3001-0604060003

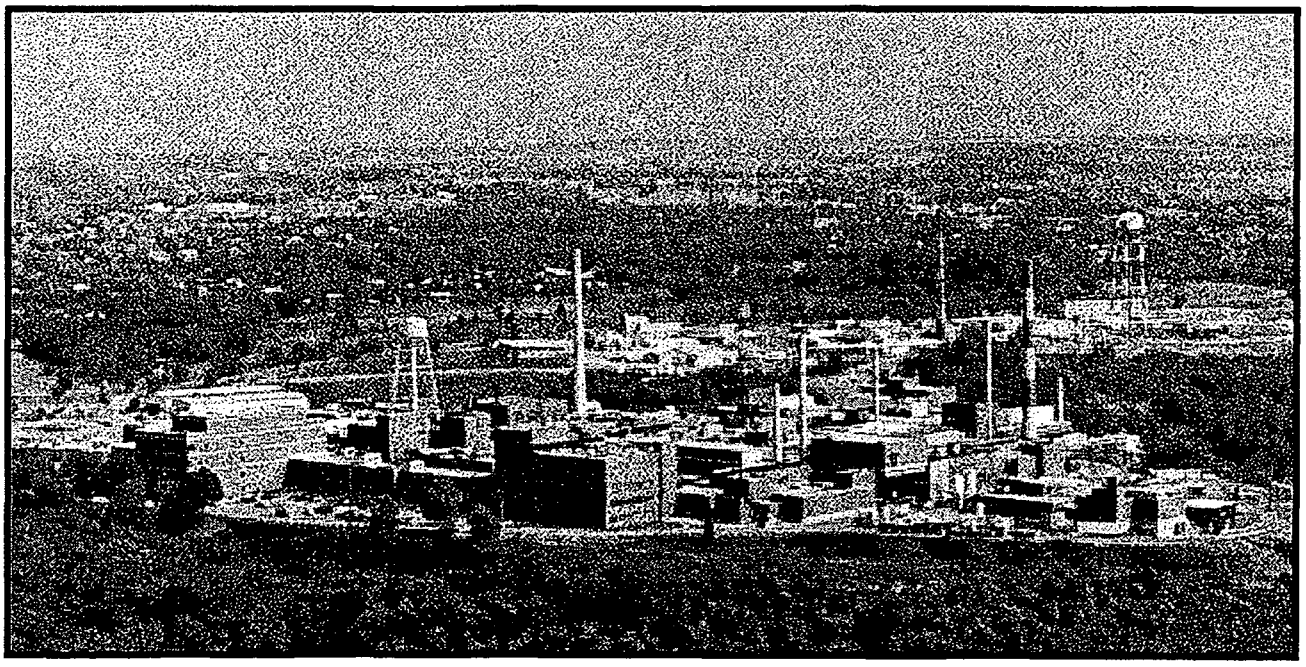
Environmental
Restoration
Program

Miamisburg Closure Project
Building Data Package

Building 30

(Demolition in accordance with Action Memo / EE/CA for Contingent Removal Actions for Contaminated Soils, Addendum 1: Structures)

Final
April 2005



3001-0604060003

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

CH2MHILL

SMO-030/05
April 13, 2005

Ms. Margaret L. Marks, Director
Miamisburg Closure Project
U. S. Department of Energy
1075 Mound Road
Miamisburg, OH 45342

ATTENTION: Paul Lucas

SUBJECT: Contract No. DE-AC24-03OH20152
Contract Clause C.2.1.1.1
Contract Deliverable #36
BUILDING 30, BUILDING DATA PACKAGE, FINAL

Dear Ms. Marks:

Attached is the following final document:

- Building 30, Building Data Package, Final

If you or members of your staff have any questions regarding the document, or if additional support is needed, please contact Dave Rakel at 937-865-4203.

Sincerely,

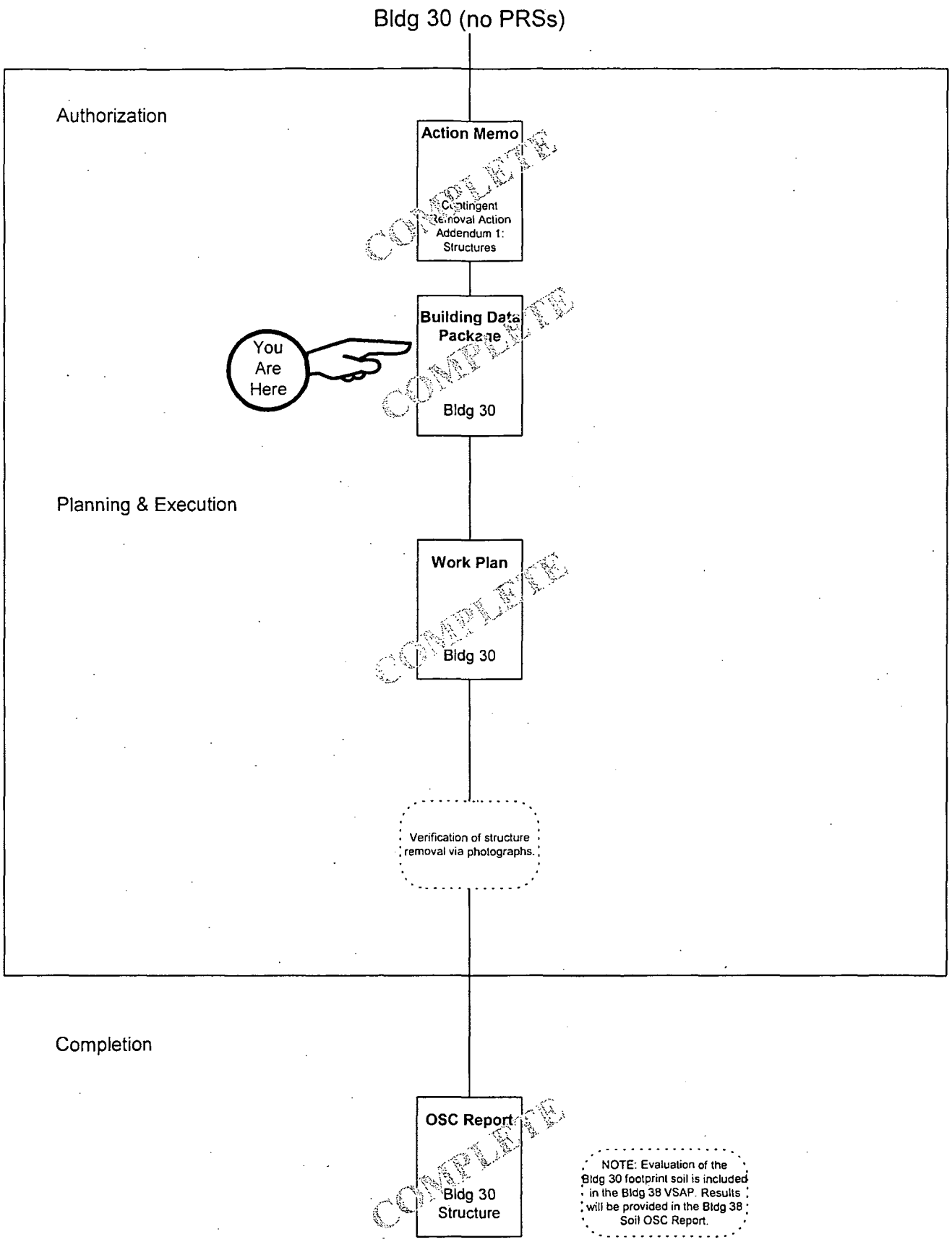
John Lehew
Site Manager

JL/ms

Enclosures

cc: T. Fischer, USEPA, (1) w/attachments
B. Nickel, OEPA, (1) w/attachments
R. Vandegrift, ODH, (1) w/attachments
M. Wojciechowski, Tetra Tech, (1) w/attach
F. Schmaltz, DOE/MCP, (1) w/attachments
L. Rawls, MCP, w/o attachments
R. Tormey, DOE/OH, (1) w/attachments
G. Desai, DOE/HQ, (1) w/attachments
CERCLA Documents, CH2M Hill, (1) w/attachs
C. Watson, CH2M Hill, (1) w/attachs
F. Bullock, MMCIC (3) w/attachments
Public Reading Room (4) w/attachments
ER Records, CH2M Hill, (1) w/attachs
DCC (1) w/attachments
Admin Record (2) w/attachments
J. Lehew, CH2M Hill, w/o attachments
D. Rakel, CH2M Hill, w/o attachments
V. Darnell, CH2M Hill, w/o attachments
B. Wier, CH2M Hill, w/o attachments
W. Webb, w/o attachments
M. McDougal, CH2M Hill, w/o attachments
MOAT Coordinator, w/o attachments
file

Building 30



6Apr05vkd

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The Mound Core Team
500 Capstone Circle
Miamisburg, OH 45342

December 2004

Mr. Frank Bullock, PE
Director of Operations
Miamisburg Mound Community Improvement Corporation
720 Mound Road
COS Bldg. 4221
Miamisburg, Ohio 45342-6714

Dear Mr. Bullock:

The Core Team, consisting of the U.S. Department of Energy Miamisburg Closure Project (DOE-MCP), U.S. Environmental Protection Agency (USEPA), and the Ohio Environmental Protection Agency (OEPA), appreciates your comments on the Building 30 Building Data Package, Public Review Draft, June 2004.

Attached is our response.

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

Sincerely,

DOE/MCP:	Paul Lucas Paul Lucas, Remedial Project Manager	12/16/04 date
USEPA:	Timothy J. Fischer Timothy J. Fischer, Remedial Project Manager	12/15/04 date
OEPA:	Brian K. Nickel Brian K. Nickel, Project Manager	12/16/04 date

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Response to MMCIC/ EHS Technology Group, LLC Comments on the Building 30 Building Data Package
Public Review Draft
June 2004

Comment 1.

Reference Document: Building 30 (Demolition in accordance with Action Memo/EE/CA for Contingent Removal Acton s for Contaminated Soils, Addendum 1: Structures) ; Public Review Draft, June 2004

Purpose: The purpose of this document is to notify the public of the Demolition Activity proposed for Building 30. This Building Data Package satisfies the Public Notification requirements as outlined in the Action Memorandum/Engineering Evaluation/Cost Analysis, Contingent Removal Action for Contaminated Soils, Addendum 1: Structures, April 2004, Final.

Assessment of Review: Building 30 (Health Physics Count Lab/SM (Special Metallurgical) Storage Building) was originally constructed as a storage facility for SM Area Storage; however, it has also housed a scanning facility for drums and boxes of radioactively contaminated materials, and a counting facility for the analysis of radionuclides. Three fixed contamination areas (FCAs) are present on the floor. Since residual contamination is present, Building 30 is designated as impacted. The contaminant found within Building 30 includes plutonium-238. Confirmation that activities within Building 30 did not impact the building footprint will be accomplished via the Building 38 VSAP. Soil contamination above acceptable levels will be managed per the Building 38 VSAP.

Technical Analysis: In 2002, the Action Memorandum, Engineering Evaluation/Cost Analysis was prepared as a Contingent Removal Action for Contaminated Soils. The idea was to streamline the cleanup process for specific types of soils contamination. An addendum to this document, titled Action Memo/EE/CA for Contingent Remvoal Actions for Contaminated Soils Addendum 1: Structures was issued as a draft in June of 2004. The purpose of this addendum is to allow certain structures, depending upon type and extent of contamination and contaminant concentrations, to also be fast tracked using a Fact Sheet. The Fact Sheet would include all pertinent information associated with the PRS and cleanup, including a description/history of the PRS, contaminants of concern (COCs), risk criteria, background levels, cleanup objectives, environmental surveillance measures, verification sampling, schedule of activities, and cost estimate. This Building Data Package fulfills these requirements.

The Cleanup could be performed in conjunction with the public review of the Fact Sheets. The public would still have the opportunity to comment on all aspects of the Removal Action. Verification sampling would not be performed until after the public comment period, allowing regulators to consider all comments before verifying the Removal Action is complete.

EHS has had the opportunity to review and comment on this Building Data Package. We concur with the planned removal action (RA) for the Building 30 due to elevated levels of plutonium-238.

As always, coordination between CH2M Hill, the cleanup contractor at the Mound Site, and Miamisburg Mound Community Improvement Corp. (MMCIC -developer of the Mound site) will result in the return of these areas to the proposed use in the Mound Comprehensive Reuse Plan.

Substantive Comments: EHS concurs with the planned removal action (RA) for Building 30. We understand that confirmation of any impact to the footprint of the building will be accomplished via the Building 38 VSAP and any soils contamination will be managed in the Building 38 VSAP. Coordination between CH2M Hill, the DOE and MMCIC to ensure the building area is left in a condition consistent with the Mound Reuse Plan.

If EHS's understandings are correct, no specific response to the above comment is necessary, and we understand that these comments will be included in the OSC report.

Response 1. Thank you for your review and input to the document. Public comments are included in the final version of the document to which they pertain; accordingly, these comments will not be included in an OSC Report as your comment indicated, but are included in the Final version of the Building 30 BDP.

MMCIC is encouraged to coordinate with DOE and the clean-up contractor regarding demolition activities. The individual demolition Work Plans will specify any site restoration activities following structure removal. The Core Team understands MMCIC's request and encourages MMCIC to meet with DOE to obtain an agreeable end state.

MIAMISBURG CLOSURE PROJECT

BUILDING DATA PACKAGES and PUBLIC FACT SHEET

The following documents are available (June 12, 2004) for public review in the CERCLA Public Reading Room, 305 E. Central Ave., Miamisburg, Ohio.

BDP and Public Fact Sheet
Buildings 31 and 31A:
31-Contaminated Materials Storage Building/LSA and TRU Waste Storage Building, and 31A-LSA and TRU Waste Storage
and
BDP Building 30: Health Physics Count Lab/SM (Special Metallurgical) Storage Building

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 30

REV	DESCRIPTION	DATE
WORKING DRAFT (to DOE)		**January 2004**
DRAFT (to Core Team)	Building 30 will be demolished as authorized by the Action Memo / EE/AC for Contingent Removal Actions for Contaminated Soils, Addendum 1: Structures, April 2004, Public Review Draft (Recommendation Provided in Appendix P),	**April 2004**
DRAFT PROPOSED FINAL (incorporates Core Team comments)	Text changes were made in response to Ohio EPA and USEPA comments.	**June 2004**
PUBLIC REVIEW DRAFT	The public review period is 12 June 2004 through 12 July 2004.	**June 2004**
FINAL		**April 2005**

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1.0 GENERAL OVERVIEW

1.1 Introduction

The purpose of this Building Data Package (BDP) is to prepare for the demolition of Building 30 (Health Physics Count Lab/SM [Special Metallurgical] Storage Building) 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.

Radiological contamination is present on internal surfaces of Building 30 walls and floors. This building will be demolished in accordance with the Core Team authorized Action Memo / EE/CA for Contingent Removal Actions for Contaminated Soils, Addendum 1: Structures, April 2004, Public Review Draft (Recommendation provided in Appendix P).

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 30 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 1527-00).

The scope of the investigation included Building 30, the soil beneath, and a 30-foot wide perimeter border around the building. The investigation of Building 30 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 30 OVERVIEW

Constructed in 1965, Building 30 is located on the east central portion of the site (Figure 1). The facility is a single-story slab-on-grade structure constructed of concrete block and contains 740 square feet of floor space. Building 30 has a six-inch thick reinforced concrete floor and a reinforced concrete foundation with the footers set at three feet below grade. Originally built as a storage facility, the building had no water or sanitary services. In 1981, the building was modified to install water service, a water heater, two sinks, a toilet, and sanitary service. The building was originally constructed with three rooms; however, modifications to the interior of the building that took place between 1989 and 1991 have altered the configuration of the original three rooms. The building floor plan along with a table showing the original room number, room function, and current room number is provided in Appendix D. Another post-construction change includes placing a doorway on the southern exterior wall of the building. There have been no room additions to Building 30 altering the original footprint.

Building 30 uses electric heat pump units (stand alone) for heating and cooling. Prior to 2001, when central steam was no longer supplied to this area of the Plant, the building used central steam for heating and window-type air conditioning units (stand alone) for cooling. Electric service is 240 volts. The building has potable and service water, a fire sprinkler system, and sanitary services. Building 30 is not connected to storm drains because the building sits on the edge of a hill.

2.1 Past Uses of Building 30

Building 30 was built as the SM (Special Metallurgical) Storage Area, although it was also used for other purposes (Table 1). It was originally constructed with three rooms – an Air Lock Room, a Loading Room, and a Storage Room. In the waste management site plans for the years 1979 through 1983, Building 30 was included on a table of radioactively contaminated facilities. However, the building was not included on the table in the waste management site plan for 1984. The waste management site plans for subsequent years were more directed at waste storage activities; and did not describe point of generation activities to the detail that is found in earlier reports, and therefore did not mention Building 30.

Table 1 - Programs and Processes Housed in Building 30

Timeframe	Process or Function
1965 to 1984	SM (Special Metallurgical) storage area
1979 to 1983	Gamma scanning facility for drums and boxes of radioactively contaminated materials
Late 1980s to 2003	Counting laboratory for the analysis of radionuclides

When Building 30 was used as a gamma scanning facility, soil in sealed dishes was screened in a gamma counter to determine the amount of plutonium or thorium present in the sample. The sealed dishes were not opened and were discarded in a Low Specific Activity (LSA) container outside of Building 30. As a radiological counting laboratory, Building 30 personnel used liquid scintillation counting to count paper smear samples for the detection of tritium and gross alpha/beta activity. The counting laboratory function continued in Building 30 until October 2003, when the operation was moved to another location.

2.2 Current Uses of Building 30

Building 30 is currently inactive. The equipment is in the process of being removed. All required equipment will be removed from the building (in accordance with 41 CFR 101-200), 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 30

Table 2: Summary of Environmental Concerns and Findings

Description	Comment	Resolution
Lead-Based Paint	No previous lead surveys or sampling data could be found for Building 30 (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.). Painted surfaces will be tested for lead content as planned work indicates the need for such testing in order to avoid worker exposure to lead. Waste Management performed worst-case scenario calculations to determine that building demolition debris containing lead-based paint meets the waste acceptance criteria at both Envirocare and Nevada Test Site.
Chemicals	Appendix K provides a list of chemicals and products reportedly used or stored in Building 30.	All chemicals will be removed prior to demolition, and dispositioned by Waste Management.
Ballasts associated with Fluorescent Lamps	Fluorescent lamps were used in the building. Ballasts may contain polychlorinated biphenyls (PCBs).	Per the Environmental Appraisal, F22 of 59 (Appendix F), PCBs were removed from Building 30 prior to 1996. During Safe Shutdown activities, ballasts will be evaluated for PCBs. Any ballasts that may contain PCBs will be removed prior to demolition, and disposed of by Waste Management.
Air Emissions	The Environmental Appraisal (Appendix F) indicates that when the building was used as a radiological counting laboratory, potential air emission sources included isopropyl alcohol, Ultima Gold, and window wash, as well as process contaminants. An air emission survey in 1990 identified two fume hoods in the building. The fume hoods shared an exhaust that had a HEPA filter. Air emissions were considered *de minimis* based on process knowledge. In 1996 during the Environmental Appraisal walk-through of Building 30, there were no fume hoods in Building 30 and therefore, a permit application was not required.	Air emissions from Building 30 processes are believed to have had no adverse impact on the building or the environment. All processes in Building 30 have ceased and the building is currently undergoing safe shutdown activities in preparation for demolition.

Table 2: Summary of Environmental Concerns and Findings

Description	Comment	Resolution
Asbestos	During July of 2002, a comprehensive walk-through survey of all areas of Building 30 was performed in order to identify all asbestos-containing materials (ACMs) prior to demolition of the facility (Appendix I). Twenty-seven linear feet of asbestos-containing pipe insulation were identified as requiring removal.	The pipe insulation was removed in accordance with NESHAP requirements and disposed of by Waste Management. The asphalt roofing is assumed to contain asbestos, but as a Nonfriable Category I material in accordance with NESHAP, it will remain in place during demolition and be disposed of as construction waste. All work will be performed in accordance with current state and federal regulations.
Drainage Sumps	There are no drainage sumps.	N/A
Lead	N/A	N/A
Mercury	N/A	N/A
Radiological	Some building surfaces in Building 30 are known to have radiological contamination above surface release criteria and extensive remediation is not considered practical. Radiological survey findings are presented in Section 2.4, and the Characterization Report is provided in Appendix G.	Building 30 will be demolished in its entirety as a radiological facility as authorized by the Action Memo / EE/CA for Contingent Removal Actions for Contaminated Soils, Addendum 1: Structures, April 2004, Public Review Draft, and the debris disposed of as radiological waste per Waste Management direction. Confirmation that the activities within Building 30 did not impact the building footprint will be accomplished via the Building 38 Area VSAP. Soil contamination above acceptable levels will be managed per the Building 38 Area VSAP.
Septic System	The Area 16, SM Building Sanitary Sewage Septic Tank Leach Field (PRS 286) is south and west of Building 30. PRS 286 has not yet been binned by the Core Team.	There is known soil contamination in PRS 286. The information will be presented to the Core Team for binning.
Wastewater	Handled by site wastewater facility.	N/A
Stains & Corrosion/HVAC	N/A	N/A
Storage Tanks	There was an above ground argon tank (Tank T17) approximately 45 feet south of Building 30 (Appendix C, Figure 4). There are no underground storage tanks within 15 feet of the perimeter of Building 30.	The above ground argon tank was drained, disconnected, and removed. N/A

Table 2: Summary of Environmental Concerns and Findings

Description	Comment	Resolution
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 30.	N/A
Soil Contamination	Appendix L contains a graphic showing all soil sample locations within 30 feet of the Building 30 perimeter, and provides tables for all detected compounds (results above laboratory detection limits) and non-detected compounds (results below laboratory detection limits). All results are equal to or below applicable screening levels. A 30-foot perimeter was reviewed due to the limited number of samples within the standard 15-foot perimeter.	Confirmation that the activities within Building 30 did not impact the building footprint will be accomplished via the Building 38 Area VSAP. Soil contamination above acceptable levels will be managed per the Building 38 Area VSAP.

N/A: Not applicable

2.4 Radiological Information for Building 30

A radiological assessment of Building 30 was performed by reviewing its operational history and preliminary radiological survey information. Building 30 was originally constructed as a storage facility for SM Area Storage; however, it also housed a scanning facility for drums and boxes of radioactively contaminated materials, and a counting facility for the analysis of radionuclides. Three fixed contamination areas (FCAs) are present on the floor and labeled in accordance with site procedures. Since residual contamination is present, Building 30 is designated as impacted.

Scoping surveys were performed throughout the building to determine the nature and extent of contamination. Survey data indicates that contamination is present on the floor at multiple locations beyond the designated FCAs. The highest isotopic analysis result by alpha spectroscopy was 294,197 dpm/sample plutonium-238. Scan surveys of the interior walls found no measurement above the alarm set point, however, several layers of paint are visible on the walls and may be masking residual activity. Outside areas adjacent to the building were scanned for alpha contamination. Perimeter survey results found no contamination outside of the building. Since extensive remediation of the floor is not considered practical, the floor contamination will be encapsulated with the application of a paint fixative. Building 30 will be demolished in its entirety as a radiological facility as

authorized by the Action Memo / EE/CA for Contingent Removal Actions for Contaminated Soils, Addendum 1: Structures, April 2004, Public Review Draft, and the debris disposed of as radiological waste per Waste Management direction.

