormey, DOE/OH, (1) w/attachments
Dann Bird, MMCIC, (3) w/attachments
Jim Bonfiglio, MESH, (1) w/attachments
Public Reading Room, (4) w/attachments
Kurt Kehler, CH2M Hill, (1) w/attachments
Val Darnell, CH2M Hill, (1) w/attachments
DCC (1) w/attachments
John Fulton, CH2M Hill, w/o attachments
Bob Ransbottom, CH2M Hill, w/o attachments
Dave Rakel, CH2M Hill, w/o attachments

From: Val Darnell
To: brian.nickel@epa.state.oh.us; Clipp@gw.odh.state.oh.us; Dbird@mound.com; Lucas, Paul; mary.wojciechowski@ttemi.com; seely.david@epa.gov
Date: 11/10/03 4:08PM
Subject: Bldg 36 BDP - Public Review Draft

The Building 36 BDP was released today for concurrent public and Core Team review. In preparing the document, I inadvertently neglected to update the cover and footers from the previous version. Accordingly, when you receive your copies, please correct the cover so that it says Public Review Draft.

My apologies for any confusion caused by this error.

Thank you,
Val Darnell

937-865-3655

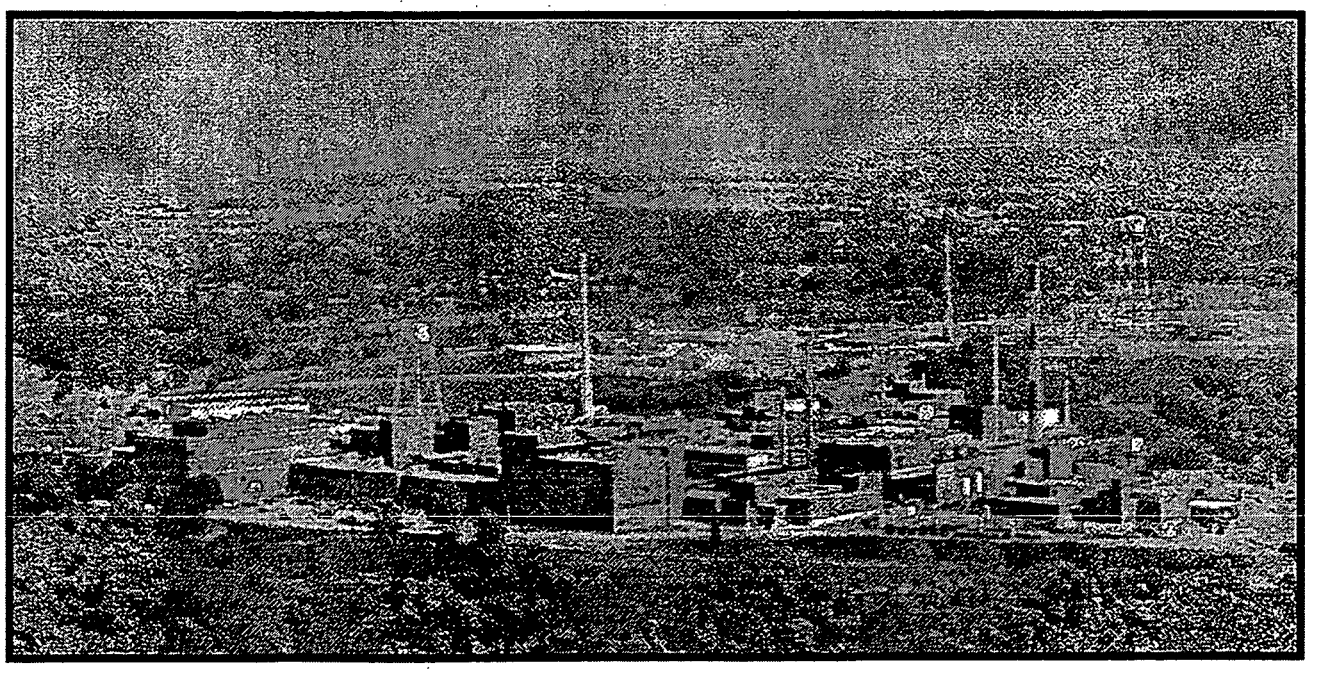
CC: Gunckle, Kathy; kathy.fox@epa.state.oh.us; Lewis, Becky; McDougal, Marsha; Schmaltz, Frank

Environmental
Restoration
Program

Miamisburg Closure Project
Building Data Package

Building 36
(Demolition)

~~Working Draft~~ PUBLIC REVIEW DRAFT
November 2003



MIAMISBURG CLOSURE PROJECT

BUILDING DATA PACKAGE

The following document is available (November 10, 2003) for public information in the CERCLA Public Reading Room, 305 E. Central Ave., Miamisburg, Ohio.

BDP Building 36: Power Systems Technologies Assembly and Testing Support Facility

Questions can be referred to Paul Lucas at (937) 847-8350 ext. 314

U.S. Department of Energy
U.S. Environmental Protection Agency
Ohio Environmental Protection Agency

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BDP Building 36

REV	DESCRIPTION	DATE
WORKING DRAFT (to DOE)		**November 2003**
DRAFT (to Core Team)	BDPs for construction demolitions undergo simultaneous review by the Core Team and public.	**N/A**
DRAFT PROPOSED FINAL (incorporates Core Team comments)		**N/A**
PUBLIC REVIEW DRAFT	Public review will be held from 10 November 2003 through 10 December 2003.	**November 2003**
FINAL		

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Appendix M Occurrence Reports
Appendix N PRS Information
Appendix O Work Plan (Draft)

1.0 GENERAL OVERVIEW

1.1 Introduction

The purpose of this Building Data Package (BDP) is to prepare for the demolition of Building 36 (PST [Power Systems Technologies] Assembly and Testing Support Facility) and to identify, if possible, any recognized environmental conditions (defined below) that may affect the subject property and building.

Recognized Environmental Condition: The presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a likely release, a past release, or a material threat of a release of any hazardous substances or petroleum into structures, or into the air, ground, groundwater, or surface water near the building.

1.2 Scope

This document has been prepared in accordance with the agreements and requirements as specified in the *Work Plan for Environmental Restoration of the DOE Mound Site, The Mound 2000 Approach*. This document is a BDP for Building 36 located at the Department of Energy (DOE) Miamisburg Closure Project (MCP) in Miamisburg, Ohio. The investigation performed to support this BDP models procedures found in *ASTM Standard Practice for Environmental Site Assessments; Phase I Environmental Site Assessment Process* (Designation E 1527-97).

The scope of the investigation included Building 36, the soil beneath and a 15-foot wide perimeter border around the building. The investigation of Building 36 included the following:

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

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

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

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

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

2.0 BUILDING 36 OVERVIEW

Constructed in 1967, Building 36 is located on the east central portion of the site (Figure 1). The facility is a single-story, slab-on-grade structure with a penthouse. It is constructed mainly of reinforced concrete block with the exterior walls being just over 11 inches thick and the interior walls and the walls of the penthouse being 12 inches thick. The floor is a 6-inch thick reinforced concrete slab set on a 6-inch thick gravel bed. The reinforced concrete footer/foundation of the building is set approximately 4 feet below grade. The roof is a built-up membrane of asphalt on a metal frame truss with a suspended ceiling. Building 36 was modified to add one small room (Room 12) and to add some interior walls since its original construction, and contains 4,255 square feet of floor space. It is believed that no research, development, or production activities using unencapsulated radiation or energetic materials have occurred in the building.

The building uses hot water (from Building 128-PST Boiler Building) for heating and a chilled glycol (standalone) unit for cooling. Electric service is 480 volts. The building has potable and service water, a fire sprinkler system, sanitary services, and storm drains.

2.1 Past Uses of Building 36

Building 36 was originally built and used as the System and Capsule Design Testing Facility. The building contained office and laboratory areas with facilities and equipment for testing of encapsulated components, including a Capsule Impact Facility, a Re-entry Ablation Facility, welding machines, a vacuum chamber, and a high temperature vacuum furnace. By the late 1980s, Building 36 was used for support functions for RTG (Radioisotope Thermoelectric Generator) assembly and testing operations. Processes housed in Building 36 were a cleaning and degreasing facility for cleaning heat source hardware and tooling, high temperature vacuum bake out ovens for the bake out of graphite modules and cleaning, a long-term temperature facility, and a pressure burst facility. Building 36 was also used for the storage of heat source/RTG program quality records and the storage of raw materials, hardware, and tooling managed by Material Control for the heat source/RTG program.

2.2 Current Uses of Building 36

Building 36 is currently inactive. The equipment and furnishings are in the process of being removed. All required equipment will be removed from the building, and any remaining equipment will be left in place and demolished/disposed of with the building. Safe Shutdown activities will be conducted prior to the commencement of demolition.

2.3 Summary of Environmental Concerns and Findings - Building 36

Table 1: Summary of Environmental Concerns and Findings

Description	Comment	Resolution
Lead-Based Paint	No previous lead surveys or sampling data could be found for Building 36, and paint coatings observed in the building appear to be intact. Since no significant degraded paint was seen, no sampling of paint for lead was performed. Although untested paint coatings must be assumed to contain lead, the observed condition of the paint indicates that there are currently no lead paint hazards within the building. (Appendix J).	No further action would be necessary to protect occupant or worker health unless any coatings were to be disturbed by close worker contact (sanding, grinding, scraping, torch cutting, etc.). If these types of activities are planned, the affected paint coatings should be tested to verify the absence of lead. Per Waste Management, building debris containing lead-based paint can be disposed of in a sanitary landfill.
Chemicals	Appendix K provides a list of chemicals reportedly used or stored in Building 36.	All chemicals will be removed prior to demolition, and dispositioned by Waste Management.
Fluorescent Lamps and PCBs	Fluorescent lamps were used in the building. Ballasts may contain polychlorinated biphenyls (PCBs).	Ballasts that may contain PCBs will be removed prior to demolition, and disposed of by Waste Management.

Table 1: Summary of Environmental Concerns and Findings

Description	Comment	Resolution
Air Emissions	Two processes in Room 2 and one process in Room 3 were considered air emission sources for vapor (fumehoods).	RAPCA determined that all processes were de minimis (did not require permit). Processes in Room 2 were discontinued in 2003 and the process in Room 3 was discontinued in 1996. The previous air emissions from Building 36 processes are believed to have had no adverse impact on the building or the environment. No further action is required.
Asbestos	Previous asbestos surveys of Building 36 were completed in 1989 and 1993. These surveys were intended to identify all reasonably accessible asbestos-containing material (ACM) within the building for the purposes of identifying damaged material and managing asbestos in place. Asbestos pipe insulation, transite cement board in fume hoods, laboratory counter tops, and floor tiles were previously identified. In September 2003 a comprehensive walk-through survey of all areas of Building 36 was performed in order to identify ACM prior to building demolition. (Appendix I)	The following ACMs were identified and will be removed prior to building demolition: sheet vinyl flooring (due to the friable felt layer), laboratory counter tops, and transite cement board. All ACM removed will be disposed of per Waste Management direction. All work will be performed in accordance with current state and federal regulations.
Drainage Sumps	N/A	N/A
Lead	N/A	N/A
Mercury	N/A	N/A
Radiological	The Building 36 Predemolition Survey Plan is provided in Appendix G. Radiological surveys are not yet complete.	Survey results will be documented in the Final Status Report, which will be reviewed by the Core Team prior to commencement of demolition activities. The report will be included in the Final BDP.
Septic System	N/A	N/A
Wastewater	Handled by site wastewater facility.	N/A
Stains & Corrosion/HVAC	N/A	N/A

Table 1: Summary of Environmental Concerns and Findings

Description	Comment	Resolution
Storage Tanks	There is an aboveground liquid nitrogen storage tank (Tank T02) outside of the northwest corner of Building 36.	The aboveground liquid nitrogen storage tank is empty, and disconnected from Building 36. It will be removed prior to building demolition
	Two underground gasoline storage tanks (Tanks 239 and 240, PRS 269), identified on a 1948 construction drawing, were located in the area where Building 36 was later constructed. The underground gasoline storage tanks were installed in 1948 as part of a fueling facility to support the original plant construction. No documentation of the tanks having been removed has been found, although it is believed that they were removed as part of construction demobilization.	A ground penetrating radar (GPR) survey was performed to located the tanks. However, the survey did not find any tanks at PRS 269. Based on this, the Core Team binned PRS 269 No Further Assessment (NFA) (Appendix N).
Solid Waste Disposal	N/A	N/A
Migratory Hazards	N/A	N/A
Radon	Radon level is not applicable for open air demolitions.	N/A
HVAC	HVAC refrigerant will be drained and disposed of during Safe Shutdown.	No further action required.
Energetic Materials	Energetic materials were not present in Building 36.	N/A

Table 1: Summary of Environmental Concerns and Findings

Description	Comment	Resolution
Soil Contamination	Appendix L contains a graphic showing all soil sample locations within 15 feet of the Building 36 perimeter, and provides tables for detected compounds (results above laboratory detection limits) and non-detected compounds (results below laboratory detection limits). Maximum exceedances to screening levels (Core Team approved or the more stringent of either 10^{-6} Risk-Based Guideline Value [RBGV] plus background or Hazard Index = 1) are listed in Table 2. All other results are below applicable screening levels.	Only one sample location (SCR909) had analytical results above the Cleanup Objective (CO) as detailed in Table 2 and Appendix L. This same location was reportedly sampled once in 1988 and three times in 1994, giving question to the validity of the data. Only one of 1994 results is above CO (Th-232 at 2.9 pCi/g vs. CO of 2.1 pCi/g) and none are above the hot spot criterion for Th-232 of 3.5 pCi/g. The result above CO is identified as being a surface sample collected from a borehole. Aerial photos reviews show that the area has been paved since at least 1983. If a borehole were installed subsequent to the paving (as indicated by the dates of the sample data), a plugged borehole would still be visible. A visual inspection of the area was performed and gave question to the validity of the location of the historic data because there are no plugged boreholes in the area that could be related to the SCR909 data. Based on this information, it is technically unfeasible to locate where the data came from in order to assess or remove the potential contamination. Therefore, no sampling is planned as part of the Building 36 demolition activities and the data will be evaluated during the RRE (Residual Risk Evaluation) process. The sample location is identified as being within an asphalt paved area. Since the asphalt is not planned to be removed as part of the Building 36 demolition activities, potential contamination at the sample location will not affect worker safety during demolition activities.

N/A: not applicable

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

Analyte	Maximum Result	Background	RBGV (10^{-6})	Screening Level
Thorium 232	2.90*	1.40	0.07	1.47

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

* See Table 1, Soil Contamination.

2.4 Radiological Characterization Summary for Building 36

A radiological assessment of Building 36 was performed by reviewing operational history and preliminary radiological survey information. Building 36 has been used for a variety of processes and functions including, System and Capsule Design Testing Facility, Capsule Impact Facility, Re-entry Ablation Facility, welding technology for the encapsulation of radioactive sources, System and Capsule Destructive Testing Facility, cleaning and degreasing facility (i.e., clean room), high-temperature vacuum bake out, Pressure Burst Facility, Material Control, and the storage of HS/RTG Quality Records. No research, development, or production activities using unencapsulated radioactive materials have occurred in the building.

The radiological status of all building surfaces will be determined to facilitate a free release of the structure consistent with project goals and site procedures. The Predemolition Survey Plan for Building 36 was prepared commensurate with operational history and in accordance with the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), and is presented in Appendix G. The survey plan will be implemented and will provide the necessary data to dictate appropriate demolition and disposal. A Final Status Report (FSR) will summarize results from implementation of the survey plan and provide justification for the designated disposal of debris. The FSR will be reviewed by the Core Team prior to proceeding with building demolition, and will be included in the final BDP.

3.0 SITE DESCRIPTION

3.1 Site/Vicinity Location and Characteristics

Building 36 is located at the DOE MCP site, formerly known as the Mound Plant. The MPC site is situated in the City of Miamisburg, Miami Township, Montgomery County, State of Ohio as shown in Appendix B.

The Mound Plant at one time was situated on approximately 300 acres of land and contained approximately 130 buildings with a total of approximately 1.4 million square feet of floor space (the number of buildings is constantly diminishing as buildings are decommissioned and either sold or demolished). The original 182-acre site, purchased by the Manhattan Engineering District in 1946, consisted of two hills and an intervening valley that runs approximately east and west. The 124-acre tract acquired in 1981 was an undeveloped mixture of fields and woods that undulates and slopes downward to the west,

away from the main site. This area was acquired to serve as a buffer and has been used as a staging area and parking area for contractors working onsite.

To the west lie a railroad line and the north south trending Miami-Erie Canal. The northern boundaries of the site abut the residential area of Miamisburg, Ohio. Mound Road marks the northern half of the eastern perimeter of the facility then veers east, away from the southern half of the eastern boundary. A public golf course (belonging to the City of Miamisburg), the Miamisburg Mound Memorial Park, old agricultural fields, residential lots, and vacant wooded lots border the facility along Mound Road. Benner Road formed the southern property line of the Mound Plant (at the 300-acre stage), with agricultural fields and farms occupying the lands beyond.

3.2 Description of Structures, Roads, and Other Improvements in Proximity to Building 36

Building 36 is bordered by rip-rap/rock and Building 128 on the north; a concrete sidewalk and Building 50 on the east; an asphalt roadway and a gravel area on the south; and an asphalt roadway and an asphalt lot on the west. Buildings 31 and 31A are northwest of and down gradient from Building 36 (Figure 3).

3.3 Current and Past Uses of Buildings in Proximity to Building 36

Buildings in proximity to Building 36 include:

- Building 128 (PST Boiler Building), located north of Building 36, is a 900 square-foot single-story building which houses the boilers for the hot water heating system for Buildings 36, 37, 50, and 126.

- Building 37 (Heat Source Testing Facility), located west of Building 50, is a 2,464 square-foot single-story structure with a penthouse that was used for three purposes: research, development, and production in conjunction with the US Advanced Battery Consortium; converting processes with freon and other hazardous materials to processes that use safer materials; and a machine shop in support of the heat source program.

- Building 50 (PST Assembly and Testing Building), located east of Building 36, is a 14,849 square-foot two-story building that provided process areas for the assembly and testing of heat sources and radioactive thermoelectric generators (RTGs) that contained sealed radioactive sources. The process areas in Building 50 are currently inactive.

- Buildings 31/31A (TRU Waste Storage), 6,090 square-foot and 2,650 square-foot respectively, are single-story metal buildings located northwest of Building 36 that were used by Waste Management for storage and staging of transuranic (TRU) waste and low level waste prior to shipment offsite. Building 31 is currently inactive, and undergoing preparations for demolition. Building 31A was subsequently used to

store raw materials and equipment for the heat source program. Operations are scheduled to cease in October 2003, and the building will then undergo preparations for demolition.

- SM Building (Special Metallurgical) was a 21,700 square-foot, single-story metal structure with a penthouse that was located south of Building 36. It was constructed in 1963 as a plutonium production facility. In 1972, a decontamination and decommissioning project removed the interior of the building along with the soil beneath the floor. During the 1990s, the outer shell of the building was taken down, with the last remnants being removed in 1995. Part of the SM Building foundation was left in place to prevent the undermining of the Building 38 stack. Building 38 and the stack were subsequently demolished.

- Buildings WH-5/WH-6 (Warehouses 5 and 6) were temporary structures built in 1947, and demolished in 1949. WH-5 was used as a garage and had approximately 6,000 square-feet of floor space. WH-6 was used as a repair shop and had approximately 2,800 square-feet of floor space. These structures were located northwest of Building 36 in the approximate location of the current Buildings 31 and 31A.

- Building 118 and GP-38 (Guard Post 38) were temporary structures that had been located southeast of Building 36. Building 118 was a small (approximately 350 square foot) structure used as an office. GP-38 was a small single-room structure used as a guard post. Both structures were demolished in the 1990s.

These buildings are believed to have had no adverse environmental impact on Building 36.

4.0 RECORDS REVIEW

4.1 General/Historical CERCLA Information

In compliance with permit requirements under Resource Conservation and Recovery Act (RCRA), the Clean Water Act (CWA), the Safe Drinking Water Act (SDWA), and the Clean Air Act (CAA), Mound Plant has applied for or has received permits for its surface water discharges, air emissions, and hazardous waste program. The site is currently operating a hazardous waste storage facility under a RCRA Part B permit dated October 18, 1996. The site also maintains a National Pollutant Discharge Elimination System (NPDES) surface water discharge permit with Facility I.D. number OH 0009857. Operations that produce particulate or vaporous emissions are either permitted or registered with RAPCA and the Ohio Environmental Protection Agency (OEPA). The site also submits annual Emergency and Hazardous Chemical Inventory forms to OEPA, pursuant to the Superfund Amendment and Reauthorization Act (SARA), Title III, the Emergency Planning and Community Right-to-Know Act. The March 2002 version of this report indicated that reportable chemicals were stored in Building 36 (Appendix K).

The Mound Plant was identified as a contaminated site on the National Priorities List (NPL) under CERCLA (Superfund) in 1989. The Mound Plant was originally listed due to volatile organic compound (VOC) contamination in the western end of the lower valley area. The cleanup of the site was originally to be accomplished under the CERCLA mandated procedures for regulating Superfund Sites using the operable unit (OU) system to define and characterize cleanup areas. As the cleanup effort went forward, it became apparent that the site did not fit the profile for a cleanup strategy based on the operable units. The DOE, the United States Environmental Protection Agency (USEPA), and OEPA designed a new decision making process for the cleanup of the site.

The new process is known formally as a "removal site evaluation process" and informally as the "Mound 2000 Process." For a more detailed description, refer to the *Work Plan for Environmental Restoration of the DOE Mound Site, the Mound 2000 Approach.* The Mound 2000 Process system divided the site into geographical parcels containing more than 400 PRSs with approximately equal numbers of PRSs concerned with potentially contaminated soil and with potential contamination in or associated primarily with building operations. A PRS is an area where knowledge of historic or current use indicates that the site may have had releases of radioactive and/or hazardous materials. The PRSs were initially identified and documented as part of the Mound site scoping process under the Federal Facility Agreement (FFA). The original list of PRSs can be found in the OU9- Site Scoping Report Volume 12, Site Summary Report, 1994. One of the objectives of the Site Scoping report was to provide a comprehensive summary of PRSs identified through the scoping process. Subsequent to the 1994 Site Scoping Report, additional PRSs have been identified as information became available, bringing the site total to 440 PRSs. The assignment of a PRS does not necessarily mean that there is a threat to human health or the environment. The tabulation of all PRSs simply provides an explicit means of tracking and evaluating all potential releases onsite, the need for further action, and the identification of the authority responsible for action.

Through the process described above, the specific PRSs in the vicinity of Building 36 (Section 4.2.3) are listed in Table 3 along with their binning status. Their locations are shown on Figure 2. Of the five PRSs in the vicinity of Building 36, two have been binned Removal Actions (RAs) by the Core Team, and the other three have been determined by the Core Team to require No Further Assessment (NFA). For a PRS to be binned NFA, the Core Team has reviewed the PRS data and agrees that all existing environmental issues associated with that PRS have been resolved and the PRS is protective of human health and the environment. No other PRSs associated with Building 36 have been identified.

4.2 Specific Record Sources for Building 36

4.2.1 Occurrence Reports

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

- discovery of fixed alpha contamination on vacuum gauge being surveyed for release for unrestricted use (copy provided in appendix M), and
- Building 36, 37, and 50 fire alarm system failure.

4.2.2 Spills and Releases

The Environmental Appraisal (Page F3 of 47) indicates that one gallon of Dowtherm SR-1 coolant (ethylene glycol) was spilled in Building 36. The date of the spill was not specified and efforts to determine the date of the spill were unsuccessful. The spill did not enter the storm or sanitary drains because no floor drains were in areas of operations. The coolant was reportedly cleaned up with absorbent material and collected in a bag. Soap and water were used to mop up the floor. Since Building 36 waste chemicals were routinely transferred to Waste Management, it is assumed that the waste coolant was transferred to Waste Management for disposal.

4.2.3 Associated PRS Overview

As a result of the investigations and documentation accomplished to comply with the CERCLA cleanup process via the Federal Facilities Agreement (FFA)/DOE Environmental Restoration (ER) Program, DOE and the site contractor tabulated all the PRSs identified under the various regulatory programs in effect at the site. Of these 440 PRSs, five are at or near Building 36, as identified in Table 3. The PRS locations are shown on Figure 2, and recommendation sheets are provided in Appendix N.

Table 3: PRSs in Proximity to Building 36

PRS	CERCLA or Bldg. Related	Binning Status	Comments
267*	CERCLA	Removal Action (RA)	Area 9, Thorium Storage and Redrumming Area
269	CERCLA	No Further Assessment (NFA)	Building 36 Historic Gasoline Tanks (Tanks 239 and 240)
270	CERCLA	NFA	Underground Sanitary Sewer Lines G6 and G7
288*	Building	RA	Area 17, SM Building Soils
392	CERCLA	NFA	Elevated Soil Gas Location

* *The Removal Action for PRSs 267 and 288 are authorized by the Building 38 Action Memorandum and will be closed out via the Building 38 Soil OSC Report.*

4.3 Review of Building Prints

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

4.4 Aerial Photographs

Aerial photographs from 1965 (prior to construction), 1968 (following construction) and 1996 (most recent aerial photo) were reviewed and no significant items were identified. Aerial photographs are presented in Appendix E.

4.5 Interviews

Past Building Manager, P.C. Molloy, was interviewed via a building manager questionnaire (included in Appendix F). The current Building Manager, Gary Weidenbach, was also interviewed regarding past facility operations and current conditions. No significant items in the building were identified based on the questionnaire or interviews.

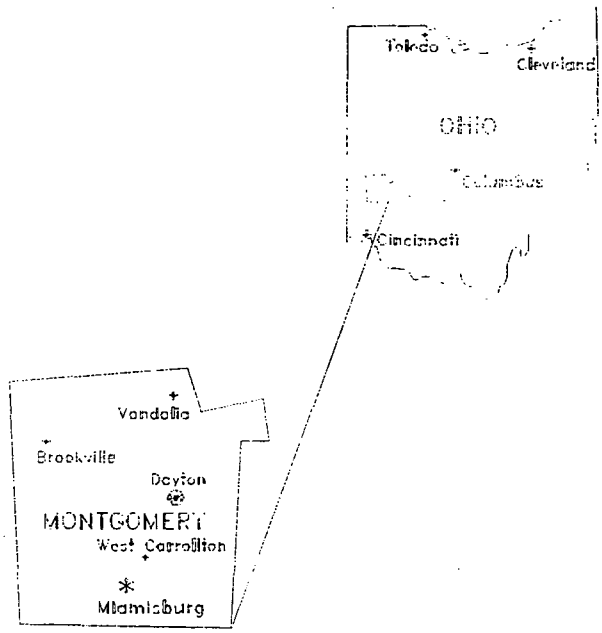
Appendix A

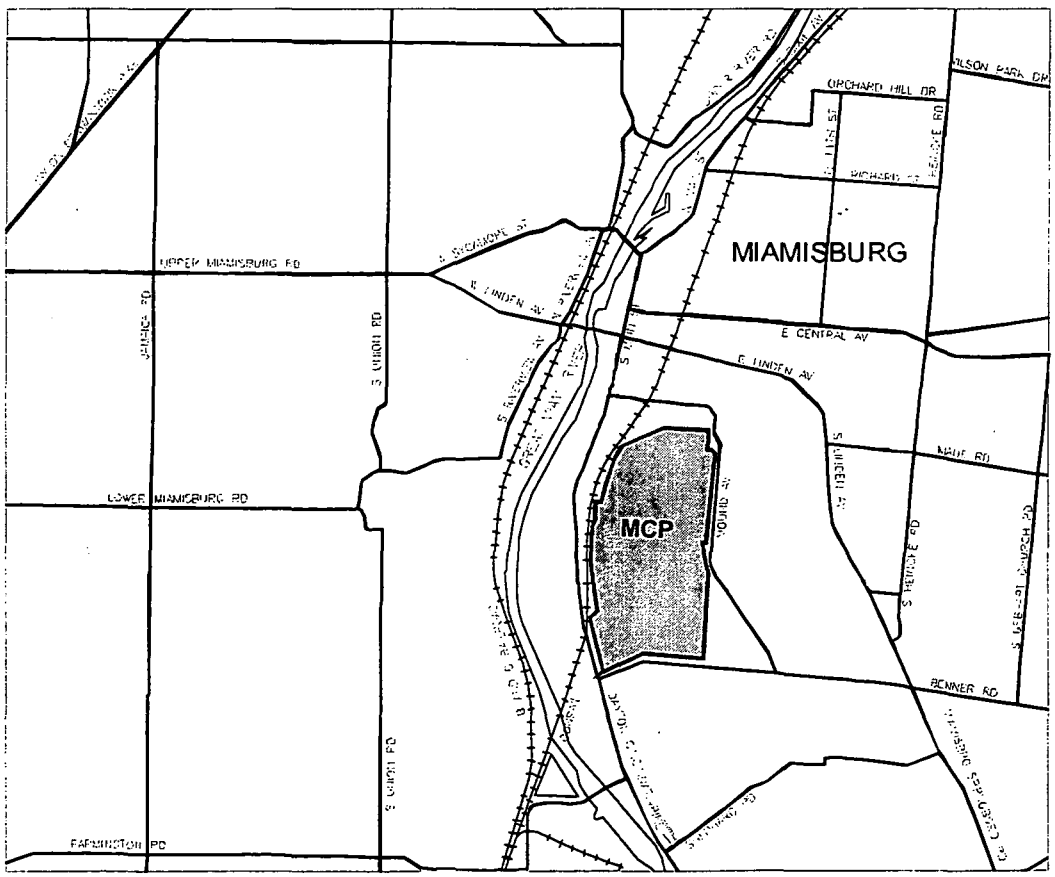
General Listing of Acronyms

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

Appendix B

Map of Montgomery County


Toledo
Cleveland
OHIO
Columbus
Cincinnati
Vandalia
Brookville
Dayton
MONTGOMERY
West Carrollton
Miamisburg


MIAMISBURG
MCP
UPPER MIAMISBURG RD
LOWER MIAMISBURG RD
FARMINGTON RD
S UNION RD
S HEMPLE RD
E CENTRAL AV
E LINDEN AV
S LINDEN AV
MAIN RD
BONNER RD
ORCHARD HILL DR
WILSON PARK DR
S VERSAILLES CHURCH RD
GREAT MIAMI RIVER

Appendix C

Figures

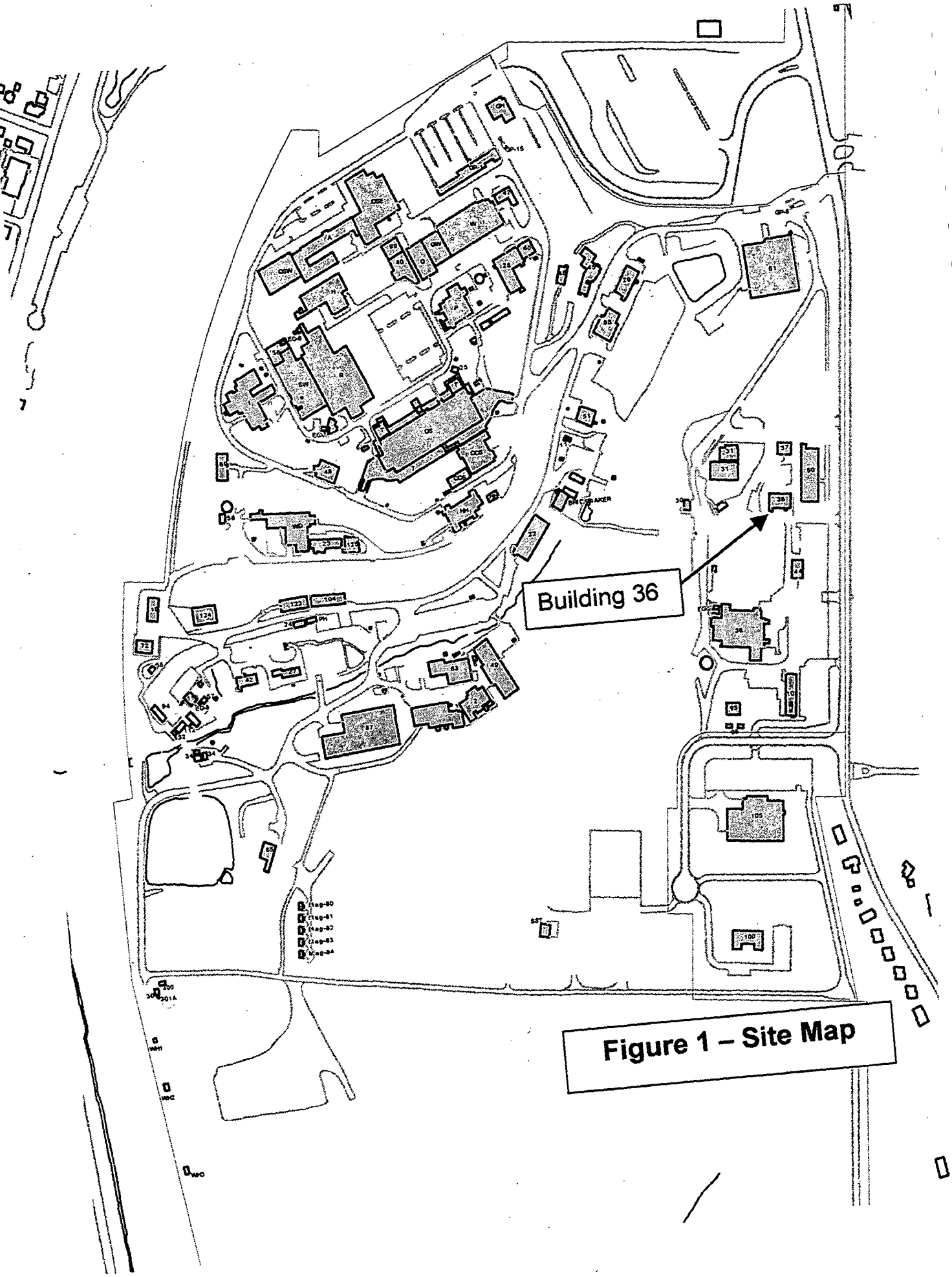
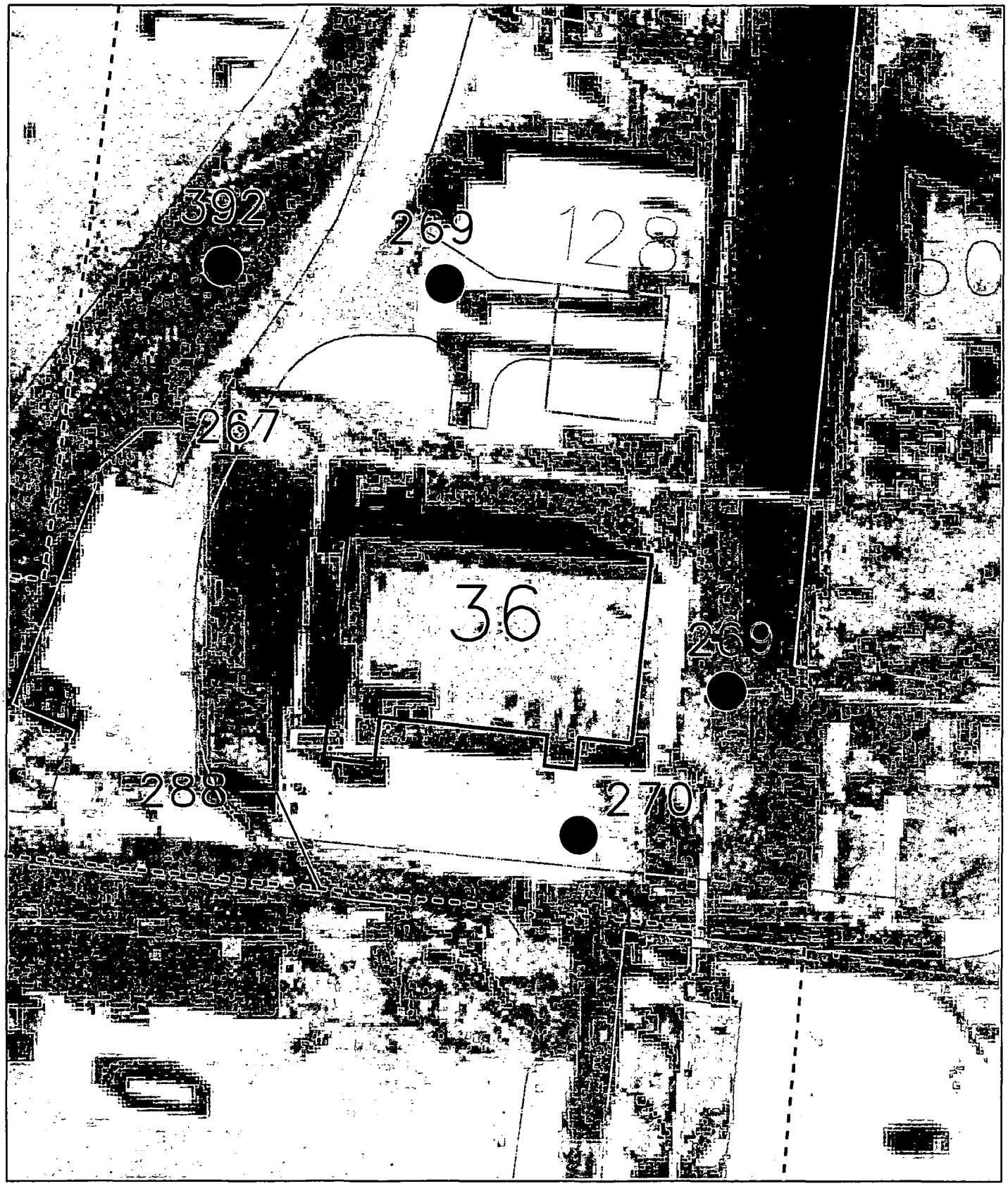


Figure 1 – Site Map



PRS Point

PRS Area

PRS Line

20 10 0 20 40FT

GRAPHIC SCALE

MOUND

Environmental Restoration Geographic Information System

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

SHEET	1	2	3	4	5	6
ISSUE	#					

PART CLASSIFICATION

DRAWING CLASSIFICATION: UNCLASSIFIED

SIZE | DRAWING NUMBER: vicinity.dgn | JOB NUMBER

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

STATUS MD-REL-##/##/## | ORIGIN MSTATION / J

Figure 2
Building 36
and Vicinity

	DATE	REVISION	BY	CHKR	ENG	UPREC	APVD	#
SS	04/29/03		SSF					

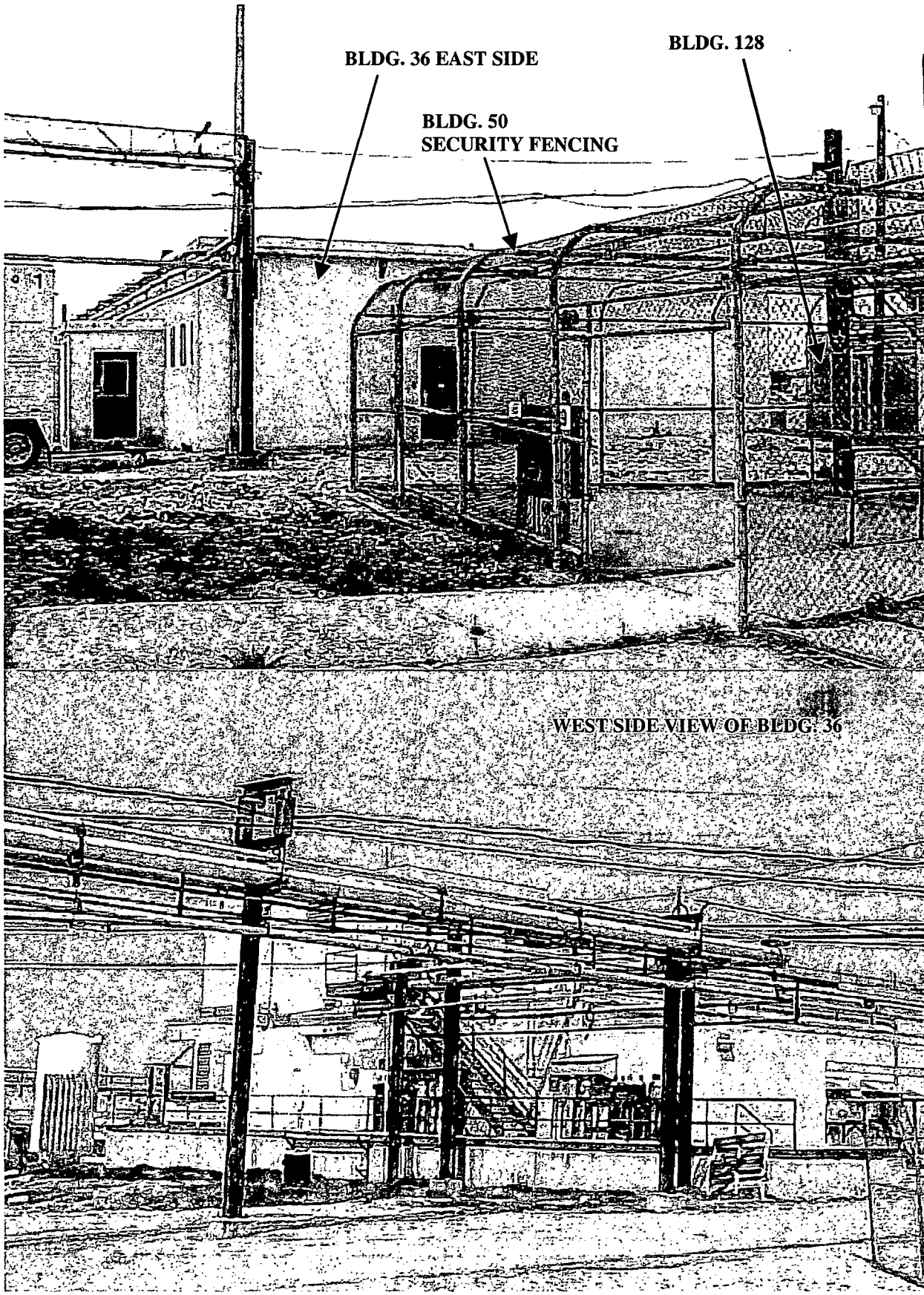


FIGURE 3A – BLDG. 36

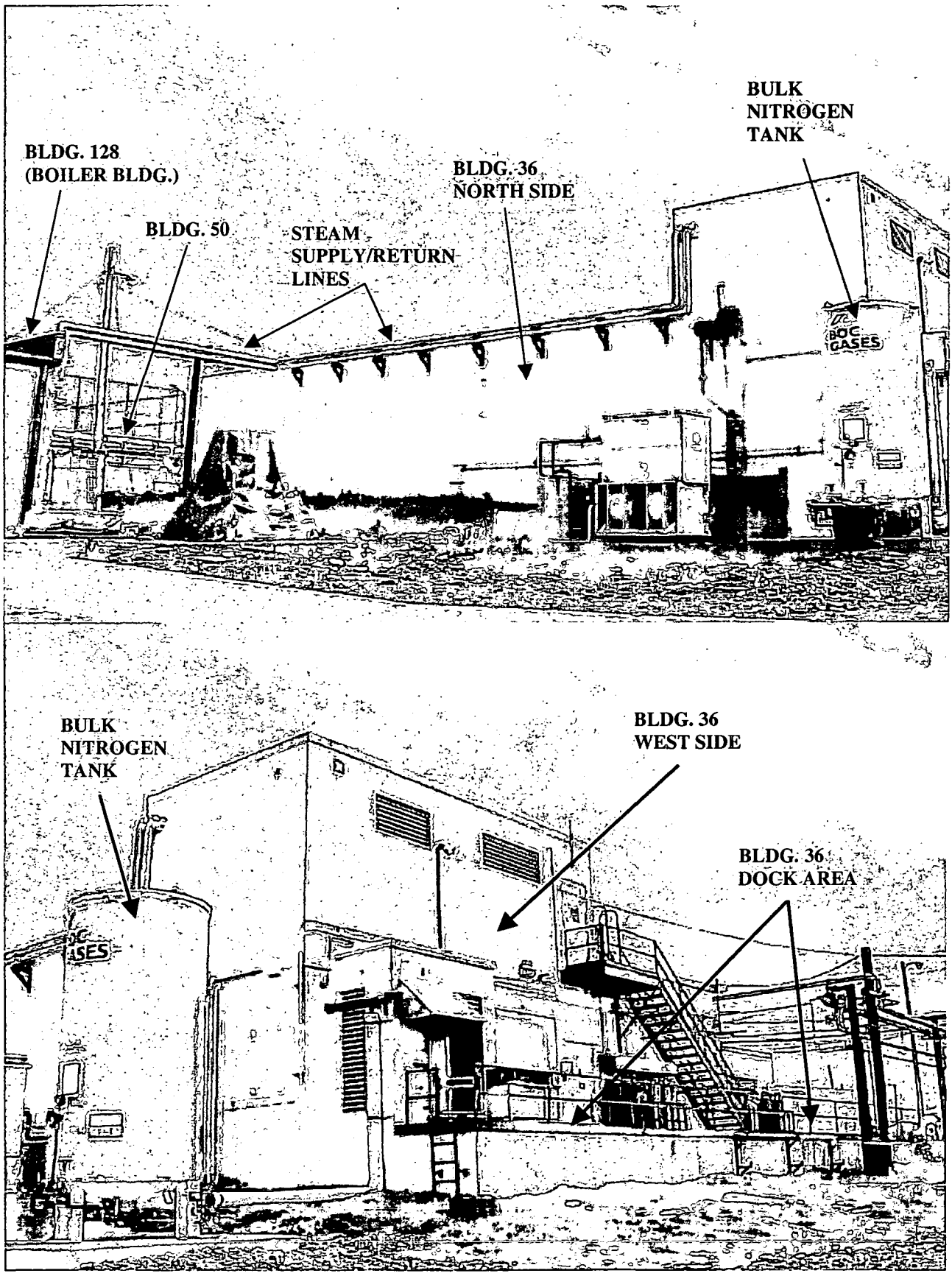


FIGURE 3B – BLDG. 36

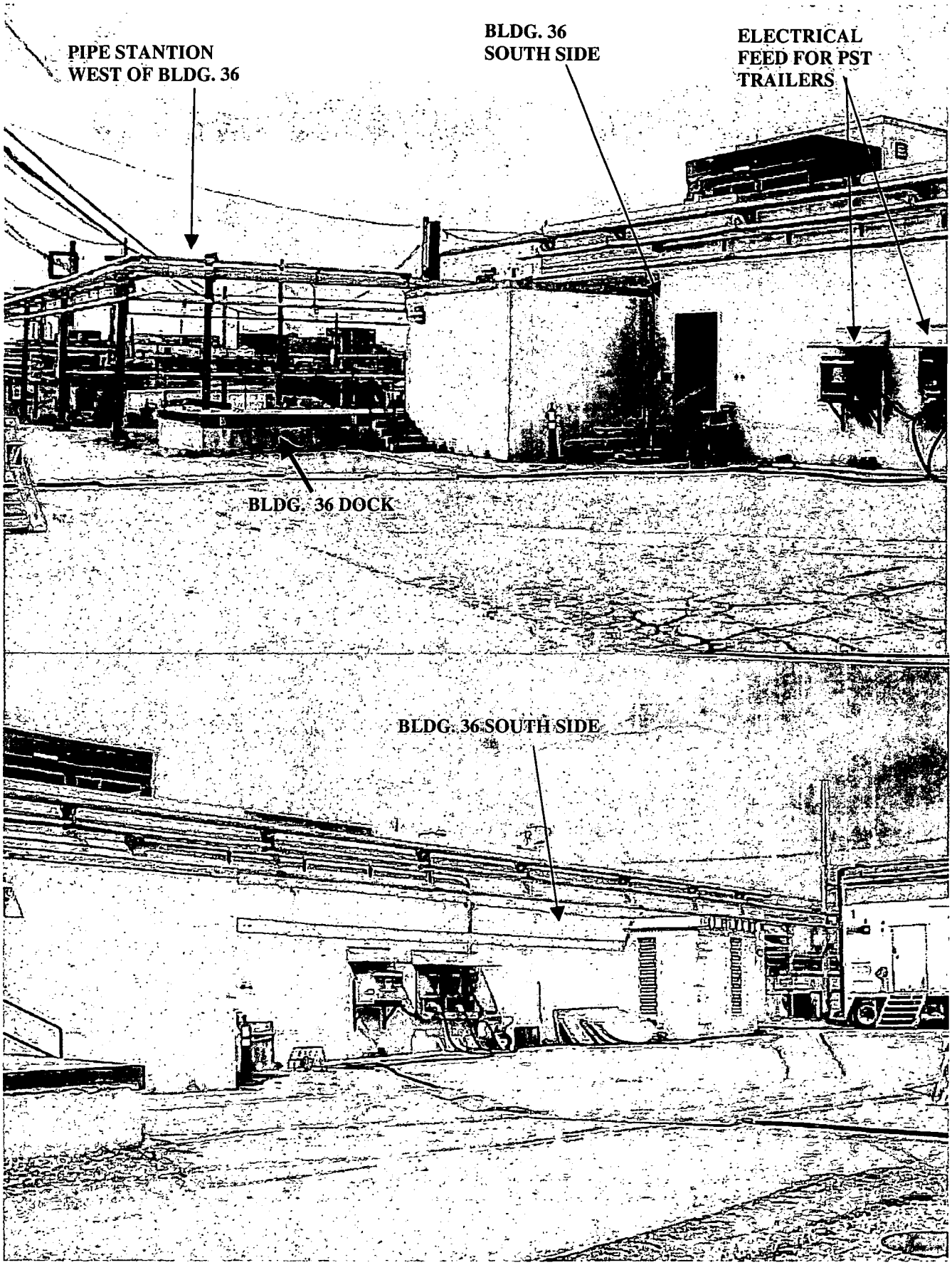
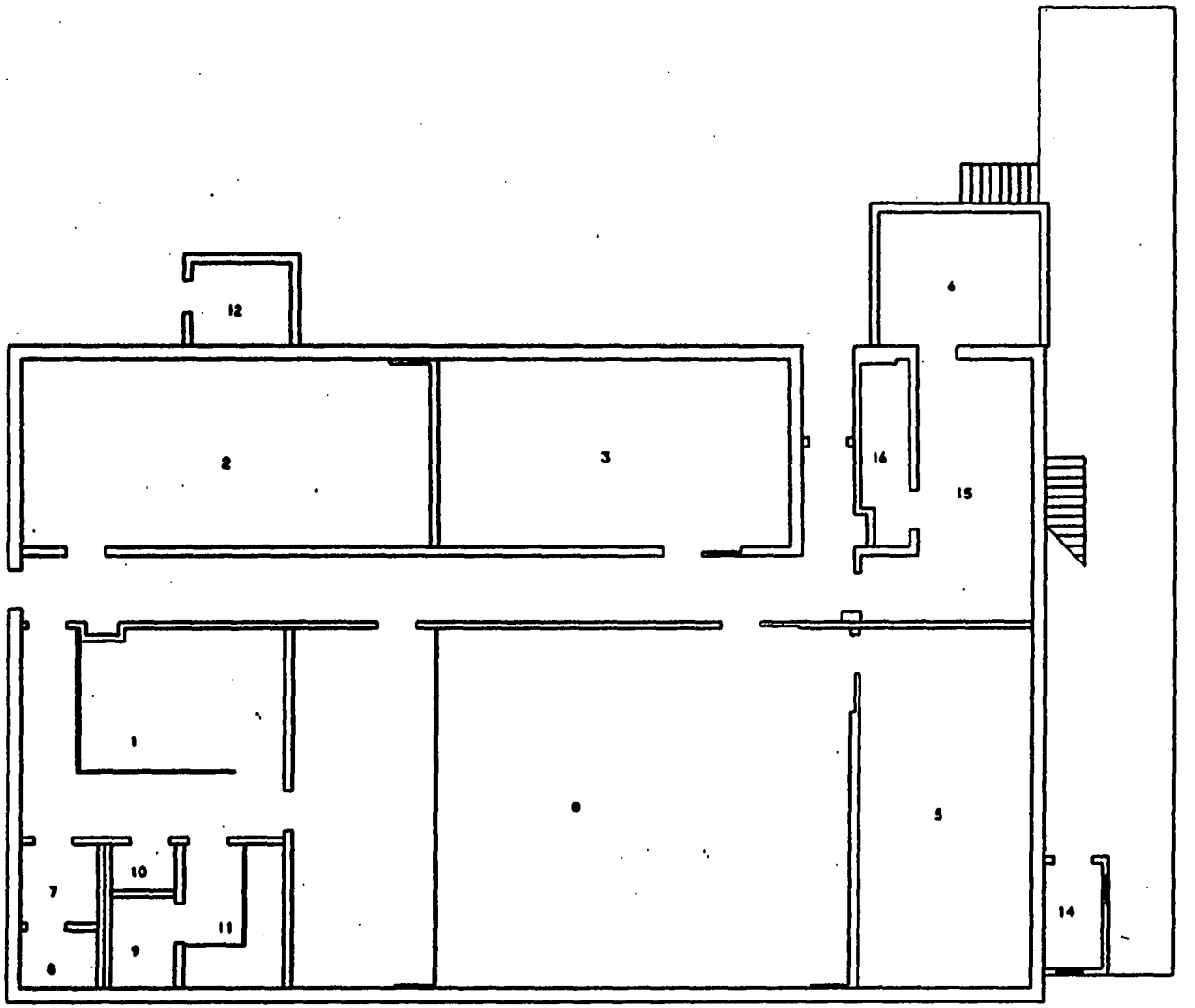


FIGURE 3C – BLDG. 36

Appendix D

Floor Plans

ISS	DATE	REVISION	BY	CHKD	DWD	LPKD	APVD	R
0	12/12/91	ASBUILT ISSUE	DCW				DVD	



.LD & NON-SENSITIVE
by Mound Declassification
Coviewer Initials: [illegible]
5/4/98

UNCLASSIFIED

0 3' 6' 10' 20'

BLDG #36
FIRST FLOOR
BLDG CODE:3036

NOT FOR PUBLIC DISSEMINATION

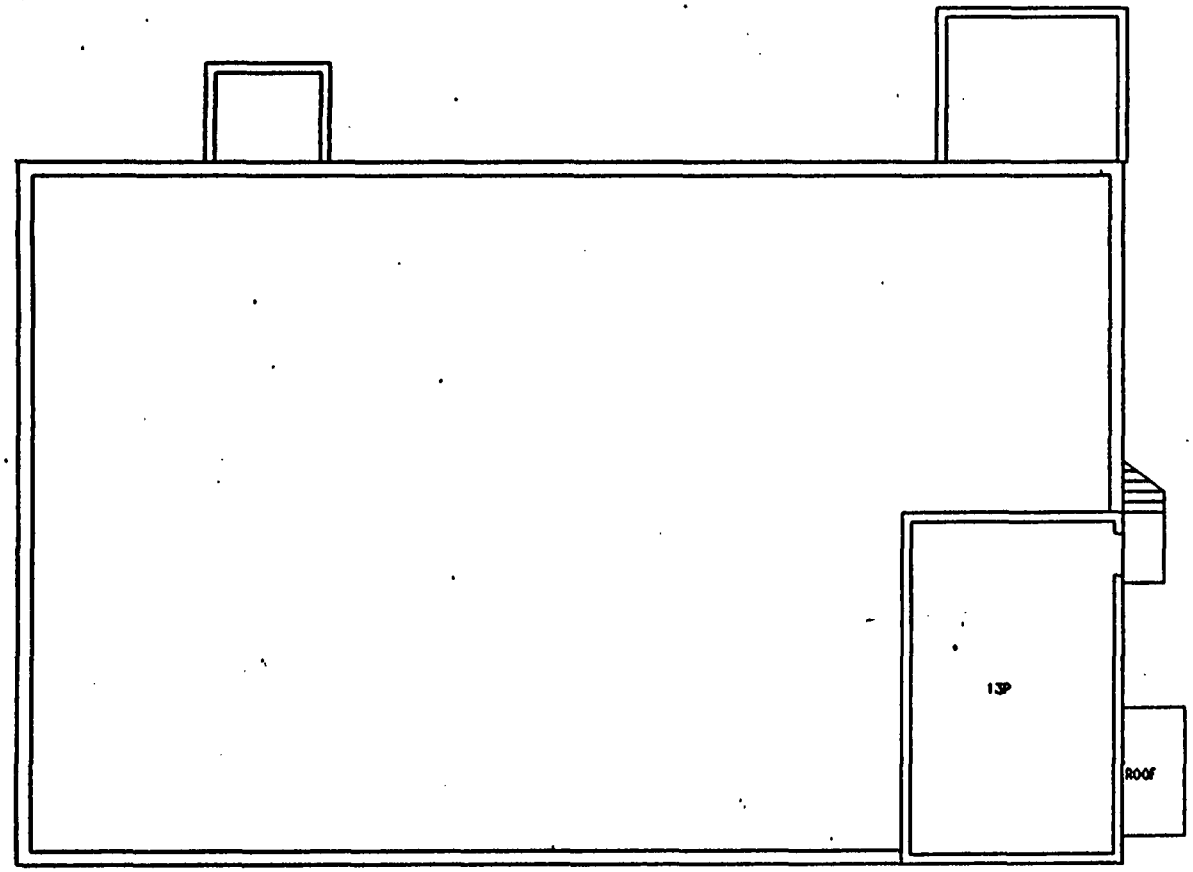
MAY CONTAIN UNCLASSIFIED CONTROLLED NUCLEAR INFORMATION SUBJECT TO SECTION 148 OF THE ATOMIC ENERGY ACT OF 1954, AS AMENDED (42 USC 2168). APPROVAL BY THE DEPARTMENT OF ENERGY PRIOR TO RELEASE IS REQUIRED.