Confirmation that the activities within Building 30 did not impact the building footprint will be accomplished via the Building 38 VSAP. Soil contamination above acceptable levels will be managed per the Building 38 VSAP.

3.0 SITE DESCRIPTION

3.1 Site/Vicinity Location and Characteristics

Building 30 is located at the DOE MCP site, formerly known as the Mound Plant. The MCP site is situated in the City of Miamisburg, Miami Township, Montgomery County, State of Ohio as shown in Appendix B.

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

To the west 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 30

Building 30 is bordered by a down gradient grass covered hillside on the west; a grassy area on the north; an asphalt roadway and Buildings 31 and 31A on the northeast; an asphalt roadway, and the Building 31 staging area and loading dock on the east; and a small asphalt parking area on the south (Figure 3).

3.3 Current and Past Uses of Buildings in Proximity to Building 30

Buildings in proximity to Building 30 include:

- Buildings 31 and 31A (TRU Waste Storage), 6,090 square-foot and 2,650 square-foot respectively, are single-story metal buildings that were used by Waste Management for storage and staging of transuranic (TRU) waste and low level waste prior to shipment offsite. Building 31A was subsequently used to store raw materials and equipment for the heat source program. Both buildings are located northeast of Building 30. Operations in these buildings ceased in October 2003. Buildings 31 and 31A are currently inactive and the buildings are undergoing preparations for demolition. Demolition is anticipated to be authorized by the Core Team in accordance with the Action Memo / EE/CA for Contingent Removal Actions for Contaminated Soils, Addendum 1: Structures.

- Building 36 (PST Assembly and Testing Support Facility), located east of Building 30, is a 4,255 square-foot single-story structure with a penthouse that supported the general purpose heat source (GPHS) assembly and testing program. Building 36 was demolished in January 2004 as an industrial demolition project. Radiological contamination was discovered on the surface or the dock outside of Building 36 (as detailed in the Building 36 Dock Fact Sheet, April 2004). Soil Sampling in the vicinity of the dock will be accomplished per Core Team approved Sampling and Analysis Plan (SAP).

- Building 33 (Maintenance/Storage Facility), which was located southeast of Building 30, was a 1,344 square-foot single-story slab-on-grade structure that was originally used as a maintenance shop and was later used as a maintenance and storage facility for the Decontamination and Decommissioning (D & D) process. The building superstructure was demolished in February 1998 as an industrial demolition project. The slab and foundation will be removed with the Building 38 soil removal action.

- SM Building (Special Metallurgical) was a 21,700 square-foot, single-story metal structure with a penthouse that was located southeast of Building 30. It was constructed in 1963 as a plutonium production facility. In 1972, a D & D 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 under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) removal action process. Approximately 60 to 100 feet of the SM Building foundation remains near the former Building 38 stack location. It will be removed with the Building 38 soil removal action.

- Buildings WH-5 and 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 northeast of Building 30 in the approximate location of the current Buildings 31 and 31A.

- Building WH-14 (Warehouse 14), was a temporary structure built in 1947 and demolished in 1966 or 1967. The building, which was located south of Building 30, was used for storage and had approximately 6,100 square feet of floor space. In the

early 1950s, Warehouse 14 was used for the storage of polonium-contaminated equipment from the Dayton Units. In May and June of 1965, approximately 485 drums of plutonium-contaminated materials were moved to Warehouse 14 and to the open area east of where Warehouse 14 was located. The former location of Building WH-14 was identified as PRS 303, which was binned a Removal Action on May 30, 2001. This PRS is included in the Building 38 Removal Action, Action Memorandum, Addendum 1, Final, August 2003. These materials were relocated to Building 31 in 1966.

With the exception of SM Building, these buildings are believed to have had no adverse environmental impact on Building 30. Although it cannot be proven, it is possible that the predominant radiological contamination (plutonium-238) found in Building 30 came from SM Building (used for plutonium production) since Building 30 was the SM Storage Area.

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 no reportable chemicals are stored in Building 30; however, the report identifies an aboveground argon tank, Tank T17, which was located just south of Building 30, but has been removed (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 30 (Section 4.2.3) are listed in Table 3 along with their binning status. Their locations are shown on Figure 2. One of the PRSs has been binned a Removal Action (RA) by the Core Team, and the other has not yet been binned. Because of known soil contamination in the unbinned PRS, it is anticipated that it will be binned as an RA as well. No other PRSs associated with Building 30 have been identified.

4.2 Specific Record Sources for Building 30

4.2.1 Occurrence Reports

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

- Discovery of fixed alpha on vacuum gage being surveyed for release for unrestricted use (June 1991).

  Contamination was discovered during a routine survey of excess equipment scheduled for lot sale. The gage was secured in the Health Physics Laboratory in Building 30 pending further decontamination and release.

- Building 30 contamination (October 1999).

  An incident occurred in Building 30 (Radiological Count Room), involving personnel contamination and area contamination. A radiological smear (wipe) submitted for analysis was found to be in excess of the prescreening levels for smears. This finding precipitated a radiological survey of personnel in the Building 30 and the building itself at the direction of the Radiological Point of Contact (RPOC). The survey revealed that the fingertips of the right hand of the Count Room Technician were contaminated. At the direction of the RPOC, the technician washed his hands and was surveyed again and was found to be free from contamination. Nose wipes taken from the technician and all technicians involved in Building 30 radiological surveys

were negative. Radiological surveys of the building indicated that the floor was contaminated, with no wipeable contamination present. The finding of unmarked fixed contamination areas on the floor of Building 30 could be attributed to the degradation of existing floor coating due to aged paint and foot traffic. The technician had traveled offsite before the RPOC notification and the precipitating event. Extensive surveys were performed on the technicians' vehicles and in the immediate area surrounding Building 30 to determine if any radiological tracking occurred. All surveys indicated no radiological contamination; therefore, the likelihood of contamination having been tracked offsite is highly remote. Protective paint was applied on the identified Fixed Contamination Areas (FCAs). Unique (numbered) FCA identifiers were applied to the FCAs. The building was posted as a Radioactive Material Management Area (RMMA) and as an FCA.

- Inadequate characterization and disposal of liquid scintillation waste (February 1996).

  As a result of an assessment of Building 30 counting laboratory activities, it was discovered that low level radionuclide scintillation fluids had been disposed of at three hazardous waste incineration facilities which did not possess licenses for radioactive material. All collection of such waste was suspended. The three vendors who transported and disposed of the fluids as well as the three incineration facilities were informed of the type and quantities of low level radioactive waste sent to each site. A conservative dose assessment was performed and indicated that the maximum hypothetical dose had a negligible impact on environment, safety, and health.

4.2.2 Spills and Releases

- None

4.2.3 Associated PRS Overview

As a result of the investigations and documentation accomplished to comply with the CERCLA cleanup process via the Federal Facilities Agreement (FFA)/DOE Environmental Restoration (ER) Program, DOE and the site contractor tabulated all the PRSs identified under the various regulatory programs in effect at the site. Of these 440 PRSs, two are at or near Building 30, 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 30

PRS	CERCLA or Bldg. Related	Binning Status	Comments
267	CERCLA	Removal Action (RA)	Area 9, Thorium Storage and Redrumming Area
286	CERCLA	Unbinned*	Area 16, SM Building Sanitary Sewage Septic Tank Leach Field

* *PRS 286 has not yet been binned by the Core Team.*

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, K.G. Koehler, 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, other than those identified herein, were identified based on the questionnaire or interviews.

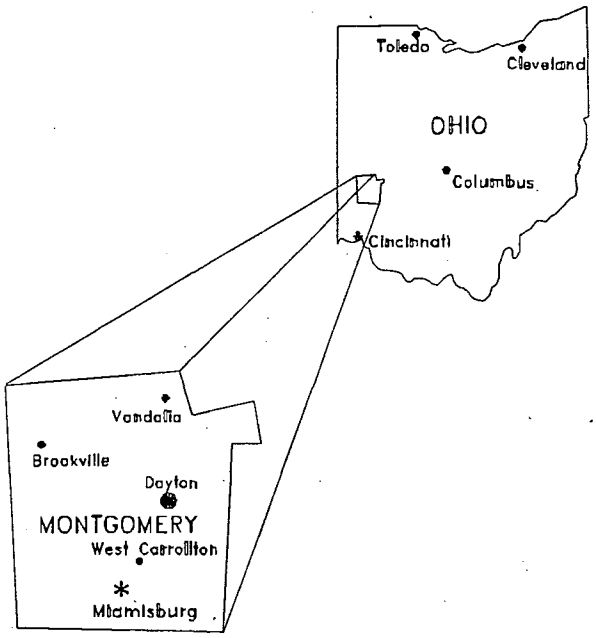
Appendix A

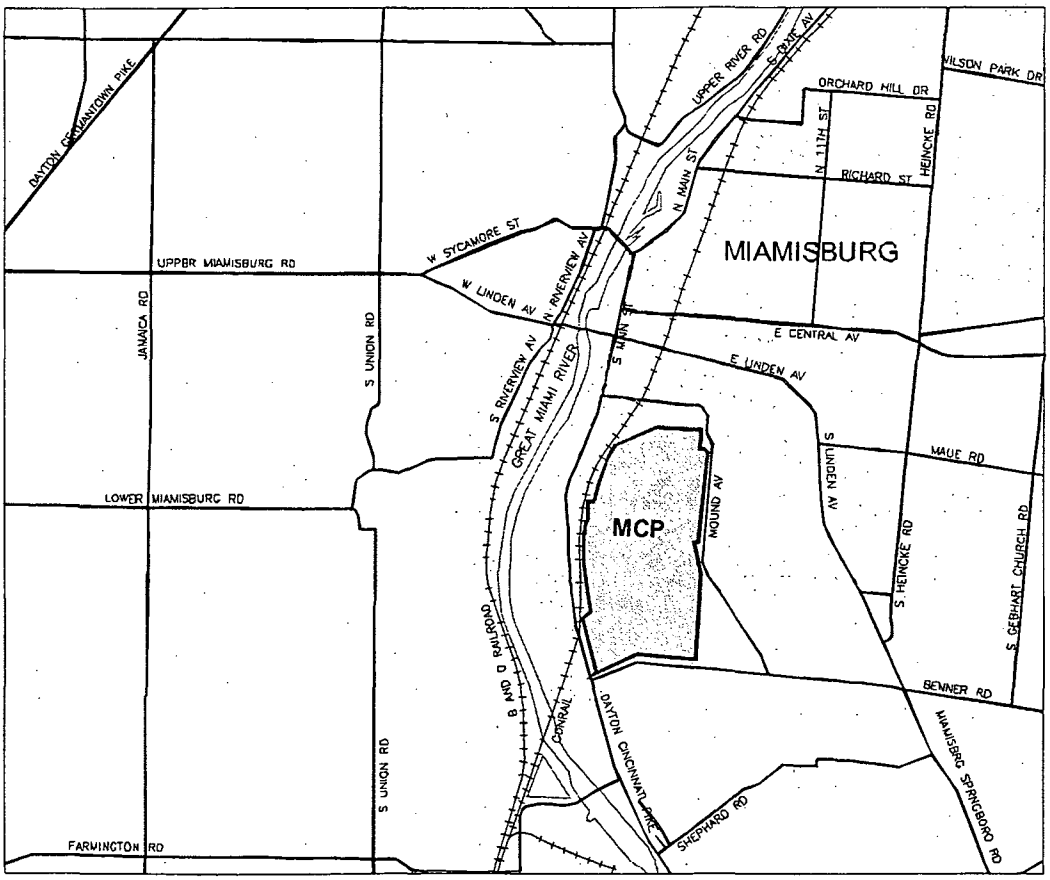
General Listing of Acronyms

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


DAYTON CENTERVILLE PIKE
UPPER MIAMISBURG RD
JAMAICA RD
S UNION RD
LOWER MIAMISBURG RD
FARMINGTON RD
W SYCAMORE ST
W LINDEN AV
N RIVERVIEW AV
S RIVERVIEW AV
GREAT MIAMI RIVER
B AND O RAILROAD
CONRAIL
N MAIN ST
S MAIN ST
UPPER RIVER RD
S DAIE AV
DAYTON CINCINNATI PIKE
SHEPHARD RD
MIAMISBURG
ORCHARD HILL DR
N 11TH ST
RICHARD ST
HEINCKE RD
WILSON PARK DR
E CENTRAL AV
E LINDEN AV
S LINDEN AV
MAUE RD
MOND AV
MCP
S HEINCKE RD
S GEBHART CHURCH RD
BENNER RD
MIAMISBURG SPRINGBORO RD

B1/1

Appendix C

Figures

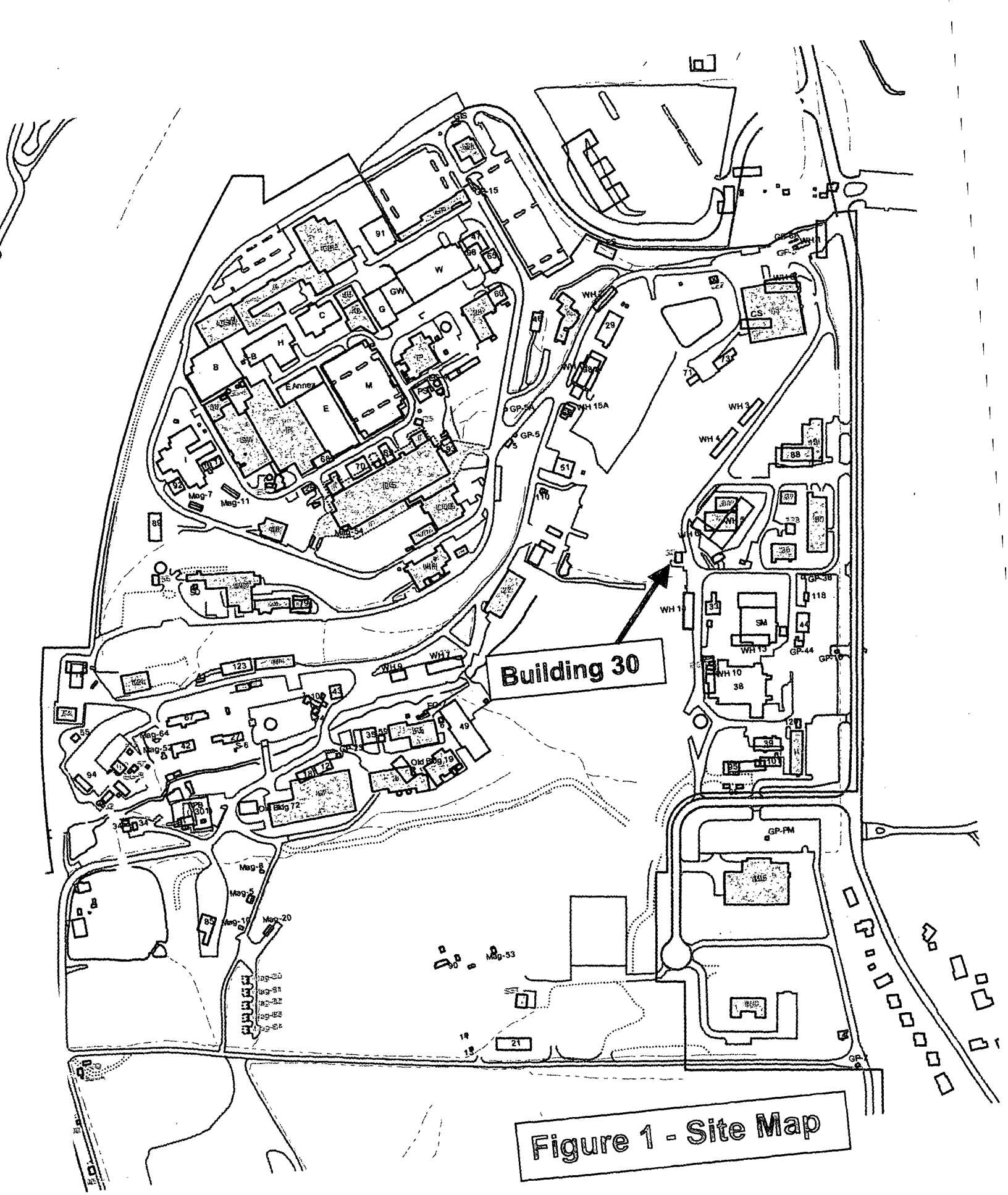
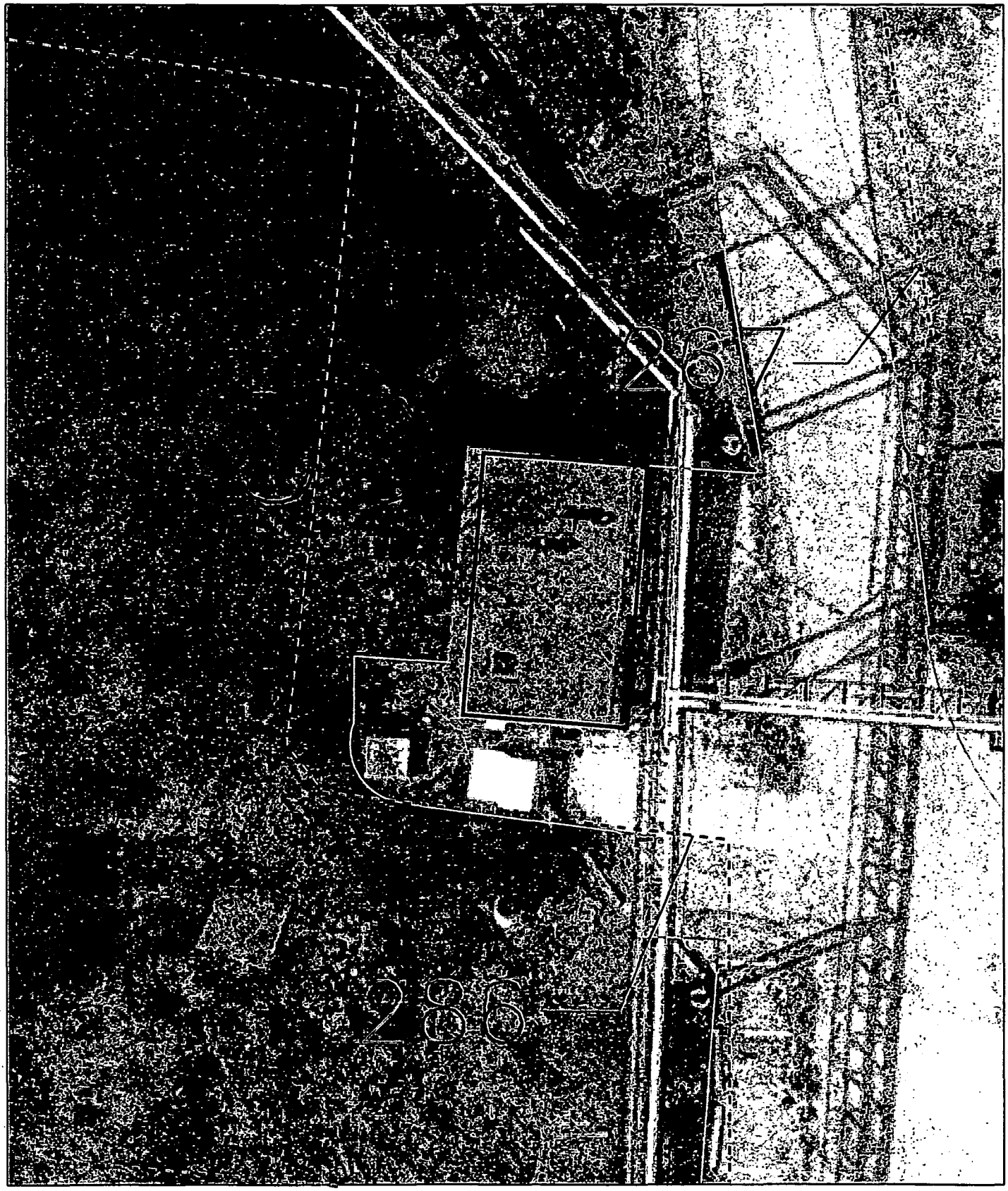


Figure 1 - Site Map



PRS Point

PRS Area

PRS Line

ISS	DATE	REVISION	BY	CHKR	ENG	UNCC	APVD	S
	04/29/03		SSF					

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	Figure 2 Building 30 and Vicinity
ISSUE	
PART CLASSIFICATION	
SECURITY CLASSIFICATION UNCLASSIFIED	SIZE / DRAWING NUMBER vicinity.dgn / JOB NUMBER
DWG TYPE STE / PROJ ER-GIS	CADD / SCALE / SHEET 1 OF
STATUS MD-REL-00/00/00	ORIGIN MSTATION / J