SHEET	1	2	3	4	5	6	TITLE	(U) TITLE CLASSIFICATION
ISSUE	0	0					BLDG #36 FLOOR PLANS	
MAX CLASSIFICATION								
DRAWING CLASSIFICATION: UCNI							SIZE: C	DRAWING NUMBER: FSC911247
								JOB NUMBER: 12335
DWG TYPE: SFP							FROM: BLDG #36	NAME: 14865
SCALE AS NOTED							SHEET 1 OF 2	
STATUS: MD-REL.-12/12/91							ORIGIN: MD-BRJ-V3.3	

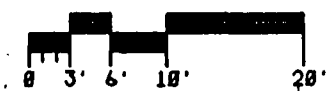
APPROVALS: SAFETY CONSTRUCTIONS REVIEWER: ___ MSC ___ MRSDOC ___ RCDOC ___ EMDOC — DATE:
TECH. REP. ___
ORG. REP. ___
TRUEDOC ___
TEDOC ___
EMDOC ___

DESIGN DWG | PROJ NUM | DRAWN | DWG REV | CP & DC | PROD REV | DWG NUM | APVD | DATE

1 of 2



UNCLASSIFIED & NON-SENSITIVE
Reviewed by Mound Declassification
Office. Reviewer Initials: RDM
5/4/98



UNCLASSIFIED

BLDG #36
PENTHOUSE
BLDG CODE:3036

NOT FOR PUBLIC DISSEMINATION

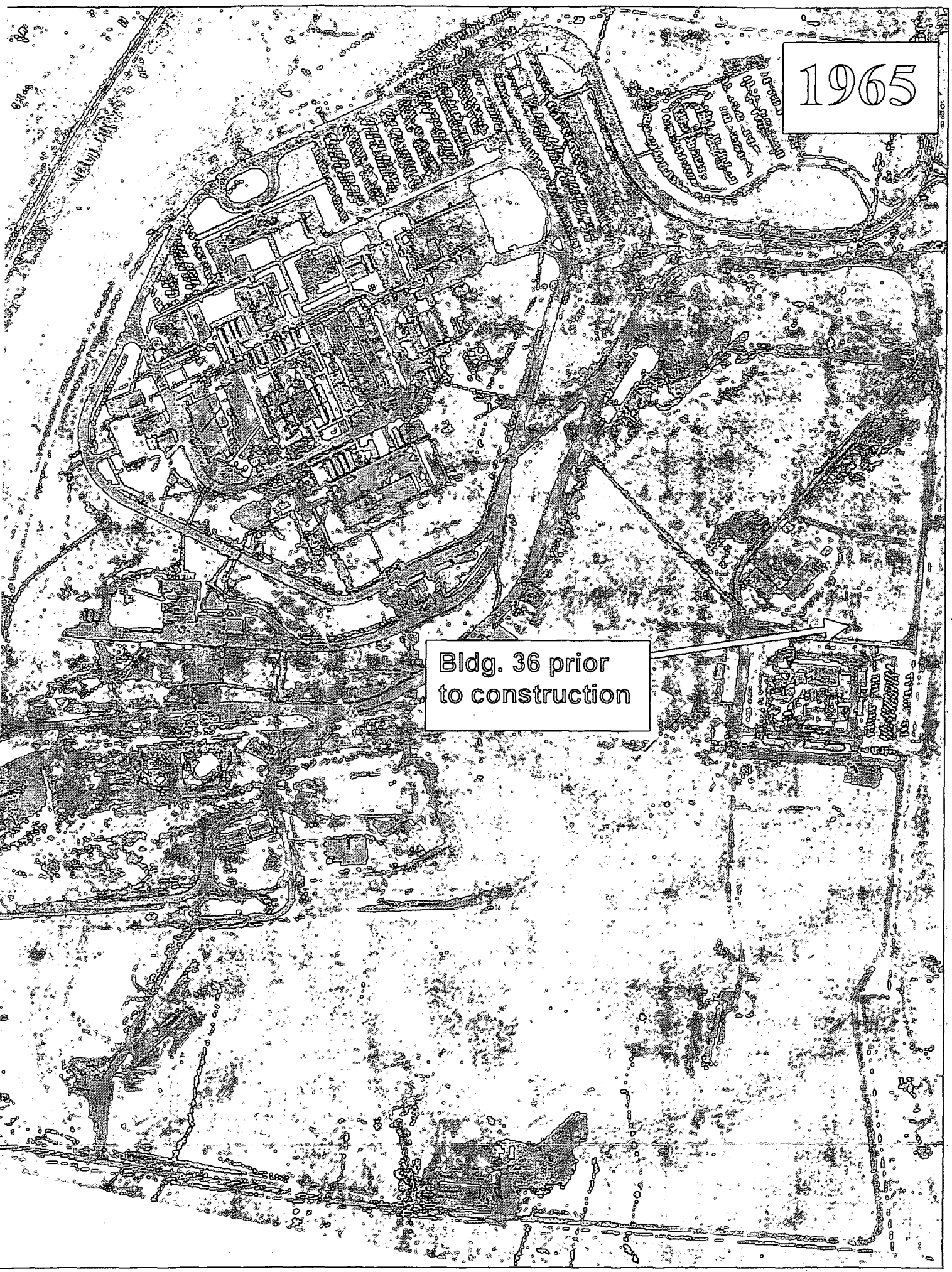
MAY CONTAIN UNCLASSIFIED CONTROLLED NUCLEAR INFORMATION SUBJECT TO SECTION 148 OF THE ATOMIC ENERGY ACT OF 1954, AS AMENDED (42 USC 2168). APPROVAL BY THE DEPARTMENT OF ENERGY PRIOR TO RELEASE IS REQUIRED.

DRAWING NUMBER	FSC911247
JOB NUMBER	12335
DRAWING CLASSIFICATION	UCNI
SIZE	C
CODE	14865
SCALE	AS NOTED
ISSUE	0
SHEET	2
STATUS	MD-REL.-12/12/91

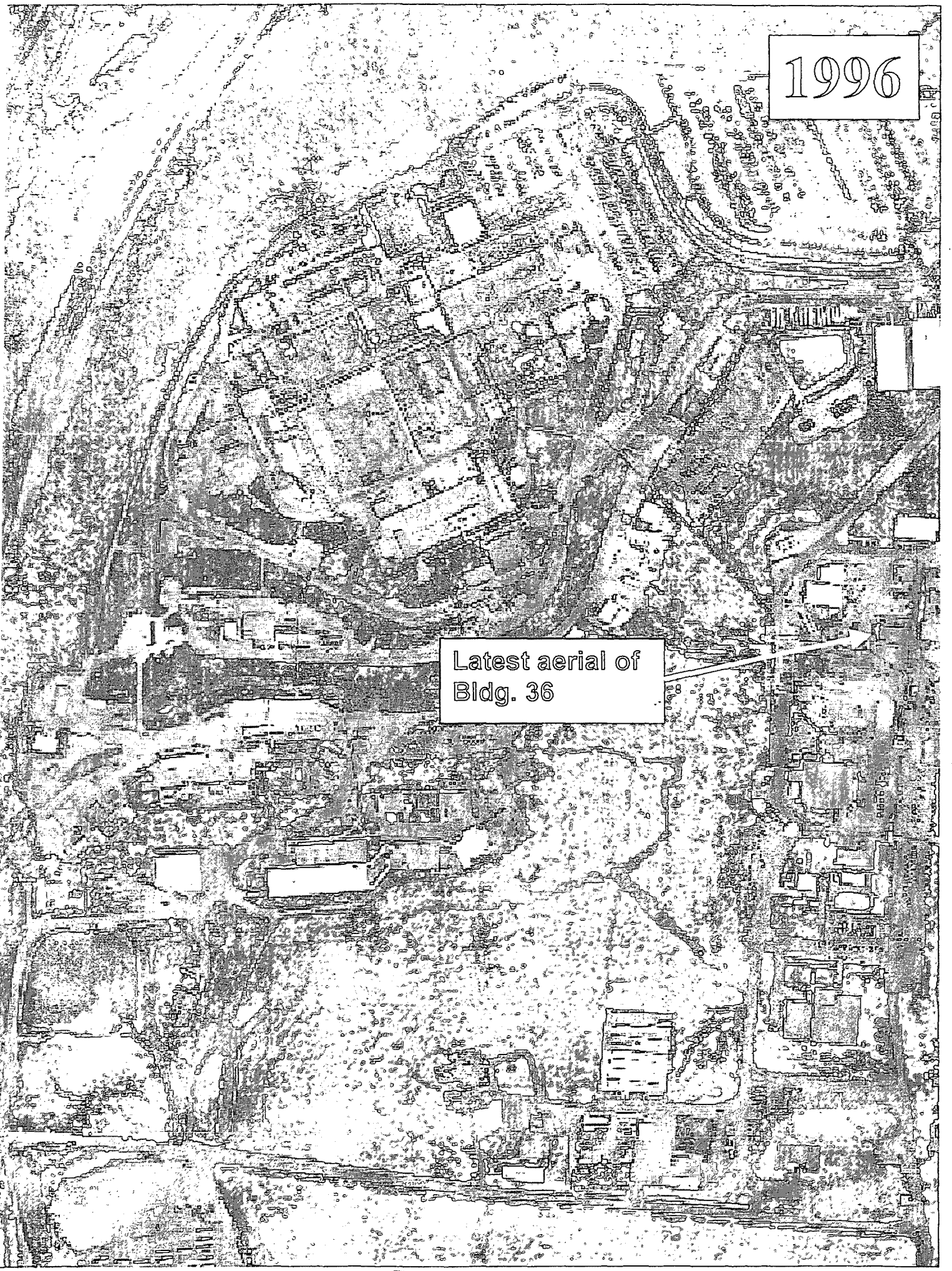
D 2 of 2

Appendix E

Aerial Photographs


1965
Bldg. 36 prior
to construction

E2of3



E3of3

Appendix F

Environmental Appraisal Report of the Mound Plant (excerpt)

Based on a review by subject matter experts,
hand-written corrections have been made to the report provided in this appendix.

9.59 BUILDING 36

9.59.1 Scope of Building 36 Report

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

The appraisal team performed a walk-through of Building 36 on February 26, 1996. The Environmental Appraisal Checklist (EAC) was used to record findings. The EAC is found in Attachment 1 (Section 9.59.6.1). The appraisers were accompanied by the building manager. Other information was supplied by the building manager and recorded on the Building Manager's Questionnaire (BMQ), included as Attachment 2 (Section 9.59.6.2).

9.59.2 Description of Building 36

Corrected 9-24-03 D.C. Kramer

Building 36 is a one-story structure constructed of concrete block with a penthouse. The roof is a metal built-up membrane of asphalt. The building was constructed in ~~1968~~ 1967. Building 36 is located on what is known as the SM/PP hill as shown in Attachment 3 (Section 9.59.6.5). Adjacent buildings are Building 37 to the north, Building 50 to the east, Building 38 to the south, and Building 31 to the west. The building is serviced by ~~central steam for heat,~~ chilled water, and electrical service of 480V (*Mound Facility Physical Characterization*, 12-1-93).

hot water from Bldg 128 for heat UKW 9/25/03

Building 36 is used to support general purpose heat source testing operations. Operations conducted in the building are high-temperature bakeout of graphite modules and cleaning. Room 3 has been renovated and all that remains in it is a fumehood. Total area of Building 36 is 4,255-square-feet. Floor plans are presented as Attachment 4 (Section 9.59.6.4). No research, development or production activities using radiation or energetic materials have occurred in the building (*Mound Facility Physical Characterization*, 12-1-93).

9.59.3 Summary of Findings

Several concerns were identified during the walk-through and during the review of reference materials. The air emission database must be updated. There is an unidentified drum below Building 36 dock. There is an Environmental Protection Agency (EPA) listed water fountain suspected of lead contamination. Containers of chemicals need to be properly labeled, including gas cylinders.

9.59.4 Observations

9.59.4.1 Air Emissions

Three applications were filed on March 5, 1992 for a Permit to Operate (PTO). No PTOs were received from the Regional Air Pollution Control Agency (RAPCA). The applications covered EF-1 and EF-2 in Room 2 and EF-3 in Room 3. Operations and emissions in Room 2 are the same as those listed in Mound's air emission database, but operations in Room 3 are different since it was renovated. The fumehood in Room 3 is currently being used as a staging area for materials to be picked up by Waste Management. Emissions from vacuum pumps are not listed in the air emission database. There are no fuel-burning units in the building. There was no visual evidence of fugitive dust.

9.4.2.2 Water Emissions

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

9.59.4.2.1 Sanitary Wastewater

The building has sanitary services. According to a diagram of underground utility lines, presented as Attachment 5 (Section 9.59.6.5), the building is serviced by a sanitary line. Expected discharges to the sanitary system are by sinks and toilets. Confirmation of drainage of sanitary waste into sanitary conveyance lines was not within the scope of this effort, therefore, dye tests or smoke tests were not conducted. There is no monitoring of building effluent. Based on current operations identified by the process owner, effluent from Building 36 should not deviate from that expected by the sanitary treatment plant manager. No chemicals would be expected to have entered the sanitary system as there are no floor drains in the laboratories.

9.59.4.2.2 Storm Wastewater

The building is also serviced by storm drains according to Attachment 5 (Section 9.59.6.5). Roof drains discharge to the storm sewer according to the BMQ, Attachment 2 (Section 9.59.6.2). Exterior grates and drains were not tested to confirm that they connect to the storm drainage

system. Inspection showed no sign of odors, colored discharges, or scarring which would indicate that any materials other than storm water have entered the storm drainage system

9.59.4.2.3 Process Wastewater

This building does not create or discharge radioactive wastewater to the WD facility. According to Attachment 5 (Section 9.59.6.5), no radioactive wastewater lines service Building 36.

9.59.4.2.4 Chemicals

Chemicals in Building 36 were evaluated against Table V of Appendix D in 40 CFR 122 and none are listed Clean Water Act (CWA) pollutants. Chemical storage and handling procedures are in place for proper disposal of chemicals. A gallon of Dowtherm SR-1 (ethylene glycol) was spilled in Building 36, but none entered the storm or sanitary drains. No floor drains were seen in areas of operations. There is no evidence that chemicals have entered the storm or sanitary drains.

9.59.4.3 Potable and Service Water

Potable water is supplied to the building. Backflow prevention devices are installed at all visible points of potential cross-connections. Potable and service water lines are uniquely marked and easily identified. The bottled water fountain in the building is not an EPA-listed model suspected of lead contamination, but the building water fountain is a listed model suspected of lead contamination. The water fountain suspected of lead contamination was previously removed. VKD 9/25/03

9.59.4.4 Chemical Storage and Hazardous Materials

Chemicals used in Building 36 were attached to the BMQ in Attachment (Section 9.59.6.2). There was no evidence of chemical storage incompatibility. Material Safety Data Sheets (MSDSs) are available in the building and were reviewed for completeness. There is a flammable storage cabinet which meets standard National Fire Protection Association (NFPA) requirements.

Several containers of tungsten molly metals and nickel particle coolant used as simulate fuels were stored in a cabinet. These containers did not have a chemical inventory label attached. Lab personnel did not know why these items were there or how they got there. The materials are not used in any ongoing processes in the building. A bag containing Dowtherm SR-1 coolant was not labeled as such. The coolant was collected in a bag as part of a 1-gallon spill.

Compressed gas cylinders are stored on the north side of building. Full and empty storage bay areas were properly marked with posted signs. Some full/empty tags were not attached to the cylinders.

The building is equipped with appropriate emergency response equipment such as eyewashes, safety showers, and fire extinguishers. Halon 1211 is the prevalent fire extinguisher. Inspection tags were present and current. There is an Emergency Evacuation Plan, and signs are posted in the building.

There is an aboveground storage tank outside Building 36 containing liquid nitrogen. No secondary containment is provided or required. The tank is owned and maintained by Airco, a contractor. This tank supports operations in Building 36. There are no sumps, separators, or catch basins, in or around the building. There are no underground storage tanks associated with Building 36.

The building was tested and does contain asbestos-containing building material (MD-10391, *Asbestos Program Manual*, 9-14-95). There was no visual evidence of friable asbestos. The areas containing asbestos material were identified and properly marked indicating the presence of asbestos.

There are no capacitors or transformers containing polychlorinated biphenyls (PCBs) located in the building. There is no record of past presence (1995 PCB Annual Document Log).

9.59.4.5 Solid, Hazardous, and Chemical Wastes

The solid waste generated in the building results from offices and laboratory activities. Solid wastes are removed by janitorial personnel to a local collection point, then shipped offsite to a local landfill by a service contractor. The disposal contract is maintained by Waste Management. There is no visual evidence that hazardous materials or wastes are mixed with solid waste streams.

Hazardous wastes generated by the operations in Building 36 are stored in solvent cans as a Satellite Accumulation Area (SAA) located inside the building. The SAA procedures and appearance conform to RCRA requirements. Hazardous wastes are characterized prior to being collected by the Waste Management Group. Hazardous wastes are transported and stored in Building 72 for ultimate disposal. There is no onsite treatment of waste. Waste disposal manifests and Certificates of Disposal are maintained by the EG&G Waste Management Group.

There was an unidentified 55-gallon drum outside of Building 36 below the west dock. Contents of the drum are unknown.

9.59.4.6 Waste Minimization and Pollution Prevention

At Mound there is an active program to minimize waste streams in accordance with state and federal requirements and Executive Order 12856. The use of Freon has been discontinued in the cleaning operations in Building 36.

9.59.5 Findings and Recommendations

Photographs were taken to document the environmental appraisal. They are included as Attachment 6 (Section 9.59.6.6). The environmental appraisal of Building 36 indicates that the following action items, in priority order, should be planned and scheduled for accomplishment thus assuring that best management and operating practices are in place.

36-1 Unidentified 55-gallon drum below the Building 36 west dock needs to be identified as to its contents and removed for proper management.

36-2 An EPA-listed water fountain suspected of lead contamination needs to be removed and replaced. This water fountain was removed. VKO 9/25/03

36-3 Secondary containers of chemicals need to be labeled. The bag of Dowtherm SR-1 should be properly, and promptly, disposed of.

36-4 Full and empty gas cylinders shall be stored separately and in a manner that minimizes handling. All gas cylinders shall carry a legible label or marking identifying their contents (CGA P-1).

36-5 Update air emissions database and air permit application for Building 36. RAPCA should be notified of the change in status of the fumehood in Room 3 (OAC 3745-31).

ENVIRONMENTAL APPRAISAL CHECKLIST

Building Name 36 -

Appraisers: Ronald Paulick
Name Discipline

Billie J. Williams
Name Discipline

Philip A Parker
Name Discipline

Name Discipline

Building Manager: G D Miller for P. C. Molloy

Process Manager:

Date: 2-26-96

9.59-9

ENVIRONMENTAL APPRAISAL CHECKLIST

Table of Contents

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Safe Drinking Water Act	7
RCRA Hazardous Waste	8
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TSCA—PCB	14
Low-level and Transuranic Waste	17
Waste Minimization/Pollution Prevention Activities	22

Environmental Appraisal Checklist

Building Name: 36 Appraisers: Pawlak/Adkins/Parker Date: 2-26-96

Clean Water Act (CWA) Screening Checklist

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

CWA Checklist

Regulatory Guideline	Question	Response	Comments
40 CFR 122 Appendix D Table V	If chemicals are used/stored in the building, are they on the attached list? Are they properly contained?	Y / (N) (Y) / N	
	Is the building in operation? What are the processes and where do they discharge to?	(Y) / N _____ _____	KTG support
	Do the floor drains, sinks & toilets appear to be draining properly?	(Y) / N	
OAC 3745-33	Do the floor drains and sinks drain to a sanitary or storm sewer?	(Sanitary) Storm	
	Is there a sump/pit in the building? If so, what does it contain? How often is it pumped out? Does water collect in sump? Does sump have secondary containment?	(X) / (N) _____ _____ Y / N Y / N	N/A
	Are there any manholes, catch basins, drains, or fill pipes in or around the building? If so, are there any unusual appearances, colors, and/or odors? Describe in comment section. Can chemicals flow into the drain?	(Y) / N Y / (N) Y / (N)	

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9.59-11

9.59-12

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Environmental Appraisal Checklist

Building Name: 36 Appraisers: Paulick/Adkins/Parker Date: 2-26-96

Clean Air Act (CAA) Screening Checklist

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

CAA Checklist

Regulatory Guideline	Question	Response	Comments
	Are there existing air permits or applications applicable to the building?	(Y) / N	exempt. in Rm 2
OAC 3745-31,35	If yes, are the terms and conditions of the permit or the information included on the application (see air emissions database) being followed? Note any differences and update the air emissions database.	(Y) / N	rm 3 hood not being used ~~for~~ as intended.
OAC 3745-31	Are there any sources that are not included in the air emissions database? If so, note the room, hood number, active or not, POC, and applicable air emission database information on Table B.	(Y) / (N)	Vacuum pumps, ? may vent to exhaust or outside
OAC 3745-31-03	Are there sources which are lab equipment of lab fumeheads used exclusively for chemical or physical analyses and bench scale lab equipment? These sources do not require a permit. However, the air emissions database should be updated.	Y / (N)	
	Has there been any release of air contaminants from this building?	Y / (N)	

Environmental Appraisal Checklist

Building Name: 36

Appraisers: Paulsen / Adkins / Parker Date: 2-26-96

CAA Checklist ~~Page intentionally left blank~~ RP 3/8/96

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

TABLE A

Process Source	Room Number	Hood Number	In Database	Active	Chemicals Used	Quantity Used	Quantity to Waste Management	Hours/Yr. Operation	Air Emissions
Vac pumps	004 005		Y / (N)	(Y) / N					
	003		(Y) / N	Y / N ?	Not being used as intended. room was remodeled.				
			Y / N	Y / N					
			Y / N	Y / N					
			Y / N	Y / N					

Source: _____

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Environmental Appraisal Checklist

Building Name: 36 Appraisers: Paulick/Adkins/Parker Date: 2-26-96

Hazardous Materials (HM) Screening Checklist

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

HM Checklist

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

File 47

Environmental Appraisal Checklist

Building Name: 36 Appraisers: Pouchet/Adkins/Parker Date: 2-26-96

HM Checklist

Regulatory Guideline	Question	Response	Comments
29 CFR 1910.106(d)(7)	All flammable/combustible storage locations have at least one 12-B portable fire extinguisher located outside and within 10 ft. of a door opening into any room for storage. No smoking signs are posted.	(Y) / N	Halon 1211 fire extinguishers
29 CFR 1910.151	Eyewashes/showers shall be provided within the work area. Ensure unit is operational.	(Y) / N	
CGA P-1 3.3 & 3.3.10	All gas cylinders (full or empty) shall carry a legible label or marking identifying the contents.	(Y) / N	
CGA P-1 3.5.3	Full and empty containers should be stored separately with the storage layout planned so that containers comprising of old stock can be removed first with a minimum handling of other containers.	(Y) / N	
CGA P-1 3.5.8	All compressed gas containers in service or in storage shall be stored standing upright and the container shall be secured.	(Y) / N	
CGA P-1 4.2.2	Oxygen cylinders shall be separated from flammable gas containers or combustible materials a minimum of 20 ft. or a noncombustible barrier 5 ft. high.	(Y) / N	
29 CFR 1910.104(2)(10)	Oxygen stored as a liquid shall be on a noncombustible surface. Asphalt is considered combustible. Wood and long dry grass shall be cut back 15 ft. from the container.	(Y) / N	
29 CFR 1910.104	Bulk oxygen storage shall be permanently placarded "OXYGEN - NO SMOKING - NO OPEN FLAMES".	Y / N	N/A No Bulk Storage of O_2
	Is there a sign posted in each work area regarding emergency egress and emergency response action?	(Y) / N	
	Is there an emergency response plan available?	(Y) / N	

9.59-16

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Environmental Appraisal Checklist

Building Name: 36 Appraisers: Paulick/Adkins/Parker Date: 2-26-96

HM Checklist

Regulatory Guideline	Question	Response	Comments
	Is there a process area?	(Y) / N	
	Does it have proper containment?	Y / N	N/A
	Is there a liquid bulk transfer area?	Y / (N)	
	Is there proper containment?	Y / N	N/A
	Is there an above ground storage tank? If so, complete Table B.	(Y) / N	

Above Ground Storage Tanks Inventory

TABLE B—Above Ground Storage Tanks Inventory

Building	Capacity (Gal.)	Contents	Estimated Volume	In Service	Containment	Visual Stains/ Contamination	If Empty, Flushed
36		Nitrogen		(Y) / N	Y / (N)	Y / (N)	~~Y / N~~
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N

Source: _____

Environmental Appraisal Checklist

Building Name: 36 Appraisers: Paulick/Atkins/Parker Date: 2-26-96

Safe Drinking Water Act (SDWA) Screening Checklist

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

SDWA Checklist

Regulatory Guideline	Question	Response	Comments
OAC 3745 95-02 (A)	Do actual or potential cross-connections exist between potable (light green) and service water (dark green)?	(Y)/ N	
OAC 3745 95-04 (B)(C)	Are backflow prevention devices installed where cross connections (hoses connected to faucets, hot water tank vented directly to a drain) exist?	(Y)/ N	
	Are sources of service water (janitorial and laboratory faucets, or outdoor spigots) posted as non-potable water sources?	(Y) N	
	Does the facility contain any water coolers or fountains ~~that are not lead free?~~ Complete Table C.	(Y)/ N	

TABLE C—Water Fountain Survey

Building	Location	Model #	Comments / Date of Analysis for Lead
36	Room 1	W1118A	Halsey Taylor - EPA LISTED. (*)
36	Room 1	BLF1AHS-100	Oasis - Bottled water TK

Source: _____

(*) The water fountain suspected of lead contamination was previously removed.