C2 of 4

BLDG. 30, SHOWING ADJACENT PIPE STANCHIONS

VIEW FROM NORTHEAST CORNER

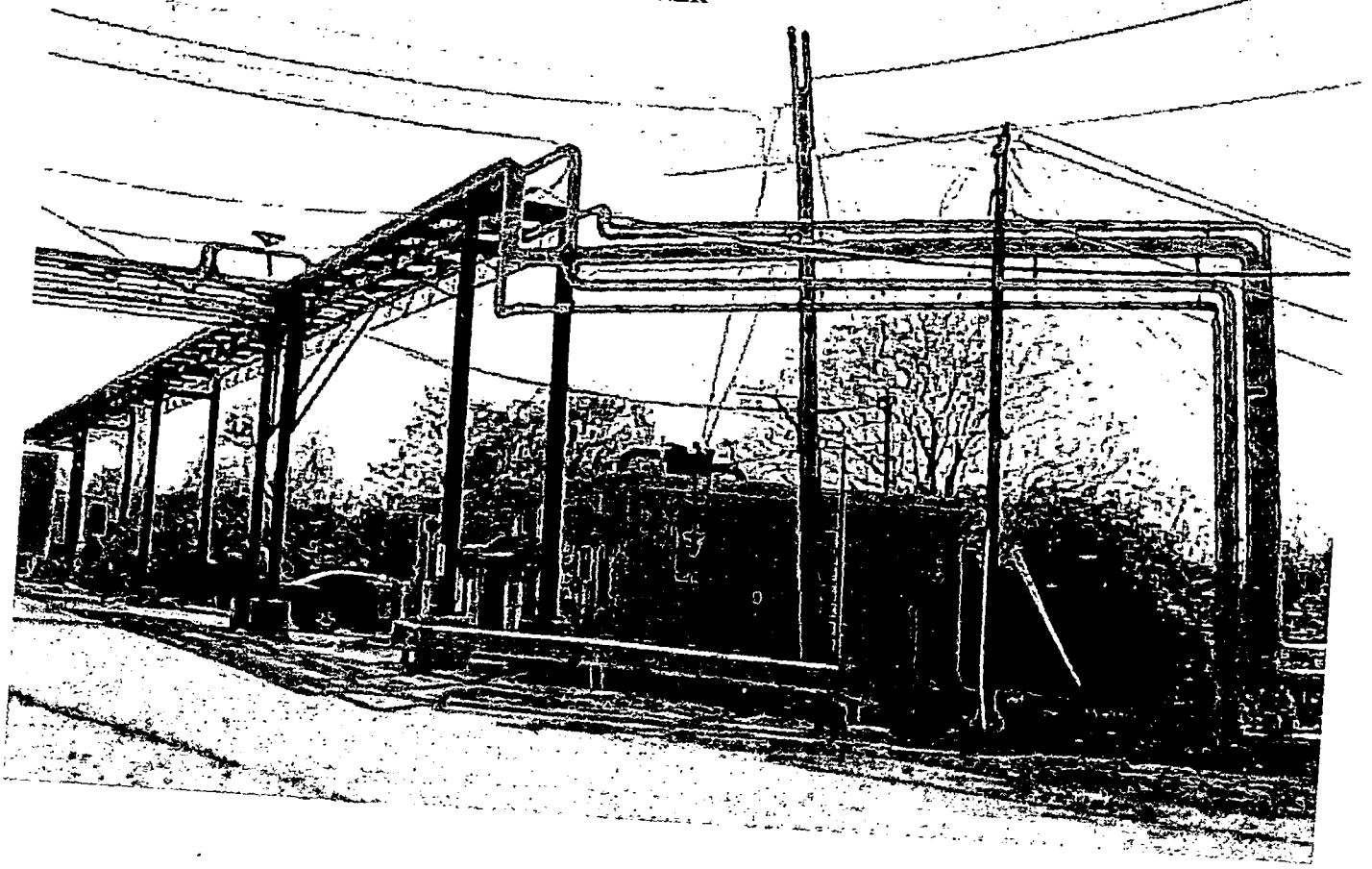


FIGURE 3 – BLDG. 30

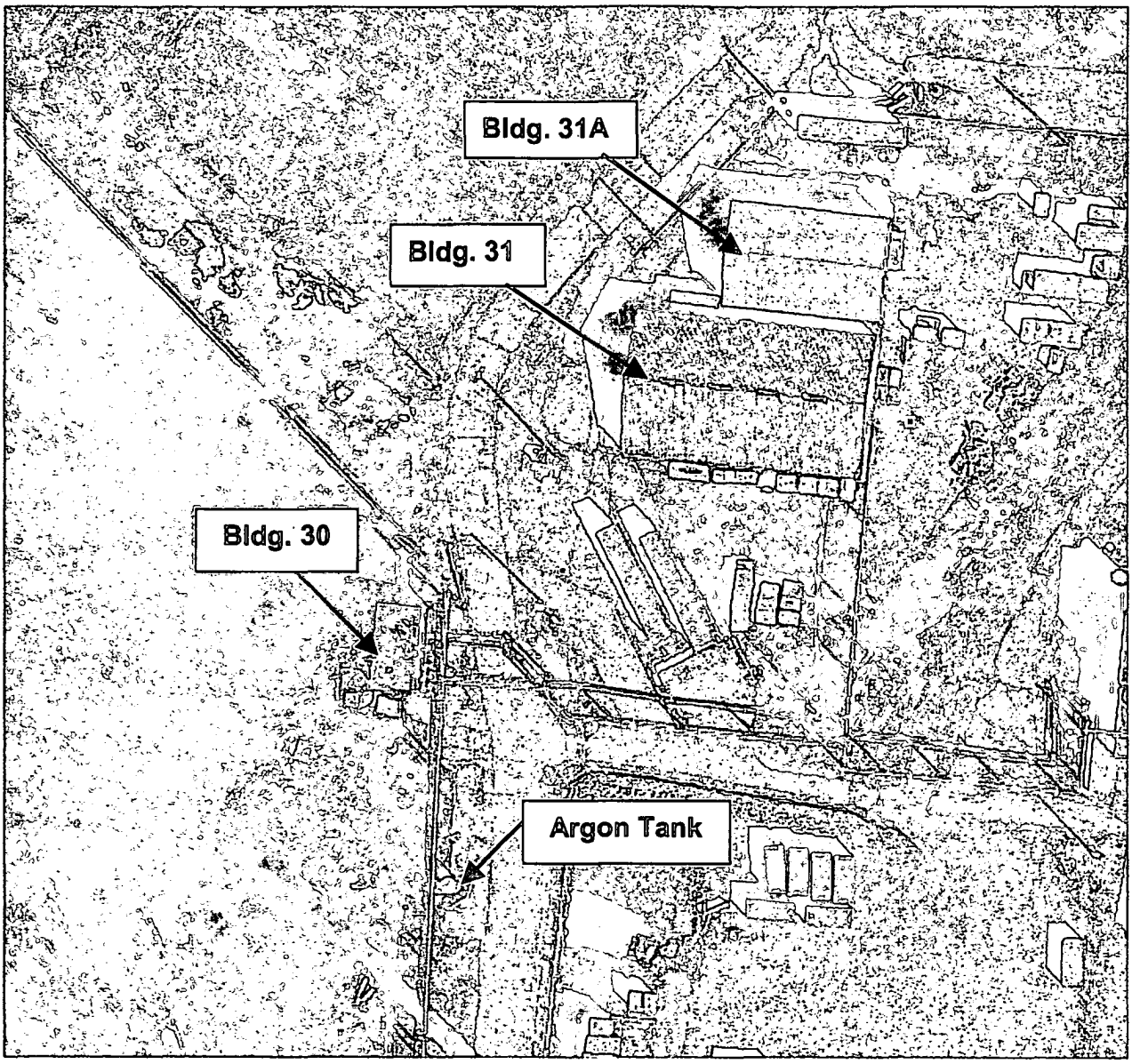
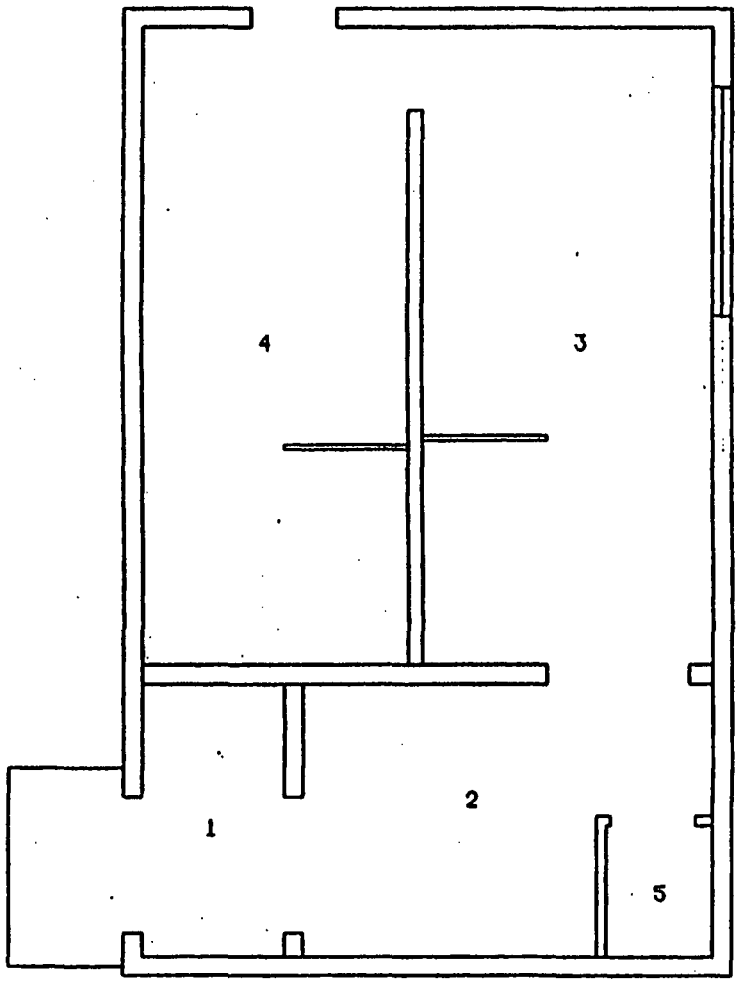


Figure 4
Former Location of Argon Tank
South of Building 30

Appendix D

Floor Plans

ISS	DATE	REVISION	BY	CHKD	DWN	APVD	APVD	B
B	12/12/91	ASBUILT ISSUE	DCW				DVD	



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

BLDG #30
FIRST FLOOR
BLDG CODE:3030

0 1' 3' 5' 10'

SHEET	1 2 3 4 5 6
ISSUE	B
TITLE	BLDG #30 FLOOR PLANS
(U) TITLE CLASSIFICATION	
DRAWING CLASSIFICATION	UNCLASSIFIED
SIZE	C
DRAWING NUMBER	FSC911242
JOB NUMBER	12335
DWG TYPE	SFP
FROM	BLDG #30
CODE	14015
SCALE AS NOTED	
SHEET 1 OF 1	
SOURCE	MO-REL-12/12/91
GENERATOR	MO-GRS-V3.0

APPROVALS: DATE:
SAFETY COMMITTEE REVIEWER:
___NONE ___BUILDING ___HEMC ___DOSC
TECH. REVIP. ___
GR. PARL. ___
BUILDING ___
HEMC ___
DOSC ___

DESIGN CHK | PROJ MGR
SPECS | DWG MGR
LP & EC | PROJ REV
DWG TYPE
APVD | DATE

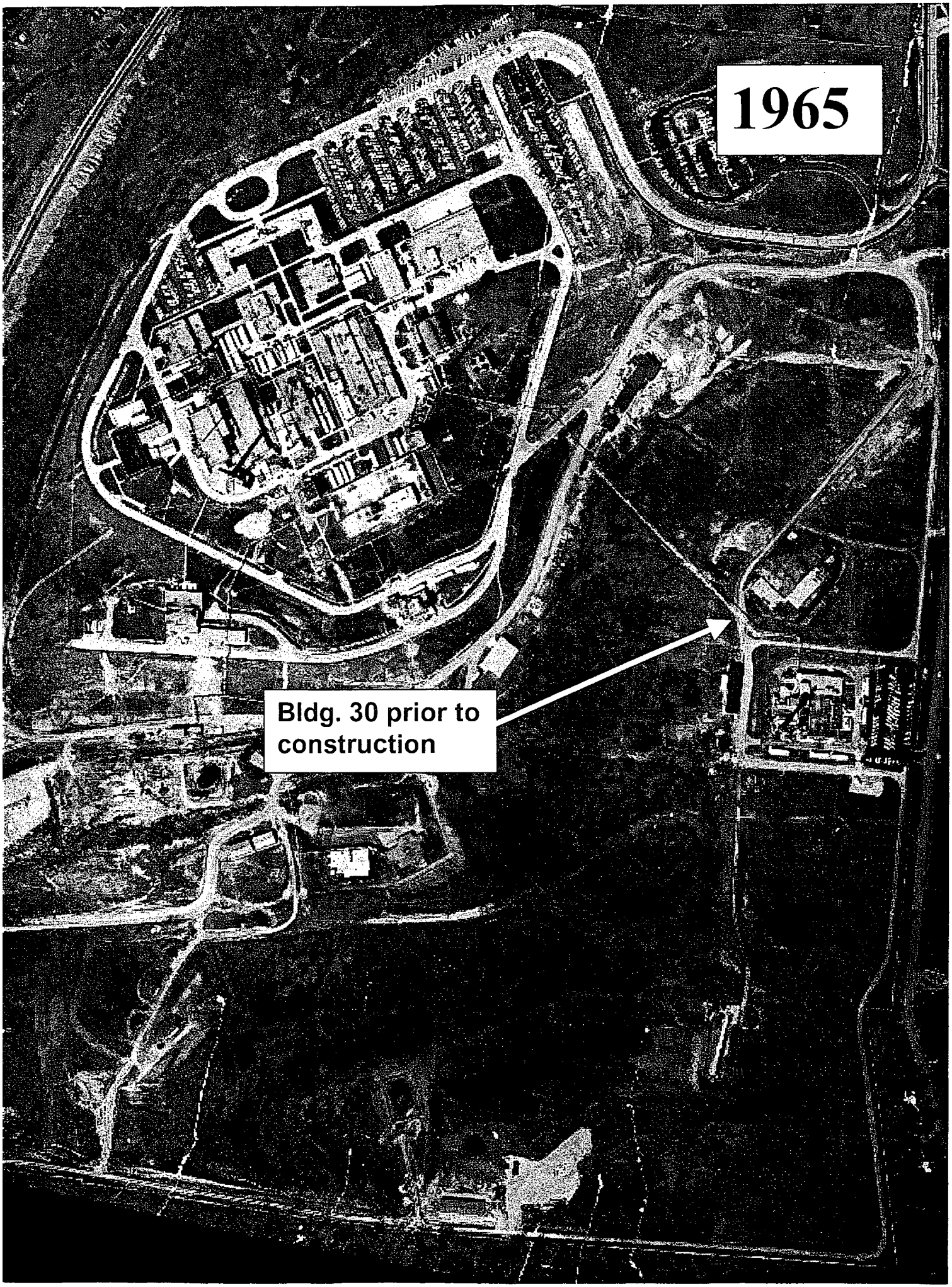
1 of 2

Building 30
Original Room Functional Designations

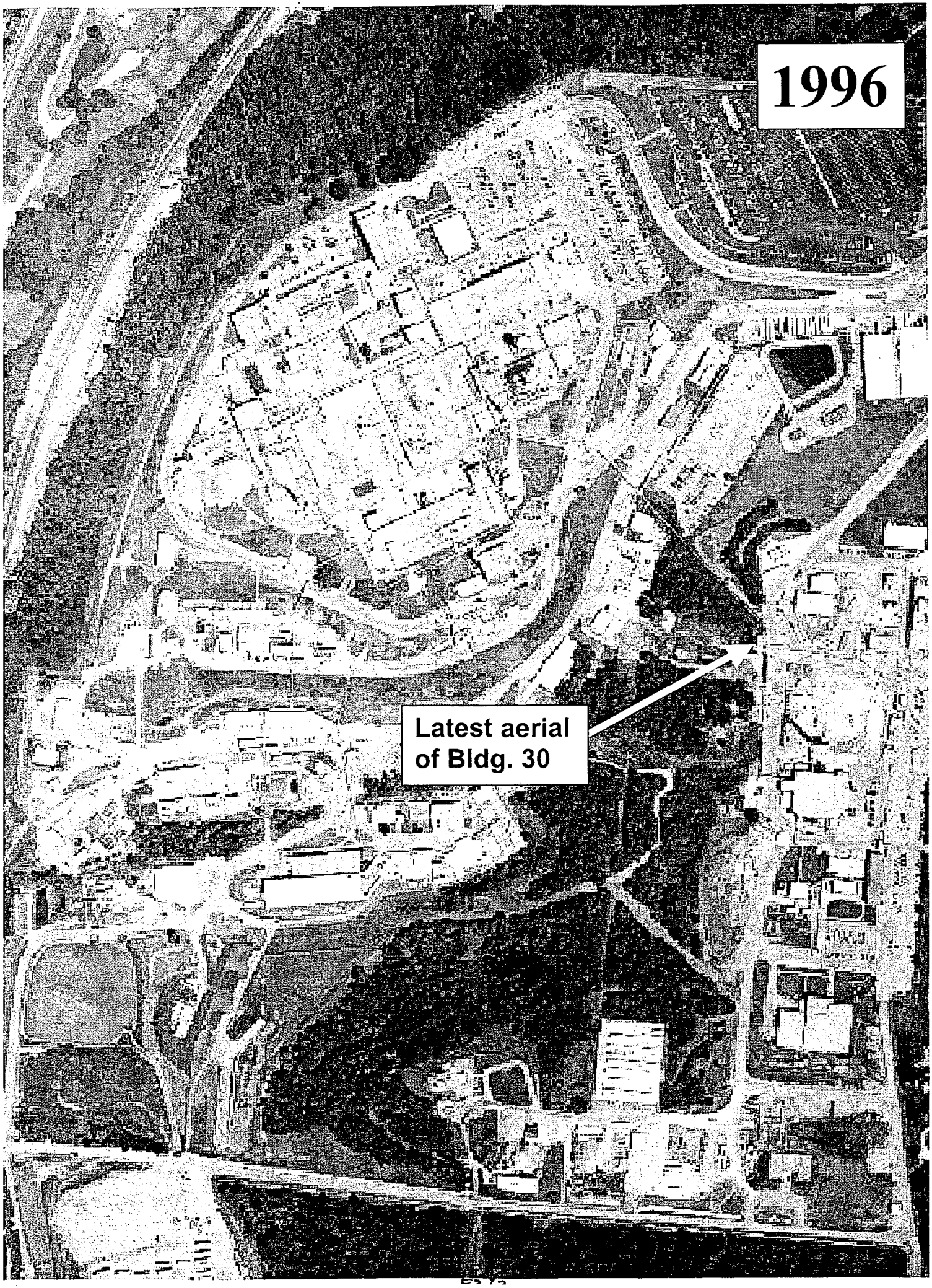
Original Functional Designation	Original Room Number	Current Room Number(s)
Air Lock Room	81	1
Loading Room	82	2 and 5
Storage Room	83	3 and 4

Appendix E

Aerial Photographs


1965
Bldg. 30 prior to construction

1968
Bldg. 30 recently constructed (1965)


1996
Latest aerial of Bldg. 30

Appendix F

Environmental Appraisal Report of the Mound Plant (excerpt)

The Environmental Appraisal Report was prepared in 1996 and documents the observed conditions at the time of the inspection. Information provided in the Building Data Package text supercedes information provided in this appendix.

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

9.53 BUILDING 30

9.53.1 Scope of Building 30 Report

A team of environmental professionals performed a walk-through of Building 30 on the morning of January 29, 1996. The Environmental Appraisal Checklist (Attachment 1—Section 9.53.6.1) was used to record findings. Escorting the appraisers was the building manager, and other knowledgeable personnel such as the process manager. Information was supplied by the building manager and recorded on the Building Manager's Questionnaire (BMQ), included as Attachment 2 (Section 9.53.6.2).

9.53.2 Description of Building 30

Building 30 houses a radiological counting laboratory. Liquid scintillation counting is used to count paper smear samples for the detection of tritium, and gross alpha/beta activity. Several years ago Building 30 was converted from use as an office/storage area to a counting lab. The building also housed a gamma scan facility for drums and boxes at some time in the past.

Building 30 is located on the edge of the SM/PP hill, southwest of Building 31, as shown in the site plan presented as Attachment 3 (Section 9.53.6.3). Constructed in 1965, it is a 740-square-foot concrete block structure with a built-up membrane roof. There is electrical service of 240V.

Currently, one-third of the building is used for laboratory analysis; it is a radiological buffer area. The remaining area, a controlled area, is used for storage of supplies used in the lab. The floor plan is presented in Attachment 4 (Section 9.53.6.4).

9.53.3 Summary of Findings

There appears to have been no renovation when Building 30 was converted from an office/storage facility to a lab. For example, there is no fume hood for ventilation, and no lab sink or work bench.

Several issues of environmental concern were identified during the walk-through, during subsequent conversations with waste management professionals, and by review of reference materials. Of primary concern were waste characterization, handling, storage, and disposal practices. These and other compliance-related issues were discussed with the building manager, process manager, waste management professionals, and EG&G MAT managers. Also, several suggestions were made related to improvement of management practices.

The process manager was debriefed at the conclusion of the walk-through. The building manager was not present for the walk-through, but was subsequently provided with a copy of the environmental appraisal checklist and draft building report. Open action items were resolved or are being actively investigated by the appraisal team, process manager, building manager, waste management professionals, and EG&G MAT managers.

9.53.4 Observations

9.53.4.1 Air Emissions

There is no fume hood in the building, and there is no stack. Potential sources of emissions are limited to small quantities of chemicals used in the lab, including isopropyl alcohol Ultima Gold, (blend of alkylnaphthalene with scintillators PPO and bis-MSB and emulsifiers), and window wash, as well as process contaminants. Documentation was not available from the building manager, the process manager or the environmental monitoring group to indicate that potential emissions have been calculated, although it has been assumed by the environmental monitoring group that emissions are *de minimis*. There is no data to support this determination, as is required under Ohio Administrative Code (OAC) 3745-31 and OAC 3745-35-02. No permit application has been submitted for the building, as emissions are considered *de minimis*. There are no fuel-burning units in the building. There is no evidence of fugitive dust.

9.53.4.2 Wastewater Emissions

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

*Subsequently, MCP effluent was re-routed around the canal via a covered pipe to the Mound Overflow Creek.
D.C. Kramer 4/22/04

9.53.4.2.1 Sanitary Wastewater

The building has sanitary service. According to the diagram of underground lines, presented as Attachment 5 (Section 9.53.6.5), the building is serviced by a sanitary line. There is no sink in the buffer area. Building occupants report that there is no laboratory-related waste placed into the sanitary system.

9.53.4.2.2 Storm Wastewater

D.C. Kramer 1-19-04

According to drawings presented in Attachment 5 (Section 9.53.6.5), the building is not serviced by storm drains. ~~Inspection shows no sign of odors, colored discharges, or scarring which would indicate that any materials other than storm water had entered the storm drainage system.~~

D.C. Kramer 1-19-04

Building occupants report that an occasional odor of sewer gas permeates the building. According to occupants, a septic tank and leach field were located near the building, next to the low specific activity (LSA) storage pad. They suspect it to be a source of odors. The septic system is no longer in use, and building occupants are unaware of its current status. Occupants call upon Industrial Hygiene for testing of indoor air when odors are present. There has been no work stoppage due to the odors.

9.53.4.3 Potable and Service Water

Potable and service water are supplied to the building. Sources are properly posted. Backflow prevention devices are in place, in accordance with OAC 3745-95-04. There is a water cooler which supplies drinking water; it has not been tested for lead.* According to EPA protocol, annual sampling criteria do require testing of each fountain. *Site policy was not to test bottled water coolers (stand-alone units, not plumbed to building). No environmental concern. D.C. Kramer 1-19-04

9.53.4.4 Chemical Storage and Hazardous Materials

A limited number and amounts of chemicals are stored in the building. A list is included in the BMQ, Attachment 2 (Section 9.53.6.2). They include chemicals used in the process as well as janitorial supplies. Storage and handling procedures conform to those described in 29 CFR 1910. Although 29 CFR 1910 calls for flammable materials stored in quantities of 5 gallons or more to be in a safety can or flammables cabinet, due to the configuration of the lab and life safety concerns, it was recommended that a 1-gallon plastic jug of alcohol stored in the lab be kept in a clearly labeled safety can. The process manager obtained a can for storage.

The building is equipped with appropriate emergency response equipment such as a chemical spill containment kit, eyewash, safety shower, and fire extinguisher. Inspection tags were present and current. There is an emergency evacuation plan, and signs were posted in work areas. (see Figure 4 Appendix C) South of Building 30, There was a 1,500 gallon above ground tank containing Argon. This Tank was removed in 2003. D.C. Kramer 1-19-04 ~~There are no aboveground storage tanks in or around the building.~~ There are no sumps, separators, or catch basins, in or around the building. There are no underground storage tanks associated with this building.

According to the *Mound Facilities Physical Characterization* (12-1-93), the building is slightly contaminated with radioactive materials (plutonium-238). The building was tested and does contain asbestos-containing building material (MD-10391, *Asbestos Program Manual*, 9-14-95). There is no evidence of friable asbestos material. Pipe lagging is in good condition, and pipes are well-marked.

9.53.4.5 Solid, Hazardous, and Radioactive Waste

Wastes generated in the Building 30 radiological buffer area include paper smears, scintillation vials containing, lab wipes used to clean equipment and vials, and assorted paper and packaging materials.

According to the process manager, some of the wastes have low-level contamination. Wastes were segregated into two groups, those with tritium activity greater than 100,000 dpm, and those with less than 100,000 dpm. Because the lab had no process or procedure to segregate low level alpha and beta activity of waste samples, the process manager considered all the waste to be LSA waste.

The appraisal team observed a package of scintillation vials deposited in a clear plastic bag, labeled with black marker as less than 100,000 dpm. The only disposal receptacle in the buffer area was a yellow can containing a yellow plastic bag.

A waste generator's profile sheet was available and resided with the process manager. Information on the sheet documented the waste characterization as LSA wastes by process knowledge and documented waste quantities. The profile sheet was different from the one described by Mound Procedure MD-81240, *Issue 8, Low Level Waste Management Procedures*. It was also different than the one described by Mound Procedure MD-81071, *Waste Acceptance Criteria Manual*. In Building 30, the process manager was also the waste generator.

According to the process manager, Building 30 wastes were deposited in plastic bags, and were transported weekly by "decon technicians" for subsequent disposal offsite. It was the generator's belief that the wastes were being handled and disposed of as LSA waste.

The appraisal team asked for the name of the technician collecting waste. The name provided by Building 30 employees was that of a non-rad technician working in the hazardous waste group. The appraisal team explained that it is Mound practice that this waste stream is transported to Building 72, and together with scintillation vials from other labs, is disposed of offsite by incineration under a DOE-recognized exemption for scintillation fluid containing less than 100,000 dpm tritium per gram fluid.

The process manager was unclear about the disposal process, and waste categorization as LSA waste versus LSA exempt waste. He had obtained no Resource Conservation and Recovery Act (RCRA) training or low-level waste generator's training. He was advised of his responsibility related to "cradle-to-grave" handling of the waste, and it was suggested that he contact waste management professionals to resolve any questions or concerns. A call was placed and a message left with Waste Management by the appraisal team before leaving the building. Subsequent contacts were made by both the appraisal team and the process team with waste management professionals and EG&G MAT managers to resolve questions raised during the appraisal and to initiate corrective action.

9.53.4.6 Waste Minimization and Pollution Prevention

There is an active program to minimize waste streams, in accordance with state and federal regulations. Lab supplies are removed from packaging outside of the buffer area to minimize potential contamination of packaging materials. This significantly reduces the waste stream from the buffer area.

9.53.5 Findings and Recommendations

As the purposes of this evaluation are to assess existing environmental conditions and to improve the environmental management of the site, the findings herein encompass areas of best management practices as well as regulatory requirements. Photographs* which were taken to document inspection findings are included as Attachment 6 (Section 9.53.6.6).* PHOTOGRAPHS NOT AVAILABLE, DC Kramer 6-7-04

30-1. Waste generated in Building 30 was not characterized in accordance with DOE Order 5820, 40 CFR 265, or OAC 3745-52-11. Waste was not managed in accordance with the waste characterization that was performed.

The process manager and waste management professionals must review the waste generator's profile and other documentation to determine and confirm the nature of the waste generated in Building 30. Waste management and disposal procedures and practices should be reviewed. Upon determination of the character of the waste, it should be managed and disposed of appropriately. If the waste is LSA, hazardous or mixed, EG&G MAT and DOE reporting procedures related to any improper disposal of Building 30 wastes should be followed.

30-2. The generator's waste characterization profile did not conform to that required by Mound procedure. Documentation related to characterization of LSA waste, as described in Mound Procedure MD-81240, *Issue 8, Low Level Waste Management Procedures,* was not available with the generator.

Generator's documents should be reviewed on a routine basis to confirm that the waste stream is correctly described and characterized, that proper procedures are followed, and that documentation of waste determination is retained.

30-3. The process manager/waste generator should have sufficient training to provide knowledge of which regulations apply to his waste streams and to initiate correct waste management practices and disposal, such as LSA waste generator training and RCRA generator training.

The process manager/waste generator should complete LSA and RCRA waste generator training as required by NVO 325 Training Matrix and OAC 3745-65-16. Training sufficient to ensure proper characterization, emergency response, waste management and disposal should be completed by waste generators. Other areas of required training were not, but should be, reviewed. Applicable training should be completed.

30-4. Line management did not ensure that relevant waste generator training was completed by the process manager/waste generator in Building 30. In accordance with OAC 3745-65-16, relevant training must be provided to enable facility personnel to perform their duties in a way that ensures the facility's compliance with regulations. Employees must complete applicable training within 6 months of the date of employment or transfer to a new position at the facility and must participate in an annual review.

At Mound, the waste management organization provides guidance for training requirements based on materials handled; central training provides training, as well as on-line records of attendance; line management develops training plans to assure that generators are trained and reviews training records to ensure that training is current and adequate for the job performed. Given the recent and ongoing transition of personnel at Mound, this system should be reviewed to determine if a deficiency exists and if adequate safeguards are present. It should be noted that the Tiger Team Assessment, December 1989, found the hazardous waste training program to be deficient; it was noted as corrected.

30-5. EG&G MAT did not perform routine field surveillance to identify potential waste characterization, storage, handling, or disposal problems, or assure that the Building 30 process manager/waste generator was correctly managing waste streams.

Although some waste generators receive RCRA training, and have process knowledge of waste streams, they may lack an understanding of the intricacies of RCRA waste determination guidelines. While it is the responsibility of generators and their line management to properly manage waste streams, there must be a mechanism whereby trained professionals routinely provide field assistance and monitor performance.

30-6. There is no documentation available to determine if air emissions from Building 30 have been reviewed or determined to be *de minimis*, as required by OAC 3745-15-05. Such documentation should be in place to support management determinations.

30-7. The color coding convention for plastic bags used for radioactive materials, set forth in Mound Procedure MD-10019 (12-04-95), Radiological Control Manual, was not followed in Building 30. Some LSA wastes generated in Building 30 were deposited in a yellow can lined with a yellow plastic bag. Scintillation vials were deposited in a clear plastic bag.

The mandated procedure calls for radioactive material to be placed in yellow bags. Mound Procedure MD-81240, *Issue 8 , Low Level Waste Management Procedures,* calls for placement of LSA waste in bags which are properly marked, but states no color distinction. Since radioactive waste is a subset of radioactive material, it appears that MD-81240 should conform to procedures set forth in MD-10019.

ENVIRONMENTAL APPRAISAL CHECKLIST

Building Name 30

Appraisers:

Nancy H Vyas
Name Discipline

John Hausfeld
Name Discipline

Name Discipline

Name Discipline

Building Manager: Kathy Koehler

Process Manager: J.J. Johnson, process manager

Mike Ball, counting room Master Tech.

Date: 1-29-96 am

9.53-9

ENVIRONMENTAL APPRAISAL CHECKLIST

Table of Contents

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Clean Air Act	2
Hazardous Materials	4
Safe Drinking Water Act	7
RCRA Hazardous Waste	8
TSCA and NESHAP Requirements for Asbestos	13
TSCA—PCB	14
Low-level and Transuranic Waste	17
Waste Minimization/Pollution Prevention Activities	22

Environmental Appraisal Checklist

Building Name: 30 Appraisers: Vijas/Hausfeld Date: 1-29-96am

Clean Water Act (CWA) Screening Checklist

Question	Response	Comments
Does the outside drain spouting of the building discharge directly to a storm sewer/sanitary system?	DCKramer 1-19-04 Y / N	drains to ground
Are there sinks, toilets and floor drains in the building?	Y / N	If the answer to any of these questions is yes, proceed with the following checklist.
Are chemicals being used in the building?	Y / N	
Is there a process which discharges to the storm or sanitary system?	Y / N	~~discharges to storm per site drawings~~

No Bldg 30 process discharges to the storm or sanitary system. DCKramer 1-19-04

There is no connection from Bldg. 30 directly to storm drain. DCKramer 1-19-04

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	alcohol <1 gal stored in labeled plastic jug.
	Is the building in operation? What are the processes and where do they discharge to?	Y / N _____ _____	health count physics lab
	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	per site drawing
	Is there a sump/pit in the building? If so, what does it contain? How often is it pumped out? Does water collect in sump? Does sump have secondary containment?	Y / N _____ _____ Y / N Y / N	per M. Ball abandoned septic tank & field next to LSA waste storage pad.
	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	odor of "sewage". Called IH to test indoor air. No work stoppage.

chemicals used: isopropyl alcohol
ultima gold
windshield wash.

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Environmental Appraisal Checklist

Building Name: 30 Appraisers: Vyas/Hausfeld Date: 1-29-96 am

Clean Air Act (CAA) Screening Checklist

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

CAA Checklist

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

There is no stack or hood to vent from Bldg. Are there emissions

Environmental Appraisal Checklist

Building Name: 30 Appraisers: Vyas/Hausfeld Date: 1-29-96 am

N/A

CAA Checklist

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

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

Source: _____

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Environmental Appraisal Checklist

Building Name: 30 Appraisers: Vyas/Hauspeld . Date: 1-29-96 am

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)	MSDS to be obtained ✓
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	Lab area is very tight. No windows except in NBA. Exit at end of room in RBA.
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	*Bldg. 30 was not connected to the central chilled water system.
29 CFR 1910.106(d)(4)	Inside Flammable/combustible storage rooms must meet the following: 4 in. raised sill or trench that drains to a safe area, liquid tight wall/floor joints, self-closing doors, gravity or mechanical exhaust providing 6 room changes/hr., exhaust switch located outside room, at least one 3 ft. aisle; no cracks in secondary containment.	Y / N NA	*Ventilation was poor & employees were uncomfortable in the summer because cooling was provided by window-type room air conditioning units prior to 2001. D.C. Kramer 1-19-04

Lab function in a storage bldg. No ventilation * alcohol door

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Building Name: 30 Appraisers: Vyas/Hausfeld Date: 1-29-96 am

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	
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 none	
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 ~~NONEN~~ HV	
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 none	
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 none	
29 CFR 1910.104	Bulk oxygen storage shall be permanently placarded "OXYGEN - NO SMOKING - NO OPEN FLAMES".	Y / N	
	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	

piping is well marked

tank methane 10%
argon 90%

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Building Name: 30 Appraiser: Vyas/Hausfeld Date: 1-29-96 am

HM Checklist

Regulatory Guideline	Question	Response	Comments
	Is there a process area?	(Y)/N	
	Does it have proper containment?	(Y)/N	
	Is there a liquid bulk transfer area?	Y/(N)	
	Is there proper containment?	Y/(N)	
	Is there an above ground storage tank? If so, complete Table B.	(Y)/~~N~~ VKA 1/15/04	south of Bldg 30, there was a 1,500 gallon A.G. tank containing Argon

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
south of		~~None~~ VKA 1/15/04		Y/N	Y/N	Y/N	Y/N
30	1500	Argon (*)		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

(*) This tank was removed in 2003. (VKA) 1/15/04

Source: _____

F14459

Environmenta. .ppraisal Checklist

Building Name: 30 Appraisers: Vyas/Hausfeld Date: 1-29-96 am

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)	NOTE BELOW

TABLE C—Water Fountain Survey

Building	Location	Model #	Comments / Date of Analysis for Lead
30	Rm 3	OASIS	8525-130365 to be checked by Mnnd.*
			*SITE POLICY WAS NOT TO SAMPLE BOTTLED WATER
			COOLERS (STAND-ALONE UNITS; NOT PLUMBED TO BUILDING).
			NO ENVIRONMENTAL CONCERN. D.C. Kramer 1-19-04

Source: _____

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Environmental Appraisal Checklist

Building Name: 30 Appraisers: Vegas/Hausfeld Date: 1-29-96

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	

JJ Johnson, process manager & generator, described waste as potential LSA so it should be handled as such.

Waste stream: liquid scintillation vials, scint. fluid, assayed smear samples, lab count paper, wipes.

alcohol wipes - air dry ∴ not mixed waste

Discussed tactics to avoid creating mixed waste

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Building Name: 30 Appraisers: Vyas / Hausfeld Date: 1-29-96am

NA

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	
OAC 3475-52-34 (C)	Has any of the RCRA hazardous waste in this building been managed in Satellite Accumulation Areas? If no, proceed to the next section. If yes, answer the following.	Y / N	
	Are the containers marked with the words hazardous waste, or other words denoting the hazard?	Y / N	
	Are the containers in good condition?	Y / N	
	Are the waste compatible with the containers?	Y / N	
	Are containers managing ignitable hazardous waste stored at least 50 feet from the plant site boundary?	Y / N	
	Are containers kept closed and locked except during filling?	Y / N	
	Are containers moved within 3 days of being filled?	Y / N	

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Environmental Appraisal Checklist

Building Name: 30 Appraisers: Vyas/Hausfeld Date: 1-29-96am

N/A

RCRA Checklist

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

Building Name: 30 Appraisers: Vyas/Hausfeld Date: 1-29-96 am

NA

RCRA Checklist

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

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Environmental Appraisal Checklist

Building Name: 30 Appraisers: Vyas/Hausfeld Date: 1-20-96 am

N/A

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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Building Name: 30 Appraisers: Vyas/Hausfeld Date: 1-29-96 am

Asbestos Screening Checklist

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

Asbestos Checklist

per site document Mound Phase Facility Characterization

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? If no for this building or area note this conclusion in the comment section.	(Y) / N	
	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	

No sign of asbestos - friable

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Environmental Appraisal Checklist

Building Name: 30 Appraisers: Vyas/Hausfeld Date: 1-29-96am

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

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

TSCA Checklist

Regulatory Guideline	Question	Response	Comments
40 CFR 761	Has any waste generated in, or from, this building been characterized either through process knowledge or by analyses to determine if it contains PCB's ? If the answer is no, note . If the answer is yes, proceed with next section.	Y / N	per PCB Annual Document Log PCBs removed in past.
	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	

NO evidence of PCB transformers
no capacitors

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Building Name: 30 Appraisers: Vyas/Hauspeck Date: 1-29-96am

NA

TSCA Checklist

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

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Environmental Appraisal Checklist

Building Name: 30 Appraisers: Vyas/Hausfeld Date: 1-29-96 am.

NA

TSCA Checklist

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

GENERAL COMMENTS:

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Environmental Appraisal Checklist

Building Name: 30 Appraisers: Vyas/Hausfeld Date: 1-29-96 am

Low-Level Waste and Transuranic Waste Screening Checklist

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

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
Low-Level Waste			
DOE Order 5820.2A Chapter III	Can any waste generated in, or from, this building be characterized either through process knowledge or by analyses to determine if it is LLW ? If the answer is no, note. If the answer is yes, proceed with next section.	(Y)/ N process characterization	Rad activity due to survey smears. Generator elected to categorize as LSA because waste cannot be tested for α + β activity
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	generator's form reviewed. Form different from Haz Waste + LSA Waste documents. CHECK!
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	No sign of monitoring Contact HP.
	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	Not Known. Contact H.P.
	Based on field data, does the monitoring conducted in this area conform to the performance standard?	Y / N	

Two LSA Waste areas: storage pad outside contains white boxes. LSA waste scint. vials in plastic bags outside.

Vials stored in lab + picked up weekly by DECON. Picked up by Steve King.

Check with Health Physics re monitoring for exposures.

Contains with LSA + 100K

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Environmental Appraisal Checklist

Building Name: 30 Appraisers: Vyas/Hausfeld Date: 1-29-96 am

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	Confusion w DOE LSA waste exemption. Recommend Johnson attend training.
	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	No training to date for LSA or RCRA. Came from commercial nuclear industry
	Do characterization data include the following:		
	Physical and chemical characteristics of the waste?	Y / N	Generator receives no copies of any documents ~~after waste leaves bldg~~
	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	NO BAG or BOX monitor to evaluate waste ∴ cannot be treated as "clean trash", ~~& actually know from~~ scint. analysis can't measure
	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	INVESTIGATE W LSA GP.
	Are records maintained at the facility enabling this waste to be traced from its origin?	Y / N	INVESTIGATE W HAZ WASTE

Waste deposited in yellow can with yellow liner. Scint. vials stored in clear plastic bag with no rad label. What is round LSA waste rule? Are yellow bags

Contact Isper – relayed Johnson is responsible cradle to grave. He must check paperwork. This

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Building Name: 30 Appraisers: Vyas/Haisfeld Date: 1-29-96-am

Low-Level Waste and Transuranic Waste Checklist

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

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9.53-30

Environmental Appraisal Checklist

Building Name: 30 Appraisers: Vyas/Hausfeld Date: 1-29-96am.

NA

Low-Level Waste and Transuranic Waste Checklist

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

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Building Name: 30 Appraiser: [illegible] / Hausfeld Date: 1-29-96 AM

NA

Low-Level Waste and Transuranic Waste Checklist

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

GENERAL COMMENTS:

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9.53-31

Environmental Appraisal Checklist

Building Name: 30 Appraisers: Vyas/Hauenfeld Date: 1-29-96am

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	Keeps cardboard containers outside of buffer area, so they won't be contaminated. Brings ultima gold empty containers back + disposes of them as non-rad
	Are there solvent wastes?	Y / N	
	Is vehicle maintenance performed?	Y / N	
	Are oils used ?	Y / N	
	Are these corrosive wastes?	Y / N	
	Are there sludges?	Y / N	
	Are there halogenated organic (nonsolvent) wastes?	Y / N	
	Are metals recovered from wastewater?	Y / N	
	Is waste sludge generated?	Y / N	
	Are any waste minimization practices used that reduce the generation of sludge?	Y / N	
	Ion exchange process?	Y / N	
	Lead in gasoline lowered to reduce tank sludge toxicity?	Y / N	
	Storage tank agitators installed?	Y / N	
	Corrosive resistant materials used?	Y / N	
	Prevention of crude oil oxidation ?	Y / N	
	Drying?	Y / N	

Building Name: 30 Appraisers: Vyas/Atausfeld Date: 1-29-96 am

NA

Waste Minimization/Pollution Prevention Activities Checklist

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

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Environmental Appraisal Checklist

Building Name: 30 Appraisers: Vyas/Kausfeld Date: 1-29-96 am

NA

Waste Minimization/Pollution Prevention Activities Checklist

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

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Building Name: 30 NA

Appraisers: Yves/Hausfeld

Date: 1-29-96 am

Waste Minimization/Pollution Prevention Activities Checklist

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

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Environmental Appraisal Checklist

Building Name: 30 NA

Appraisers: Vyas / Hausfeld

Date: 1-29-96 am

Waste Minimization/Pollution Prevention Activities Checklist

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

Building Name: 30 Appraisers: Vyas/ Hausfeld Date: 1-29-96 am

NA

Waste Minimization/Pollution Prevention Activities Checklist

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

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M u n d Electronic Message/AOS

From :JOHN JOHNSON
JOHNJJ3
Dept. :Administration
Tel. No :
Date :01-Feb-1996 04:54pm EST
Subject :building 30 review

John,

This E-mail provides a response to the areas of concern identified in build 30 and addressed in your E-mail to Katherine Koehler dated January 29, 1996

The following are in response to the concerns identified in building 30:

1. The absence of a MSDS folder in the building - An MSDS binder has been established in building 30 for the chemicals and gas utilized by the Count Lab Technicians (e.g., isopropal alcohol, window cleaner, Ultima-Gold scintillation fluid, P-10 gas). MSDS sheets for cleaning supplies are to b supplied by Ray Martin (reference E-mail J.J.Johnson to Ray Martin dated 1/31/96 with cc to yourself).

2. The absence of a waste generator record for the Ultima-Gold waste - Although Ultima-Gold in itself is not considered a hazardous material or a candidate for mixed waste when containing low levels of radioactivity an inventory sheet has been developed and placed in building 30. This sheet be used for the documentation of used Ultima-Gold liquid scintillation fluid/vials.

3. (the need for) a small flammable cabinet for the isopropyl alcohol that used - Occupational Safety and Health Administration 29CFR1910.106(e)(2)(i and 29CFR1910.106(e)(2)(ii)(b)(1) provides guidance for the "Incidental sto or use of flammable and combustible liquids." This guidance states that "T quantity of liquid that may be located outside of an inside storage room or storage cabinet in a building or in any one fire area of a building shall n exceed...25 gallons of Class IA liquids in containers." Additionally, the Safety and Hygiene Manual MD-10286 for "Storage and handling of Flammable Liquids" further limits the maximum capacities and container types in secti 4.4. This section states "Maximum capacities and container types of flamma liquids allowed to sit out in the open (such as in laboratory work areas) s be as follows:

Glass	1 pint
Metal or approved plastic	1 gallon
Safety Cans	2 gallons

e use of one gallon or less of isopropyl alcohol (Class IA liquid) in an approved plastic container exceed the OSHA requirements and meet the Mound Safety and Hygiene Manual general requirements. No further action required.

4. The exit door from the RWP area to the outside needs to be labeled as su Building manager, Katherine Koehler, has addressed this concern through the

itiation of an MSR to install said exit sign (reference E-mail from K.Koel John Johnson/Michael Ball dated 1/31/96 re Action Items from Building 30 vironmental Audit).

you have any questions, please contact me at 4421.

anks,

hn J. Johnson
diological Control

D' tribution:

TO:	John Hausfeld	(HAUSJR)
CC:	Ted Quale	(QUALTJ)
CC:	Terry Vaughn	(VAUGTL)
CC:	Eunice Warmoth	(WARMEM)
CC:	Katherine Koehler	(KOEHKG)
CC:	JOHN JOHNSON	(JOHNJJ3)

n d Electronic Message/AOS

:Katherine Koehler
KOEHKG
:ENGINEERING
No :865-4886
:13-Dec-1995 10:51am EST
ct :Building Survey Support

:Terry Vaughn (VAUGTL)
:JOHN JOHNSON (JOHNJJ3)

:W. B. Clark (CLARWB)

Terry and JJ,

This morning I will drop off a copy (in Terry's office) of the Building 30 Building Managers questionaire for the Environmental Audit currently taking place. I need your support in completing the questionaire. Your timely cooperation would be appreciated.

Please return to me as soon as you can.

Thanks,

Kathy Koehler

I N T E R O F F I C E M E M O R A N D U M

Date: 30-Jan-1996 04:00pm EST
From: John Hausfeld
HAUSJR
Dept: ES&H
Tel No: 4216

TO: See Below

Subject:Building 30 review

Kathy,

Nancy and I walked through building 30 on January 29, 1996, at 9:00 a.m. I apologize if you did not receive the phone mail message that I left on your phone last Thursday, 1/25/96, prior to yesterday morning.

We spoke with J.J. Johnson and Mike Ball. Our main concerns were 1) the absence of a MSDS folder in the building, 2) the absence of a Waste Generatc Record for the Ultima Gold waste, 3) a small flammable cabinet for the Isopropyl Alcohol that is used, and 4) the exit door from the RWP area to th outside needs to be labeled as such.

Nancy is still in the process of attempting to find out the handling of the waste that is generated from building 30.

I'll get in touch with you tomorrow concerning the schedule for next week th involves your buildings.

Thanks,

John
Distribution:

TO: Katherine Koehler (KOEHKG)

CC: Eunice Warmoth (WARMEM)
CC: JOHN JOHNSON (JOHNJJ3)

TOTAL P.04
9.53-45

o u n d	Electronic Message/AOS

'rom :Katherine Koehler
KOEHKG
ept. :ENGINEERING
el. No :865-4886
ate :21-Feb-1996 01:33pm EST
ubject :Review of Draft Building 30 Assessment Report

O :Eunice Warmoth (for Nancy Vias) (WARMEM)

C :W. B. Clark (CLARWB)
C :Linda Bauer (BAUELR)
C :John Hausfeld (HAUSJR)
C :Dave B. Armstrong (ARMSDB)

Nancy,

You requested a critical review of your Building 30 Environmental Assessment report but did not allot sufficient time to do one. Please do not take these comments in the wrong way. I've did not give the review the time I would like to have committed but the following is a list of concerns I noted on a quick read through.