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Environmental Appraisal Checklist

Building Name: 36 Appraisers: Paulick/Adkins/Parker Date: 2-26-96

RCRA Screening Checklist

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

RCRA Checklist

Regulatory Guideline	Question	Response	Comments
OAC 3745 52-11	Has any material generated been characterized RCRA hazardous? Was charactarization by analysis or by process knowledge? Are lab results or documentation of process knowledge readily available? Note any uncharacterized material in comment section. Is it waste? If yes, proceed with next section.	(Y) N analysis / process Y / (N) Y / (N)	
OAC 3745 52-11	Are any of the materials noted RCRA hazardous waste? If no, note and stop here. If yes, note the location of the management unit, and the method of management, and proceed with the appropriate section below.	(Y) / N	

Environmenta. ppraisal Checklist

Building Name: 36 Appraisers: Paulick/Adkins/Parker Date: 2-26-96

RCRA Checklist

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

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Environmental Appraisal Checklist

Building Name: 36 Appraisers: Paulick/Adkins/Parker Date: 2-26-96

RCRA Checklist

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

Environmental Appraisal Checklist

Building Name: 36 Appraisers: Paulick/Adkins/Parker Date: 2-26-96

RCRA Checklist

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

Environmental Appraisal Checklist

Building Name: 36 Appraisers: Paulick/Adkins/Parker Date: 2-26-96

RCRA Checklist

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

General Comments:

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Environmental Appraisal Checklist

Building Name: 36 Appraisers: Paulick/Adkins/Parker Date: 2-26-96

Asbestos Screening Checklist

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

Asbestos Checklist

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

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

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Environmental Appraisal Checklist

Building Name: 36 Appraisers: Paulick/Adkins/Parker Date: 2-26-96

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

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

TSCA Checklist

Regulatory Guideline	Question	Response	Comments
40 CFR 761	Has any waste generated in, or from, this building been characterized either through process knowledge or by analyses to determine if it contains PCB's ? If the answer is no, note . If the answer is yes, proceed with next section.	Y / N	No PCB's
	Based on an inspection, are any of the materials or equipment potentially PCB contaminated? If no, note and stop here. If yes, note the location of the management unit, and the method of management, and proceed.	Y / N	
40 CFR 761.65 (c) (5)	Are PCB articles or containers stored in this building checked for leaks at least once every 30 days?	Y / N	
	If yes, are auditable records maintained.	Y / N	
40 CFR.30 (a) (1) (ix)	Are any PCB transformers in use, or stored for possible reuse, that contain PCB's at concentrations of 500 ppm or greater?	Y / N	
	Are they visually inspected quarterly? If yes, are auditable records maintained?	Y / N	

Environmental Appraisal Checklist

Building Name: 36 Appraisers: Paulick/Adkins/Parker Date: 2-26-96

TSCA Checklist

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

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Environmental Appraisal Checklist

Building Name: 36 Appraisers: Paulick/Adkins/Parker Date: 2-26-96

TSCA Checklist

Regulatory Guideline	Question	Response	Comments
40 CFR 761.65 (c) (2)	Only non-leaking and undamaged large high voltage PCB's capacitators and PCB-containing electrical equipment are allowed to be stored outside of PCB storage areas, on pallets if stored outside, with containment for 10 percent of the volume of the equipment. Do all PCB's stored in this configuration conform with this requirement?	Y / N	No PCB's
40 CFR 761.45 and .65	Are all PCB storage areas marked with a large PCB mark as described in 40 CFR 761.45 (a)?	Y / N	
40 CFR 761.65 (c) (5)	Have all leaking PCB articles and containers been transferred to non-leaking containers?	Y / N	
40 CFR 761.65 (c) (6)	Do all PCB storage containers for the storage of liquid and non-liquid PCB's comply with DOT shipping container specifications?	Y / N	

GENERAL COMMENTS:

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Environmental Appraisal Checklist

Building Name: 36 Appraisers: Pawlak/Adkins/Parker Date: 2-26-96

Low-Level Waste and Transuranic Waste Screening Checklist

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

Low-Level Waste and Transuranic Waste Checklist

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

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Environmental Appraisal Checklist

Building Name: 36 Appraisers: Paulick/Adkins/Parker Date: 2-26-96

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
DOE Order 5820.2A Chapter III, 3.d.	Based on field data, is the characterization of the materials in this area sufficient to assure proper segregation to assure proper segregation, treatment, storage, and disposal?	Y / N	No Rad Waste
	Based on field data does the characterization as documented at the time of generation of the waste ensure that the actual physical and chemical characteristics, and major radionuclide content of this material are recorded and known at all stages of the waste management process?	Y / N	
	Do characterization data include the following:		
	Physical and chemical characteristics of the waste?	Y / N	
	Volume of the waste (including solidification and absorbent material)?	Y / N	
	Weight of the waste (including solidification and absorbent material)?	Y / N	
	Major radionuclides and their concentrations?	Y / N	
	Packaging date, package weight, external volume?	Y / N	
	How were the concentration of radionuclides determined? Direct methods?	_____	
	How were the concentrations of radionuclides determined? Indirect methods?	_____	
DOE Order 5820.2A Chapter III, 3.h	Is the storage configuration in long term storage sufficient to meet the performance standard?	Y / N	
	Are records maintained at the facility enabling this waste to be traced from its origin?	Y / N	

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Environmental Appraisal Checklist

Building Name: 36 Appraisers: Paulick/Adkins/Parker Date: 2-26-96

Low-Level Waste and Transuranic Waste Checklist

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

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Environmental Appraisal Checklist

Building Name: 34

Appraisers: Faulkner/Adkins/Parker

Date: 2-26-96

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
DOE Order 5820.2A, Chapter II, 3.b	Has the TRU waste been assayed or otherwise evaluated to determine its radioactive content prior to storage?	Y / N	No TRU Waste
	Has the TRU waste been characterized or otherwise evaluated to determine if hazardous waste is present?	Y / N	
	Has classified TRU waste been treated to destroy the classified characteristics?	Y / N	
DOE Order 5820.2A, Chapter II 3.d	Has all newly generated TRU waste been packaged in non-combustible packaging that meets DOT requirements?	Y / N	
	Have all Type A TRU waste packages been equipped with a method to prevent pressure buildup?	Y / N	
	Have all TRU packages been marked, labeled and sealed in accordance with 40 CFR 261 Subpart C and 49 CFR 172 Subparts D, E and 49 CFR 173 Subpart I?	Y / N	

Environmental Appraisal Checklist

Building Name: 36 Appraisers: Paulick/Adkins/Parker Date: 2-26-96

Low-Level Waste and Transuranic Waste Checklist

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

GENERAL COMMENTS:

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Environmental Appraisal Checklist

Building Name: 34 Appraisers: Paulick/Atkins/Parker Date: 2-26-96

Waste Minimization/Pollution Prevention Activities Screening Checklist

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

Waste Minimiaztion/Pollution Prevention Activities Checklist

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

Environmental Appraisal Checklist

Building Name: 36 Appraisers: Paulick/Atkins/Riker Date: 2-26-96

Waste Minimization/Pollution Prevention Activities Checklist

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

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Environmental Appraisal Checklist

Building Name: 36 Appraisers: Paulick/Atkins/Parker Date: 2-26-96

Waste Minimization/Pollution Prevention Activities Checklist

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

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Environmental Appraisal Checklist

Building Name: 36 Appraisers: Paulick/Adkins/Parker Date: 2-26-96

Waste Minimization/Pollution Prevention Activities Checklist

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

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Environmental Appraisal Checklist

Building Name: 36 Appraisers: Paulick/Parker/Adkins Date: 2-26-96

Waste Minimization/Pollution Prevention Activities Checklist

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

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Environmental Appraisal Checklist

Building Name: 36 Appraisers: Paulick/Adkins/Parker Date: 2-26-96

Waste Minimization/Pollution Prevention Activities Checklist

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

Building Manager's Questionnaire

Building Name: 36 Building Manager: P.C. Mollov Phone: 3869 Date: 12-07-95
Alternate: T.J. Gerrard Phone: 5568

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

None

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

Some areas safety glasses req'd.

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

Clean-room 80-36 Rm 2 access with 80 operations supervisor permission.

4. Provide a physical description of the building.

corrected: 1967 RCKramer 9-17-03

Building 36 was built in ~~1968~~ and contains 4,255 ft². It is constructed of concrete blocks with a BUM roof (asphalt). HVAC systems are ~~central steam~~ and chilled water. The one-story building has asbestos in the thermal insulation systems, but there is no contamination from radiological or energetic materials.

HOT WATER (FROM BLDG. 128-PST BOILER BLDG.) Corrected RCKramer 9-17-03

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

5. Provide a drawing of the building.

Attached.

6. What is the current building use?

The building supports the GPHS testing operations. ~~Three~~ Two high-temperature bake-out ovens ~~and a long-term temperature facility operate continuously~~. The building also houses a ~~degreasing~~ cleaning facility (Clean-room)

Source: Mound Buildings, 5-9-95

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

Source: Mound Buildings, 5-9-95

Building Name: 36 Building Manager: P.C. Mollov Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

Process(es) Housed: Cleaning and baking heat source components, electronics shop

How Wastes Are Generated:

In one portion of this building heat source components are baked in high-vacuum furnaces. No hazardous wastes are generated.

In another portion of the building, heat source components are cleaned. Some parts are cleaned by spraying them with Freon. The Freon usually evaporates and goes up the stack. Others are wiped clean with alcohol. The alcohol evaporates, and no liquid waste is generated. In some cases parts are cleaned in ultrasonic baths of methylene chloride. The methylene chloride is poured into waste containers and picked up by Waste Management.

Preventive Maintenance of vacuum pumps generates waste vac pump oil.
~~The electronics shop does not generate any hazardous waste.~~
Ethylene Glycol in existing chilled water system potential waste.

Contact:
Phone #:

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

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Building Manager's Questionnaire

Building Name: 36 Building Manager: P.C. Mollov Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

All equipment in RM 4 & 5 has been removed. Future plans include new equipment for RM 5.

10. Does the building have air emission sources? Yes (No)

Process Source	Room Number	Hood Number	Active	Chemicals Used	Quantity Used	Quantity to Waste Management	Lbs./Yr. Operation	Air Emissions
RTG Assembly	002	3600 20002	Y	Acetrol (Vac) Ethanol PF-5052 (perfluora) ~~Freon (113)~~ Argon		.02 .076 .01 .001	416 158.08 208 2.08	
Safe Shutdown	003	3600 30001	Y	Staging for sealed waste chemicals awaiting W.M. pickup.		3.29 .001		
RTG Assembly	002	3600 20001	Y	Ethanol ~~Freon 11 (113)~~ PF 5052		.076 .094	158.08 195.52	
Vac. pumps	004 005		(Y) / N					
			Y / N					

Source: Mound Air Emissions Database 11/30/95

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Building Name: 36 Building Manager: P.C. Mollov Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

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

Source: Air Permits 2/4/95

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

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

Source: Air Permits 2/4/95

13. Does the building have potable water? (Yes) No

14. Does the building discharge to the storm sewer? (Yes) No
Roof conduits

15. Does the building discharge to the sanitary sewer? (Yes) No
Restrooms.

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

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

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9 59-44

Building Name: 36 Building Manager: P.C. Mollov Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

17. Does the building contain transformers or capacitors? ~~NO~~ YES

Source: PCB ANNUAL DOCUMENT LOG

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

Source: PCB ANNUAL DOCUMENT LOG

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

Chemical Name	State	Amount (MAX)
DUO SEAL PUMP OIL	L	5 GA
1A Cylinder Argon/Hydrogen	G	(20 EA) estimated (1A)
1A Cylinders Argon	G	4 cylinders, MOT REGAS
Ducite SC-100X		
ACTREL 1171L		

Source: Chemical Inventory 1994

ethyl alcohol
PF 5052
Dowtherm SR-1

See HAZ MAT #27 on pg 7.

Building Name: 36 Building Manager: P.C. Mollov Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

Chemical	Amount	Clean-up Measures
Ethylene Glycol	~ 1 gal	Sorb-all absorbent
- Dowtherm SR-1		& soap water mop
		~~[illegible]~~

Source: _____

21. Where do waste chemicals go?

Transfer excess to waste mgmt.

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

General restroom/floor cleaning supplies (inside 80)

23. Where do excess janitorial supplies go?

Transfer excess to waste mgmt.

Source: _____

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

Chemical	Amount	Chemical	Amount

Source: _____

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9.59-46

Building Manager's Questionnaire

Building Name: 36 Building Manager: P.C. Mollov Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

Registration Number	Content	Quantity	Last Inspection Date	Preventive Maintenance Performed	Inside Or Outside
~~7440-37-1~~	~~Argon~~	~~01C~~		~~Y/N~~	
~~7440-37-1~~	~~Argon~~	~~01C~~		~~Y/N~~	
	BULK LIQ(N_2)	CK.		Y/N	Outside

Source: Emergency and Hazardous Chemical Inventory Form - Chemical Storage Tanks on EGG Mound Site Owned and Maintained by Outside Contractors 8/8/94

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

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

Source: _____

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

Materials	Amount
Actrel 1171	31.1
Actrel 1171	24.1
Actrel 1171	16.1
Actrel 1171 Cleaner	32.9
Actrel 1171L	33.3
Actrell	24.3
Alumina	7.9
Aluminum Silicate	8.2
Ascorbic Acid	1.0
Calcium Carbonate	2.1
Calcium Chloride	1.2
Calcium Sulfite	3.5
Carbon	0.2
Colloidal Silica Gel	1.4
Dowtherm Antifreeze Waste	276.0
Durite SC-1008	17.2
Durite SC-1008	17.2

Building Manager's Questionnaire

Building Name: 36 Building Manager: P.C. Mollov Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

Materials	Amount
Durite SC-1008	20.9
Durite, Graphite Mix	3.3
Ethanol	23.4
Ethanol	19.3
Ethanol	28.3
Ethyl Acetate	33.1
Ethyl Alcohol	16.2
Ethyl Alcohol	7.0
Ethylene Glycol, Water Waste	20.2
Ethylene Glycol, Water Waste	20.0
Ferric Nitrate	1.0
Freon	20.0
Freon	25.0
Freon	45.3
Freon	9.7
Freon TF	9.0
Hydrofluoric Acid	0.7
Insta Gel XF	44.6
Mercury Thermometers	0.1
Mercury Thermometers	2.2
Nitric Acid	14.7
Oil Waste	412.5
Oil Waste	464.5
Oil Waste, Hydraulic Oil	252.0
Performance Fluid PF-5052	30.7
Potassium Carbonate	1.7
Potassium Hydroxide	0.7
Sulfamic Acid	20.8
Trichloroethane	0.5

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

—New chemical inventory was recently completed. (See E. Howell) 02/26/96.

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Q 50-48

Building Manager's Questionnaire

Building Name: 36 Building Manager: P.C. Mollov Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

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

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

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

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

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

Source: _____

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9.59-49

Building Name: 36 Building Manager: P.C. Mollov Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

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

Source: _____

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9.59-50

Building Manager's Questionnaire

Building Name: 36 Building Manager: P.C. Mollov Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

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

Source: _____

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

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9.59-51

Building Name: 36 Building Manager: P.C. Mollov Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

> presently reducing excess equipment/materials from 80.

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

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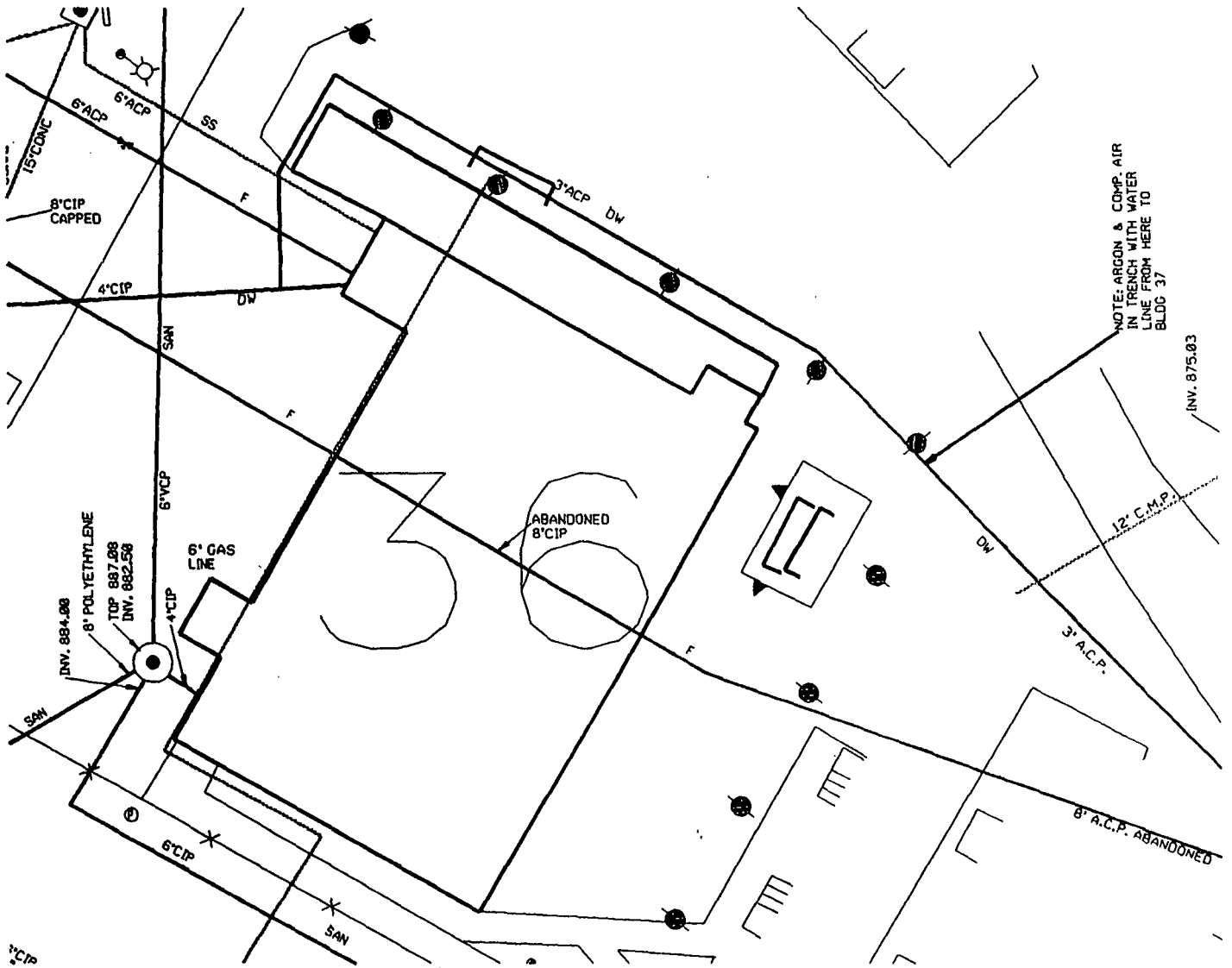


FIRE
POTABLE
RAW
SANITARY
STORM
RADIOLOGICAL

N

UNCLASSIFIED

E.G.&G.-MOUND

UNDERGROUND WATER & WASTE LINES

BLDG. 36
DATE: 03-12-96

9.59-65

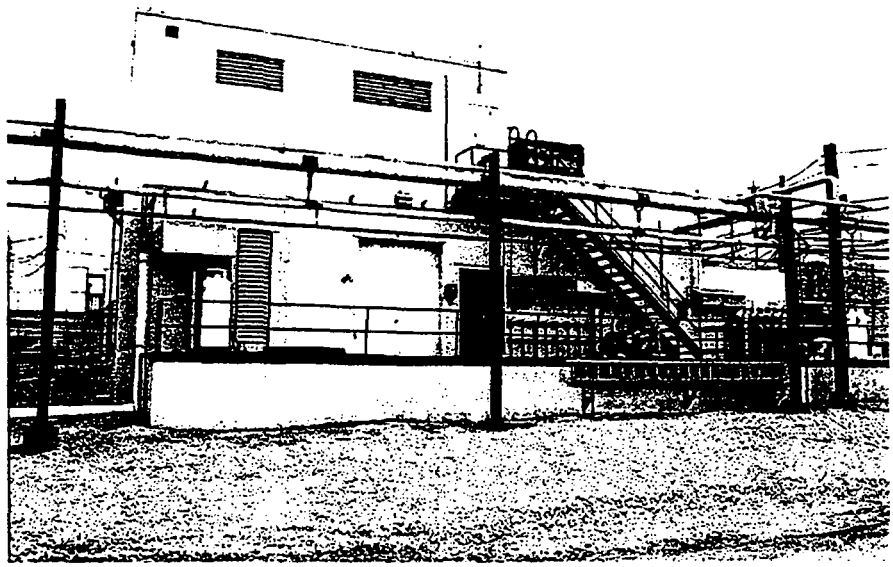
Appendix G

Radiological Information

Pre-demolition Survey Plan

For

Building 36



Prepared By:	**Roderick C. Case**	**Date:**	**9/3/03**
Reviewed By:	**Kevin Doody** CHP	**Date:**	9/4/03
Approved By:	**A. Stephen Collas**	**Date:**	9/4/03

1.0 Historical Overview

Building 36 was constructed in about 1967, as the "System & Capsule Design Testing Facility." The square footage of Building 36 is noted in contemporary documents as 4,255-ft^2. The building included testing equipment and testing facilities such as the "Capsule Impact Facility", and the "Re-entry Ablation Facility" and similar testing equipment.

Descriptors applied to the facility in the 1970s, and into the 1980's included systems and capsule destructive testing, nondestructive testing of encapsulated radioactive components, and welding technology for the encapsulation of radioactive sources, as well as a System & Capsule Destructive Testing Facility.

According to late-1980's site documents, Building 36 contains "Support Functions for RTG Assembly and Testing Operations."

In 1990, and continuing in to the mid-1990's, Building 36 is used for "cleaning and baking heat source components" and an electronics shop." In 1997, an observation was made that Building 36 was still used in support of the Heat Source Program, as well as for records storage and other support activities (i.e., clean room).

"Building 36 is used to support general purpose heat source testing operations. Operations conducted in the building are high-temperature bakeout of graphite modules and cleaning. Room 3 has been renovated and all that remains in it is a fumehood."

Building 36 has been used for the same purpose since construction and no research, development, or production activities using radioactive or energetic materials have occurred in the building.

1.1 Current Status

Building 36 is scheduled for demolition in accordance with the Miamisburg Closure Project goals. It is believed that Building 36 has not been impacted by site operations. The radiological status of all building surfaces must be determined to facilitate a free release of the structure in accordance with site procedures. A characterization study of the radiological condition of this building will direct the appropriate decisions of its final status.

2.0 Data Quality Objectives

The Data Quality Objectives (DQO) process is a series of planning steps that have been defined by the EPA (USEPA, 1998) to ensure that the type, quantity, and quality of survey data used in decision making are appropriate for the intended application. The DQO's for this survey plan are derived from Mound procedures and consistent with the Mound 2000 Approach for building disposition (Reference 2).

2.1 Problem Statement

Determine whether or not the residual radioactivity of the surfaces of building materials associated with Building 36 satisfy the release criteria specified in DOE Order 4500.5.

2.2 Decision Statement

The purpose of this survey plan is to determine if the non-impacted designation of Building 36 is appropriate.

Random measurements of alpha and beta activity will be made on building surfaces and compared directly to the $DCGL_w$. If all of the measurements are below the $DCGL_w$ then no further surveys will be required. If any measurement is above the $DCGL_w$, the affected area will be remediated, reclassified and resurveyed in accordance with Reference 5.

This survey plan will provide the necessary data to make this decision.

2.3 Inputs to the Decision

The Historical Site Assessment and current survey data are initial inputs to determine area classifications. Gross surface activity measurements for alpha and beta activity will be performed. Removable alpha, beta, and tritium activity will be counted. Sediments will be analyzed for radioisotopes and compared to site screening values.

The instrumentation selected for this survey plan will be appropriate for the radionuclides typical for the Mound site.

Surface scanning will be performed to locate anomalies that might indicate elevated areas of residual activity and that require further investigation or remedial action. A floor scan for alpha contamination will be performed using a Ludlum 2350/43-37 Floor Probe at a scan speed of 1 inch per second, with the probe located within 1/4 inch to the surface being scanned. The minimum detectable activity (MDA) is 85dpm/100 cm^2 with 95% detection probability, at a background level equal to or less than 10 cpm. A 30 second integrated count will be performed at locations where elevated measurements are observed. The MDA in the integrated mode is 49dpm/100 cm^2 or 286 dpm/probe.

Direct measurements of building surfaces will be made at fixed locations using a Ludlum 2350/43-68 gas flow proportional probe (or equivalent) for alpha and beta contamination. The integrated count time is one minute. The alpha MDA is 46 dpm/100cm^2 at a background of less than 3 cpm. The beta MDA is 375 dpm/100cm^2 at a background of less than 400 cpm.

The presence of loose surface activity, including H^3 will be determined using coin smears. An area of 100cm^2 will be smeared at each data point. Smears will be counted in an alpha/beta counter. A liquid scintillation counter (LSC) will measure removable tritium. Smear and sediment samples with gross activity above the $DCGL_w$ will be analyzed by alpha or gamma spectroscopy.

All field and laboratory instrumentation will be specified on the Survey Plan Form (SPF) and shall be operated in accordance with the appropriate Mound procedures.

All surveys and samples collected for this survey plan will be performed in accordance with the Quality Control requirements of Reference 3. Replicate surveys, sample recounts, instrument performance checks, chain of custody for samples, control of field survey data and databases, and QC investigations provide the highest level of confidence in the data collected to support the survey outcome. The SPF will specify the QC requirements for this survey.

2.4 Study Boundaries

Defining the study boundaries helps ensure the data taken during the final status survey are representative of the survey unit. The area under consideration is the physical surfaces inside and outside of the Building 36 structure. Subsurface material (under-slab,

footers, etc) and associated soil is not evaluated in this survey, but will be assessed separately when surfaces are accessible in accordance with Mound procedures.

Building 36 surfaces are classified as non-impacted by site operations. No radiological processes were ever used in this building. No unencapsulated radioactive material was used or stored there. The building surfaces will be randomly surveyed to confirm a non-impacted classification. A characterization SPF will be written to specify the specific survey and sampling requirements.

Sampling of building materials will include removable loose surface contamination (smears) and sediment sampling of floor drains and ventilation units. Smears (100cm2) will be collected at survey data point locations. Any areas of elevated activity above the $DCGL_w$ will be evaluated for isotopic content by intrusive sampling or insitu analysis.

For survey planning, the number of data points (n = 20) in the survey unit was obtained from Table 5.5, Reference 5.

2.5 The Decision Rule

A decision rule relates the concentration of residual radioactivity in the survey unit to the release criterion so that decisions can be made based on the results of the final status survey. Reference 6, DOE Order 5400.5, Radiation Protection of the Public and the Environment, offers generic release criteria for building surfaces. Table 1 lists these permissible surface contamination guidelines which were adapted from NRC Regulatory Guide 1.86. Tritium at the Mound facility is an exception. For tritium, 10,000 dpm/100cm^2 was selected based on technical information presented in Reference 4. For purposes of this survey, these limits are considered to be the DCGL's for building and structure release. Since no process activities were ever associated with Building 36, it is assumed that Pu-238 is the potential contaminant of concern and the Group 1 limits are appropriate for alpha measurements. Group 4 limits are used for beta measurements.

Table 1

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

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

The average activity levels shown in Table 1 assumes that the residual contamination is uniformly distributed across the survey unit and are designated $DCGL_w$ in this plan. The maximum activity shown in Table 1 represents the $DCGL_{EMC}$. If the average surface activity within each survey unit is below the $DCGL_w$ and the maximum activity is less than the $DCGL_w$, then it will be accepted as the Final Status Survey and no further survey action is required. If any measurements are found to be above the $DCGL_w$, and the elevated activity can not be attributed to naturally occurring radioisotopes, the area will be considered impacted and reclassified and resurveyed in accordance with Reference 5.

2.6 The Limits on Decision Errors

A Type I error is made when the null hypotheses, H_0, is rejected when it is true. A Type II error is made when the null hypotheses is not rejected when it is false. The error rates are expressed as the probability that a survey unit passes when it should fail (α) or fails when it should pass (β). Because the measurement variability is expected to be small at the DCGL, the $\alpha = 0.05$ and $\beta = 0.01$ for this survey.

The concentration range between the Lower Bound of the Gray Region (LBGR) and the DCGL defines the gray region of residual radioactivity concentration in which the consequences of Type II decision errors are relatively minor. The statistical test uses the LBGR to define the level that, above which, false positive rates greater than that specified by the limits on decision errors are accepted. The LBGR is limited by the variability exhibited by the measurements and the decision errors chosen. Because the detection limits expected by the direct field measurements are low relative to the $DCGL_w$, it is estimated that an LBGR equal to one-half of the $DCGL_w$ can be achieved.

2.7 Optimizing the Design

The DQO process is neither static nor sequential. As new information is gathered it will be incorporated into the planning process. In order to facilitate this process, a Survey Plan Form (SPF) is developed for field use, to direct the specific details required by the overall survey plan. The SPF will specify the types of samples to be collected and the precise locations and analysis to be performed. It will define the specific instruments to be used for the survey and the exact location and type of surveys required. The SPF will specify the Quality Control (QC) requirements of the survey as required by Reference 3. Additional information and comments can be added to clarify or enhance the survey/sample process. The SPF is reviewed and approved prior to beginning the survey and is subsequently reviewed and approved after all data is collected to ensure completeness and accuracy. Data from initial survey efforts may result in altering area classifications. Additional SPF's may be required to complete the final status survey process for a survey unit. A review of the DQO's will ensure that data have appropriately and adequately addressed the stated objectives.

It is critical to the DQO process that the survey units are isolated from the potential for recontamination or disturbances that could lead to invalidating the survey results. Access shall be restricted to all areas where surveys have been completed until such time as the survey unit is released.

2.8 Final Status Survey Report

When all of the DQO's are satisfied, a report of the final status of the building is prepared and submitted for review. This report called a Final Status Survey (FSS) will summarize and document the MARSSIM survey and the final status of the building. The FSS report will be transmitted to the Mound 2000 Core Team for review and approval prior to proceeding with building demolition.

3.0 References

1. CH2MHILL Mound, Inc., EC&AS Department, White Paper: *Building 36 Structural History and Process History Summary Background Document*, February 2003
2. Work Plan, *Mound 2000 Approach*, DOE/MEMP, 1995
3. MARSSIM Implementing Procedures, *Field Quality Control for Building Contamination Surveys*, MD-80046, Op 402
4. DOE, 1991, *Recommended Tritium Surface Contamination Release Guides,* DOE, EH, 0201T, March, 1991; Mound Tritium Committee, Appendix A, Health-Based Risk Assessment for Unconditional Release of Items Contaminated with Tritium
5. NUREG 1575, Rev 1, Aug 2000, *Multi-Agency Radiation Survey and Site Investigation Manual*, (MARSSIM)
6. DOE Order 5400.5, *Radiation Protection of the Public and the Environment*

Appendix I

Asbestos Information

From: Christopher Ahlquist
To: Darnell, Val; Kramer, Donald
Date: 10/2/03 4:54PM
Subject: Bldg 36

Val -

For **Building 36** asbestos and lead paint concerns, the following is provided for your use:

Asbestos

Previous asbestos surveys for Building 36 were completed in 1989 and 1993. These surveys were intended to identify all reasonably accessible asbestos-containing materials within the building for the purposes of identifying damaged material and managing asbestos in place. Asbestos pipe insulation, transite cement board in fume hoods, laboratory counter tops, and floor tiles were previously identified.

During September of 2003, Mr. Christopher Ahlquist, an Industrial Hygienist with CH2M Hill Mound, Inc., performed a comprehensive walk-through survey of all areas of Building 36 in order to identify all asbestos-containing materials prior to demolition of the facility. Mr. Ahlquist is an Ohio Department of Health Certified Asbestos Hazard Evaluation Specialist as required by State regulations for individuals assessing asbestos-containing materials. 450 square feet of sheet vinyl flooring, 204 square feet of laboratory counter tops, and 120 square feet of transite cement board were identified. These materials will be removed by a licensed asbestos hazard abatement contractor under contract to CH2M Hill Mound in accordance with NESHAP requirements prior to commencement of demolition activities.

The asphalt roofing is assumed to contain asbestos, but as a Nonfriable Category II material in accordance with NESHAP it will remain in place during demolition and be disposed of as construction waste. One variety of floor tile within the building was found to be asbestos-containing, but it is also classified as a Category II Nonfriable and need not be removed.

Lead

No previous lead surveys or sampling data could be found for Buildings 36, and paint coatings observed within the building appeared to be intact. Since no significantly degraded paint was seen, no sampling of paint for lead was accomplished.

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

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

These determinations were made by Mr. Christopher Ahlquist who is an Ohio Department of Health Licensed Lead Risk Assessor.

Let me know if I can be of further assistance,

Chris Ahlquist

Date: September 25, 2003

From: Christopher Ahlquist
BOSS Project Team, Safety & Health

To: Jeff Boston
BOSS Project Team, Engineering

Re: Building 36: Asbestos-Containing Materials

During September of 2003, Mr. Christopher Ahlquist, an Industrial Hygienist with CH2M Hill Mound, Inc. (CH2M), completed a survey of Building 36 at the Mound site in Miamisburg, Ohio for purpose of identifying asbestos-containing materials contained therein. Mr. Ahlquist is an Ohio Department of Health Certified Asbestos Hazard Evaluation Specialist as required by Ohio Department of Health regulations. During the course of the survey, Mr. Ahlquist reviewed previous survey reports and sampling data and collected additional bulk samples of materials found within Building 36 as necessary in order to determine the asbestos content of said materials. A room-by-room inspection of all accessible spaces was then conducted in order to prepare an inventory of the location and approximate quantities of identified asbestos-containing materials. Five (5) distinct types of regulated materials were found to contain greater than one percent (>1%) asbestos content which defines a material as asbestos-containing by EPA and OSHA regulations. No asphalt roofing materials were sampled during the course of this or previous referenced surveys, and all such materials should be assumed to contain asbestos until analysis indicates otherwise.

Sample Method

During CH2M's survey bulk samples were collected utilizing sampling methods and protocol specified in the EPA's Asbestos Hazard Emergency Response Act (AHERA). Each sample was collected and placed in a clean, sealable hard-shell container and labeled with a unique sample identification number. Pertinent information was recorded on a Bulk Sample Data Sheet including sample identification number, date of inspection, name of inspector, building name, a brief description and location of the sample, and the type of material sampled (e.g., preformed-block pipe insulation, aircell-paper pipe insulation, etc.).

Analysis of Samples

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

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

The analyzing laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). NVLAP is the agency sponsored by the National Institute of Standards and Technology providing EPA accreditation of laboratories analyzing bulk samples for asbestos content.

Conclusions

The locations of asbestos-containing materials identified, material descriptions, quantities, and other pertinent information can be found on *Table: Inventory of Asbestos-Containing Materials* attached with this report. Five (5) different materials (each represented by a unique assigned homogeneous area number) were identified through analysis to be regulated asbestos-containing material (>1%) per EPA and OSHA definition. Since the quantity of friable material is less than 50 square feet, neither the EPA nor the Ohio Department of Health requires notification prior to removal. However, since the nonfriable materials identified are considered Nonfriable Category II which are likely to become friable during demolition in accordance with EPA, these materials must be removed before demolition can occur. Removal activities must be accomplished by properly trained individuals employing appropriate work methods and engineering controls.

Please call with any questions or concerns.

Respectfully,

Christopher Ahlquist
Industrial Hygienist

TABLE: INVENTORY OF ASBESTOS-CONTAINING MATERIALS
BUILDING 36
SEPTEMBER 25, 2003

Location of ACM	Material Description	Homo-geneous Area No.	Type ACM	Material Quantity (approx.)
Room 2, floor	Vinyl flooring, pebble pattern	1	Misc.	450 sf
Room 2, table tops	Laboratory counter top and back splash, black	2	Misc.	120 sf
Room 2, fume hood	Fume hood lining, grey (transite)	3	Misc.	60 sf
Room 2, fume hood	Fume hood counter top, black	4	Misc.	12 sf
Room 2, fume hood drawer	Fire-rated gloves, white	5	Misc.	1 pair
Room 3, fume hood	Fume hood lining, grey (transite)	3	Misc.	60 sf
Room 3, fume hood	Fume hood counter top, black	4	Misc.	12 sf
Room 4, table tops	Laboratory counter top and back splash, black	2	Misc.	60 sf

Notes:

Misc. = Miscellaneous Material
sf = Square feet

Appendix J

Lead Information

From: Christopher Ahlquist
To: Darnell, Val; Kramer, Donald
Date: 10/2/03 4:54PM
Subject: Bldg 36

Val -

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Previous asbestos surveys for Building 36 were completed in 1989 and 1993. These surveys were intended to identify all reasonably accessible asbestos-containing materials within the building for the purposes of identifying damaged material and managing asbestos in place. Asbestos pipe insulation, transite cement board in fume hoods, laboratory counter tops, and floor tiles were previously identified.

During September of 2003, Mr. Christopher Ahlquist, an Industrial Hygienist with CH2M Hill Mound, Inc., performed a comprehensive walk-through survey of all areas of Building 36 in order to identify all asbestos-containing materials prior to demolition of the facility. Mr. Ahlquist is an Ohio Department of Health Certified Asbestos Hazard Evaluation Specialist as required by State regulations for individuals assessing asbestos-containing materials. 450 square feet of sheet vinyl flooring, 204 square feet of laboratory counter tops, and 120 square feet of transite cement board were identified. These materials will be removed by a licensed asbestos hazard abatement contractor under contract to CH2M Hill Mound in accordance with NESHAP requirements prior to commencement of demolition activities.

The asphalt roofing is assumed to contain asbestos, but as a Nonfriable Category II material in accordance with NESHAP it will remain in place during demolition and be disposed of as construction waste. One variety of floor tile within the building was found to be asbestos-containing, but it is also classified as a Category II Nonfriable and need not be removed.

Lead

No previous lead surveys or sampling data could be found for Buildings 36, and paint coatings observed within the building appeared to be intact. Since no significantly degraded paint was seen, no sampling of paint for lead was accomplished.

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

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

These determinations were made by Mr. Christopher Ahlquist who is an Ohio Department of Health Licensed Lead Risk Assessor.

Let me know if I can be of further assistance,

Chris Ahlquist

Appendix K

Chemical Information

Applicable pages of *CY2001 Emergency and Hazardous Chemical Inventory Report* (dated March 2002) are provided.

Also provided is a list of chemicals known to have been in this Building.

BWXT of Ohio, Inc.

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

March 2002

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

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

K 1 of 4

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

STAPLE

Emergency and Hazardous Chemical Inventory Form

K2of4

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

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

5.0	Chemical Description										Hazard Class					Location of Chemicals						Amount			
	CAS REGISTRY NO.	SPECIFIC CHEMICAL NAME	PURE	MIXTURE	COMPONENTS	EHS CHEMICAL	SOLID	LIQUID	GAS	TRADE SECRET	ACUTE	CHRONIC	FIRE	REACTIVE	RELEASE OF PRESSURE	B, T, OR A BUILDING, TANK OR AREA NO.	DIVISION OR ROOM LETTER	FLOOR	STORAGE TYPE CODE	PRESSURE & TEMPERATURE CONDITIONS	LOCATION-CONFIDENTIAL	MAXIMUM	AVERAGE	UNITS	NO. OF DAYS ON SITE
1	7440-37-1	argon	X						X		X				X	B-36	4	1	L	2,4		01	01	C	365
2	7440-37-1	argon		X					X		X				X	B-36	4	1	L	2,4		01	01	C	365
3	7440-37-1	argon	X						X		X				X	B-36	5	1	L	2,4		01	01	C	365
4	7440-37-1	argon	X						X		X				X	B-36	dock	1	L	2,4		02	02	C	365

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

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

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

Richard B Provencher
SIGNATURE

2/27/02
DATE SIGNED

EPA 0317 Revised 5/3/89

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

STAPLE

Emergency and Hazardous Chemical Inventory Form

K3 of 4

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

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

Tank T02 is adjacent to Bldg 36. VKW 9/25/03

5.0	Chemical Description										Hazard Class					Location of Chemicals						Amount			
	CAS REGISTRY NO.	SPECIFIC CHEMICAL NAME	PURE	MIXTURE	COMPONENTS	EHS CHEMICAL	SOLID	LIQUID	GAS	TRADE SECRET	ACUTE	CHRONIC	FIRE	REACTIVE	RELEASE OF PRESSURE	S, T, OR A BUILDING, TANK OR AREA NO.	DIVISION OR ROOM LETTER	FLOOR	STORAGE TYPE CODE	PRESSURE & TEMPERATURE CONDITIONS	LOCATION-CONFIDENTIAL	MAXIMUM	AVERAGE	UNITS	NO. OF DAYS ON SITE
1	7782-37-9	nitrogen	X					X	X		X				X	T02			A	2,7		04	04	C	365
[redacted]																									
[redacted]																									
[redacted]																									
[redacted]																									
[redacted]																									

CERTIFICATION (READ AND SIGN AFTER COMPLETING ALL SECTIONS)

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

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

SIGNATURE

2/27/02
DATE SIGNED

EPA 0317 Revised 5/3/89

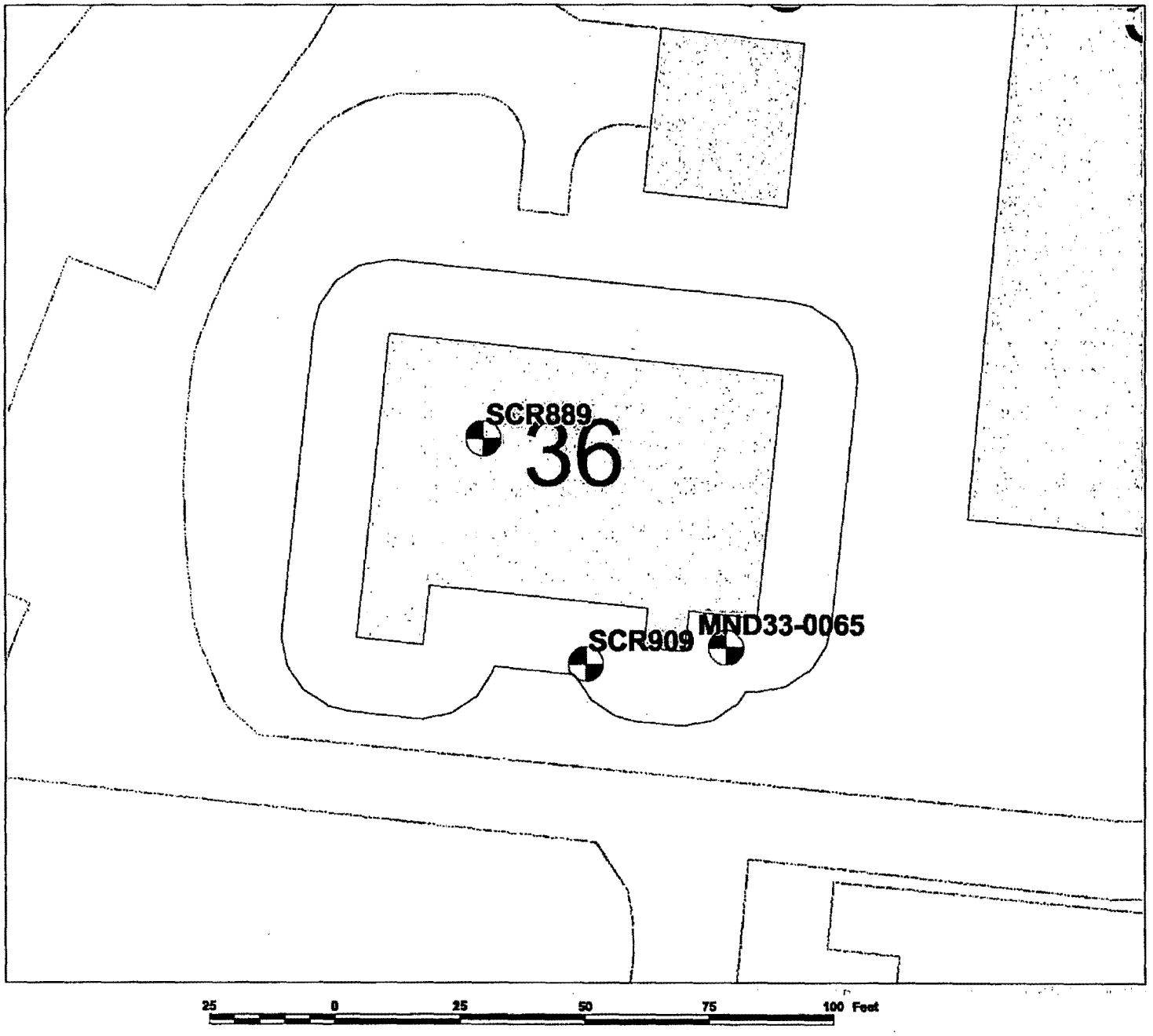
Chemicals and Products Previously Used or Stored in Building 36

Acetone
Actrel
Actrel 1171
Actrel 1171 cleaner
Actrel 1171L
Alumina
Aluminum Silicate
Argon
Argon 94%/hydrogen 6%
Argon 96%/hydrogen 4%
Ascorbic acid
Calcium carbonate
Calcium chloride
Calcium sulfite
Carbon
Chlorodifluoromethane
Colloidal silica gel
Dichlorodifluoromethane
Dowtherm antifreeze waste
Dowtherm SR-1
Durite SC-1008
Durite, graphite mix
Epoxy paint
Ethanol
Ethyl acetate
Ethyl alcohol
Ethylene glycol antifreeze
Ethylene glycol, water waste
Ferric nitrate
Freon
Freon TF
Helium
HF-E-71DA
Hydrofluoric acid
Insta Gel XF
Isopropanol
Mercury thermometers
Nitric acid
Nitrogen
Oil waste
Oil waste, hydraulic oil
Oxygen 96%/hydrogen 4%
Performance fluid PF-5052
PF 5052
Potassium carbonate
Potassium hydroxide
Prestone container
Propylene glycol
Sulfamic acid
Trichloroethane

Appendix L

Soil Sampling, Vicinity

Historic Sample Locations within 15 feet of Building 36



Sample Detect

Borehole

N
W
E
S

MOUND

Environmental Restoration Geographic Information System

04/30/03

Building 36 Detects

Location_ name	Sample_id	Collection_ date	Value_name	Measured_ value	Value_ units	Detection _limit	Chem_ class	Start_ depth	End_ depth	Lab	Data	Project_code	Media	Comments
MND33-0065	0065-0001	19911121	2-Butanone	1.0000	UG/KG	11.0000	ORVOA	4.5	8.0	J	J	MND33	Soil	
SCR909	8812213-A	19881221	Plutonium-238	27.0000	PCI/G		RAD	2.0	2.0			SCRDATA	Soil	12
SCR889	8812279	19881227	Plutonium-238	26.0000	PCI/G		RAD	1.0	1.0			SCRDATA	Soil	12
SCR909	88122113	19881221	Plutonium-238	26.0000	PCI/G		RAD	2.0	2.0			SCRDATA	Soil	12
SCR909	9405939	19940608	Thorium-232	2.9000	PCI/G		RAD	0.0	0.0			SCRDATA	Soil	123
SCR909	8812213-A	19881221	Thorium-232	2.1000	PCI/G		RAD	2.0	2.0			SCRDATA	Soil	123

*Comments

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

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

Building 36 Non-Detects

Location_name	Sample_id	Collection _date	Value_name	Measured _value	Value_ units	Detection _limit	Chem_ class	Start_ depth	End_ depth	Lab	Data	Project_co de	Media
MND33-0065	0065-0001	19911121	1,1,1-Trichloroethane	6.0000	UG/KG	6.0000	ORVOA	4.5	8.0	U	U	MND33	Soil
MND33-0065	0065-0001	19911121	1,1,2,2-Tetrachloroethane	6.0000	UG/KG	6.0000	ORVOA	4.5	8.0	U	U	MND33	Soil
MND33-0065	0065-0001	19911121	1,1,2-Trichloroethane	6.0000	UG/KG	6.0000	ORVOA	4.5	8.0	U	U	MND33	Soil
MND33-0065	0065-0001	19911121	1,1-Dichloroethane	6.0000	UG/KG	6.0000	ORVOA	4.5	8.0	U	U	MND33	Soil
MND33-0065	0065-0001	19911121	1,1-Dichloroethene	6.0000	UG/KG	6.0000	ORVOA	4.5	8.0	U	U	MND33	Soil
MND33-0065	0065-0001	19911121	1,2-Dichloroethane	6.0000	UG/KG	6.0000	ORVOA	4.5	8.0	U	U	MND33	Soil
MND33-0065	0065-0001	19911121	1,2-Dichloroethene	6.0000	UG/KG	6.0000	ORVOA	4.5	8.0	U	U	MND33	Soil
MND33-0065	0065-0001	19911121	1,2-Dichloropropane	6.0000	UG/KG	6.0000	ORVOA	4.5	8.0	U	U	MND33	Soil
MND33-0065	0065-0001	19911121	1,3-cis-Dichloropropene	6.0000	UG/KG	6.0000	ORVOA	4.5	8.0	U	U	MND33	Soil
MND33-0065	0065-0001	19911121	1,3-trans-Dichloropropene	6.0000	UG/KG	6.0000	ORVOA	4.5	8.0	U	U	MND33	Soil
MND33-0065	0065-0001	19911121	2-Hexanone	11.0000	UG/KG	11.0000	ORVOA	4.5	8.0	U	U	MND33	Soil
MND33-0065	0065-0001	19911121	4-Methyl-2-pentanone	11.0000	UG/KG	11.0000	ORVOA	4.5	8.0	U	U	MND33	Soil
MND33-0065	0065-0001	19911121	Acetone	11.0000	UG/KG	11.0000	ORVOA	4.5	8.0	JB	U	MND33	Soil
MND33-0065	0065-0001	19911121	Benzene	6.0000	UG/KG	6.0000	ORVOA	4.5	8.0	U	U	MND33	Soil
MND33-0065	0065-0001	19911121	Bromodichloromethane	6.0000	UG/KG	6.0000	ORVOA	4.5	8.0	U	U	MND33	Soil
MND33-0065	0065-0001	19911121	Bromoform	6.0000	UG/KG	6.0000	ORVOA	4.5	8.0	U	U	MND33	Soil
MND33-0065	0065-0001	19911121	Bromomethane	11.0000	UG/KG	11.0000	ORVOA	4.5	8.0	U	U	MND33	Soil
MND33-0065	0065-0001	19911121	Carbon Disulfide	6.0000	UG/KG	6.0000	ORVOA	4.5	8.0	U	U	MND33	Soil
MND33-0065	0065-0001	19911121	Carbon Tetrachloride	6.0000	UG/KG	6.0000	ORVOA	4.5	8.0	U	U	MND33	Soil
MND33-0065	0065-0001	19911121	Chlorobenzene	6.0000	UG/KG	6.0000	ORVOA	4.5	8.0	U	U	MND33	Soil
MND33-0065	0065-0001	19911121	Chloroethane	11.0000	UG/KG	11.0000	ORVOA	4.5	8.0	U	U	MND33	Soil
MND33-0065	0065-0001	19911121	Chloroform	6.0000	UG/KG	6.0000	ORVOA	4.5	8.0	U	U	MND33	Soil
MND33-0065	0065-0001	19911121	Chloromethane	11.0000	UG/KG	11.0000	ORVOA	4.5	8.0	U	U	MND33	Soil
MND33-0065	0065-0001	19911121	Dibromochloromethane	6.0000	UG/KG	6.0000	ORVOA	4.5	8.0	U	U	MND33	Soil
MND33-0065	0065-0001	19911121	Dichloromethane (Methylene Chloride)	6.0000	UG/KG	6.0000	ORVOA	4.5	8.0	JB	U	MND33	Soil
MND33-0065	0065-0001	19911121	Ethylbenzene	6.0000	UG/KG	6.0000	ORVOA	4.5	8.0	U	U	MND33	Soil
SCR889	8812275	19881227	Plutonium-238	24.0000	PCI/G		RAD	2.0	2.0	U		SCRDATA	Soil
SCR909	9405622	19940601	Plutonium-238	23.0000	PCI/G		RAD	4.5	4.5	U		SCRDATA	Soil
SCR889	88122710	19881227	Plutonium-238	20.0000	PCI/G		RAD	2.0	2.0	U		SCRDATA	Soil
SCR889	8812278	19881227	Plutonium-238	16.0000	PCI/G		RAD	1.0	1.0	U		SCRDATA	Soil

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Location_name	Sample_id	Collection _date	Value_name	Measured _value	Value_ units	Detection _limit	Chem_ class	Start_ depth	End_ depth	Lab	Data	Project_co de	Media
SCR889	8812271	19881227	Plutonium-238	14.0000	PCI/G		RAD	1.0	1.0	U		SCRDATA	Soil
SCR889	8812274	19881227	Plutonium-238	12.0000	PCI/G		RAD	1.0	1.0	U		SCRDATA	Soil
SCR889	8812277	19881227	Plutonium-238	11.0000	PCI/G		RAD	2.0	2.0	U		SCRDATA	Soil
SCR889	8812276	19881227	Plutonium-238	11.0000	PCI/G		RAD	1.0	1.0	U		SCRDATA	Soil
SCR889	8812272	19881227	Plutonium-238	10.0000	PCI/G		RAD	2.0	2.0	U		SCRDATA	Soil
SCR889	8812273	19881227	Plutonium-238	10.0000	PCI/G		RAD	2.0	2.0	U		SCRDATA	Soil
SCR909	9405939	19940608	Plutonium-238	9.0000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil
SCR909	9405928	19940607	Plutonium-238	7.0000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil
SCR909	9405940	19940608	Plutonium-238	7.0000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil
SCR889	88122711	19881227	Plutonium-238	6.0000	PCI/G		RAD	1.0	1.0	U		SCRDATA	Soil
SCR909	9405620	19940601	Plutonium-238	2.0000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil
SCR909	9405621	19940601	Plutonium-238	0.0000	PCI/G		RAD	3.0	3.0	U		SCRDATA	Soil
MND33-0065	0065-0001	19911121	Styrene	6.0000	UG/KG	6.0000	ORVOA	4.5	8.0	U	U	MND33	Soil
MND33-0065	0065-0001	19911121	Tetrachloroethene	6.0000	UG/KG	6.0000	ORVOA	4.5	8.0	U	U	MND33	Soil
SCR909	9405621	19940601	Thorium-232	1.9000	PCI/G		RAD	3.0	3.0	U		SCRDATA	Soil
SCR909	9405940	19940608	Thorium-232	1.8000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil
SCR909	88122113	19881221	Thorium-232	1.7000	PCI/G		RAD	2.0	2.0	U		SCRDATA	Soil
SCR889	8812279	19881227	Thorium-232	1.6000	PCI/G		RAD	1.0	1.0	U		SCRDATA	Soil
SCR889	8812271	19881227	Thorium-232	1.6000	PCI/G		RAD	1.0	1.0	U		SCRDATA	Soil
SCR909	9405622	19940601	Thorium-232	1.5000	PCI/G		RAD	4.5	4.5	U		SCRDATA	Soil
SCR889	8812275	19881227	Thorium-232	1.4000	PCI/G		RAD	2.0	2.0	U		SCRDATA	Soil
SCR889	88122710	19881227	Thorium-232	1.3000	PCI/G		RAD	2.0	2.0	U		SCRDATA	Soil
SCR889	8812272	19881227	Thorium-232	1.2000	PCI/G		RAD	2.0	2.0	U		SCRDATA	Soil
SCR889	8812278	19881227	Thorium-232	1.2000	PCI/G		RAD	1.0	1.0	U		SCRDATA	Soil
SCR889	88122711	19881227	Thorium-232	1.1000	PCI/G		RAD	1.0	1.0	U		SCRDATA	Soil
SCR909	9405620	19940601	Thorium-232	1.1000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil
SCR909	9405928	19940607	Thorium-232	1.1000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil
SCR889	8812276	19881227	Thorium-232	0.9000	PCI/G		RAD	1.0	1.0	U		SCRDATA	Soil
SCR889	8812274	19881227	Thorium-232	0.8000	PCI/G		RAD	1.0	1.0	U		SCRDATA	Soil
SCR889	8812273	19881227	Thorium-232	0.6000	PCI/G		RAD	2.0	2.0	U		SCRDATA	Soil
SCR889	8812277	19881227	Thorium-232	0.6000	PCI/G		RAD	2.0	2.0	U		SCRDATA	Soil
MND33-0065	0065-0001	19911121	Toluene	6.0000	UG/KG	6.0000	ORVOA	4.5	8.0	U	U	MND33	Soil
MND33-0065	0065-0001	19911121	Trichloroethylene (TCE)	6.0000	UG/KG	6.0000	ORVOA	4.5	8.0	U	U	MND33	Soil

Location_name	Sample_id	Collection _date	Value_name	Measured _value	Value_ units	Detection _limit	Chem_ class	Start_ depth	End_ depth	Lab	Data	Project_co de	Media
MND33-0065	0065-0001	19911121	Vinyl Acetate	11.0000	UG/KG	11.0000	ORVOA	4.5	8.0	U	U	MND33	Soil
MND33-0065	0065-0001	19911121	Vinyl Chloride	11.0000	UG/KG	11.0000	ORVOA	4.5	8.0	U	U	MND33	Soil
MND33-0065	0065-0001	19911121	Xylenes, Total	6.0000	UG/KG	6.0000	ORVOA	4.5	8.0	U	U	MND33	Soil

Lab and data qualifiers are defined on the pages immediately following the non-detects table in this appendix.