1.) Page 1, last paragraph which states: "Of primary concern was waste characterization, handling, storage, and disposal practices. This and other compliance issues (What other issues?) were discussed with the building manager, process manager, waste management professionals, and EG&G management."

Correction request: Remove "building manager." The attachment was the original briefing I received from the Environmental Assessment. A 5 minute subsequent discussion with Nancy Vias on 2/8/96 at approximately 8:15 was not a general compliance issue discussion. If there is any other compliance issues other than those related to the improper disposal of Counting Lab wastes at a hazardous incineration facility over a five year period, please let me know.

2l AOS

2.) Page 2, second paragraph which states: The building manager was not present at the walk through but was subsequently debriefed." should be changed to "The building manager was not present at the walk through."

Reasoning: The extent of the building managers debriefing is documented on the attachment and in a 5 minute conversation held with Nancy, John, and myself held on 2/8/96. I was never debriefed on building 30's disposal practices by the Environmental auditors. Waste management and radiation controls personnel brief me on the occurrence. I think this reference with respect to "debriefing" is misleading.

If "debriefing" is replaced with "given a copy of the draft

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Building 30 assessment report on 2/20/96" that would be accurate.

Page 2, third paragraph: What does the MEC abbreviation stand for? Mound Emission Controls?

3.) FYI-Separate issue: Building and Utility Drawings are not in "AS-BUILT" condition. As upgrades and renovations were made to utilities and buildings, the revised conditions may not have been documented on the drawings. This write up seems to assume that the drawings supplied are accurate. You might consider clarifying that this is the best available information the plant has to date.

4.) Discrepancy between the building 30 report, John Hausfelds AOS memo (attached), and critique meeting discussions concerning the waste generation forms:

The AOS states that there was a concern associated with the absence of a Waste Generator record for the Ultima Gold waste.

The environmental assessment report states that the waste generator filled one out as "LSA waste". The report did not state whether this form was given to waste management representatives or not or given to the process manager or not.

In the critique, waste management referred to a waste generators form that was filled out years ago when the it was determined that the scintillation waste could be disposed of utilizing the tritium exemption criteria and disposed of a hazardous waste due to EPA's concerns over bioaccumulation is river species

5.) Page 5, Paragraph 3: The primary finding was associated with non-characterization in accordance with DOE Order 5820, 40CFR265, and OAC 3745-52. Why didn't you reference the particular applicable sections.?

DOE has stated that compliance with all DOE orders is no longer necessary but to my knowledge have not provided a list of those orders or portions or orders which must still be complied with. Where is the listing of DOE orders that the M&O contractor is required to comply with? Does the funding match the resources required to ensure that the order is complied with?

6.) Environmental Check list,

page 1 of 27 - Is there a 40CFR122 code exemption for small quantities of flammables (alcohol) which do not require storage in a an flammable storage cabinet. yes 29 CFR 1910

Page 8 of 27 - Why was process circled (No explanation)? Why are three questions left unanswered?

I could not read the handwriting on the xeroxed copy received. I did not review illegible handwritten notes.

Kathy

This page intentionally left blank.

Building Manager's Questionnaire

MGR DID NOT HAVE TIME TO CONFIRM OR REVIEW.

Building Name: 30 Building Manager: K.G. Koehler Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

GET level II, dosimetry, read & sign the RWP.

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

None

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

Posted area - Posted as "Radioactive Material Area"

4. Provide a physical description of the building.

This 740-ft², concrete block building has a BUM roof (coal tar). The building is slightly contaminated with radioactive material (plutonium-238), and the building contains asbestos.

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

5. Provide a drawing of the building.

Attached

6. What is the current building use?

Building serves as an office and storage area supporting the Environmental, Safety, and Health Department. Some flammable chemicals are stored. Used as a Radiological Count Lab.

Source: Mound Buildings, 5-9-95

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

Believe at one time the building was used as a gamma scan facility for drums & boxes.

Source: Mound Buildings, 5-9-95

Building Manager's Questionnaire

Building Name: 30 Building Manager: K.G. Koehler Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

Process(es) Housed: Soil screening, HP counting

How Wastes Are Generated:

Soils in sealed EPA dishes are screened in a gamma counter to determine how much, if any, plutonium or thorium is present. The sealed dishes are not opened and are discarded in an LSA container outside.

HP samples are counted in a Tri-Carb 1000 liquid scintillation counter. The scintillation fluid is ~~Atomlight~~ Ultima Gold (Packard) Vials containing the scintillation fluid are put in a container which is picked up by Waste Management.

Isopropyl alcohol is used in small quantities to clean the HP equipment. The alcohol evaporates and no wastes are generated.
Window wash is used in small quantities to clean the equipment
No liquid waste is generated

Contact: J. J. Johnson
Phone #: 4421

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

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Building Name: 30 Building Manager: K.G. Koehler Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

10. Does the building have air emission sources? No — Unknown —

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

Source: Mound Air Emissions Database 11/30/95

Building Name: 30 Building Manager: K.G. Koehler Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

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

Source: Air Permits 2/4/95

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

Process Source	Permit	Log	Permit Condition & 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 Unknown

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

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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Building Name: 30 Building Manager: K.G. Koehler Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

NHV 2-25-96 per PCB Annual Document Log

Source: PCB ANNUAL DOCUMENT LOG

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

NHV 2-25-96 per PCB Annual Document Log

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)
HELIUM	G	880 cu/ft.
Ultima Gold (Packard)	L	150 litres
isopropyl alcohol	L	5 litres
window wash	L	5 litres
P-10 gas	G	800 cu ft

Source: Chemical Inventory 1994

Building Manager's Questionnaire

Building Name: 30 Building Manager: K.G. Koehler Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

Chemical	Amount	Clean-up Measures
Unknown		

Source: _____

21. Where do waste chemicals go?
Ultima Gold vials are picked up by Waste management

22. What janitorial supplies are stored inside or outside of the building?
bowl cleaner -
mops & buckets -

23. Where do excess janitorial supplies go?
Janitorial work is performed by the Decon Group of the building PP building Area. Excess supplies are Controlled and maintained by this group.

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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Building Name: 30 Building Manager: K.G. Koehler Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

Registration Number	Content	Quantity	Last Inspection Date	Preventive Maintenance Performed	Inside Or Outside
	Argon	1500 Gal		Y / N	
				Y / N	

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
Nonhaz Scintillation Vials	159.4
Nonhaz Scintillation Vials	247.8
Nonhaz Scintillation Vials	261.8
Nonhaz Scintillation Vials	255.3
Nonhaz Acintillation Vials	202.4
Nonhaz Scintillation Vials	258.0
Nonhaz Scintillation Vials	272.3
Nonhaz Scintillation Vials	228.8

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

Building Manager's Questionnaire

Building Name: 30 Building Manager: K.G. Koehler Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

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

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

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

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

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

Source: _____

Building Name: 30 Building Manager: K.G. Koehler Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

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

Source: _____

Building Name: 30 Building Manager: K.G. Koehler Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

34. Is low-level radioactive waste generated, stored, or disposed of from the building? (Yes) No
Where are logs found? Trash is picked up by Waste Management (Decon Group). The Radiological Control Count lab does not maintain a l

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.

Unknown

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Building Name: 30 Building Manager: K.G. Koehler Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

36. Is there a waste minimization program in the building? Yes No
Discuss your ideas about how to minimize waste.
Boxes, containers, and packaging material are disposed and handled as regular trash.

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

Material Safety Data Sheet

Alcohol
Identity (Trade Name As Used On Label)

Midwest Grain Products Co.
Manufacturer

One McCormick Lane
Address

Weston, MO 64098

1-800-825-0377
Phone Number (For Information)

1-800-424-9300
Emergency Phone Number Telex*

MSDS Number* 64175

CAS Number*

Date Prepared February 05, 1991

Prepared By* Lisa Williams

Note: Blank spaces are not permitted. If any item is not applicable, or information is available, the space must be marked to indicate th

SECTION 1 - MATERIAL IDENTIFICATION AND INFORMATION

COMPONENTS — Chemical Name & Common Names (Hazardous Components 1% or greater; Carcinogens 0.1% or greater)	%*	OSHA PEL	ACGIH TLV	OTHER LIMITS RECOMMENDED
Ethyl Alcohol	92.4-100		1000 p.p.m.	
Water	0-7.6		N/A	
Non-Hazardous Ingredients				
TOTAL	100			

SECTION 2 - PHYSICAL / CHEMICAL CHARACTERISTICS

Boiling Point	172°F	Specific Gravity (H_2O = 1)	.789.816(60°F)
Vapor Pressure (mm Hg and Temperature)	100 mm at 27°C	Melting Point	
Vapor Density (Air = 1)	1.59	Evaporation Rate (n-Butyl Acetate = 1)	2.7
Solubility in Water	Completely miscible	Water Reactive	None

Appearance and Odor: Alcohol is water clear and has a neutral odor. Appearance & odor can be modified by non-hazardous components of the mixture.

SECTION 3 - FIRE AND EXPLOSION HAZARD DATA

Flash Point and Method Used	Auto-Ignition Temperature	Flammability Limits in Air % by Volume	LEL	UEL
55°F c.c.	793°F		3.28%	19.00%

Extinguisher Media: CO_2;alcohol foam

Special Fire Fighting Procedures: Do not use water unless deluge quantity. Use alcohol foam, CO_2, or dry chemical to extinguish fire.

Unusual Fire and Explosion Hazards: Expolosion hazard is moderate when exposed to flame.

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ECTION 4 - REACTIVITY HAZARD DATA

BILITY Stable Unstable	Conditions To Avoid Keep away from heat or ignition sources
ompatability (terials to Avoid)	Oxidizing agents, such as acetyl chloride, nitric acid and hydrogen peroxide
ardous omposition Products	CO_2 is formed during combustion
ZARDOUS POLYMERIZATION May Occur Will Not Occur	Conditions To Avoid

ECTION 5 - HEALTH HAZARD DATA

IMARY ROUTES ENTRY	☒ Inhalation ☐ Skin Absorption	☒ Ingestion ☐ Not Hazardous	CARCINOGEN LISTED IN	☐ NTP ☐ IARC Monograph	☐ OSHA. ☒ Not Listed

ALTH HAZARDS	Acute Irritation of the eyes, nose and throat, headache
	Chronic Drowsiness and lassitude, loss of appetite and inability to concentrate
ns and Symptoms Exposure	
dical Conditions nerally Aggravated by Exposure	Unknown

NCY FIRST AID PROCEDURES - Seek medical assistance for further treatment, observation and support if necessary.

Irrigate eyes with water

n Contact
Flood with water

alation
If excessive, notify proper authority for instruction

estion
Gastric lavage, followed by saline catharsis, get medical care

ECTION 6 - CONTROL AND PROTECTIVE MEASURES

spiratory Protection ecify Type)	Activated carbon respirator	
tective Gloves	Not required if no skin contact	Eye Protection Safety eyewear with splash guards
NTILATION BE USED	☒ Local Exhaust sufficient to keep concentration below 1000 p.p.m. ☐ Mechanical (general)	☐ Special
	☐ Other (specify)	
er Protective thing and Equipment	If permissible exposure limit is exceeded, use NIOSH approved respirator	
gienic Work ctices		

ECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE / LEAK PROCEDURES

ps to be Taken If Material Spilled Or Released	Keep heat or ignition sources away; ventilate area; dilution with water will decrease the risk of a fire hazard.
ste Disposal thods	Small amounts may be flushed with water. Large amounts may be contained & collected for incineration.
ecautions to be Taken Handling and Storage	Store away from oxidizing agents; keep away from heat or ignition sources; use adequate ventilation
her Precautions and/or Special Hazards	Keep containers colsed. Ground containers when emptying.

PA ting* Health Flammability Reactivity Other | HMIS

PACKARD
A Canberra Company

MATERIAL SAFETY DATA SHEET

HEALTH
FLAMMABILITY
REACTIVITY
PERSONAL PROTECTION

PPO CAS.RN 92-71-7
bis-MSB CAS.RN 13280-61-0

PACKARD INSTRUMENT CO., INC. • 2200 WARRENVILLE ROAD • DOWNERS GROVE, IL 60515

PREPARER: J.W. van der Weele DATE: 12/01/90 REVISION #: D

CHEMICAL NAME: Blend of alkylnaphthalene with scintillators PPO and bis-MSB ~~and emulsifiers~~

SYNONYMS: None CHEMICAL FAMILY: N.A.

FORMULA: N.A. MOLECULAR WEIGHT: N.A.

TRADE NAME AND SYNONYMS: ULTIMA-GOLD™

PHYSICAL DATA

BOILING POINT, 760 mm. Hg	554-570°F/290-299°C	FREEZING POINT	-22°F/-30 °C
SP. GRAVITY (H_2O = 1)@20°C	0.960	VAPOR PRESSURE AT 20°C	2.8 mm Hg
EVAPORATION RATE (BUTYL ACETATE = 1)	N.D.	SOLUBILITY IN WATER, % by wt. at 20°C	Very slight .01
% VOLATILES BY VOLUME	<1	VAPOR DENSITY (AIR = 1)	N.D.
APPEARANCE AND ODOR	Clear blue-violet fluorescent liquid with mild odor.		

HAZARDOUS INGREDIENTS

MATERIAL	%	OSHA PEL	ACGIH TLV	OTHER LIMITS RECOMMENDATIONS
None				

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (test method)	306°F/152 °C Tag closed cup	AUTOIGNITION TEMPERATURE	≃932°F/≃500 °C

FLAMMABLE LIMITS IN AIR, % by volume	LOWER	N.D.	UPPER	N.D.

EXTINGUISHING MEDIA	Dry chemical, carbon dioxide or foam
SPECIAL FIRE FIGHTING PROCEDURES	None
UNUSUAL FIRE AND EXPLOSION HAZARDS	None

EMERGENCY PHONE NUMBERS

DAY: 1-800-445-7426
24 HOUR EMERGENCY CONTACT: CHEMTREC 1-800-424-9300

Legal responsibility is assumed only for the fact that all studies reported here and all opinions are those of qualified experts.

HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE (ACUTE AND CHRONIC)	Prolonged contact may cause slight irritation of eyes, skin and mucous membranes. May cause nausea, diarrhea or vomiting if ingested. No chronic effects are known.
ROUTE(S) OF ENTRY	INHALATION ☐ SKIN ☒ INGESTION ☒
EMERGENCY AND FIRST AID PROCEDURES	Remove to fresh air. Wash affected areas with soapy water. Flush eyes with running water for 15 minutes and seek medical attention if irritation persists.
CARCINOGENICITY	N.T.P. ☐ I.A.R.C. MONOGRAPHS ☐ OSHA ☐
MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE	None

REACTIVITY DATA

STABILITY UNSTABLE ☐ STABLE ☒	CONDITIONS TO AVOID	None
INCOMPATIBILITY (materials to avoid)	Strong oxidizers	
HAZARDOUS DECOMPOSITION PRODUCTS	None	
HAZARDOUS POLYMERIZATION May Occur ☐ Will not Occur ☒	CONDITIONS TO AVOID	None

SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED	Remove ignition sources, ventilate area. Absorb small spills with paper, diatomaceous earth or equivalent, with evaporation in a fume hood.
WASTE DISPOSAL METHOD	Sanitary sewer or incinerate in accordance with government regulations.

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type)		None required		
VENTILATION	LOCAL EXHAUST	None	SPECIAL	None
	MECHANICAL (general)	Satisfactory	OTHER	None
PROTECTIVE GLOVES		Chemical proof	EYE PROTECTION	Splash proof safety goggles
OTHER PROTECTIVE EQUIPMENT		None		
HYGIENIC PRACTICES		No eating, drinking or smoking in area. Wash after use.		

SPECIAL PRECAUTIONS

PRECAUTIONARY LABELING	WARNING! Contains the mildly irritating solvent alkylnaphthalene. Avoid contact with eyes and skin, prolonged breathing of vapor. Avoid sparks and open flame.

9.53-68

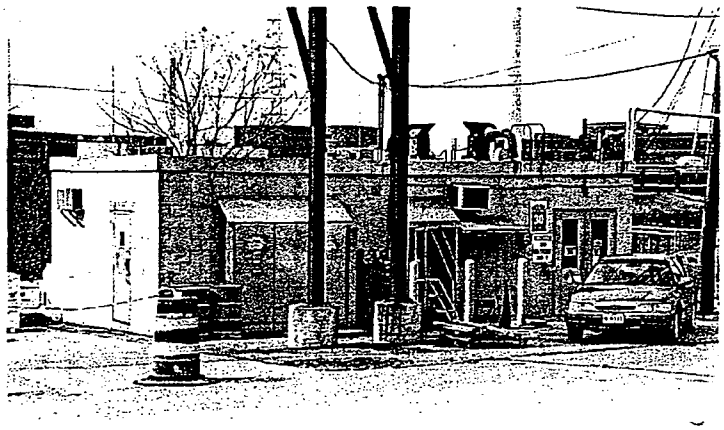
Appendix G

Radiological Information

Characterization Report

For

Building 30



Prepared By: Roderick C. Case Date: 4/22/04

Approved By: A. Stephen Collas Date: 4/22/04

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Historical Overview

Building 30 was constructed in 1965 as a one-story, 740 square foot concrete block building. The original designation of the building was the "SM Storage Area" and was changed at some point to a numerical designator, Building 30. The building was originally constructed to satisfy the need for storage space. There have been no room additions to Building 30 altering the original footprint. There have, however, been modifications to the interior of the building, altering the configuration of the original three rooms. Other post-construction changes included placing a doorway on the southern exterior wall of the building.

Based upon the information provided in Reference 1, Building 30 has housed three main processes, as follows:

- A storage facility for SM Area Storage
- A scanning facility for drums and boxes of radioactively contaminated materials
- A counting facility for the analysis of radionuclides.

Other processes may have used this facility at one time or another. A complete history of Building 30 can be found in Reference 1.

Current Status and Plan

Building 30 is scheduled for demolition in accordance with the Miamisburg Closure Project goals. Three fixed contamination areas (FCA's) are present on the floor and labeled in accordance with MD 80043, Operation 900.6.5.4. Building radiological postings are appropriate for the known radiological conditions found in the building in accordance with MD80036, "Posting for Radiological Control", Operation 10003.

Scoping surveys were performed throughout the building to determine the nature and extent of contamination. Outside areas adjacent to the building were scanned for alpha contamination. The survey data indicates that contamination is present on the floor at multiple locations beyond the designated FCA's. The highest alpha activity observed by scanning was 132,392 dpm/100cm^2 and the average of 82 locations was 2,250 dpm/100cm^2 (RSDS# 03-TF-0305). Loose surface contamination was found at one location at 34 dpm/100cm^2 alpha. The locations with the three highest alpha activity were selected for acid etch sampling. The highest pre-etch direct measurement at these locations was 316,950 dpm/100cm^2 alpha and 19,905 dpm/100cm^2 beta. The highest isotopic analysis result by alpha spectroscopy was 294,197 dpm/sample Pu-238. Post acid etch survey of the sampled areas were 139,890 dpm/100cm^2 alpha and 9,370 dpm/100cm^2 beta maximum. Loose surface contamination found at the sample location was 79 dpm/100cm^2 alpha (RSDS# 03-TF-0309). Loose surface contamination was fixed in place to prevent the further spread of contamination. Scan surveys of the interior walls found no measurement above the alarm set point of 75 dpm/100cm^2 (RSDS# 03-TF-0312). However, several layers of paint are visible on the walls and may be masking

residual activity. Perimeter survey results found no contamination outside of the building (RSDS# 03-TF-0356).

Since extensive remediation of the floor is not considered practical, the floor contamination will be encapsulated with the application of a paint fixative in accordance with MD 80043, "Contamination Control and Containment Guidance", Operation 900.6.5. Building 30 will be demolished in its entirety as a radiological facility and the debris disposed of as low level waste. Confirmation that the activities within Building 30 did not impact the building footprint will be accomplished via the Building 38 VSAP. Soil contamination above acceptable levels will be managed per the Building 38 VSAP.