L5 of 14

LABORATORY DATA QUALIFIERS (LABQUAL)

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

ORGANICS

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

INORGANICS

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

DATA QUALIFIER CODES (DATAQUAL)

ORGANICS AND INORGANICS

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

SUB-QUALIFIER CODES

ORGANICS

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

INORGANICS

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

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

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

Comparisons for Soil Analytical Results

10^{-6} Risk-Based Guideline Values			
79-00-5	1,1,2-Trichloroethane	1.90E+00	MG/KG
79-34-5	1,1,2,2-Tetrachloroethane	8.90E-01	MG/KG
75-35-4	1,1-Dichloroethene	1.20E-01	MG/KG
107-06-2	1,2-Dichloroethane	7.60E-01	MG/KG
78-87-5	1,2-Dichloropropane	4.38E+01	MG/KG
118-96-7	2,4,6-Trinitrotoluene	1.91E+02	MG/KG
72-55-9	4,4'-DDE	9.00E+00	MG/KG
50-29-3	4,4'-DDT	9.00E+00	MG/KG
309-00-2	Aldrin	1.80E-01	MG/KG
5103-71-9	Alpha Chlordane	8.50E+00	MG/KG
12672-29-6	Aroclor-1248	3.85E-01	MG/KG
11096-82-5	Aroclor-1260	3.85E-01	MG/KG
7440-38-2	Arsenic	1.20E+03	MG/KG
71-43-2	Benzene	1.45E+00	MG/KG
56-55-3	Benzo(a)anthracene	4.10E+00	MG/KG
50-32-8	Benzo(a)pyrene	4.10E-01	MG/KG
205-99-2	Benzo(b)fluoranthene	4.10E+00	MG/KG
207-08-9	Benzo(k)fluoranthene	4.10E+01	MG/KG
7440-41-7	Beryllium	7.00E-01	MG/KG
319-85-7	Beta-BHC	1.65E+00	MG/KG
117-81-7	Bis(2-ethylhexyl)phthalate	2.15E+02	MG/KG
75-27-4	Bromodichloromethane	4.80E+01	MG/KG
75-25-2	Bromoform	3.75E+02	MG/KG
7440-43-9	Cadmium	1.00E+04	MG/KG
56-23-5	Carbon Tetrachloride	5.38E-01	MG/KG
67-66-3	Chloroform	5.20E-01	MG/KG
74-87-3	Chloromethane	2.71E+00	MG/KG
7440-47-3	Chromium	1.50E+03	MG/KG
218-01-9	Chrysene	4.10E+02	MG/KG
53-70-3	Dibenz(a,h)anthracene	4.10E-01	MG/KG
124-48-1	Dibromochloromethane	3.55E+01	MG/KG
75-09-2	Dichloromethane	2.03E+01	MG/KG
60-57-1	Dieldrin	1.85E-01	MG/KG
5103-74-2	Gamma Chlordane	8.50E+00	MG/KG
58-89-9	Gamma-BHC (Lindane)	2.30E+00	MG/KG
76-44-8	Heptachlor	0.66	MG/KG
1024-57-3	Heptachlor Epoxide	0.33	MG/KG
193-39-5	Indeno(1,2,3-cd)pyrene	4.10E+00	MG/KG
78-59-1	Isophorone	3.15E+03	MG/KG
86-30-6	N-Nitrosodiphenylamine	6.00E+02	MG/KG
87-86-5	Pentachlorophenol	2.50E+01	MG/KG
121-82-4	RDX	2.70E+01	MG/KG
127-18-4	Tetrachloroethene	1.87E+01	MG/KG
79-01-6	Trichloroethene	5.09E+00	MG/KG
75-01-4	Vinyl Chloride	4.10E-01	MG/KG
7440-41-7	1,1,1,2-Tetrachloroethane	1.10E-02	MG/L
7440-38-2	1,1,2,2-Tetrachloroethane	1.40E-03	MG/L

14952-40-0	Actinium-227	4.50E-01	PCI/G
14596-10-2	Americium-241	6.30E+00	PCI/G
13982-38-2	Bismuth-207	1.60E-01	PCI/G
10045-97-3	Cesium-137	3.40E-01	PCI/G
10198-40-0	Cobalt-60	7.00E-02	PCI/G
14255-04-0	Lead-210	6.20E-01	PCI/G
13981-16-3	Plutonium-238	6.10E+00	PCI/G
15117-48-3	Plutonium-239	6.00E+00	PCI/G
PU239/240	Plutonium-240	6.00E+00	PCI/G
13982-10-0	Plutonium-242	6.33E+00	PCI/G
13966-00-2	Potassium-40	1.42E+00	PCI/G
14331-85-2	Protactinium-231	3.90E-01	PCI/G
13982-63-3	Radium-226	9.00E-02	PCI/G
10098-97-2	Strontium-90	9.40E+00	PCI/G
14274-82-9	Thorium-228	1.10E-01	PCI/G
14269-63-7	Thorium-230	9.00E-02	PCI/G
7440-29-1	Thorium-232	7.00E-02	PCI/G
10028-17-8	Tritium	2.35E+04	PCI/G
13968-55-3	Uranium-233	9.68E-01	PCI/G
13966-29-5	Uranium-234	1.05E+01	PCI/G
15117-96-1	Uranium-235	1.60E+00	PCI/G
7440-61-1	Uranium-238+D	1.00E-01	PCI/G
14596-10-2	Americium-241	4.90E-01	PCI/L
14331-79-4	Bismuth-210	2.20E+01	PCI/L
15262-20-1	Radium-228	3.30E-01	PCI/L
13967-73-2	Strontium-85	1.10E+02	PCI/L
10098-97-2	Strontium-90	3.90E+00	PCI/L
15623-47-9	Thorium-227	4.00E+00	PCI/L
14274-82-9	Thorium-228	6.90E-01	PCI/L
14269-63-7	Thorium-230	1.20E-01	PCI/L
7440-29-1	Thorium-232	3.10E-01	PCI/L
7440-61-1	Uranium-238	1.10E-01	PCI/L
OU9 Soil Background Value			
72-54-8	4,4'-DDD	4.2	MG/KG
72-55-9	4,4'-DDE	4.3	MG/KG
50-29-3	4,4'-DDT	13	MG/KG
309-00-2	Aldrin	ND	MG/KG
5103-71-9	Alpha Chlordane	ND	MG/KG
319-84-6	Alpha-BHC	ND	MG/KG
7429-90-5	Aluminum	19000	MG/KG
14596-10-2	Americium-241	ND	MG/KG
12672-29-6	Aroclor-1248	ND	MG/KG
11097-69-1	Aroclor-1254	58	MG/KG
11096-82-5	Aroclor-1260	ND	MG/KG
7440-38-2	Arsenic	8.6	MG/KG
7440-39-3	Barium	180	MG/KG
7440-41-7	Beryllium	1.3	MG/KG
319-85-7	Beta-BHC	ND	MG/KG
7440-69-9	Bismuth	ND	MG/KG

13982-38-2	Bismuth-207	ND	MG/KG
14331-79-4	Bismuth-210m	ND	MG/KG
7440-43-9	Cadmium	2.1	MG/KG
7440-70-2	Calcium	310000	MG/KG
7440-47-3	Chromium	20	MG/KG
7440-48-4	Cobalt	19	MG/KG
7440-50-8	Copper	26	MG/KG
57-12-5	Cyanide	ND	MG/KG
60-57-1	Dieldrin	ND	MG/KG
959-98-8	Endosulfan I	ND	MG/KG
1031-07-8	Endosulfan Sulfate	ND	MG/KG
72-20-8	Endrin	ND	MG/KG
7421-93-4	Endrin Aldehyde	ND	MG/KG
53494-70-5	Endrin Ketone	ND	MG/KG
5103-74-2	Gamma Chlordane	ND	MG/KG
58-89-9	Gamma-BHC (Lindane)	ND	MG/KG
76-44-8	Heptachlor	ND	MG/KG
1024-57-3	Heptachlor Epoxide	ND	MG/KG
77-47-4	Hexachlorocyclopentadiene	ND	MG/KG
7439-89-6	Iron	35000	MG/KG
7439-92-1	Lead	48	MG/KG
7439-93-2	Lithium	26	MG/KG
7439-95-4	Magnesium	40000	MG/KG
7439-96-5	Manganese	1400	MG/KG
7439-97-6	Mercury	ND	MG/KG
72-43-5	Methoxychlor	30	MG/KG
7439-98-7	Molybdenum	27	MG/KG
7440-02-0	Nickel	32	MG/KG
7440-09-7	Potassium	1900	MG/KG
7782-49-2	Selenium	ND	MG/KG
7440-22-4	Silver	1.7	MG/KG
7440-23-5	Sodium	240	MG/KG
7440-28-0	Thallium	0.46	MG/KG
7440-31-5	Tin	20	MG/KG
7440-62-2	Vanadium	25	MG/KG
7440-66-6	Zinc	140	MG/KG
14952-40-0	Actinium-227	1.10E-01	PCI/G
10045-97-3	Cesium-137	0.42	PCI/G
14255-04-0	Lead-210	1.20E+00	PCI/G
13981-16-3	Plutonium-238	0.13	PCI/G
15117-48-3	Plutonium-239	1.80E-01	PCI/G
PU239/240	Plutonium-240	1.80E-01	PCI/G
13966-00-2	Potassium-40	37	PCI/G
14331-85-2	Protactinium-231	1.10E-01	PCI/G
13982-63-3	Radium-226	2	PCI/G
10098-97-2	Strontium-90	0.72	PCI/G
14274-82-9	Thorium-228	1.5	PCI/G
14269-63-7	Thorium-230	1.9	PCI/G
7440-29-1	Thorium-232	1.4	PCI/G
10028-17-8	Tritium	1.6	PCI/G

13966-29-5	Uranium-234	1.1	PCI/G
15117-96-1	Uranium-235	0.11	PCI/G
7440-61-1	Uranium-238	1.2	PCI/G
Core Team Determined Screening Level			
7439-92-1	Lead	4.00E+02	MG/KG
14952-40-0	Actinium-227	5.60E-01	PCI/G
14596-10-2	Americium-241	6.30E+00	PCI/G
13982-38-2	Bismuth-207	1.75E-01	PCI/G
10045-97-3	Cesium-137	7.60E-01	PCI/G
10198-40-0	Cobalt-60	7.00E-02	PCI/G
14255-04-0	Lead-210	1.80E+00	PCI/G
13981-16-3	Plutonium-238	5.50E+01	PCI/G
14331-85-2	Protactinium-231	4.00E+00	PCI/G
13982-63-3	Radium-226	2.10E+00	PCI/G
14274-82-9	Thorium-228	1.61E+00	PCI/G
14269-63-7	Thorium-230	2.00E+00	PCI/G
7440-29-1	Thorium-232	1.47E+00	PCI/G
15117-96-1	Uranium-235	1.70E+00	PCI/G
7440-61-1	Uranium-238+D	1.30E+00	PCI/G
Maximum Contaminant Level for Drinking Water			
71-55-6	1,1,1-Trichloroethane	0.2	MG/L
79-00-5	1,1,2-Trichloroethane	0.005	MG/L
75-35-4	1,1-Dichloroethene	0.007	MG/L
120-82-1	1,2,4-Trichlorobenzene	0.07	MG/L
156-59-2	1,2-cis-Dichloroethene	0.07	MG/L
106-93-4	1,2-Dibromoethane	0.00005	MG/L
95-50-1	1,2-Dichlorobenzene	0.6	MG/L
107-06-2	1,2-Dichloroethane	0.005	MG/L
78-87-5	1,2-Dichloropropane	0.005	MG/L
156-60-5	1,2-trans-Dichloroethene	0.01	MG/L
106-46-7	1,4-Dichlorobenzene	0.075	MG/L
95-95-4	2,4,5-Trichlorophenol	0.05	MG/L
94-75-7	2,4-D	0.07	MG/L
7440-36-0	Antimony	0.0006	MG/L
7440-38-2	Arsenic	0.05	MG/L
7440-39-3	Barium	2	MG/L
71-43-2	Benzene	0.005	MG/L
50-32-8	Benzo(a)pyrene	0.002	MG/L
7440-41-7	Beryllium	0.004	MG/L
117-81-7	bis(2-ethylhexyl)phthalate	0.006	MG/L
75-27-4	Bromodichloromethane	0.008	MG/L
75-25-2	Bromoform	0.008	MG/L
7440-43-9	Cadmium	0.005	MG/L
56-23-5	Carbon Tetrachloride	0.005	MG/L
57-74-9	Chlordane	0.002	MG/L
108-90-7	Chlorobenzene	0.1	MG/L
67-66-3	Chloroform	0.008	MG/L
7440-47-3	Chromium	0.1	MG/L

7440-50-8	Copper	1.3	MG/L
57-12-5	Cyanide	0.2	MG/L
96-12-8	Dibromochloropropane	0.0002	MG/L
75-09-2	Dichloromethane (Methylene Chloride)	0.005	MG/L
88-85-7	Dinoseb	0.007	MG/L
1746-01-6	Dioxin	0.00000003	MG/L
72-20-8	Endrin	0.002	MG/L
100-41-4	Ethylbenzene	0.07	MG/L
16984-48-8	Flouride	4	MG/L
58-89-9	Gamma-BHC (Lindane)	0.0002	MG/L
76-44-8	Heptachlor	0.0004	MG/L
1024-57-3	Heptachlor Epoxide	0.0002	MG/L
118-74-1	Hexachlorobenzene	0.001	MG/L
77-47-4	Hexachlorocyclopentadiene	0.05	MG/L
7439-92-1	Lead	0.015	MG/L
7439-97-6	Mercury	0.002	MG/L
72-43-5	Methoxychlor	0.04	MG/L
7440-02-0	Nickel	0.1	MG/L
NO3	Nitrate	10	MG/L
14797-65-0	Nitrite	1	MG/L
87-86-5	Pentachlorophenol	0.001	MG/L
7782-49-2	Selenium	0.05	MG/L
100-42-5	Styrene	0.1	MG/L
127-18-4	Tetrachloroethene	0.005	MG/L
7440-28-0	Thallium	0.002	MG/L
108-88-3	Toluene	1	MG/L
8001-35-2	Toxaphene	0.003	MG/L
79-01-6	Trichloroethene	0.005	MG/L
75-01-4	Vinyl Chloride	0.002	MG/L
1330-20-7	Xylenes, Total	10	MG/L
14952-40-0	Actinium-227	0.4	PCI/L
14596-10-2	Americium-241	1.2	PCI/L
13982-38-2	Bismuth-207	1200	PCI/L
10045-97-3	Cesium-137	120	PCI/L
10198-40-0	Cobalt-60	400	PCI/L
13981-16-3	Plutonium-238	1.6	PCI/L
13982-63-3	Radium-226	4	PCI/L
10098-97-2	Strontium-90	40	PCI/L
14274-82-9	Thorium-228	16	PCI/L
14269-63-7	Thorium-230	12	PCI/L
7440-29-1	Thorium-232	2	PCI/L
10028-17-8	Tritium	20000	PCI/L
13968-55-3	Uranium-233	20	PCI/L
13966-29-5	Uranium-234	20	PCI/L
15117-96-1	Uranium-235	24	PCI/L
7440-61-1	Uranium-238	24	PCI/L
Guideline Values Based on the Hazard Index			
71-55-6	1,1,1-Trichloroethane	3.31E+03	MG/KG
79-00-5	1,1,2-Tricloroethane	8.52E+02	MG/KG

76-13-1	1,1,2-Trichloro-1,2,2triflouroethane	7.00E+04	MG/KG
75-34-3	1,1-Dichloroethane	2.13E+04	MG/KG
75-35-4	1,1-Dichloroethene	1.92E+03	MG/KG
120-82-1	1,2,4-Trichlorobenzene	2.04E+04	MG/KG
156-59-2	1,2-cis-Dichloroethene	2.13E+03	MG/KG
78-87-5	1,2-Dichloropropane	2.16E+01	MG/KG
156-60-5	1,2-trans-Dichloroethene	4.30E+03	MG/KG
99-65-0	1,3-Dinitrobenzene	2.00E+02	MG/KG
118-96-7	2,4,6-Trinitrotoluene	1.00E+03	MG/KG
78-93-3	2-Butanone	9.30E+03	MG/KG
95-57-8	2-Chlorophenol	1.06E+03	MG/KG
108-10-1	2-Methyl-4-pentanone	7.00E+02	MG/KG
50-29-3	4,4'-DDT	1.10E+02	MG/KG
106-44-5	4-Methylphenol	1.10E+03	MG/KG
67-64-1	Acetone	2.10E+04	MG/KG
309-00-2	Aldrin	6.4	MG/KG
5103-71-9	Alpha Chlordane	110	MG/KG
7429-90-5	Aluminum	210000	MG/KG
120-12-7	Anthracene	6.40E+04	MG/KG
7440-36-0	Antimony	8.50E+01	MG/KG
11097-69-1	Aroclor-1254	4.30E+00	MG/KG
7440-38-2	Arsenic	6.40E+01	MG/KG
7440-39-3	Barium	1.50E+04	MG/KG
71-43-2	Benzene	2.36E+01	MG/KG
65-85-0	Benzoic Acid	8.50E+05	MG/KG
7440-41-7	Beryllium	1.10E+03	MG/KG
117-81-7	Bis(2-ethylhexyl)phthalate	4.30E+03	MG/KG
75-27-4	Bromodichloromethane	4.26E+03	MG/KG
75-25-2	Bromoform	4.30E+03	MG/KG
74-83-9	Bromomethane	1.26E+01	MG/KG
85-68-7	Butyl Benzyl Phthalate	4.30E+04	MG/KG
7440-43-9	Cadmium	2.10E+02	MG/KG
75-15-0	Carbon Disulfide	1.16E+03	MG/KG
56-23-5	Carbon Tetrachloride	5.62E+00	MG/KG
108-90-7	Chlorobenzene	4.89E+02	MG/KG
75-00-3	Chloroethane	1.60E+02	MG/KG
67-66-3	Chloroform	1.50E+03	MG/KG
74-87-3	Chloromethane	1.58E+02	MG/KG
7440-47-3	Chromium	1.10E+03	MG/KG
18540-29-9	Chromium-VI	6.39E+02	MG/KG
7440-48-4	Cobalt	1.28E+04	MG/KG
7440-50-8	Copper	7.90E+03	MG/KG
57-12-5	Cyanide	4.30E+03	MG/KG
124-48-1	Dibromochloromethane	4.26E+03	MG/KG
75-09-2	Dichloromethane	1.00E+03	MG/KG
60-57-1	Dieldrin	1.10E+01	MG/KG
84-74-2	Di-n-butyl Phthalate	2.10E+04	MG/KG
117-84-0	Di-n-octyl Phthalate	4.30E+03	MG/KG
959-98-8	Endosulfan I	1300	MG/KG
33213-65-9	Endosulfan II	1300	MG/KG

100-41-4	Ethylbenzene	4.80E-01	MG/KG
86-73-7	Flourene	8.50E+03	MG/KG
206-44-0	Fluoranthene	8.50E+03	MG/KG
5103-74-2	Gamma Chlordane	110	MG/KG
58-89-9	Gamma-BHC (Lindane)	64	MG/KG
76-44-8	Heptachlor	110	MG/KG
1024-57-3	Heptachlor Epoxide	2.8	MG/KG
110-54-3	Hexane	9.10E+01	MG/KG
78-59-1	Isophorone	4.30E+04	MG/KG
7439-96-5	Manganese	2.70E+04	MG/KG
7439-97-6	Mercury	6.40E+01	MG/KG
72-43-5	Methoxychlor	1100	MG/KG
7440-02-0	Nickel	4.30E+03	MG/KG
87-86-5	Pentachlorophenol	6.40E+03	MG/KG
108-95-2	Phenol	1.30E+05	MG/KG
129-00-0	Pyrene	6.40E+03	MG/KG
7782-49-2	Selenium	1100	MG/KG
7440-22-4	Silver	1.10E+03	MG/KG
100-42-5	Styrene	1.45E+04	MG/KG
127-18-4	Tetrachloroethene	2.13E+03	MG/KG
79-01-6	Trichloroethene	6.39E+01	MG/KG
7440-28-0	Thallium	17	MG/KG
7440-31-5	Tin	130000	MG/KG
108-88-3	Toluene	2.50E+02	MG/KG
75-69-4	Trichlorofluoromethane	7.30E+02	MG/KG
7440-62-2	Vanadium	1.50E+03	MG/KG
75-01-4	Vinyl Chloride	1.19E+02	MG/KG
1330-20-7	Xylenes, Total	4.26E+05	MG/KG
7440-66-6	Zinc	6.40E+04	MG/KG
7440-41-7	1,1,1,2-Tetrachloroethane	2.90E-01	MG/L
7440-38-2	1,1,2,2-Tetrachloroethane	2.50E-01	MG/L
71-55-6	1,1,1-Trichloroethane	1.80E+00	MG/L
76-13-1	1,1,2-Trichloro-1,2,2triflouroethane	2.50E+03	MG/L
7429-90-5	Aluminum	100	MG/L
7440-42-8	Boron	9.00E+00	MG/L
18540-29-9	Chromium-VI	3.00E-01	MG/L
7440-48-4	Cobalt	6	MG/L
7440-50-8	Copper	4.00E+00	MG/L
7439-98-7	Molybdenum	0.5	MG/L
7782-49-2	Selenium	0.5	MG/L
7440-28-0	Thallium	0.008	MG/L
7440-31-5	Tin	60	MG/L
2691-41-0	HMX	1.10E+04	UG/KG
121-82-4	RDX	6.40E+04	UG/KG

Appendix M

Occurrence Reports

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

- discovery of fixed alpha contamination on vacuum gage being surveyed for release for unrestricted use (copy attached), and
- Building 36, 37, and 50 fire alarm system failure.

ALO-DA-EGGM-EGGMAT02-1991-1003 Final Report

Occurrence Report

Nuclear Energy Facilities

(Name of Facility)

Plutonium Processing and Handling

(Facility Function)

Mound Plant EG&G Mound Applied Technologies

(Laboratory, Site, or Organization)

Name: Woltermann, H. Anthony
Title: Director, Technology **Telephone No.:** (513) 865-3415

(Facility Manager/Designee)

Name: L. M. Coco
Title: Manager, Radiological & Ind. Safety **Telephone No.:** (513) 865-3928

(Originator/Transmitter)

Name: **Date:**

(Authorized Classifier (AC))

1. Occurrence Report Number: ALO-DA-EGGM-EGGMAT02-1991-1003

Discovery of fixed alpha contamination on vacuum gage being surveyed for release for unrestricted use.

2. Report Type and Date: Final

	Date	Time
Notification:	06/05/1991	15:49 (MTZ)
Initial Update:	06/19/1991	13:15 (MTZ)
Latest Update:	06/19/1991	13:15 (MTZ)
Final:	05/15/1992	11:45 (MTZ)

3. Occurrence Category: Off-Normal

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

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

6. Secretarial Office: DP - Defense Programs

7. System, Bldg., or Equipment: BUILDING 19

8. UCNI?: No

9. Plant Area: TEST FIRE

10. Date and Time Discovered: 04/15/1991 08:00 (ETZ)

M 1 of 5

11. Date and Time Categorized: 06/05/1991 09:00 (ETZ)

12. DOE Notification:

Date	Time	Person Notified	Organization
06/05/1991	12:00 (ETZ)	I. H. Schmidt	DOE/DAO

13. Other Notifications:

14. Subject or Title of Occurrence:

Discovery of fixed alpha contamination on vacuum gage being surveyed for release for unrestricted use.

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15. Nature of Occurrence:

02) Environmental
C. Hazardous Material Contamination

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16. Description of Occurrence:

On April 15, 1991, a large vacuum gage transferred from Building 36, a non-radiologically controlled facility, to Building 19, also a non-radiologically controlled facility, was discovered to have fixed only alpha contamination present on the external case. The contamination was discovered during a routine survey of excess equipment scheduled for lot sale. A small area on the side of the gauge read approximately 15,000 dpm/100 cm2 fixed alpha contamination. Decontamination attempts were unsuccessful in removing the source of the reading. The item was transferred to the Environmental Laboratory for alpha pulse height analysis. The large size of the unit (18 inches in diameter) required the construction of a special vacuum chamber and modification of alpha spectrometry equipment. The contamination has been determined to be Pu-238. The cause of the contamination is unknown. An investigation was conducted to determine the origin of the gauge. Its origin prior to its use in Building 36, could not be determined. The gauge was secured in the health physics office in

M2of5

Building 30 pending further decontamination and release.

Group 2C; Off-Normal; page G2-5.

This occurrence report was reviewed by an authorized derivative classifier (J. F. Lemming) and contains no classified nor UCNI information.

17. Operating Conditions of Facility at Time of Occurrence:

Building 19 is a warehouse for storage of excess equipment.

18. Activity Category:

01 - Construction

19. Immediate Actions Taken and Results:

Upon discovery of the fixed contamination, the item was isolated, subsequently transferred to the Analytical Laboratory, and remained secured in the Health Physics Laboratory. An investigation was conducted to determine the origin of contamination. The origin of the gauge prior to its use in Building 36 could not be determined.

20. Direct Cause:

3) Personnel Error
D. Other Human Error

21. Contributing Cause(s):

3) Personnel Error
D. Other Human Error

22. Root Cause:

3) Personnel Error
A. Inattention to Detail

23. Description of Cause:

Because of the length of time this gage has been stored, the documentation history is not clear. There is no positive evidence that the gage was ever used in a radiation control area. In

M3 of 5

any case, proper care in monitoring this gage was not taken.

24. Evaluation (by Facility Manager/Designee):

The discovery of the fixed contamination on an item improperly released for unrestricted use on site several years before the current planned release, is evidence of our improved health physics monitoring program. The current procedures in place along with heightened environment, safety and health awareness precludes a similar incident from occurring in the future. The present system in place prevents the shipping of contaminated equipment off site.

25. Is Further Evaluation Required?: No

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

1. 1. This incident was discussed with all Health Physics personnel within two weeks after the incident. A copy of this final report will be sent to all managers with responsibility for equipment in radiation control areas to further heighten awareness of the need to follow wipe procedures and to discuss the need to follow procedures with their staffs.

Target Completion Date: 03/19/1992	**Completion Date:** 03/10/1992

27. Impact on Environment, Safety and Health:

None

28. Programmatic Impact:

None

29. Impact on Codes and Standards:

30. Lessons Learned:

Current Health Physics survey practices are adequate to assure that materials released for unrestricted use from the Mound Plant site are acceptable for release.

31. Similar Occurrence Report Numbers:

1. ALO-DA-EGGM-EGGMAT-OF-91-01 and
2. ALO-DA-EGGM-EGGMAT-TR-91-04

32. User-defined Field #1:

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33. User-defined Field #2:

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34. DOE Facility Representative Input:

---

35. DOE Program Manager Input:

---

36. Approvals:

Approved by: Woltermann, H. Anthony, Facility Manager/Designee
Date: 03/18/1992
Telephone No.: (513) 865-3415

Approved by: GARTRELL, GEORGE R., Facility Representative/Designee
Date: 04/28/1992
Telephone No.:

Approved by: HAGAN, RALPH A., Program Manager/Designee
Date: 05/15/1992
Telephone No.:

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Appendix N

PRS Information

MIAMISBURG CLOSURE PROJECT
PRS 267

RECOMMENDATION:

Potential Release Site (PRS 267) is identified as one of the site's historic thorium redrumming areas. It became a PRS based on historic operations and sample results above screening levels. Further Assessment was performed and confirmed that limited plutonium-238 (historic) and thorium-232 (historic results & recent results) remains at isolated locations at levels that exceed the cleanup objectives (10^{-5} Risk-Based Guideline Values plus background).

Additionally, two locations southwest of PRS 267 (historic location SCR626 and SCR660) have historic elevated results of thorium-232 and plutonium-238 above cleanup objectives. Excavation of SCR660 was attempted but ceased when a corrugated metal pipe was found with thorium-232 in excess of cleanup objective in the sediment. Neither of the two locations is within a PRS nor identified as a PRS, but will be addressed as part of the PRS 267 removal.

Therefore, the Core Team recommends a **Removal Action** for PRS 267, the corrugated metal pipe at SCR660, and SCR626.

A PRS Package recommendation page for a Removal Action signed by the Core Team constitutes the final step in the PRS Package process. Successful completion of the Removal Action will be documented via an On-Scene Coordinator (OSC) Report signed by the Core Team, which will be placed in the Public Reading Room.

CONCURRENCE:

DOE/MCP: 4/30/03
Robert S. Rothman, Remedial Project Manager (date)

USEPA: 5/21/03
David P. Seely, Remedial Project Manager (date)

OEPA: 4/30/03
Brian K. Nickel, Project Manager (date)

N 1 of 6

MIAMISBURG CLOSURE PROJECT
PRS 269

RECOMMENDATION:

Potential Release Site (PRS) 269 is an area of land where two underground fuel storage tanks were shown to be located in support of original plant construction in a 1948 construction drawing that indicated a fueling facility existed near the northwest corner of Building 50. No documentation of the tanks having been removed has been found, although it is believed that they were removed as part of construction demobilization. PRS 269 was binned Further Assessment (FA) by the Core Team in December 1996 based on the suspected presence of the tanks. FA included an assessment to locate the tanks, and if the tanks were found to be present, sampling should be conducted. If the tanks were determined to be no longer present, PRS 269 would be re-binned.

FA has been successfully completed by means of a ground penetrating radar (GPR) survey that did not identify any underground tanks at PRS 269.

Therefore, the Core Team recommends **No Further Assessment** for PRS 269.

A PRS Package with an NFA recommendation signed by the Core Team will be placed in the Public Reading Room for a 30-day review period. Upon closure of the public review comments, if any, the PRS Package will be issued as a final document and made available in the Public Reading Room.

CONCURRENCE:

DOE/MCP: _____ 3/19/03
Robert S. Rothman, Remedial Project Manager (date)

USEPA: _____ 3/26/03
David P. Seely, Remedial Project Manager (date)

OEPA: _____ 3/19/03
Brian K. Nickel, Project Manager (date)

N 2 of 6

RECOMMENDATION

PRS 31-36, 125, & 270 Package

Potential Release Sites (PRSs) 31-36, 125, and 270 were identified as PRSs as a result of breaks and/or separations in Mound's sanitary sewer lines, identified during a 1982 video survey of the lines. Radionuclides were not considered contaminants of concern. The concern was the potential release of non-radioactive contaminants into the environment from the identified breaks in the lines. A subsequent project repaired these lines by replacing them or by extruding a liner at the point of the breaks. Soil sampling was performed and results for all non-radioactive analytes were below 10^{-5} Risk-Based Guideline Values.

Therefore, the Core Team recommends **No Further Assessment** for PRSs 31-36, 125, and 270.

11-27-02

Rob Rothman, OSC
U.S. Department of Energy
Miamisburg, Ohio

11/26/02

Tim Fischer, RPM
USEPA
Chicago, Illinois

11/27/02

Brian Nickel
OEPA
Dayton, Ohio

9. RECOMMENDATION

This decision document represents the selected removal action for the Building 38 site, developed in accordance with CERCLA as amended by SARA, and not inconsistent with the NCP. This decision is based on the administrative record for the site.

Conditions at the site meet the NCP Section 300.415 (b)(2) criteria for a removal and we recommend initiation of the response action.

Approved:

Delita White for Art Kleinrath		7/1/99
Art Kleinrath, On-Scene Coordinator	DOE/MEMP	Date
Timothy J. Fischer		7/7/99
Timothy J. Fischer, Remedial Project Manager	USEPA	Date
Brian K. Nickel		7/12/99
Brian K. Nickel, Project Manager	OEPA	Date

Table 5.1 PRSs to be Dispositioned Soil Removals

PRS	Description	COCs	Cleanup Objective
267	Area 9, Former Thorium Storage/Redrumming Area	Pu-238 & Th-232	(pCi/g) Pu-238 = 55 Th-232 = 2.1 Po-210=7.4** Sr-90 = 94.7 Cs-137 = 3.8
273	Area 12, Thorium-contaminated Soil form Area 1	Pu-238 & Th-232	
303	Warehouse 14 Foundation	Pu-238 & Th-232	
77	Former Warehouse 10 Footprint	Po-210	
78	Former Warehouse 11 Footprint	Reactor waste, Sr-90 & Cs-137)	
285	Area 11, Contamination from SM Bldg. Operations	Pu-238	
287	SM Bldg. Historic Septic Tank (tank 241) -removed	Pu-238	
288	Area 17, SM Bldg. Soils	Pu-238 & Th-232	
289-292	SM Bldg. Alpha Wastewater Sumps (tanks 210-213) - all four removed	Pu-238	
293	Footprint of Former SM Bldg. Solidification Unit	Pu-238	
296	Bldg. 38 West Dock Sump (tank 25)*	Pu-238	
299	EG-2 Diesel UST (tank 121). Tank removal and soil sampling is regulated under AOC 1301:7-9-13. The required BUSTR (Bureau of Underground Storage Tank Regulations) Remedial Action Plan contains COCs and action levels related to this tank. Plan pending approval by the state fire marshal.		

* The location of PRS 296 was improperly identified as the out-of-service concrete stormwater holding tank across the roadway. The location has been corrected. Although not a PRS, the stormwater tank sediment, if any, will be sampled to confirm it does not contain unacceptable levels of contaminants. Following confirmation via sampling, the tank will be demolished and the area backfilled to grade.

** Assumes Po-210 & Pb-210 present.

MOUND PLANT
PRS 389/392
SOIL CONTAMINATION

RECOMMENDATION:

PRSs 389 and 392 are located in the eastern sector of the original Mound plant. These soil locations were identified as PRSs due to qualitative hydrocarbon detections found during the PETREX soil gas portion of the ***OU5, Non Area of Concern*** investigation.

In 1996, the Soil Gas Confirmation sampling effort sampled the locations with the highest ion counts (confirmation sample locations 5, 6 and 9) in the eastern sector and discovered no contamination above the 2×10^{-6} risk range. PRSs 389 and 392 were not sampled as part of the *Soil Gas Confirmation Sampling* but the PRSs had lower ion counts than confirmation sample locations 5, 6, and 9. This implies that these PRSs will have similar or lower health risk.

All radiological samples collected near these PRSs indicate that radionuclides are below their applicable 10^{-5} Risk Based Guideline Criteria or regulatory levels. Therefore, NO FURTHER ASSESSMENT is recommended.

CONCURRENCE:

DOE/MB: Arthur W. Kleinrath, Remedial Project Manager 11/20/96 (date)

USEPA: Timothy J. Fischer, Remedial Project Manager 11/20/96 (date)

OEPA: Brian K. Nickel, Project Manager 11/20/96 (date)

SUMMARY OF COMMENTS AND RESPONSES:

Comment period from 12/19/96 to 1/23/97

☒ No comments were received during the comment period.

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

Appendix O

Work Plan (Draft)

WORK PACKAGE / PRELIMINARY HAZARD ANALYSIS

~ Office Master Copy (Original Approval Signatures) ~ Field Working Copy (Original Field Sign -Offs) ~ Review Copy [Note: Mark this section in color] ~ Other Copy

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

1. WORK PACKAGE TITLE: **Demolition of Building 36**

2. WORK PACKAGE NUMBER: **BOSS-36952 - 00.**

3. WORK PACKAGE SCOPE:

- The purpose of this project is the demolition of Building 36, using heavy equipment to demolish the building superstructure, concrete slab, foundations and underground utility piping and remove and dispose of the debris.
- All Safe Shutdown, Utility Isolation, and Asbestos Abatement activities will have been completed before initiation of this project.

4. WORK LOCATION:

Building 36 – SM/PP Area

5. WORK PACKAGE PHASES:

1. Site Information
2. Site Preparation & Mobilization
3. Building Demolition & Debris Disposal
4. Area Radiological Evaluation, Site Remediation, & Demobilization

LIST OF APPENDIXES:

A – PHA/JSHA

B – Pre-Job Briefing/Job Status Log

C – Drawings/Sketches/Photographs

D – Miscellaneous (RWP, USQ, etc.)

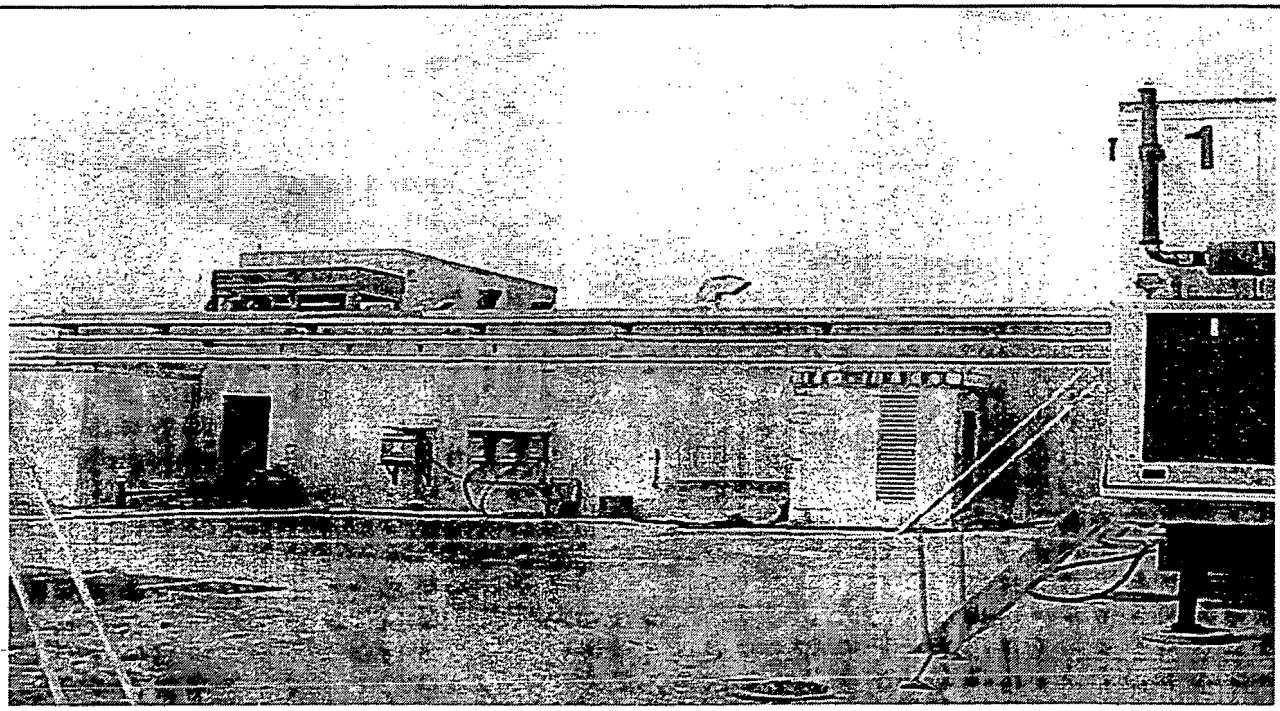
E – Post-Job Conference/Lessons Learned

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

6. SPECIAL MATERIALS AND EQUIPMENT:

1. Tracked excavator with shear, grapple, hoe ram, concrete cracker/pulverizer, or bucket attachment
2. Rock crusher
3. Rubber tired and tracked front-end loaders
4. Transport equipment for debris as required
5. Fog Cannon
6. Torch Equipment
7. Volvo Dump Truck

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



7. DETAILED WORK STEPS:

7.1 SITE INFORMATION:

The footer/foundation on the building is set at approximately 4'+/- below grade. The foundation is constructed of reinforced concrete, that under most walls consist of #4 rebar @ 12 O.C., set on a footer, using a #4 rebar dowel set in the footer. The footing and foundations under the building columns are constructed of horizontal and vertical rebar. Steps in the footing include rebar reinforcing, using a #5 bar bent to conform to the step. I Beams sit atop the columns The floor on the lower or first floor is a 6" thick reinforced concrete slab, set on a 6 +/- thick gravel bed.

The floor of the penthouse is a 2-1/2" thick concrete slab on a truss.

Wall construction as depicted by the engineering drawings of reinforced concrete block on most interior and exterior walls. Exterior walls are 11+ inches thick, while the interior walls, and the walls of the penthouse are 12" thick.

The roof is a built-up type on a metal frame truss, with a suspended ceiling.

7.2 NATIONAL HISTORIC PRESERVATION ACT (NHPA)

Building 36 is not listed as a historic structure with the Ohio Historic Preservation Office (OHPO). No mitigative documentation package is required.

IMPORTANT: However, if any items or artifacts are discovered as this project progresses, the Cultural Resource Representative will be notified at extension 3691. Work will be temporarily suspended until which time the items or artifacts have been recovered.

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

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

7.3 SITE PREPARATION & MOBILIZATION

7.3.1 Site Access Control

Establish work zone boundary using fencing and/or with barricade tape as directed by the Project Foreman. Natural barriers, such as, waterways, spillways, etc. may be used to control access to the site.

Proper signage will be placed at all access points to the site.

This zone is not to be entered by anyone not directly involved with the demolition unless they have contacted the Project Construction Manager/Foreman first.

7.3.2 Clear Area and Mark/Protect Utility Equipment

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

Verify/Mark/Protect fire hydrant and other above grade utility equipment to prevent damage during demolition activities.

Install storm drain protection by utilizing a grating slipcover. Utilize GPS shoot-in locations of all outside grate drains that may be covered and difficult to re-locate.

Provide silt fencing and other measures to control/prevent storm water run-off and soil erosion in accordance with Environmental Compliance PoC instructions. Periodically reevaluate effectiveness.

7.3.3 Temporary Utilities

Water is required to control dust emissions. Ensure backflow prevention is present for domestic water source. Coordinate with site Radiological , Safety and Health and Environmental Compliance PoCs.

7.3.4 Temporary Facilities

This project will use the existing BOSS project new trailer complex located in the existing Mound "C" parking lot.

7.3.5 Temporary Communications

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

7.3.6 Staging Areas

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

7.4 PRELIMINARY ACTIVITIES AND VERIFICATIONS

7.4.1 Verify all Building Utility Isolation Activities have been completed per FTS – 36953, Mechanical Utilities Isolation Work Package and FTS – 37642 Electrical Utilities Isolation Work Package, and verify the following have been disconnected:

- Fire Alarm Pull Boxes
- Fire Suppression Water Flow Alarms
- Smoke Detector Alarms
- Security Systems
- DDC signals

HOLD POINT:	Utility Isolation Activity Completion Verification
_____ Date/Time_____	
Project Supervisor signature or email confirmation	

7.4.2 The *Pre-Job Briefing Record,* per PP-1045/PP-1045A must be completed and signed.

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

7.4.4 DOE Lessons Learned will be reviewed.

7.4.5 Notification of Demolition and Renovation form must be filed with the Regional Air Pollution Control Agency (RAPCA) at least 10 business days before planned building demolition.

HOLD POINT:	RAPCA Notification Verification
_____ Date to Proceed with Demo_____	
Environmental Compliance PoC signature or email confirmation	

7.4.6 The "Cold & Dark" Implementation Requirements Document requires a Review Team tour, per D&D Requirements Implementation Plan, of the facility & scope of the project prior to Project Manager authorizing the start of work.

HOLD POINT:	'COLD & DARK' Review Team Walkdown Completed & Project Manager Authorizes Work to Start:
Project Manager _____	Date & Time : _____

WARNING HAZARD: Dust Control – Utilize dust control measures for demolition activities as described in Table 1 in Appendix A. The Goal is no visible dust emissions. Controls will be evaluated routinely to determine their effectiveness.

CAUTION ELECTRICAL HAZARD: Contact of overhead power lines with heavy-duty equipment. If any part of heavy-duty equipment has the potential to come within 10' of street lighting circuit, perform LOTO to de-energize electrical power source. This circuit must be re-energized each evening when demolition is complete for that day.
Note locations on 'Cold & Dark' Safety Sketch

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

CAUTION HAZARD: Struck by moving equipment.

- Maintain the following distances from operating equipment:
- Shear – 75 feet
- Hoe Ram – 50 feet
- Other heavy duty equipment – 30 feet
- Bobcat – 15 feet
- Block access/egress to Building 50

WARNING NOISE HAZARD: If noise surveys indicate the need, hearing protection will be worn while operating heavy-duty equipment. Follow the requirements of MD-10286 D9.

CAUTION LEAD HAZARD: Exposure to airborne lead during torch cutting. Contact Industrial Hygiene to verify absence of lead in paint prior to torch cutting.

CAUTION ASBESTOS HAZARD: Asphalt roof and floor tiles may contain asbestos – do not render friable or conduct invasive activities involving close worker contact. Contact Chris Ahlquist x3737 with any questions

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

7.5 BUILDING DEMOLITION SEQUENCE OF WORK

7.5.1 Demolish the Upper Section of the structure's concrete block walls using heavy equipment. Utilize debris to build a ramp to allow equipment to reach the higher level penthouse to weaken the structure to allow upper section to collapse onto lower level for demolition and to reach the built-up metal roof & 2 1/2 – inch thick concrete slab on corruform utility room for dismantlement.

Use the existing slab for load out surface for loading debris and placing into appropriate hauling containers or trucks.

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

7.5.2 Slab and Foundation Demolition

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

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

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

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

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

7.6 SITE REMEDIATION & DEMOBILIZATION

7.6.1 Grading, Seeding, & Mulching

Restore the area by grading and filling with appropriate amount of gravel/soil to grade to drain.

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

Remove any unnecessary remaining sediment/storm water control fences

7.6.2 Remove Temporary Protection Structures
Remove barriers and/or wooden boxes from fire hydrants, fire prevention water lines

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

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

Work Package /Preliminary Hazard Analysis (Continued)

8.COMMENTS:

Note: Comments, to identify activities/hazards that are common to multiple phases of the project (example: Wear leather gloves when handling cut pipe). Identification of these items will facilitate the addressing the items once in the pre-job briefing.

9. REVIEW SIGNATURES:

Written by: _____ Date: ___/___/___ Phone:

Superintendent: _____ Date: ___/___/___ Phone:

Foreman: _____ Date: ___/___/___ Phone:

Project Eng. Mgr: _____ Date: ___/___/___ Phone:

Industrial Safety & Hygiene: _____ Date: ___/___/___ Phone:

Rad. Controls: _____ Date: ___/___/___ Phone:

ES&C: _____ Date: ___/___/___ Phone:

Waste Mgmt: _____ Date: ___/___/___ Phone:

Bldg. Mgmt: _____ Date: ___/___/___ Phone:

Classification: : _____N/A_____ Date: ___/___/___ Phone:

Other: _____ Date: ___/___/___ Phone:

Note: Project Manager has the authority to N/A signatures if review is not applicable.

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

Brief Explaination_ Building 36 is not categorized as a Radiological or Nuclear Facility and the work scope will not affect other Radiological or Nuclear Facilities_____

USQ Trained Person: _____ Date: ___/___/___ Phone:

11. AUTHORIZATION SIGNATURE:

Project Manager: _____ Date: ___/___/___ Phone:

12. WORK PACKAGE CLOSURE:

Job Supervisor: _____ Date: ___/___/___ Phone:

Project Manager: _____ Date: ___/___/___ Phone:

RETURN PHA TO IS&H AT JOB COMPLETION.

APPROVAL CONTINUATION SHEET

Reviews:

Name	Signature	Date	Department

Reference Drawings	Rev.	Reference Procedures	Rev.

WORK PLAN REVISION SHEET

1. WORK PACKAGE TITLE: Demolition of Building 36
2. WORK PACKAGE NUMBER: BOSS-36952 - 00.

[Note: Mark this section in color]

~ Office Master Copy (Original Approval Signatures) ~ Field Working Copy (Original Field Sign -Offs) ~ Review Copy ~ Other Copy

Revision Description: (attach page revisions to form)

Reviewed by:	Name	Signature	Date
Project Engineering:			
Project Superintendent/Foreman:			
Radiological Operations:			
Industrial Safety & Hygiene:			
Waste Management:			
Environmental Safeguards & Compliance:			
Building Manager:			
Other:			

Approved by:

CH2M Hill Project Manager

Name Signature

Date

REVISION LOG

1. WORK PACKAGE TITLE: Demolition of Building 36

2. WORK PACKAGE NUMBER. BOSS-36952 - 00.

Revision	Reason	By	Date

Appendix A

Preliminary Hazards Analysis (PHA)

Job Specific Hazards Analysis (JSHA)

APPENDIX A

Preliminary Hazard Analysis (PHA)For Work Package Activities

SECTION A, INDUSTRIAL SAFETY - TO BE COMPLETED BY THE INDUSTRIAL SAFETY AND HEALTH REPRESENTATIVE
Identify engineering/administrative controls or PPE as required, keyed to the following checklist items. Insert any required and/or other special actions to be taken because of the particular hazard (i.e. lead compliance plans, confined space plans, hearing conservation programs, etc.), Including any notations for future Hazard Analyses. Additionally, identify any activities which DOE prescribed Occupational Safety and Health standards, that require protective measures be designed, inspected, or approved by a professional engineer or other competent person. (Use Section F if additional space is needed.)

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Access/Blockage:			
Blockage of exits or means of egress	Yes	All	[EGRESS] Building 50 during equipment operations Still available for emergency egress
Blockages/obstructions (Identify)	No		
Confined space entry (**permit**)	No		[CONFINE]
Emergency alarms or evacuation plans required	Yes	All	[EMERG] Plant Public Address system will be used to announce any plant emergency over the plant radio channel, cell phones will be used also, no specific added hazards exist in the demolition of this building.
Obstruction of fire protection equipment (pull boxes, hydrants, fire department connections, control panels, fire extinguishers, etc.)	Yes	All	Fire hydrant will be protected, but still available for emergency use.
Traffic control/flagman	Yes	All	[TRAFFIC] Provide sufficient flagmen and signage to ensure safe traffic control
Flammable/Explosive:			
Burning, welding, hot-work (Fire Watch) (**permit**)	Yes	2 & 3	[BURN] Obtain & follow Hot Work Permit per MD-10444. Paint may contain lead, do not torch cut painted surfaces without verification by IH or Safety PoC.
Chemical compatibility of corrosives/flammables	No		
Explosive/flammable atmosphere	No		
Explosives	No		
Fire protection system/equipment outage	No		[FIRE/EFIRE]
Fire Hazards Analysis/Fire Engineer Approval	Yes	N/A	[FHA/ADJA] Completed in Utilities Isolation Package
Flammable liquids/gases	Yes	2 & 3	[FLAM] Acetylene & oxygen – Utilize proper tank restraints. Follow Mound Procedure MD-10286, H1
Powder-actuated tools (**permit**)	No		
Special Fire Protection Equipment Required	No		[FIREQU]
Chemicals:			
Chemical process safety	No		
Compressed gas cylinders	Yes	2 & 3	Acetylene & oxygen Follow Mound Procedure MD-10286, H1
Emergency eyewash/shower available	No		[EWASH]
Elevated/Aerial Work:			
Crane operations, overhead or mobile	No		
Critical lifts (heavy or high value loads)	No		[CLIFT]
Elevated work/fall protection	Yes	All	[ELEV] Follow Mound Procedure MD-10286, M8
Forklifts, aerial lifts or material handling equipment	Yes	All	Trained operators only
Hoisting and rigging	No		[HOIST]
Overhead utilities (Identify)	No		[UITL]

APPENDIX A

Preliminary Hazard Analysis (PHA)For Work Package Activities (Continued)

SECTION A, INDUSTRIAL SAFETY - TO BE COMPLETED BY THE SAFETY AND HEALTH REPRESENTATIVE
Identify engineering/administrative controls or PPE as required, keyed to the following checklist items. Insert any required and/or other special actions to be taken because of the particular hazard (i.e. lead compliance plans, confined space plans, hearing conservation programs, etc.), Including any notations for future Job Safety and Health Analysis(JSHA). Additionally, identify any activities which DOE prescribed Occupational Safety and Health standards that require protective measures be designed, inspected, or approved by a professional engineer or other competent person. (Use Section F if additional space is needed.)

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Lockout/tagout, outages, disconnects **(permit)**			[LOTO/ISO]
• Electrical	No		Electrical isolation of the facility is accomplished during Utilities Isolation Activities.
• Mechanical (steam, hydraulic, pneumatic, gravity)	No		Utility isolation of the facility is accomplished during Utilities Isolation Activities.
• Interlocks	No		[ILOCK]
• Chemical	No		
• Radiological	No		
Outages of the plant public announcement (PA) system or the emergency notification system	No		[OUTAGE]
Building Systems Alarms - Ensure systems are not functional by contacting: Fire Department Security Facilities Services.	Yes	2	-Fire Alarm Pull Boxes -Fire Suppression Water Flow Alarms -Smoke Detector Alarms -Security Systems -DDC signals
Alarm Disable/Disconnect	No		
Structure Related:			
Modification to Fire Wall/Door	No		[FIREWAL]
Penetrations into walls, floors, etc. **(permit)**	No		[PENETR]
Plastic sheeting or wood framing/enclosures	No		
Structural Modification	No		[STRUCT]
Work impacting adjacent normally occupied areas	Yes	All	[ADJAC/BMAPP/SIGNS/NOTIF]
Building Structural Engineering Survey per OSHA 29 CFR 1926.850	Yes	N/A	Survey Completed by __W._Johanan__-letter in Appendix D_____ Date:
Temporary Requirements:			
Temporary heating facilities	No		
Temporary/portable buildings or structures	No		[FACIL]
Temporary service hook-ups (Identify)	Yes	All	Water hydrant for misting, including backflow prevention, if required or fog cannon & self contained water tanks
Public utilities (Identify)	No		[WATER]
Lighting/illumination/adequacy	No		[MLITE]
Miscellaneous:			
Machine guards	No		
Off-shift work	Yes	All	As determined by Project Manager
Repetitive work	No		[ERGO]
Other (Specify)	None		
Work in attics, ceilings, chases, or crawlspaces	No		
Work Requiring Scaffolding **(inspection required)**	No		[SCAFF]
Electrical:			
Electrical hazards	No		[LIVEL]

APPENDIX A

Preliminary Hazard Analysis (PHA)For Work Package Activities (Continued)

SECTION A, INDUSTRIAL SAFETY - TO BE COMPLETED BY THE SAFETY AND HEALTH REPRESENTATIVE
Identify engineering/administrative controls or PPE as required, keyed to the following checklist items. Insert any required and/or other special actions to be taken because of the particular hazard (i.e. lead compliance plans, confined space plans, hearing conservation programs, etc.), Including any notations for future Job Safety and Health Analysis(JSHA). Additionally, identify any activities which DOE prescribed Occupational Safety and Health standards that require protective measures be designed, inspected, or approved by a professional engineer or other competent person. (Use Section F if additional space is needed.)

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Grounding of electrical equipment	No		
Soils/Excavation:			
Underground utilities (Identify)	Yes	3 & 4	[UITL] Utilize Excavation/Soil Disturbance Permit, MD_10286, O5 before slab demolition or site remediation
Trenching/Shoring (permit)	No		[DIG]
Hazards due to condition of facility or terrain (Identify)	No		
Any soil disturbance	Yes	3 & 4	[DIG] (Note: Check for URMAs) Obtain & follow Excavation/Soil Disturbance Permit, MD_10286, O5 before slab demolition or site remediation

SECTION B, INDUSTRIAL HYGIENE - TO BE COMPLETED BY INDUSTRIAL HYGIENE REPRESENTATIVE
Identify engineering/administrative controls or PPE as required, keyed to the following checklist items. Insert any required and/or other special actions to be taken because of the particular hazard (i.e. lead compliance plans, confined space plans, hearing conservation programs, etc.), Including any notations for future Job Safety and Health Analysis (JSHA) . Additionally, identify any activities which DOE prescribed Occupational Safety and Health standards that require protective measures be designed, inspected, or approved by a professional engineer or other competent person. (Use Section F if additional space is needed.)

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Asbestos/Fibers:			
Asbestos	Yes	3	[ASBEST] Asphalt roof and floor tiles may contain asbestos – do not render friable or conduct invasive activities involving close worker contact
Removal of ceiling tiles*	No		
Insulation/man-made mineral fibers (☐ MSDS available)*	No		
Hazardous Materials:			
Beryllium	No		
Cadmium	No		
Chlorofluorcarbon (CFC)	No		[CFC]
Coal, tar or asphalt products	Yes	3	Roofing material contains tar and asphalt products; to be disposed of as construction debris.
Lead	No		
Mercury	No		
Polychlorinated biphenyls (PCBs)	No		
Carcinogens (☐ MSDS available)*	No		[CARC]
Chemical/Corrosives:			
Chemicals/solvents (☐ MSDS available)*	No		[CHEM/MSDS]
Corrosives/acids/caustics (☐ MSDS available)*	No		

*NOTE: Requires a description of the materials involved which present a hazard. Identify the physical location of the MSDS.

APPENDIX A

Preliminary Hazard Analysis (PHA)For Work Package Activities (Continued)

FOR Work Packages

SECTION B, INDUSTRIAL HYGIENE - TO BE COMPLETED BY INDUSTRIAL HYGIENE REPRESENTATIVE
Identify engineering/administrative controls or PPE as required, keyed to the following checklist items. Insert any required and/or other special actions to be taken because of the particular hazard (i.e. lead compliance plans, confined space plans, hearing conservation programs, etc.), Including any notations for future Job Safety and Health Analysis (JSHA). Additionally, identify any activities which DOE prescribed Occupational Safety and Health standards that require protective measures be designed, inspected, or approved by a professional engineer or other competent person. (Use Section F if additional space is needed.)

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Ventilation/Air:			
Abrasive blast (☐ MSDS available)*	No		
Coating/painting (☐ MSDS available)*	No		
Dusty operations	Yes	3 & 4	[POWDER] Utilize dust control measures as appropriate from Table 1 (OPA980014).
Foam in Place Operations	No		
Spraying/generation of mists*	Yes	3 & 4	Demolition dust control water misting during demolition and road wetting during waste hauling.
Ventilation or Air Monitoring requirements	Yes	3 & 4	[VENTIL/IH] Air monitoring for potential silica during demolition activities wil be performed as needed for annual site assessment.
Miscellaneous:			
High Pressure systems	No		[HIPRES]
Lasers	No		
Noise in excess of 85 dBA	Yes	3	[NOISE] Hearing protection required during noise hazard activities.
Blood-borne pathogens*	No		
Temperature extremes (heat or cold stress)	Yes	All	[CRYRO/COLD/HEAT] discuss in daily pre-job briefings & monitor per MD-10286 Operations D13/D16
Welding, brazing, or thermal cutting operations (permit)	Yes	2, 3,& 4	[BURN] Hot Work Permit Required. Paint may contain lead, do not torch cut painted surfaces without verification by IH.
Hazardous Waste Operations (HAZWOPER)*	No		
Other (specify)	None		-

***NOTE:** Requires a description of the materials involved which present a hazard. Identify the physical location of the MSDS.

APPENDIX A

Preliminary Hazard Analysis (PHA)For Work Package Activities (Continued)

FOR Work Packages

SECTION C, RADIOLOGICAL PROTECTION - TO BE COMPLETED BY RADIOLOGICAL CONTROLS REPRESENTATIVE
Identify engineering/administrative controls or PPE as required, keyed to the following checklist items. Insert any required and/or other special actions to be taken because of the particular hazard (i.e. RWP, ALARA Plan, etc.), Additionally, identify any activities which DOE prescribed Occupational Safety and Health standards that require protective measures be designed, inspected, or approved by a professional engineer or other competent person. (Use Section F if additional space is needed.)