References

1. Building 30 *Structural History and Process History Summary Background Document,* February 2002

Building 30 Survey Data Collection Sheet

		Scoping Floor Scan survey			
		Loose Surface dpm/100cm2			Fixed dpm/100cm2
Location	RSDS#	α	β	H^3	α
BLDG30-01	03-TF-0305	1.61	0.03	3.98	112
BLDG30-02	03-TF-0305	0	3.3	0	83
BLDG30-03	03-TF-0305	0	1.16	0	314
BLDG30-04	03-TF-0305	1.33	3.65	0	323
BLDG30-05	03-TF-0305	0	0	4.18	462
BLDG30-06	03-TF-0305	0	0	0	832
BLDG30-07	03-TF-0305	0	0	0	961
BLDG30-08	03-TF-0305	0	0	0	980
BLDG30-09	03-TF-0305	0	4.98	0	789
BLDG30-10	03-TF-0305	1.44	0	0	578
BLDG30-11	03-TF-0305	1.1	0	0	396
BLDG30-12	03-TF-0305	0	2.58	0	211
BLDG30-13	03-TF-0305	0.88	4.3	3.68	79
BLDG30-14	03-TF-0305	0	0.16	0	680
BLDG30-15	03-TF-0305	0	0	2.16	224
BLDG30-16	03-TF-0305	0	3.22	0	366
BLDG30-17	03-TF-0305	0	0	0	423
BLDG30-18	03-TF-0305	0	2.1	0.19	165
BLDG30-19	03-TF-0305	0	0	0.19	257
BLDG30-20	03-TF-0305	1.33	6.01	0	142
BLDG30-21	03-TF-0305	0	1.6	3.08	201
BLDG30-22	03-TF-0305	0	0	0	198
BLDG30-23	03-TF-0305	0	0	0.18	145
BLDG30-24	03-TF-0305	3.28	0	4.37	370
BLDG30-25	03-TF-0305	1.65	2.35	4.59	403
BLDG30-26	03-TF-0305	0	0	0	693
BLDG30-27	03-TF-0305	0	3.51	0	1829
BLDG30-28	03-TF-0305	0	1.41	2.27	59
BLDG30-29	03-TF-0305	0	0	3.41	155
BLDG30-30	03-TF-0305	0	0	0	185
BLDG30-31	03-TF-0305	0	1.93	0	175
BLDG30-32	03-TF-0305	0	0	0.18	277
BLDG30-33	03-TF-0305	0	0.18	0	188
BLDG30-34	03-TF-0305	0	2.1	0.9	191
BLDG30-35	03-TF-0305	0	0	3.25	132
BLDG30-36	03-TF-0305	0	0	0	195
BLDG30-37	03-TF-0305	0	0.44	0	83
BLDG30-38	03-TF-0305	0	0.32	0	376
BLDG30-39	03-TF-0305	0	0	2.4	122
BLDG30-40	03-TF-0305	0	0	0	102
BLDG30-41	03-TF-0305	0	0.04	0	89
BLDG30-42	03-TF-0305	0	0.6	0.19	99
BLDG30-43	03-TF-0305	0	1.12	0	83
BLDG30-44	03-TF-0305	0	0	5.18	106
BLDG30-45	03-TF-0305	0	0	0	69
BLDG30-46	03-TF-0305	0	0.16	0	132
BLDG30-47	03-TF-0305	0.74	0	0	106
BLDG30-48	03-TF-0305	1.09	0	1.19	172

BLDG30-49	03-TF-0305	9.54	0	0	6598
BLDG30-50	03-TF-0305	33.99	0	0	835
BLDG30-51	03-TF-0305	6.28	0	0	89
BLDG30-52	03-TF-0305	1.33	2.47	0	224
BLDG30-53	03-TF-0305	0	0	0	185
BLDG30-54	03-TF-0305	0	6.18	0	195
BLDG30-55	03-TF-0305	0	5.67	1.17	122
BLDG30-56	03-TF-0305	1.38	0	0	112
BLDG30-57	03-TF-0305				
BLDG30-58	03-TF-0305	0	0	0	83
BLDG30-59	03-TF-0305	0	2.58	0	73
BLDG30-60	03-TF-0305	0.89	0.63	4.61	215
BLDG30-61	03-TF-0305	1.14	0	0	125
BLDG30-62	03-TF-0305	10.25	0	0	218
BLDG30-63	03-TF-0305	7.2	0	0	3080
BLDG30-64	03-TF-0305	5.58	0.49	0	132392
BLDG30-65	03-TF-0305	0	0	0	300
BLDG30-66	03-TF-0305	0	0.9	0	69
BLDG30-67	03-TF-0305	0	1.16	0	89
BLDG30-68	03-TF-0305	0	3.78	1.73	152
BLDG30-69	03-TF-0305	0	0	4.27	383
BLDG30-70	03-TF-0305	0.43	0	4.36	1393
BLDG30-71	03-TF-0305	0	0	0	155
BLDG30-72	03-TF-0305	3.04	2.36	0.18	69
BLDG30-73	03-TF-0305	0	0	0	112
BLDG30-74	03-TF-0305	1.44	0	2.64	875
BLDG30-75	03-TF-0305	0	0	0	838
BLDG30-76	03-TF-0305	0	2.58	0.2	432
BLDG30-77	03-TF-0305	0	0	7.59	330
BLDG30-78	03-TF-0305	0	1.36	0	574
BLDG30-79	03-TF-0305	0	0.76	0	545
BLDG30-80	03-TF-0305	7.2	0.49	0	2958
BLDG30-81	03-TF-0305	0	0	0	7691
BLDG30-82	03-TF-0305	1.21	0	0	4202
BLDG30-83	03-TF-0305	2.41	0	1.1	3499
		α	β	H^3	α
	Avg	1.314146	0.95926829	0.895366	2,250
	SD	4.207545	1.56561177	1.672161	14,605
	Max	33.99	6.18	7.59	132,392
	#	82	82	82	82
	+/-	0.910705	0.33887008	0.361932	3,161

Building 30 Survey and Sample Data

Sample Data	Pre-etch dpm/100cm2		Post-etch dpm/100cm2		Pu-238
Location	alpha	beta	alpha	beta	dpm/sample
30-64	316,950	19905	139,890	9370	294,197
30-49	48,450	4165	21,540	2140	166,815
30-81	12,430	740	2,190	505	23,783

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RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) 30 2,3,4	SURVEY NO. 03-TF-0305
PURPOSE: Scoping Survey of Floor	RWP NO. NA
	DATE: 11-14-03
	TIME: 1630

MAP/DRAWING

COPY

See

ATTAched

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

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
2350	5855/5864	6-18-04
2360	5775/5720	9-23-04
	NA	

[redacted]

HP #	Date:
7474	11-18-03
HP #	Date:
ATTAched	
HP # 5214	Date: 11-24-03

ML-9620 (2-98)

Survey No. 03-TF-0305

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1-83	See	Attached		Floor
		N	A	

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

COMMENTS: N/A LOCATION #50 WAS REWIPED AND COUNTED: SEE ATTACHED

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

ML-9620A (4-98)

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: SMEAR021
Batch Ended: 11/18/03 8:37

Crosstalk correction performed.

Recalibration Date: 03/18/05
Serial Number: 26966-1

Batch ID: ABERCROMBE 03-TF-0305 (83) CYR

Detector ID	Sample ID	Alpha Activity DPM	Alpha Activity σ	Alpha Activity flags	Beta Activity DPM	Beta Activity σ	Beta Activity flags
A1	1	1.61	2.01		0.03	1.76	
A2	2	0.00	2.11		3.30	2.68	
A3	3	0.00	1.97		1.16	2.08	
A4	4	1.33	2.01		3.65	2.65	
B1	5	0.00	2.00		0.00	2.02	
B2	6	0.00	2.00		0.00	1.17	
B3	7	0.00	1.82		0.00	1.21	
B4	8	0.00	1.86		0.00	1.14	
C1	9	0.00	2.12		4.98	3.27	
C2	10	1.44	2.05		0.00	1.75	
C3	11	1.10	1.95		0.00	1.69	
C4	12	0.00	1.93		2.58	2.61	
D1	13	0.88	2.17		4.30	3.00	
D2	14	0.00	2.42		0.16	1.70	
D3	15	0.00	1.91		0.00	1.18	
D4	16	0.00	2.09		3.22	2.51	
A1	17	0.00	2.00		0.00	1.25	
A2	18	0.00	2.10		2.10	2.40	
A3	19	0.00	1.95		0.00	1.20	
A4	20	1.33	2.03		6.01	3.14	
B1	21	0.00	2.02		1.60	2.60	
B2	22	0.00	2.00		0.00	1.18	
B3	23	0.00	1.82		0.00	1.21	
B4	24	3.28	2.63		0.00	1.14	
C1	25	1.65	2.09		2.35	2.76	
C2	26	0.00	2.05		0.00	1.75	
C3	27	0.00	1.99		3.51	2.68	
C4	28	0.00	1.92		1.41	2.33	
D1	29	0.00	2.13		0.00	1.73	
D2	30	0.00	2.39		0.00	1.20	
D3	31	0.00	1.94		1.93	2.35	
D4	32	0.00	2.06		0.00	1.58	
A1	33	0.00	2.01		0.18	1.76	
A2	34	0.00	2.10		2.10	2.40	

11-24-03

G 11 of 41

PSS 03-TF-0305

R 3/6/13

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: SMEAR021
Batch Ended: 11/18/03 8:37

Crosstalk correction performed.

Recalibration Date: 03/18/05
Serial Number: 26966-1

Batch ID: ABERCROMBE 03-TF-0305 (83) CYR

Detector ID	Sample ID	Alpha Activity DPM	Alpha Activity σ	Alpha Activity flags	Beta Activity DPM	Beta Activity σ	Beta Activity flags
A3	35	0.00	1.95		0.00	1.20	
A4	36	0.00	1.97		0.00	1.18	
B1	37	0.00	2.01		0.44	2.33	
B2	38	0.00	2.01		0.32	1.66	
B3	39	0.00	1.82		0.00	1.21	
B4	40	0.00	1.86		0.00	1.14	
C1	41	0.00	2.07		0.04	2.14	
C2	42	0.00	2.06		0.60	2.14	
C3	43	0.00	1.96		1.12	2.07	
C4	44	0.00	1.89		0.00	1.17	
D1	45	0.00	2.13		0.00	1.73	
D2	46	0.00	2.42		0.16	1.70	
D3	47	0.74	1.91		0.00	1.18	
D4	48	1.09	2.06		0.00	1.58	
A1	49	9.54	4.46		0.00	1.76	
A2	50	33.99	8.58		0.00	1.70	
A3	51	6.28	3.88		0.00	1.21	
A4	52	1.33	2.00		2.47	2.37	
B1	53	0.00	1.98		0.00	1.65	
B2	54	0.00	2.07		6.18	3.11	
B3	55	0.00	1.88		5.67	3.19	
B4	56	1.38	1.86		0.00	1.14	
C2	58	0.00	2.05		0.00	1.75	
C3	59	0.00	1.94		0.00	1.20	
C4	60	0.00	1.93		2.58	2.61	
D1	61	0.89	2.14		0.63	2.12	
D2	62	1.14	2.39		0.00	1.20	
D3	63	10.24	4.69		0.00	2.03	
D4	64	7.20	4.10		0.49	1.94	
A1	65	5.58	3.45		0.00	1.25	
A2	66	0.00	2.08		0.90	2.08	
A3	67	0.00	1.97		1.16	2.08	
A4	68	0.00	2.01		3.78	2.65	
B1	69	0.00	2.00		0.00	2.02	
B2	70	0.00	2.00		0.00	1.18	
B3	71	0.43	1.83		0.00	1.70	

11-24-03

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RSAS 03-TF-0305

R 4/6/13

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: SMEAR021
Batch Ended: 11/18/03 8:37

Crosstalk correction performed.

Recalibration Date: 03/18/05
Serial Number: 26966-1

Batch ID: ABERCROMBE 03-TF-0305 (83) CYR

Detector ID	Sample ID	Alpha Activity DPM	Alpha Activity σ	Alpha Activity flags	Beta Activity DPM	Beta Activity σ	Beta Activity flags
B4	72	3.04	2.66		2.36	2.54	
C1	73	0.00	2.06		0.00	1.75	
C2	74	1.44	2.05		0.00	1.75	
C3	75	0.00	1.94		0.00	1.20	
C4	76	0.00	1.93		2.58	2.61	
D1	77	0.00	2.13		0.00	1.73	
D2	78	0.00	2.45		1.36	2.08	
D3	79	0.00	1.93		0.76	2.03	
D4	80	7.20	4.10		0.49	1.94	
A1	81	0.00	2.00		0.00	1.25	
A2	82	1.21	2.06		0.00	1.20	
A3	83	2.41	2.75		0.00	1.70	
C1	57 NO SAMPLE	1.65	2.06		0.00	1.75	

G13441

2525 03-TF-0305

R 56613

Albert Fabian

11-24-03

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: SMEAR005
Batch Ended: 11/20/03 7:57
Cal. Due Date: 5/1/05
Serial Number: 26966-3

Batch ID: ABERCROMBIE 03-TF-0305 [1] JC

Detector ID	Sample ID	Alpha Activity			Beta Activity		
		DPM	σ	flags	DPM	σ	flags
A1	1	0.00	2.01		0.00	1.82	

REWIPE OF LOCATION # 50

J. Collins

Page 1 of 1 11-24-03

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2525 03-TF-0305

R 6 of 1

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

	LL	UL	LCR	2S%	BKG
Region A:	0.5 -	18.6	0	0.0	7.41
Region B:	2.0 -	18.6	0	0.0	6.52
Region C:	40.0 -	2000	0	0.0	7.10

Quench Indicator: tSIE/AEC
Ext Std Terminator: Count
03-TF-0305 K. ABERCROMBE (83) AG
Coincidence Time(ns): 18
Delay Before Burst(ns): Normal
Protocol Data Filename: C:\DATA\PROT2.DAT
Count Data Filename: C:\DATA\SDATA2.DAT
Spectrum Data Drive & Path: C:\DATA

S#	SMPL_ID	TIME	CPMA	LUM	FLAG	tSIE	DPM1	2Sigma	CPMC
-1		10.00	7.41	8	B	641.22		0.00	7.10
0		2.00	807.35	0		529.46	1653.64	121.75	3.40
1		2.00	1.91	5		508.41	3.98	9.71	0.00
2		2.00	0.00	9		515.22	0.00	0.00	0.40
3		2.00	0.00	10		546.16	0.00	0.00	1.90
4		2.00	0.00	9		530.76	0.00	0.00	1.40
5		2.00	2.09	0		554.53	4.18	9.38	0.00
6		2.00	0.00	0		557.64	0.00	0.00	1.40
7		2.00	0.00	14		546.61	0.00	0.00	0.40
8		2.00	0.00	8		542.10	0.00	0.00	0.90
9		2.00	0.00	11		525.89	0.00	0.00	1.90
10		2.00	0.00	11		594.69	0.00	0.00	2.90
11		2.00	0.00	20		531.92	0.00	0.00	5.90
12		2.00	0.00	0		543.33	0.00	0.00	1.40
13		2.00	1.74	0		498.40	3.67	9.73	3.90
14		2.00	0.00	0		506.36	0.00	0.00	3.90
15		2.00	1.09	0		564.19	2.16	8.86	1.90
16		2.00	0.00	7		513.02	0.00	0.00	1.40
17		2.00	0.00	11		503.53	0.00	0.00	0.00
18		2.00	0.09	0		519.76	0.19	8.76	0.00
19		2.00	0.09	0		534.57	0.19	8.64	2.40
20		2.00	0.00	0		541.53	0.00	0.00	4.40
21		2.00	1.59	0		591.28	3.08	8.87	5.40
22		2.00	0.00	0		549.80	0.00	0.00	0.40
23		2.00	0.09	7		536.45	0.18	8.62	1.40
24		2.00	2.09	0		507.65	4.37	9.80	0.00
25		2.00	2.09	5		464.55	4.59	10.30	0.00
26		2.00	0.00	0		585.65	0.00	0.00	2.08
27		2.00	0.00	0		624.88	0.00	0.00	0.90
28		2.00	1.09	0		514.86	2.27	9.28	0.00
29		2.00	1.59	0		482.28	3.41	9.83	1.90
30		2.00	0.00	0		536.56	0.00	0.00	3.40
31		2.00	0.00	0		513.32	0.00	0.00	0.00
32		2.00	0.09	0		557.83	0.18	8.46	5.90
33		2.00	0.00	0		552.40	0.00	0.00	3.90
34		2.00	0.44	6		529.94	0.90	8.85	1.90
35		2.00	1.59	0		533.80	3.25	9.34	3.30

18 Nov 2003 13:15 ALPHA/BETA - 1.09 ~~Page #2~~ SLP
Protocol #: 2 PW H3 #410462 User : 2138

S#	SMPL_ID	TIME	CPMA	LUM	FLAG	tSIE	DPM1	2Sigma	CPMC
36		2.00	0.00	0		554.42	0.00	0.00	3.40
37		2.00	0.00	7		552.87	0.00	0.00	6.40
38		2.00	0.00	0		555.80	0.00	0.00	0.00
39		2.00	1.20	0		556.04	2.40	8.98	0.40
40		2.00	0.00	0		556.52	0.00	0.00	3.49
41		2.00	0.00	7		520.98	0.00	0.00	2.40
42		2.00	0.09	7		505.44	0.19	8.88	2.40
43		2.00	0.00	10		547.00	0.00	0.00	3.90
44		2.00	2.59	0		559.27	5.16	9.55	0.00
45		2.00	0.00	9		560.58	0.00	0.00	1.90
46		2.00	0.00	7		565.95	0.00	0.00	4.40
47		2.00	0.00	0		567.63	0.00	0.00	0.00
48		2.00	0.59	6		546.55	1.19	8.78	2.40
49		2.00	0.00	7		537.97	0.00	0.00	8.40
50		2.00	0.00	0		522.55	0.00	0.00	43.40
51		2.00	0.00	0		505.78	0.00	0.00	20.31
52		2.00	0.00	11		539.29	0.00	0.00	0.11
53		2.00	0.00	10		529.08	0.00	0.00	0.90
54		2.00	0.00	11		506.69	0.00	0.00	0.90
55		2.00	0.59	0		566.12	1.17	8.62	0.40
56		2.00	0.00	7		546.02	0.00	0.00	0.00
1 MISSING TUBE(S)									
58		2.00	0.09	7		563.14	0.18	8.42	0.00
59		2.00	0.00	0		538.03	0.00	0.00	0.40
60		2.00	0.00	0		542.50	0.00	0.00	1.40
61		2.00	2.08	5		459.66	4.61	10.37	0.40
62		2.00	0.00	0		500.69	0.00	0.00	4.40
63		2.00	0.00	0		500.41	0.00	0.00	13.90
64		2.00	0.00	7		514.46	0.00	0.00	16.90
65		2.00	0.00	0		506.56	0.00	0.00	5.40
66		2.00	0.00	0		491.63	0.00	0.00	3.32
67		2.00	0.00	7		463.10	0.00	0.00	0.40
68		2.00	0.00	11		510.00	0.00	0.00	0.00
69		2.00	0.85	6		535.00	1.73	8.99	2.90
70		2.00	2.09	5		532.98	4.27	9.57	0.00
71		2.00	2.18	5		554.59	4.36	9.42	2.40
72		2.00	0.00	0		556.55	0.00	0.00	1.90
73		2.00	0.09	7		543.65	0.18	8.57	0.90
74		2.00	0.00	10		540.04	0.00	0.00	2.40
75		2.00	1.30	6		540.72	2.64	9.15	0.90
76		2.00	0.00	8		541.27	0.00	0.00	4.40
77		2.00	0.09	7		470.94	0.20	9.23	2.90
78		2.00	3.59	0		496.29	7.59	10.57	3.40
79		2.00	0.00	11		499.93	0.00	0.00	4.90
80		2.00	0.00	7		476.23	0.00	0.00	10.87
81		2.00	0.00	0		563.18	0.00	0.00	3.40
82		2.00	0.00	0		502.68	0.00	0.00	5.42
83		2.00	0.52	6		502.55	1.10	9.12	9.90

Albert Robinson

RSDS 03-TF-0305

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B 86

20 Nov 2003 08:48 TRI-CARB - 1.09 ~~Page #1~~
Protocol #: 4 PW H3 #407906 User : 7388

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

	LL	UL	LCR	2S%	BKG
Region A:	0.5	- 18.6	0	0.0	6.68
Region B:	2.0	- 18.6	0	0.0	5.86
Region C:	40.0	- 2000	0	0.0	8.50

Quench Indicator: tSIE/AEC
Ext Std Terminator: Count
ABERCROMBIE 03-TF-0305 (1) RGB
Luminescence Correction On
Coincidence Time(ns): 18
Delay Before Burst(ns): Normal
Protocol Data Filename: C:\DATA\PROT4.dat
Count Data Filename: C:\DATA\SDATA4.DAT
Spectrum Data Drive & Path: C:\DATA

S#	TIME	CPMA	CPMB	LUM	FLAG	tSIE	DPM1	2SIGMA	CPMC
-1	10.00	6.68	5.86	3	B	622.86		0.000	8.50
0	2.00	595.07	557.72	1		443.58	1298.09	102.030	2.50
1	2.00	0.43	1.15	18		513.13	0.88	9.251	5.65

REWIPE OF LOCATION #50

30-Building Characterization SCOPING Survey of FLOOR

RSDS# 03-TF-0305 RCT: KA RCT: N/A

Alpha	43-68 BKG:	0	EFF:	0.2091	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # :
Beta	43-68 BKG:	0	EFF:	0.1793	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # :
Scan	43-37 BKG:	0	EFF:	0.2075	PROBE AREA:	584	cm^2	Surface Eff:		0.5	Detector # :
TYPE	LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
ALPHA	SRC BKG	5855	7474	5864	1		11/13/03	13:37	12	300	18
ALPHA	SRC BKG	5855	7474	5864	1	0	11/13/03	13:40	1952	60	14818
ALPHA	SRC BKG	5855	7474	5864	1	0	11/13/03	13:41	1902	60	14438
ALPHA	SRC BKG	5855	7474	5864	1	0	11/13/03	13:43	1954	60	14833
ALPHA	SRC BKG	5855	7474	5864	1	0	11/13/03	13:45	2006	60	15228
BETA	SRC BKG	5855	7474	5864	2	0	11/13/03	13:52	483	300	855
BETA	SRC BKG	5855	7474	5864	2	0	11/13/03	13:56	2038	60	18042
BETA	SRC BKG	5855	7474	5864	2	0	11/13/03	13:57	2166	60	19175
BETA	SRC BKG	5855	7474	5864	2	0	11/13/03	14:00	2033	60	17998
BETA	SRC BKG	5855	7474	5864	2	0	11/13/03	14:03	1902	60	16838
SCAN	SRC BKG	5855	7474	5850	3	0	11/14/03	12:36	17	300	6
SCAN	SRCCHECK	5855	7474	5850	3	0	11/14/03	13:33	2237	60	3692
SCAN	SRCCHECK	5855	7474	5850	3	0	11/14/03	13:36	2072	60	3420
SCAN	SRCCHECK	5855	7474	5850	3	0	11/14/03	13:38	2223	60	3669
SCAN	SRCCHECK	5855	7474	5850	3	0	11/14/03	13:39	2086	60	3443
SCAN	SRCCHECK	5855	7474	5850	3	0	11/14/03	13:41	2036	60	3360
SCAN	SRCCHECK	5855	7474	5850	3	0	11/14/03	13:42	2128	60	3512
SCAN	BLD30 01	5855	7474	5850	3	1	11/14/03	13:46	34	30	112
SCAN	BLD30 02	5855	7474	5850	3	2	11/14/03	13:47	25	30	83
SCAN	BLD30 03	5855	7474	5850	3	3	11/14/03	13:48	95	30	314
SCAN	BLD30 04	5855	7474	5850	3	4	11/14/03	13:49	98	30	323
SCAN	BLD30 05	5855	7474	5850	3	5	11/14/03	13:50	140	30	462
SCAN	BLD30 06	5855	7474	5850	3	6	11/14/03	13:51	252	30	832
SCAN	BLD30 07	5855	7474	5850	3	7	11/14/03	13:52	291	30	961
SCAN	BLD30 08	5855	7474	5850	3	8	11/14/03	13:52	297	30	980
SCAN	BLD30 09	5855	7474	5850	3	9	11/14/03	13:53	239	30	789
SCAN	BLD30 10	5855	7474	5850	3	10	11/14/03	13:54	175	30	578
SCAN	BLD30 11	5855	7474	5850	3	11	11/14/03	13:55	120	30	396
SCAN	BLD30 12	5855	7474	5850	3	12	11/14/03	13:56	64	30	211
SCAN	BLD30 13	5855	7474	5850	3	13	11/14/03	13:57	24	30	79
SCAN	BLD30 14	5855	7474	5850	3	14	11/14/03	14:00	206	30	680
SCAN	BLD30 15	5855	7474	5850	3	15	11/14/03	14:07	68	30	224
SCAN	BLD30 16	5855	7474	5850	3	16	11/14/03	14:08	111	30	366
SCAN	BLD30 17	5855	7474	5850	3	17	11/14/03	14:09	128	30	423
SCAN	BLD30 18	5855	7474	5850	3	18	11/14/03	14:10	50	30	165
SCAN	BLD30 19	5855	7474	5850	3	19	11/14/03	14:11	78	30	257
SCAN	BLD30 20	5855	7474	5850	3	20	11/14/03	14:12	43	30	142
SCAN	BLD30 21	5855	7474	5850	3	21	11/14/03	14:13	61	30	201