Item		Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Location:	Controlled Areas (Specify)	No		
	)			
	Other (Specify)	No		
Activities:	Digging/Soil Removal (permit)	Yes	3 & 4	[DIG] Excavation permit required for slab/foundation removal and site remediation activities
	• URMA	No		
	Welding, burning, grinding, hammering, chipping, or scraping of contaminated materials	Yes	2, 3 & 4	Precautions to be taken to prevent physical disturbance of contaminated areas
	Decontamination	No		
	- Site Remediation	Yes	4	None Required
	Waste Disposal	No		
	Other (Specify)			
Sources:	X-Ray equipment, sealed, or unsealed sources	No		
Controls:	Radiological Work Permit	No		[RWP/RWP=JS/RWP=N/R/RPGEN]
	ALARA Plan	No		[ALARA] No
	Other			

APPENDIX A

Preliminary Hazard Analysis (PHA)For Work Package Activities (Continued)

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

		Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Conditions:	Fugitive Dust (refer to Table 1 below)	Yes	All	OPA 980014 Section 2.11
	Storm Water Runoff	Yes	All	Install sediment/storm water protective "slip cover" around storm drain grating & silt fencing.
	Erosion Control	Yes	All	Grading, seeding, and mulching
	NESHAPS Calculation	Yes	N/A	Emission Levels determined to be below requirement. No US EPA approval required for this building.
	National Historic Preservation	No	N/A	Building 36 is not listed as a historic structure with the Ohio Historic Preservation Office (OHPO). No mitigative documentation package is required.
	• Artifacts found			If any items or artifacts are discovered as this project progresses, the Cultural Resource Representative will be notified @ extension 3691. Work will be temporarily suspended until which time the items or artifacts have been recovered.
	Safe Drinking Water Act	No	N/A	All Utilities were isolated with Utility Isolation Work Package FTS-35838
	• Potable water	No	N/A	Potable water was disconnected for building during Utilities Isolation Work Package FTS-35838.
	• Backflow preventers for misting	Yes	All	Install backflow prevention for water misting source as directed by Environmental Compliance PoC
	Emergency Spill Response Materials (Confirm process lines are drained)	Yes	All	Ensure spill kits are available
	Locate Monitoring Wells	No	N/A	No monitoring wells within project site boundary
Notifications:	RAPCA Notification for Asbestos	No	N/A	All regulated asbestos material was removed during a previous phase of this project
	RAPCA Notification for Demolition	Yes	3	Required 10 business days before beginning demolition activity
	Emergency Spill Response Notification	Yes	All	911 or 865-4040
	Other	None		

Table 1 Airborne Contaminant Protection Methods

Dust Generating Activities	Administrative and Engineering Dust Control Measures
Building Demolition	• Applying dust control materials such as water and surfactants
Hauling Material and Equipment	• Reducing vehicle speeds (<20 mph) • Covering truck beds when transporting materials • Keeping soil levels in vehicles below the vehicle sides • Wetting roads used for transport • Wet sweeping or otherwise removing soil and mud deposits from paved roadways and parking areas
Vehicle and Equipment Traffic	• Reducing vehicle speeds (<20 mph) • Covering truck beds when transporting materials • Wetting roads used for transport • Minimizing unnecessary traffic on roadways, parking areas, and areas around field activities
Excavation	• Applying dust control materials water and surfactants • Covering storage piles with a tarpaulin, plastic, etc. • Keeping soil levels in vehicles below the vehicle sides • Minimizing the material drop height during excavation and loading operations • Compacting soils in work areas and in stockpiles at the end of each workday • Changing excavation and transportation method(s) when feasible • Applying vegetative cover or asphalt to project work area at completion of project • Sealing off work areas, stockpiles, etc., before the workday and during lunch breaks
Trenching	• Applying dust control materials water and surfactants • Covering storage piles with a tarpaulin, plastic, etc. • Keeping soil levels in vehicles below the vehicle sides

Table 1 Airborne Contaminant Protection Methods (continued)

Dust Generating Activities	Administrative and Engineering Dust Control Measures
Trenching (Continued)	• Minimizing the material drop height during excavation and loading operations • Compacting soils in work areas and in stockpiles at the end of each workday • Changing excavation and transportation method(s) when feasible • Applying vegetative cover or asphalt to project work area at completion of project • Sealing off work areas, stockpiles, etc., before the workday and during lunch breaks
Material Loading and Unloading	• Reducing vehicle speeds (<20 mph) • Covering truck beds when transporting materials • Keeping soil levels in vehicles below the vehicle sides • Wetting roads used for transport • Wet sweeping or otherwise removing soil and mud deposits from paved roadways and parking areas
Storage Piles	• Compacting soils in work areas and in stockpiles at the end of each workday • Sealing off work areas, stockpiles, etc., before the workday and during lunch breaks • Covering storage piles with a tarpaulin, plastic, etc. • Applying vegetative cover to storage pile areas at completion of project
Wind Erosion from Work Sites	• Compacting soils in work areas and in stockpiles at the end of each workday • Sealing off work areas, stockpiles, etc., before the workday and during lunch breaks • Covering storage piles with a tarpaulin, plastic, etc. • Applying vegetative cover or asphalt to project work area at completion of project

Preliminary Hazard Analysis (PHA)For Work Package Activities (Continued)

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

	Quantity Expected	Work Package Phase	Radiological Characterization	Packaging Requirements	Mode of Disposal
Types:					
Sanitary Landfill Waste: • Concrete • Steel & Copper Piping • Metal Roofing • PVC • Electrical Wiring • Fiberglass Insulation • Wood	30,330 Cu.Ft.	3	No elevated radioactivity levels	30 Cu. Yd. Roll-Off/End Dumps	Offsite Disposal via Waste Management Operations/Journey LTD.
Hazardous Waste: • RCRA Hazardous Waste • Asbestos • Other	None				
Mixed Waste	None				
Low Level Radiological Waste: • Building Debris • Below grade	None				
Transuranic (TRU) Waste	None				
NOTE: 1. Sealed pressure vessels will need to be at <1.5 atmosphere if present. 2. Any items not previously evaluated are to be set aside for evaluation by Waste Management prior to disposal.					
Other:					
Material sent off-site Fill out MD-200180 Attachment 1 (see below)					
Material sent to concrete crusher Fill out MD-200180 Attachments 1 & 2 (see below)					

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

EMERGENCY PREPAREDNESS

- Site Notification Procedures
  Use **911** for all emergency services onsite. This is the first response for any emergency, spill, or release. If using a cell phone, dial **865-4040 or NEXTEL AA911**. This number will ring into the plant 911 system. Any injury, no matter how minor, shall be reported immediately to the Medical Department for evaluation and treatment. The injured employee shall report any injury to the supervisor in charge or designee.

  Employees will be notified of emergency or abnormal conditions by the project two-way radios. Additionally, unique sheltering and evacuation signals are available should site-wide protective actions be necessary.
  Evacuation: Continuous air horn blasts
  Take Shelter: Two air horn blasts – pause – two air horn blasts

- Evacuation Route/Assembly Areas
  Assembly area is West of Building 36 outside the Site Boundary Fence. See map in Appendix C.

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

  The take shelter area is Building 50. See map per Appendix C.

APPLICABLE LESSONS LEARNED – See Appendix E

JOB SAFETY & HEALTH ANALYSIS

JSHA MASTER DOCUMENT CONTROL NO:
BOSS – 36 - 081403

DATE: 9/25/2003	_X_ NEW ___ REV	**BUILDING:** H	**JOB:** Demolish Building 36 MSR #36952
DEPARTMENT/COMPANY: BOSS Project/CH2M Hill Mound, Inc.			**SECTION:** N/A
OCCUPATIONS: : Heavy Duty Operators, Demolition Tech's, Demolition Crafts, & Electricians. Supported by Project Personnel e.g.. Supervision, Engineering, Building/Facility Manager, RAD Control, Ind. Hygiene, and Safety			

SIGNATURES

ORIGINATOR:
REVIEW/REV:
REVIEW/REV:
REVIEW/REV:
APPROVED:

REQUIRED PERSONAL PROTECTIVE EQUIPMENT: Hard Hat, Safety Glasses with side shields, safety shoes, safety vest	**MSDS(s)/CHEMICALS ASSOCIATED WITH THE JOB:**

BASIC JOB STEPS	POTENTIAL ACCIDENT/ILLNESSES OR KNOWN HAZARDS	SAFE JOB PROCEDURES
Break the job down into basic steps that tell what is done first, what is done next, and so on. Record the job steps in their normal order of occurrence. Describe what is done, not the details of how it is done. Usually, three or four words are sufficient to describe each job step. For example, the job of "replacing a light bulb" may break down into basic steps as follows: 1. Bring and set up ladder 2. Ascend ladder 3. Remove light globe & bulb 4. Replace light bulb 5. Replace light globe 6. Descend ladder 7. Remove and store ladder	Ask yourself for each job what accidents/illnesses could occur to the employee doing the job. Record potential accidents/illnesses by combining one of the abbreviations below with the agent of contact. For example, "struck by a crane hook" is recorded "SB-crane hook." Number each potential accident. SB - Struck by CB - Contacted by SA - Struck against CW - Contact with CI - Caught in CO - Caught on IB - Caught between F - Fall SO - Strain-overexertion* E - Exposure (occ. illness) *Show ergonomic stresses as SO (repetitive trauma, single event strain, or awkward position)	For each potential accident/illness, ask yourself exactly what the employee should do or not do to avoid the accident/illness. Describe specific precautions in detail. Give each precaution the same number given in the potential accident (center column) to which it applies. Avoid generalities such as "Be alert," "Be careful," and "Take caution." Use simple do or don't statements; e.g., "Lock out main power switch," "Stand clear of lift before signaling," or "Check wrench grip before exerting full force." If necessary, explain how, as well as what, to do. Amount of detail is a matter of judgment. Describe ergonomic solutions (job redesign, new tools, worker lift assistance, etc.)
General Safety Note	A wide variety of incidents occur on a regular basis that potentially could result in injury or illness	-Be cognizant of your own safe work practices as well as those of your co-workers -Review any related safety procedures of which you are unsure -Utilize STOP WORK Authority as necessary
Pre-job meeting with involved personnel to discuss the work plan and safety requirements. This meeting is conducted daily.	N/A	-This project engages in Enhanced Work Planning(EWP), an ISM process that evaluates and improves the approach by which work is identified, planned, approved, controlled, and executed.
1. Site Preparation & Mobilization	Standard construction hazards.	-Demolition preparation is defined by 29CFR1926.850; workers, unfamiliar with construction standards must notify the project supervision and/or project health and safety personnel.
1a. Site Access Control	Struck by equipment, debris	-Once the work area is defined, only authorized personnel are permitted in the construction perimeter. -Unescorted, Non-project and Non-emergency personnel, must have acceptance of the BOSS Project Project Manager for entry. -Emergency access to the work zone will be maintained to the extent possible.
1b. Clear Area and Mark/Protect Utility Equipment	Running into fire hydrants, manhole covers, or grates over field drains.	-Mark/protect hydrant and other utility equipment with wooden boxes, visible stakes, and/or colored flags. -Cover field grates to protect

JOB SAFETY AND HEALTH ANALYSIS FORM
(CONTINUATION SHEET)

BASIC JOB STEPS	POTENTIAL ACCIDENT/ILLNESSES OR KNOWN HAZARDS	SAFE JOB PROCEDURES
2 Building Demolition & Debris Disposition	Vehicle Traffic Hazard	-Control traffic with flagmen and signage as necessary
2a. Demolish building using excavator mounted shear, hoe ram, grapple, loader, and bobcat	Struck by flying debris Struck by moving equipment Noise Hazard	-Establish construction boundary. -Wear hard hat, safety glasses, safety shoes, and reflective vest inside construction area. Make eye contact with operator when working around equipment. Use hand signals to communicate intent. -Maintain the following distances from operating equipment: Shear – 75 feet Hoe Ram – 50 feet Other heavy duty equipment – 30 feet Bobcat – 15 feet -Make sure equipment is in safe working order. Use spotter if vision is obstructed. -Install traffic control with sufficient flagmen -Wear hearing protection while running heavy duty equipment Follow the requirements of MD-10286 D9
2b. Torch cut rebar or to weaken structural members	Burns, fire Potential lead paint fume exposure Compressed Gas Cylinders (CGCs)	-Obtain and follow Hot Work permit per MD-10286 O2. Wear proper PPE, have fire extinguishers in the construction zone. -Test for lead paint; do not torch cut lead paint. -Follow Mound Procedure MD-10286, H1
2c. Working in excessive heat/cold	Heat Stress/Cold Stress	-Follow the requirements of MD-10286 D13/D16 and discuss in daily pre-job briefings
2d. Debris Characterization & Disposal	Radiological Contamination	-Have RCTs survey underside of concrete slab before disposal
2e. Slab & Foundation Demolition & Removal	Underground Utility Contact – Electrical/Water Pressure Exposure Radiological Contamination	-Evaluate & Mark area per Excavation/Soil Disturbance Permit, MD_10286, O5 for Underground Utilities. - Have RCTs survey bottom of concrete slab before disposal
3a. Rough grading	Equipment/ personnel mixture	-Stay clear of operating heavy equipment

JOB SAFETY AND HEALTH ANALYSIS FORM
(CONTINUATION SHEET)

BASIC JOB STEPS	POTENTIAL ACCIDENT/ILLNESSES OR KNOWN HAZARDS	SAFE JOB PROCEDURES
3b. Seeding & Mulching	Slip – Trip – Fall Lifting /twisting strain	-Uneven walking and/or working surfaces –use extra caution. -Follow accepted practices
3c. Demobilize Construction Equipment Remove dust control water distribution system Remove temporary power Remove fencing	Equipment/ personnel mixture Cuts and abrasions Lifting /twisting strain Radiological contamination of equipment if required by in-process surveys	-Be cognizant of your own safe work practices as well as those of your co-workers -Review any related safety procedures of which you are unsure -Utilize STOP WORK Authority as necessary -Coordinate in-process Rad Surveys with Rad Techs

02220 43

SIGN-OFF SHEET

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

Signature	Date	Department

Appendix B

Pre-Job Briefings/Job Status Log

JOB STATUS LOG

ACKAGE TITLE: Demolition of Building 36

ACKAGE NUMBER.

DATE	TIME	WORK PKG. SECTION	% Complete	BY	STATUS

02586 37

Appendix C

Drawings/Sketches/Photographs

- **Building 36 Cold & Dark Safety Plan**
- **Building 36 Underground Utilities Sketch**
- **Building 36 Foundation Plan, Dwg 303600-02001**
- **Building 36 Floor Plan & Room Finish Schedule, Dwg 303600-02002**
- **Building 36 Roof Framing & Upper Floor Plan, Dwg 303600-02003**
- **Building 36 Roof Plan Lintel, Column, & Beam Details, Dwg 303600-02004**
- **Building 36 Wall Sections, Dwg 303600-02006**

Appendix D

Miscellaneous

- **No USQ required for this Work Package**
- **No RWP# required for this Work Package**
- **Structural Engineering Survey letter, per OSHA CFR1926.**
- **MSR 36952**
- **Request To Stage Clean Hard Fill Debris at Construction Spoils Area**
- **ML-9987 – D & D Solid Waste Free Release Declaration**

Attachment 1 – Request To Stage Clean Hard Fill Debris at Construction Spoils Area

Work Location/ Source of material Builiding 36 Approximate Volume 2837 cu.ft.

Requestor Project Group BOSS Project Project Point of Contact Jeffrey Boston

Name/Phone Ext 865-3262

MSR # 369532 Charge # EE050J

Process Knowledge (attach documentation, if more space needed):

PRS # PRS Binning Status: NFA RA FA NFA Pending Stakeholder Review

Binning remarks

Clean up criteria for soils

Identify how point of origination /area is posted: (e.g. non-RMMA, URMA, SCA, CA, HCA, RMA, RMMA, FCA, etc.)

Note:

Radionuclides of Concern for verification sampling:

Radiological Surface Contamination Not Applicable – never exposed to radionuclides circle if applicable

Survey Results: <PP-1059F, Table 2-2 criteria > PP-1059F, Table 2-2 criteria

In Process monitoring of excavating equipment: <PP-1059F, Table 2-2 criteria > PP-1059F, Table 2-2 criteria

Activation Concerns: No Yes If yes, explain

Material is released for recycle /reuse Yes No

Sending Rad POC Signature	**Date**
Sending Project Manager Signature	**Date**

Work Location/ Source of material

Final material use:

On-site Unrestricted Removed as LLW to disposal

Waste Management Rad POC Signature	**Date**
Spoils Area Foreman Signature	**Date**

Attachment 2 — ML-9987 – D & D Solid Waste Free Release Declaration

The ____BOSS_____ Project has determined that all solid waste streams resulting from safe shutdown, decontamination, and/or demolition of Building(s) ___36_____ have been free released in accordance with DOE Order 5400.5, MCP procedural manual MD-80043, and direction from the DOE Miamisburg Environmental Management Project (MEMP) office (letter from Provencher to Baker, MB 423-99, dated April 27, 1999). Data supporting this free release determination may be found by contacting ____Jeffrey Boston_____, Project Manager, at ___865-3262_____. This data may include radiological surveys and data sheets and/or process knowledge utilized according to the above procedures.

_____ _____

Waste Coordinator Date

Appendix E

POST-JOB CONFERENCE/LESSONS LEARNED

Transporting Portable Fuel Tanks

(L03-012)

Lessons Learned Statement:

When moving portable fuel tanks, care should be taken to adjust lifting forks to the proper width required by the item being lifted. Setting of the forks into available lifting slots should be verified and spill kits should be readily available at the job site where portable fuel tanks are being used.

Discussion:

Oh March 26, 2003, a Heavy Duty operator attempted to lift a 550 gallon portable diesel fuel day tank, with a John Deere 644G loader equipped with forks. The tank assembly was equipped with two lifting slots; however the operator did not take time to adjust the loader forks to match their spacing. He attempted to pick up the tank by engaging only one lifting slot (a common practice) and placing the other fork under the lower tank support rails. In his haste to complete the job, the operator proceeded to lift the tank without first verifying that the fork had engaged the slot; the fork had missed the intended slot. As the tank was lifted it became unstable, rolled off of the forks, and tipped onto its end. At this point, diesel fuel began to pour out of the vent pipe. After three attempts, the operator was able to right the tank and stop the spill. Immediately, the Fire Department was called and several people in the area began to take measures to contain the spill. Through teamwork by the involved organizations, the spill was prevented from flowing into the adjacent stream. A total of approximately 24 gallons of fuel spilled from the tank onto a paved parking lot.

Analysis:

Failure to take the time necessary to adjust the loader forks and to verify that they were set into the tank lifting slots prior to lifting resulted in the spill of diesel fuel. Contributing to the event was the common practice of transporting the tank with only one fork set in the lifting slot. Additionally, work plans did not consider special precautions though the tank was being manipulated while in close proximity to a body of water.

Recommended Actions:

1. Operators must take the required time to adjust lifting forks to the proper width required by the item being lifted. The practice of moving the portable tanks with only one fork set into the lifting slots should be discontinued. Further, setting of the forks into both lifting slots must be verified prior to beginning the lift.
2. Spill kits should be located at the job site where portable fuel tanks are being used.
3. Work plans should provide special precautions when using or transporting portable fuel tanks near bodies of water.

Refueling Vehicles Safely

L02-037 (2002-RL-HNF-0040)

Lessons Learned Statement:

Static electricity sparks near gasoline pump nozzles can ignite vapors, causing serious fires. The person pumping the gas should avoid reentering the vehicle while refueling. If reentering is absolutely necessary, the person must touch a metal part of the vehicle well away from the fuel fill spout before touching the hose nozzle.

Discussion of Activities:

See a graphic depiction of what can happen if someone ignores this warning at:

http://www.hanford.gov/lessons/sitell/ll02/burnout.jpg.

Analysis:

Between January and April 2000 the Petroleum Equipment Institute researched 81 cases of fires caused by "static electricity" at gas pumps, similar to the one that caused the damage shown above. Many more cases of fires have been reported since then but were not analyzed in that study. Results of that research show that:

- Twenty reports described fires before the refueling process began, when the fueler touched the gas cap or the area close to it after leaving the vehicle.
- Twenty nine fires occurred when vehicles of various makes and models were reentered and the nozzle was touched during refueling. Some resulted in extensive damage to the vehicle, to the station, and to the customer, including one fatality.
- Fifteen fires did not involve either of these two situations. In all but one of these 15 cases the fueler was not the source of the electrical discharge and the source of ignition cannot easily be determined.
- PEI received insufficient information on seventeen fires reported by NHTSA to confidently categorize them.
- Ninety four per cent of the people involved in fires where footwear was identified had on rubber-soled shoes.

Recommended Actions:

Avoid getting back into your vehicle while filling it with gasoline. If you absolutely must get into your vehicle while the gas is pumping, make sure that when you get out you close the door and TOUCH METAL before pulling the nozzle out.

Estimated Savings/Cost Avoidance: Up to $30,000 for a vehicle fire and hundreds of thousands of dollars to treat severe burns.

Priority Descriptor: YELLOW/Caution

Work / Function: Business and Support Services; Driving; Fire Protection; Transportation

Hanford Functional Categories: N/A

Hazard: Fire

ISM Core Function: Analyze hazards; Develop/Implement Controls

Originator: Bob Renkes, Petroleum Equipment Institute, (918) 494-9696, fax (918) 491-9895, rrenkes@pei.org. Passed to Fluor Hanford Lessons Learned by Rex Jordan, Hanford Fire Marshall, (509) 373-4022

Contact: Fluor Hanford Lessons Learned Coordinator; (509) 373-7664; FAX 372-3950; e-mail: PHMC_Lessons_Learned@rl.gov

Authorized Derivative Classifier: Not required

Reviewing Official: John Bickford

Keywords: fire, refueling, static discharge, gasoline

References: "Stop Static" report by PEI (http://www.pei.org/static/index.htm)

POST JOB CONFERENCE

1. WORK PACKAGE TITLE: Demolition of Building 36
2. WORK PACKAGE NUMBER. BOSS-36952 - 00.

What went well?

What could be improved?

Other Comments:

Items Requiring Further Action:

POST-JOB CONFERENCE ATTENDEES

NAME	HP	NAME	HP

LESSONS LEARNED INPUT FORM

Title: (This is a brief descriptive title)

Lessons Learned Statement: (This is a brief, two or three sentence, summary of the lesson that was learned)

Discussion: (This is background and detail of what happened)

Analysis: (Discussion of what went wrong, or right and what should be done in the future)

Recommended Actions: (Identify specific corrective actions)

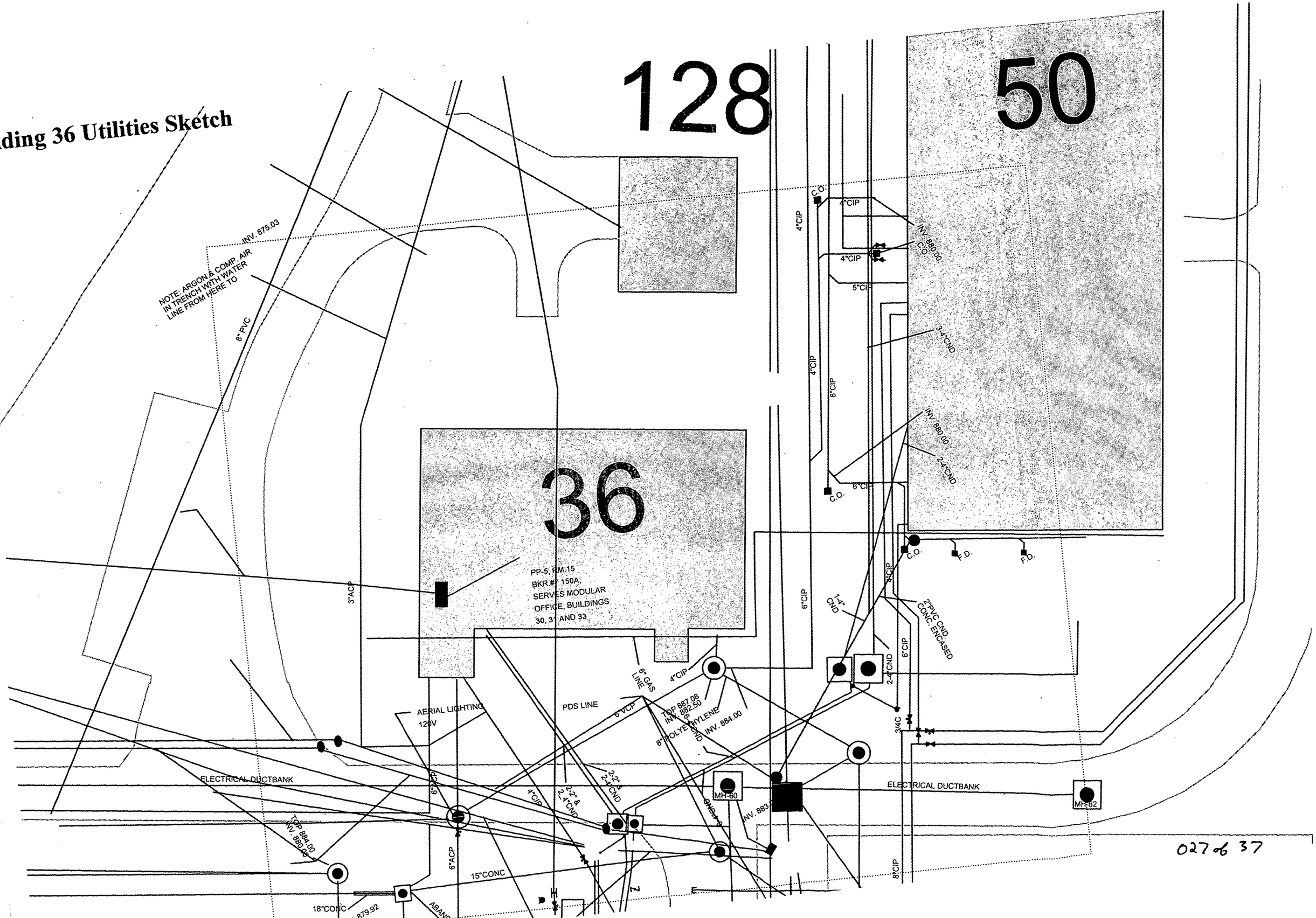
Submitted by: _____ Date: _____

OPTIONAL

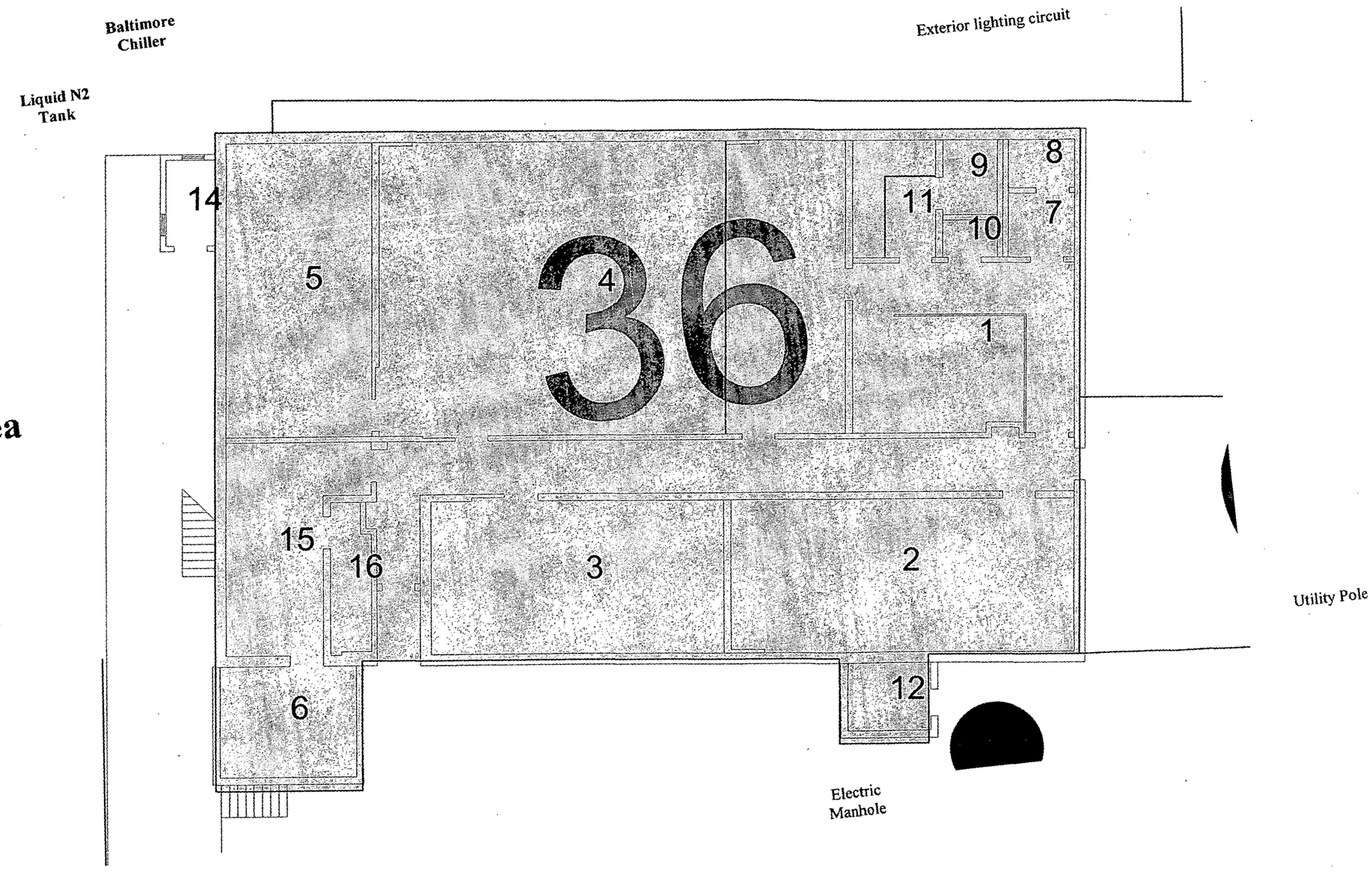
Mail to: Lessons Learned Program Manager, W-219 or appropriate Project or Functional Manager

037637

Building 36 Utilities Sketch



Building 36 Cold & Dark Safety Sketch



Equipment Staging Area

02806 37

EMERGENCY HORN BLASTS:
EVACUATION: CONTINUOUS HORN BLAST
TAKE SHELTER: 2 HORN BLASTS – PAUSE – 2 HORN BLASTS