30-Building Characterization SCOPING Survey of FLOOR

RSDS# 03-TP-0305 RCT: KA RCT: MA

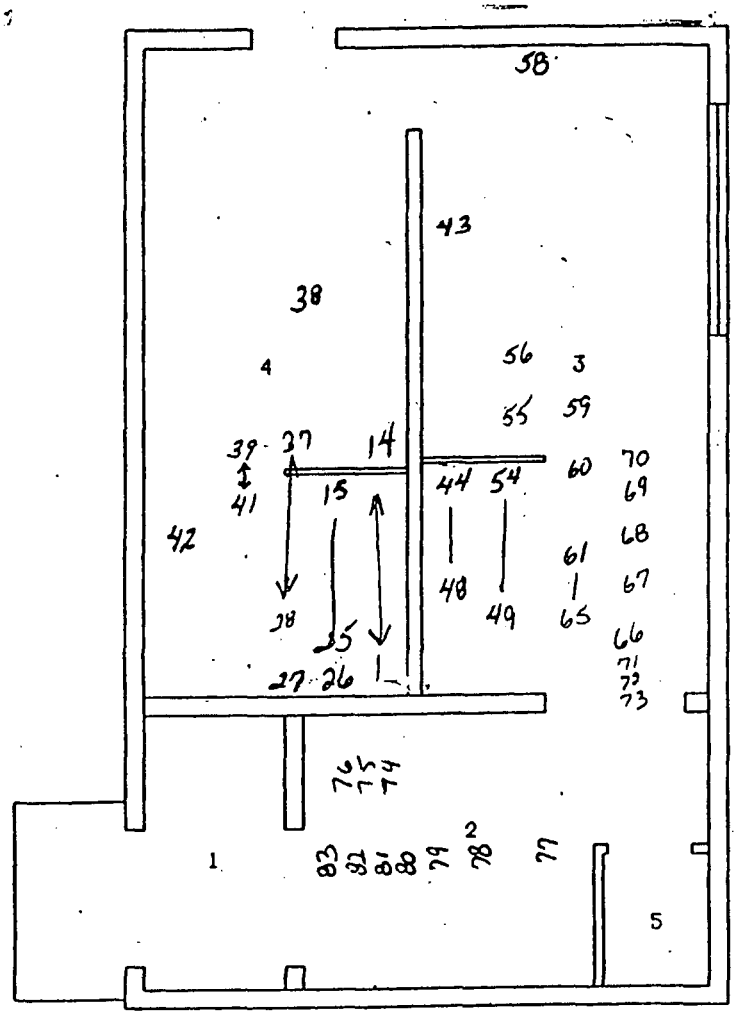
Alpha	43-68 BKG:	0	EFF:	0.2091	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # : 1
Beta	43-68 BKG:	0	EFF:	0.1793	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # : 2
Scan	43-37 BKG:	0	EFF:	0.2075	PROBE AREA:	584	cm^2	Surface Eff:		0.5	Detector # : 3
TYPE	LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
SCAN	BLD30 22	5855	7474	5850	3	22	11/14/03	14:13	60	30	198
SCAN	BLD30 23	5855	7474	5850	3	23	11/14/03	14:14	44	30	145
SCAN	BLD30 24	5855	7474	5850	3	24	11/14/03	14:15	112	30	370
SCAN	BLD30 25	5855	7474	5850	3	25	11/14/03	14:16	122	30	403
SCAN	BLD30 26	5855	7474	5850	3	26	11/14/03	14:18	210	30	693
SCAN	BLD30 27	5855	7474	5850	3	27	11/14/03	14:19	554	30	1829
SCAN	BLD30 28	5855	7474	5850	3	28	11/14/03	14:22	18	30	59
SCAN	BLD30 29	5855	7474	5850	3	29	11/14/03	14:22	47	30	155
SCAN	BLD30 30	5855	7474	5850	3	30	11/14/03	14:23	56	30	185
SCAN	BLD30 31	5855	7474	5850	3	31	11/14/03	14:24	53	30	175
SCAN	BLD30 32	5855	7474	5850	3	32	11/14/03	14:25	84	30	277
SCAN	BLD30 33	5855	7474	5850	3	33	11/14/03	14:26	57	30	188
SCAN	BLD30 34	5855	7474	5850	3	34	11/14/03	14:27	58	30	191
SCAN	BLD30 35	5855	7474	5850	3	35	11/14/03	14:28	40	30	132
SCAN	BLD30 36	5855	7474	5850	3	36	11/14/03	14:29	59	30	195
SCAN	BLD30 37	5855	7474	5850	3	37	11/14/03	14:30	25	30	83
SCAN	BLD30 38	5855	7474	5850	3	38	11/14/03	14:31	114	30	376
SCAN	BLD30 39	5855	7474	5850	3	39	11/14/03	14:36	37	30	122
SCAN	BLD30 40	5855	7474	5850	3	40	11/14/03	14:37	31	30	102
SCAN	BLD30 41	5855	7474	5850	3	41	11/14/03	14:38	27	30	89
SCAN	BLD30 42	5855	7474	5850	3	42	11/14/03	14:45	30	30	99
SCAN	BLD30 43	5855	7474	5850	3	43	11/14/03	15:34	25	30	83
SCAN	BLD30 44	5855	7474	5850	3	44	11/14/03	15:37	32	30	106
SCAN	BLD30 45	5855	7474	5850	3	45	11/14/03	15:38	21	30	69
SCAN	BLD30 46	5855	7474	5850	3	46	11/14/03	15:39	40	30	132
SCAN	BLD30 47	5855	7474	5850	3	47	11/14/03	15:40	32	30	106
SCAN	BLD30 48	5855	7474	5850	3	48	11/14/03	15:41	52	30	172
SCAN	BLD30 49	5855	7474	5850	3	49	11/14/03	15:43	1999	30	6598
SCAN	BLD30 50	5855	7474	5850	3	50	11/14/03	15:45	253	30	835
SCAN	BLD30 51	5855	7474	5850	3	51	11/14/03	15:46	27	30	89
SCAN	BLD30 52	5855	7474	5850	3	52	11/14/03	15:47	68	30	224
SCAN	BLD30 53	5855	7474	5850	3	53	11/14/03	15:49	56	30	185
SCAN	BLD30 54	5855	7474	5850	3	54	11/14/03	15:49	59	30	195
SCAN	BLD30 55	5855	7474	5850	3	55	11/14/03	15:51	37	30	122
SCAN	BLD30 56	5855	7474	5850	3	56	11/14/03	15:52	34	30	112
SCAN	BLD30 58	5855	7474	5850	3	57	11/14/03	15:55	25	30	83
SCAN	BLD30 59	5855	7474	5850	3	58	11/14/03	15:57	22	30	73
SCAN	BLD30 60	5855	7474	5850	3	59	11/14/03	15:57	65	30	215
SCAN	BLD30 61	5855	7474	5850	3	60	11/14/03	15:59	38	30	125
SCAN	BLD30 62	5855	7474	5850	3	61	11/14/03	16:00	66	30	218
SCAN	BLD30 63	5855	7474	5850	3	62	11/14/03	16:00	933	30	3080
SCAN	BLD30 64	5855	7474	5850	3	63	11/14/03	16:01	40108	30	132392

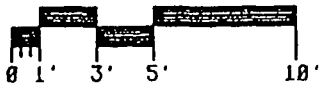
30-Building Characterization SCOPING Survey of FLOOR

RSDS# 03-TF-0305 RCT: KA RCT: N/A

Alpha	43-68 BKG:	0	EFF:	0.2091	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # :
Beta	43-68 BKG:	0	EFF:	0.1793	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # :
Scan	43-37 BKG:	0	EFF:	0.2075	PROBE AREA:	584	cm^2	Surface Eff:		0.5	Detector # :
TYPE	LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
SCAN	BLD30 65	5855	7474	5850	3	64	11/14/03	16:03	91	30	300
SCAN	BLD30 66	5855	7474	5850	3	65	11/14/03	16:07	21	30	69
SCAN	BLD30 67	5855	7474	5850	3	66	11/14/03	16:08	27	30	89
SCAN	BLD30 68	5855	7474	5850	3	67	11/14/03	16:09	46	30	152
SCAN	BLD30 69	5855	7474	5850	3	68	11/14/03	16:10	116	30	383
SCAN	BLD30 70	5855	7474	5850	3	69	11/14/03	16:11	422	30	1393
SCAN	BLD30 71	5855	7474	5850	3	70	11/14/03	16:15	47	30	155
SCAN	BLD30 72	5855	7474	5850	3	71	11/14/03	16:16	21	30	69
SCAN	BLD30 73	5855	7474	5850	3	72	11/14/03	16:17	34	30	112
SCAN	BLD30 74	5855	7474	5850	3	73	11/14/03	16:18	265	30	875
SCAN	BLD30 75	5855	7474	5850	3	74	11/14/03	16:19	254	30	838
SCAN	BLD30 76	5855	7474	5850	3	75	11/14/03	16:20	131	30	432
SCAN	BLD30 77	5855	7474	5850	3	76	11/14/03	16:21	100	30	330
SCAN	BLD30 78	5855	7474	5850	3	77	11/14/03	16:22	174	30	574
SCAN	BLD30 79	5855	7474	5850	3	78	11/14/03	16:23	165	30	545
SCAN	BLD30 80	5855	7474	5850	3	79	11/14/03	16:24	896	30	2958
SCAN	BLD30 81	5855	7474	5850	3	80	11/14/03	16:24	2330	30	7691
SCAN	BLD30 82	5855	7474	5850	3	81	11/14/03	16:25	1273	30	4202
SCAN	BLD30 83	5855	7474	5850	3	82	11/14/03	16:27	1060	30	3499

REV	DATE	REVISION	BY	CHKR	DWG.	APVD	APVD	CK
0	12/12/91	ASBUILT ISSUE	DCW				DVD	





BLDG #30
FIRST FLOOR
BLDG CODE:3030

SHEET 1 2 3 4 5 6	TITLE (U) TITLE CLASSIFICATION		
ISSUE 0	BLDG #30 FLOOR PLANS		
PART CLASSIFICATION			
DRAWING CLASSIFICATION UNCLASSIFIED	SIZE C	DRAWING NUMBER FSC911242	JOB NUMBER 12335
DWG TYPE SFP	FROM BLDG #30	CAMC 14865	SCALE AS NOTED SHEET 1 OF 1
STATUS MD-REL-12/12/91		ORIGIN MD-BR3-V3.0	

LOCATION CODE	PROJ MGR
BRCH	DWG SUPV
CP & DC	PEER REV
DWG TYPE	
APVD	DATE

APPROVALS: DATE:
SAFETY COMMITTEE REQUIRED:
___NONE ___SRUDOC ___RDOC ___CHDOC
TECH. REP. ___
GR. MGR. ___
SRUDOC ___
RDOC ___

PSDS 03-TF-0305

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PS 13 of 13

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RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) BUILDING 30	SURVEY NO. 03-TF-0309
PURPOSE: BUILDING 30 ACID ETCH PRE AND POST SURVEY	RWP NO. N/A
	DATE: 11-17-03
	TIME: 1600

MAP/DRAWING

SEE ATTACHED DRAWING AND RESULTS

COPY

LEGEND: # = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact

△# = mrem/hr neutron

[#] = air sample number

(#) = swipe number

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

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
2360	5833/5847	03-13-04
3030	5816	07-10-04

[redacted]

HP #	Date:
5214	11-25-03
HP #	Date:
5214	11-18-03
ED RESULTS	
HP #	Date:
6178	11-25-03

ML-9620 (2-98)

Survey No. 03-TF-0309

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1				30-64 PRE
2				30-49 PRE
3				30-81 PRE
4				30-81 POST
5				30-49 POST
6				30-64 POST
#5	0	19	N/A	30-49 POST

SEE ATTACHED RESULTS

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

N/A

COMMENTS:

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

ML-9620A (4-98)

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: SMEAR020
Batch Ended: 11/18/03 7:51

Crosstalk correction performed.

Recalibration Date: 03/18/05
Serial Number: 26966-1

Batch ID: ABERCROMBIE 03-TF-0309 (6) CYR

Detector ID	Sample ID	Alpha Activity DPM	Alpha Activity σ	Alpha Activity flags	Beta Activity DPM	Beta Activity σ	Beta Activity flags
C1	1	78.81	13.14		0.00	3.03	
C2	2	7.50	4.07		0.00	2.14	
C3	3	1.10	1.94		0.00	1.20	
C4	4	1.45	1.89		0.00	1.17	
D1	5 NO SAMPLE	0.00	2.16		3.22	2.74	
D2	6	71.91	13.46		0.00	2.09	

SK SK

Carol by Robinson

11/18/03 CYR

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RSS 03-TF-0309

R 368

~~Page 1 of 1~~ SK 11-25-03

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

	LL	UL	LCR	2S%	BKG
Region A:	0.5	- 18.6	0	0.0	6.92
Region B:	2.0	- 18.6	0	0.0	6.68
Region C:	40.0	- 2000	0	0.0	7.60

Quench Indicator: tSIE/AEC
Ext Std Terminator: Count
03-TF-0309 KA (K1-K6) AG
Coincidence Time(ns): 18
Delay Before Burst(ns): Normal
Protocol Data Filename: C:\DATA\PROT2.DAT
Count Data Filename: C:\DATA\SDATA2.DAT
Spectrum Data Drive & Path: C:\DATA

S#	SMPL_ID	TIME	CPMA	LUM	FLAG	tSIE	DPM1	2Sigma	CPMC
-1		10.00	6.92	6	B	645.56		0.00	7.60
0		2.00	770.46	0		530.72	1576.20	117.32	5.40
1		2.00	9.10	3		550.76	18.27	11.89	69.90
2		2.00	1.08	6		537.52	2.19	8.81	1.40
3		2.00	0.00	0		582.68	0.00	0.00	1.40
4		2.00	3.93	5		570.76	7.76	9.77	4.90
1 MISSING TUBE(S)									
6		2.00	0.08	0		610.26	0.14	7.80	110.05

Albert Ritzo

RSDS 03-TF-0309

30-BLDG CHARACTERIZATION ALPHA/BETA SURVEY ACID ETCH

RSDS# 03-TF-0309 RCT: [illegible] RCT: [illegible]

						BETA			ALPHA		
LOCATION	2360	RCT ID	PROBE	ITEM #	DATE	gross count	CT TIME	dpm/100cm2	gross count	CT TIME	dpm/100cm2
30-64 pre	5833	5760	5847	1	11/17/03	4086	60	19905	31696	60	316950
30-49 pre	5833	5760	5847	2	11/17/03	938	60	4165	4846	60	48450
30-81 pre	5833	5760	5847	3	11/17/03	253	60	740	1244	60	12430
30-64 aft	5833	5760	5847	4	11/17/03	1979	60	9370	13990	60	139890
30-49 aft	5833	5760	5847	5	11/17/03	533	60	2140	2155	60	21540
30-81 aft	5833	5760	5847	6	11/17/03	206	60	505	220	60	2190

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BWXT of Ohio, Inc.

ANALYTICAL SERVICES REQUEST FOR ANALYSIS

DATE SUBMITTED:	SAMPLE TYPE:	COLLECTED BY:	NUMBER OF SAMPLES
11-17-03	Acid Etch	Hop	3
PROJECT/FUNCTION:	PRIMARY CONTACT/PHONE NO.:		MAIL STOP:
BOSS	DAN HARVEY 3320		
CHARGE NUMBER:	DATE(S) COLLECTED:	RSDS# (if applicable):	ATTACHMENTS (list):
EA554A	11-17-03		

ANALYSES REQUESTED (check):

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

ADDITIONAL INFORMATION:

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

LAB IDENTIFICATION	SAMPLE LOCATION	SAMPLE NUMBER	RESULTS
0310416	Bldg. 30	49	
0310417	↓	64	
0310415	↓	81	

COMMENTS:

ANALYZED BY: L. C. Heffner

DATE: 11-25-03

ML-5222 (1-01)

RSDS 03-TF-C

D. 6.6.8

Laboratory ID#:	**0310416 - 0310418**
Project/function:	**Building 30**
Submitted:	**Nov 17, 2003**
Submitted by:	**L. Hopkins**
Point of Contact:	**D. Harvey x3320**
RSDS#:	**N/A**
Date:	**Nov 25, 2003**

Lab ID 0310416
Sample Location Bldg. 30 #49

Isotope	dpm/sample	Uncertainty +/-	LDL
Pu-238	166,815.28	28,231.51	3.62

Lab ID 0310417
Sample Location Bldg. 30 #64

Isotope	dpm/sample	Uncertainty +/-	LDL
Pu-238	294,197.95	52,808.16	4.14

Lab ID 0310418
Sample Location Bldg. 30 #81

Isotope	dpm/sample	Uncertainty +/-	LDL
Pu-238	23,783.14	4,719.83	4.86

[redacted]

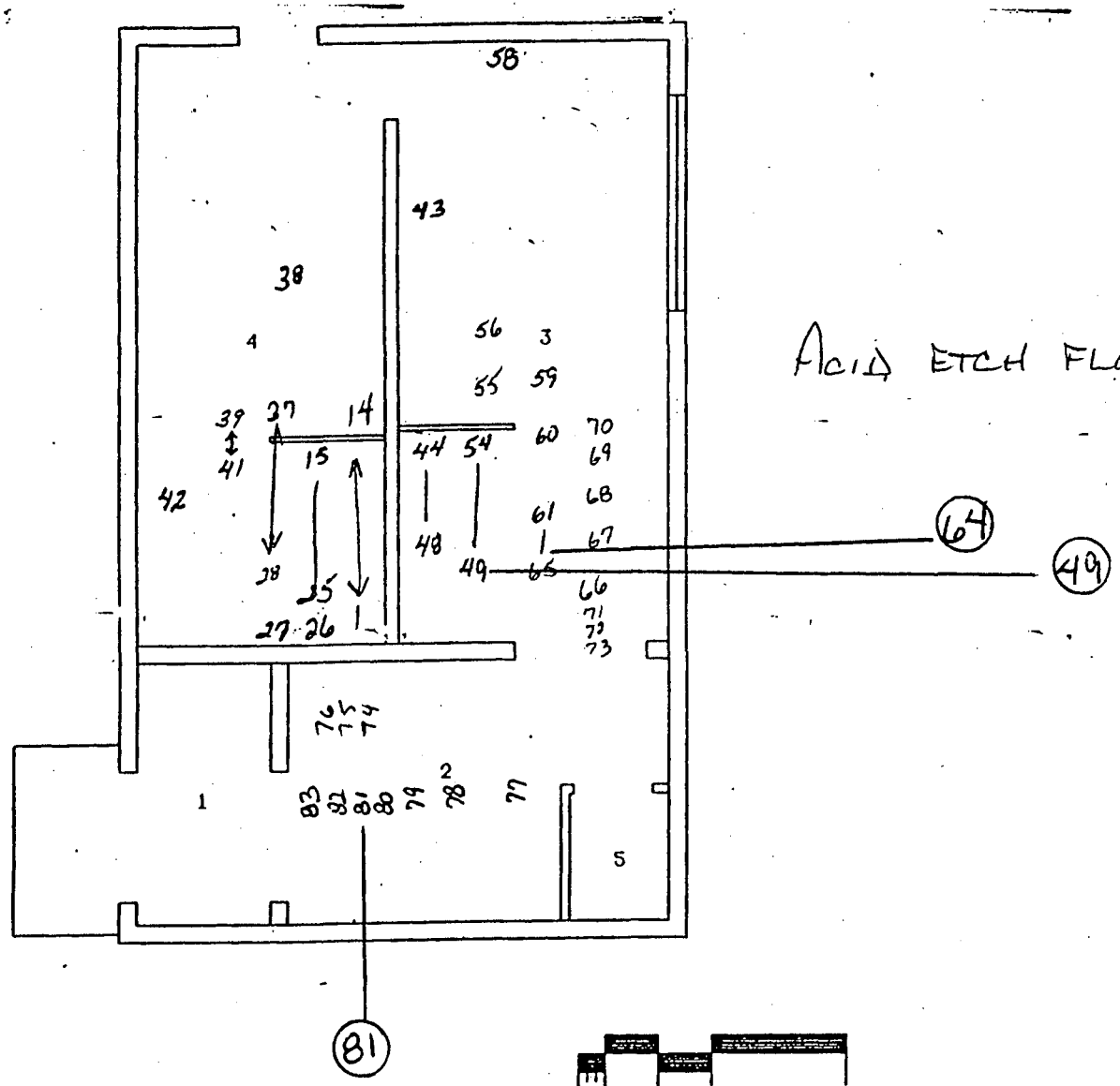
An[redacted] 1585 11-25-03
HP # Date

Data Ve[redacted] 7763 11/25/03
HP # Date

RSDS 03-TF-0309

B 768

REV	DATE	REVISION	BY	CHKD	APD	ENGD	APVD	N
0	12/12/91	ASBUILT ISSUE	DCW				DVD	



BLDG #30
FIRST FLOOR
BLDG CODE:3030

SHEET	1	2	3	4	5	6
ISSUE	0					

PART CLASSIFICATION

TITLE (U) TITLE CLASSIFICATION
BLDG #30
FLOOR PLANS

DRAWING CLASSIFICATION: UNCLASSIFIED

SIZE: C | DRAWING NUMBER: FSC911242 | JOB NUMBER: 12335

APPROVALS: DATE:
SAFETY COMMITTEE REQUIRED:
___NONE ___NUCLEAR ___TOXIC ___CHEMICAL
TECH. REP. ___
ENG. MGR. ___

RSAC03-TF-0309

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8/8

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) BUILDING 30	SURVEY NO. 03-TF-0312
PURPOSE: SCOPING SURVEY OF WALLS IN BUILDING 30 UP TO 6 FEET	RWP NO. N/A
	DATE: 11-18-03
	TIME: 1630

MAP/DRAWING

COPY

SEE ATTACHED RESULTS AND DRAWING.

NO INTEGRATED COUNTS TAKEN.

NO READINGS ABOVE ALARM SET POINT

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

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
2350	5857	09-09-04
2350	5855	06-18-04
	N/A	

HP # 7474 5760	Date: 11-20-03
HP #	Date:
HP # 6178	Date: 11-20-03

[redacted]

Survey No. 03-TF-0312

RADIOLOGICAL SURVEY DATA SHEET (cont.)

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

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

COMMENTS:

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

ML-9620A (4-98)

30-Building Characterization Survey wall scan

RSDS# 03-TF-0312 RCT: KA RCT: [illegible]

Alpha	43-68 BKG:	0	EFF:	0.2297	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # : 1
Beta	43-68 BKG:	0	EFF:	0.1863	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # : 2
Scan	43-37 BKG:	0	EFF:	0.1948	PROBE AREA:	584	cm^2	Surface Eff:		0.5	Detector # : 3
TYPE	LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
ALPHA	SRC BKG	5857	5760	5859	1		11/18/03	12:52	6	300	8
ALPHA	SRCCHECK	5857	5760	5859	1		11/18/03	12:55	2077	60	14353
ALPHA	SRCCHECK	5857	5760	5859	1		11/18/03	12:56	2146	60	14830
ALPHA	SRCCHECK	5857	5760	5859	1		11/18/03	12:58	2021	60	13966
ALPHA	SRCCHECK	5857	5760	5859	1		11/18/03	13:00	2194	60	15161

30-Building Characterization Survey wall scan

RSDS# 03-TF-0312 RCT: KA RCT: ZK

Alpha	43-68 BKG:	0	EFF:	0.2091	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # :
Beta	43-68 BKG:	0	EFF:	0.1793	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # :
Scan	43-37 BKG:	0	EFF:	0.2075	PROBE AREA:	584	cm^2	Surface Eff:		0.5	Detector # :
TYPE	LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
ALPHA	SRC BKG	5855	7474	5864	1		11/18/03	12:52	12	300	18
ALPHA	SRCCHECK	5855	7474	5864	1		11/18/03	13:03	2002	60	15197
ALPHA	SRCCHECK	5855	7474	5864	1		11/18/03	13:05	1983	60	15053
ALPHA	SRCCHECK	5855	7474	5864	1		11/18/03	13:07	2046	60	15531
ALPHA	SRCCHECK	5855	7474	5864	1		11/18/03	13:10	2058	60	15623

30-Building Characterization Survey Wall Scan

RSDS# 03-TF-0312 RCT: KA RCT: HR

Alpha	43-68 BKG:	0	EFF:	0.2091	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # : 1
Beta	43-68 BKG:	0	EFF:	0.1793	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # : 2
Scan	43-37 BKG:	0	EFF:	0.2075	PROBE AREA:	584	cm^2	Surface Eff:		0.5	Detector # : 3
TYPE	LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
ALPHA	SRC BKG	5855	5214	5864	1		11/19/03	7:42	38	300	58
ALPHA	SRCCHECK	5855	5214	5864	1	0	11/19/03	7:58	1890	60	14347
ALPHA	SRCCHECK	5855	5214	5864	1	0	11/19/03	7:59	2017	60	15311
ALPHA	SRCCHECK	5855	5214	5864	1	0	11/19/03	8:01	2164	60	16427
ALPHA	SRCCHECK	5855	5214	5864	1	0	11/19/03	8:03	2029	60	15402

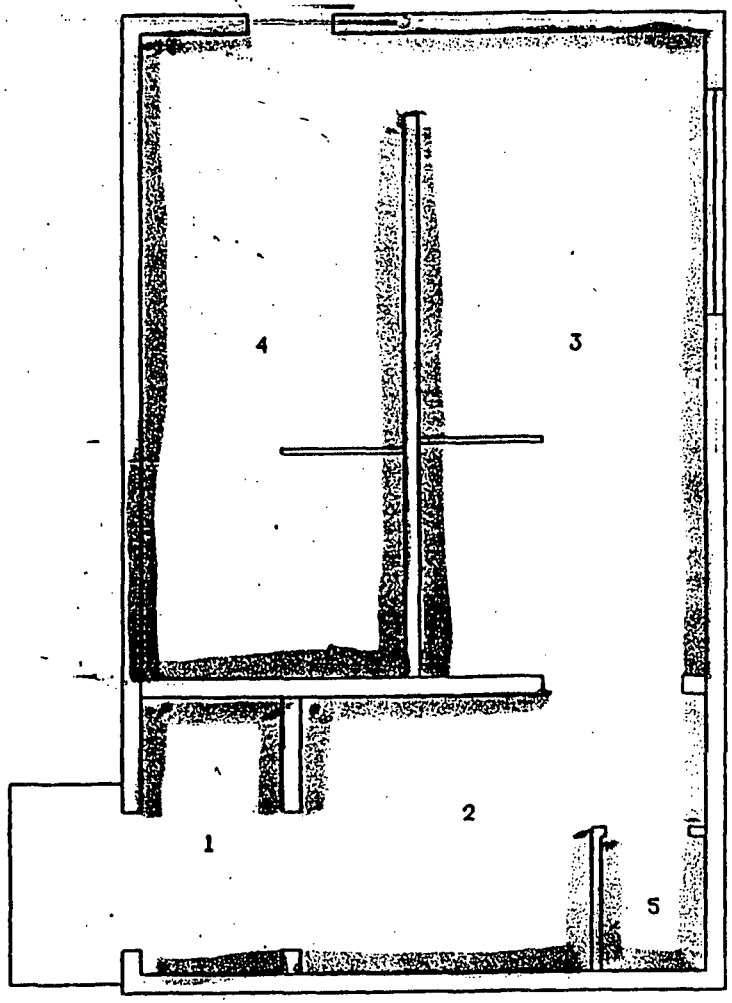
Building 30 Characterization Survey Wall Scans

RSDS# 03-TF-0312 RCT: KA RCT: [illegible]

Alpha	43-68 BKG:	0	EFF:	0.2297	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # :
Beta	43-68 BKG:	0	EFF:	0.1863	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # :
Scan	43-37 BKG:	0	EFF:	0.1948	PROBE AREA:	584	cm^2	Surface Eff:		0.5	Detector # :
TYPE	LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
ALPHA	SRC BKG	5857	5214	5859	1		11/19/03	8:01	6	300	8
ALPHA	SRCCHECK	5857	5214	5859	1	0	11/19/03	8:07	2005	60	13855
ALPHA	SRCCHECK	5857	5214	5859	1	0	11/19/03	8:09	2047	60	14145
ALPHA	SRCCHECK	5857	5214	5859	1	0	11/19/03	8:11	2099	60	14505
ALPHA	SRCCHECK	5857	5214	5859	1	0	11/19/03	8:14	1981	60	13689

ITM	DATE	REVISION	BY	CHKD	DWN	APVD	M
0	12/12/91	ASBUILT ISSUE	DCW			DVD	

[redacted] SCANNED ALL ACCESIBLE WALL SURFACES TO HEIGHT OF 6 FEET.



UNCLASSIFIED & NON-SENSITIVE
Reviewed by Mound Declassification Office. Reviewer Initials: [illegible]

RSDS 03-TF-0312 [illegible]

0 1' 3' 5' 10'

BLDG #30
FIRST FLOOR
BLDG CODE:3030

SHEET	1	2	3	4	5	6
TITLE	BLDG #30 FLOOR PLANS					
DRAWING CLASSIFICATION	UNCLASSIFIED					
SIZE	C					
DRAWING NUMBER	FSC911242					
JOB NUMBER	12333					
DWG TYPE	SFP					
FROM	BLDG #30					
SCALE	1:48.65					
SHEET	1 OF 1					
SOURCE	MO-REL-12/12/91					
DESIGN	MO-BR3-V3.0					

7 OF 7

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RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) Building 30 Outside Areas	SURVEY NO 03-TF-0356
PURPOSE: Characterization Scoping of Areas Outside Building 30	RWP NO. N/A
	DATE: 12-31-03
	TIME 1300

MAP / DRAWING

Areas noted on attached map were scanned with the BICRON FIDLER and Ludlum 2360 as indicated.

BICRON FIDLER readings were for indication only. No elevated readings were detected.

Integrated reading taken if confirmed audible alpha detected on Ludlum 2360. All results were <100dpm/100cm2 Alpha and <5000 dpm/100cm2 Beta.

COPY

LEGEND:

= mrem/hr (γ) whole body

#E = mrem/hr (β+η+γ) extremity on contact

K = factor of 1000

— · — · - = radiological boundary

△# = mrem/hr neutron

(#) = swipe number

[#] = air sample number

(#/α) or /β = direct contamination surement in dpm/100 cm²

[redacted]

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
FIDLER	3815	9/23/04
2360	5775/5720	9/23/04
N/A		
N/A		

HP# 5760	Date: 12/31/03
HP#	Date:
HP# 6178	Date: 1-2-04

Survey No. 03-TF-0356

RADIOLOGICAL SURVEY DATA SHEET (cont.)

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

N/A

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

N/A

COMMENTS: N/A

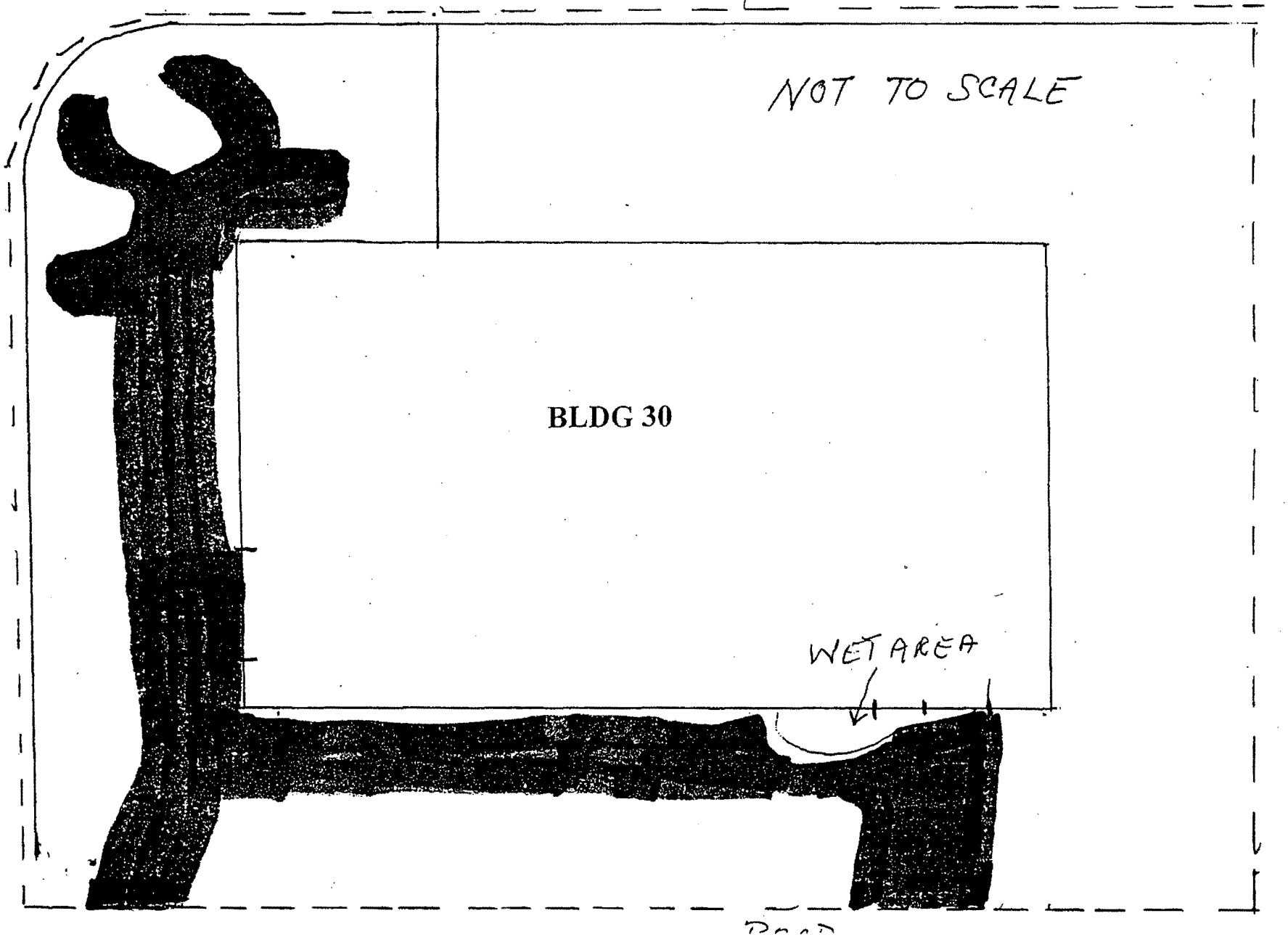
NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample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

ML-9620A (4-98)

BUILDING 30 OUTSIDE AREAS SCOPING SURVEY
RSDS 03-TF-0356 PAGE 3 OF 3 RCT HWR

Dotted lines indicate areas scanned in all accessible areas with BICRON FIDLER.

Shaded areas indicate areas scanned for alpha with Ludlum 2360.



Appendix H

Radon Information

Radon level is not applicable for open air demolitions.

Appendix I

Asbestos Information

From: Christopher Ahlquist
To: Darnell, Val; Kramer, Donald
Date: 4/22/04 1:24PM
Subject: Bldg 30, rev.

Don/Val -

For Building 30 asbestos and lead paint concerns, the following is provided for your use:

Asbestos

No previous asbestos survey information was found for Building 30.

During July of 2002, Helix Environmental, Inc., under contract to BWXT of Ohio, Inc., performed a comprehensive walk-through survey of all areas of Building 30 in order to identify all asbestos-containing materials prior to demolition of the facility. During their survey Helix Environmental utilized Ohio Department of Health Certified Asbestos Hazard Evaluation Specialists as required by State regulations for individuals assessing asbestos-containing materials. Six (6) fire rated doors within Building 30 were assumed to contain asbestos and were identified as requiring removal prior to demolition; twenty-seven (27) linear feet of asbestos-containing pipe insulation were identified as requiring removal. The fire doors were subsequently determined by Mr. Chris Ahlquist (Industrial Hygienist and State Certified Asbestos Hazard Evaluation Specialist with CH2M Hill Mound) to not contain asbestos linings as previously assumed. The pipe insulation was removed and packaged by American Services Group, an Ohio Department of Health Licensed Asbestos Abatement Contractor, on December 4, 2003. The pipe insulation was removed in accordance with NESHAP requirements and placed into a container for disposal by the Mound Waste Management Group.

In addition, Helix Environmental identified 740 square feet of asphalt-based roofing as assumed asbestos-containing material. However, as a Nonfriable Category I material in accordance with NESHAP, this material will remain in place during demolition and be disposed of as construction waste.

Lead

No previous lead surveys or sampling data were found for Building 30. Since the building is scheduled for imminent demolition, painted surfaces will be tested for lead content as planned work indicates the need for such testing in order to avoid worker exposure to lead. This restriction will be 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

CC: Ransbottom, Robert

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HELIX ENVIRONMENTAL, INC.

PRE-DEMOLITION ASBESTOS INSPECTION BUILDING 30 MOUND FACILITY. MIAMISBURG, OHIO

Prepared for

Mr. Dave Pratt, Senior Buyer
BWXT of Ohio, Inc.
P.O. Box 3030, OSE 216
1 Mound Road
Miamisburg, Ohio 45343-3030

Prepared by

HELIX ENVIRONMENTAL, INC.
1 East Stewart Street
Dayton, Ohio 45409

Ralph A. Froehlich, CIH, CSP, QEP
Certified Industrial Hygienist No. AP-2631

Report Date: Aug., 2002

Helix Job No. 3200

THIS REPORT CONTAINS INFORMATION ON THE ASBESTOS CONTENT OF BUILDING MATERIALS WHICH IS REQUIRED TO BE MAINTAINED FOR THE LIFE OF THE BUILDING. THIS REPORT MUST BE PROVIDED TO SUBSEQUENT BUILDING OWNERS AS REQUIRED BY 29 CFR 1926.1101

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PRE-DEMOLITION ASBESTOS INSPECTION
BUILDING 30, MOUND, MIAMISBURG, OHIO
JULY, 2002

TABLE OF CONTENTS

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1.	EXECUTIVE SUMMARY	1
2.	BACKGROUND	4
3.	INSPECTION AND SAMPLING PROCEDURES	6
4.	ANALYTICAL PROCEDURES	8
5.	APPLICABLE STANDARDS	9
6.	ANALYTICAL RESULTS	11
7.	DISCUSSION AND RECOMMENDATIONS	14
8.	APPENDICES	17

PRE-DEMOLITION ASBESTOS INSPECTION
BUILDING 30, MOUND, MIAMISBURG, OHIO
JULY, 2002

1. EXECUTIVE SUMMARY

On July 10, 2002, Helix Environmental, Inc. contracted with BWXT of Ohio, Inc. to conduct an asbestos-containing building materials inspection of Building 30 and other buildings at the Mound Site for the U.S. Department of Energy in Miamisburg, Ohio. The asbestos inspection was necessary to identify, quantify and evaluate the condition of regulated asbestos-containing building materials (RACBM) prior to the start of building demolition, and to confirm negative suspect asbestos-containing building materials identified during previous inspections. This report summarizes the inspection procedures, sampling and analytical methods, and analytical results, with recommendations for consideration.

The following materials were identified as suspect asbestos building materials in Building 30:

- Hard Pipe Joint Thermal System Insulation
- Hard Pipe Thermal System Insulation
- Drywall
- Drywall Joint Compound
- Fire Doors (assumed)
- Roofing materials (assumed)

A total of three bulk samples were collected to to confirm the negative results of suspect-asbestos containing materials from two previous inspections. Roofing materials and fire doors were assumed to contain asbestos, in accordance with current OSHA and EPA regulations and the scope of work for the project. Roofing materials are considered Category I Nonfriable Materials under current U. S. EPA regulations, and can remain in the building during demolition. Assumed asbestos-containing fire doors will need to be removed prior to building demolition, and should be treated as asbestos-containing materials until sampling and analytical information is available to document that they do not contain more than 1% asbestos.

Some suspect asbestos-containing materials had previously been identified through sampling and analysis as asbestos-containing materials during previous inspections. These documented asbestos-containing materials were not resampled. Where previous sampling results had documented that a suspect material contained no detectable asbestos, Helix Environmental, Inc. resampled the material to ensure that it contained no asbestos.

The sampling results document the following confirmed and assumed asbestos-containing materials in Building 30:

- Hard Pipe Thermal System Insulation (Previously Identified)
- Hard Pipe Joint Insulation (Previously Identified)
- Fire doors (assumed)
- Roofing materials (assumed)

Work which disturbs asbestos-containing materials could result in airborne fiber releases and exposures to workers and building occupants. OSHA regulations require air sampling to document worker exposures to asbestos whenever these materials are disturbed, as well as training for all workers who perform such work. State and federal environmental regulations also apply to work which damages the materials during demolition. In Ohio, if more than 50 SF or 50 LF of friable regulated asbestos-containing materials must be removed using methods which may damage them, a certified asbestos abatement contractor would be required for this work. Advance notification (ten working days) is also required prior to the start of removal.

Based on the results, Helix Environmental, Inc. recommends that:

1. **BWXT of Ohio, Inc. maintain copies of the information from this asbestos inspection and sampling with Building 30 records.** This information must be maintained for the duration of ownership of the building, and must be transferred to subsequent owners. This may most easily be accomplished by maintaining a copy of this report in a secure location with other building records.

2. **Identified asbestos-containing materials should not be disturbed or removed except by properly trained and equipped personnel.** Since the planned demolition will disturb more than 50 SF or 50 LF of these materials, the regulated materials must be removed by a licensed asbestos abatement contractor prior to the start of demolition, in accordance with all regulatory requirements, using specifications developed by an accredited Asbestos Project Designer. The specifications will permit abatement contractors to provide competitive fixed cost proposals for the abatement work, ensuring the lowest reasonable cost for the work. Adherence to the specifications will also ensure that a "state of the art" abatement project occurs, which will minimize the potential for exposure outside of the abatement area.

3. **Air sampling should be performed during any work which disturbs the**

integrity of identified asbestos-containing materials, in accordance with OSHA regulations. Air monitoring should be performed by experienced industrial hygienists under the direction of a Certified Industrial Hygienist to document airborne exposures to asbestos inside and outside of the work area, before, during and after the abatement work. Certified personnel and laboratories should be used to provide adequate documentation of airborne fiber levels. Records of the abatement operation should be maintained for a minimum of thirty years.

4. **Provide ten working-day advance notification to the Regional Air Pollution Control Agency prior to the start of demolition.** Notification is required by U. S. EPA regulations (40 CFR 61M) even if no asbestos-containing building materials have been identified in the building, in order to allow regulatory officials to reinspect the building.

2. BACKGROUND

On July 10, 2002, Helix Environmental, Inc. contracted with BWXT of Ohio, Inc. to conduct an asbestos-containing building materials inspection of Building 30 at the Mound Site for the U.S. Department of Energy in Miamisburg, Ohio. The asbestos inspection was necessary to identify, quantify and evaluate the condition of regulated asbestos-containing building materials (RACBM) prior to the start of building demolition, and to confirm negative suspect asbestos-containing building materials identified during previous inspections.

The inspection and sampling were performed on July 24, 2002 by Ralph Froehlich, CIH, CSP, QEP. and Mr. Cameron Day, Industrial Hygienist. Mr. Froehlich is a Certified Industrial Hygienist with more than twenty years experience in the fields of occupational and environmental health. Mr. Froehlich is certified by the Ohio Department of Health as an Asbestos Hazard Evaluation Specialist, Asbestos Hazard Abatement Specialist, and as an Asbestos Project Designer (Cert. Nos. 3074, 2112, and 60038, respectively). Mr. Day has over two years experience in the fields of occupational safety and health and is certified by the Ohio Department of Health as an Asbestos Hazard Evaluation Specialist (Cert. No. 33958).

Building 30 is a one-story 740 SF concrete block building with built up roof which was built in 1965. Currently, Building 30 is occupied and operational.

In 1989, Pedco Environmental, Inc. reported that the following asbestos-containing building materials were found in Building 30:

- Preformed block insulation on steam lines
- Transite panels in chemical lab hood

In 1993, Barge, Waggoner, Sumner & Cannon, Miamisburg, Ohio, inspected selected buildings at the Mound facility, including Building 30. In the inspection report, the following suspect asbestos-containing materials were found to contain more than 1% asbestos:

- Hard Pipe Joint Thermal system Insulation
- Hard Pipe Thermal System Insulation

The following suspect materials were found to contain no detectable asbestos:

- Drywall

- Drywall Joint Compound

Helix Environmental, Inc. was directed to inspect the building to identify all suspect regulated asbestos-containing materials, and to sample and verify the asbestos content of all previously-identified suspect asbestos-containing materials for which previous sample results were found to contain less than 1% asbestos. Regulated asbestos-containing materials that had been previously identified were assumed to contain asbestos. Materials that had not been previously identified as suspect asbestos-containing materials were also to be sampled if they were not assumed asbestos-containing. Category I Nonfriable materials (resilient flooring materials, bituminous roofing materials, gasket materials). were not sampled, in accordance with directions from Mr. Chris Alquist, BWXT of Ohio, Inc. In addition, Helix Environmental, Inc. was directed to assume that all fire doors contained asbestos.

3. INSPECTION AND SAMPLING PROCEDURES

The following materials were identified as suspect asbestos-containing building materials, based on a room-by-room inspection of the building:

- Hard Pipe Joint Thermal System Insulation
- Hard Pipe Thermal Systems Insulation
- Drywall
- Drywall Joint Compound
- Fire Doors (assumed)
- Roofing materials (assumed)

The results of the room-by-room inspection are contained in the appendices.

A total of three bulk samples were collected to confirm the negative results of suspect-asbestos containing materials from two previous reports. Materials that met the definition of Category I Nonfriable asbestos-containing materials were assumed to contain asbestos, and were not sampled.

Representative samples of suspect asbestos-containing materials were collected by Helix Environmental, Inc. using appropriate hand sampling tools and random sampling techniques. Samples were placed in labeled resealable sampling bags. The outside of the sampling container, all sampling tools, and the immediate area were then wiped using new moist towelettes to minimize the possibility of cross contamination. The single-use towelettes were properly disposed off site by Helix Environmental, Inc. personnel. Sampling locations were sealed using labeled duct tape and then photographed for documentation purposes. Sampling personnel from Helix Environmental, Inc. used personal protective equipment where necessary, including half-face air-purifying respirators with HEPA cartridges during sampling, to minimize the possibility of personal exposure to asbestos.

Confirmed and suspect asbestos-containing materials were assessed as to the type of material, amount, condition and disturbance potential, and noted on physical assessment records. Condition of materials were rated as to the extent of damage to the material. Undamaged material was given a condition assessment of "good". Materials having less than 25% localized or less than 10% distributed damage were given a "fair" (damaged) condition assessment. Materials having more than 25% localized or more than 10% distributed damage were given a "poor" (significantly damaged) condition assessment.

Side-by-side quality assurance/quality control samples were also collected at a minimum 5% QA/QC sampling rate. The sample locations and assessments are included on the sample logs attached in the appendices.

4. ANALYTICAL PROCEDURES

Bulk asbestos samples were sent to Schneider Laboratories, Inc., Richmond, Virginia, where they were analyzed via Polarized Light Microscopy with dispersion staining in accordance with the U.S. Environmental Protection Agency's Interim Methods for the Determination of Asbestos in Bulk Insulation Samples (EPA-600/R-93/116, June, 1993.) Under this method, the limit of detection for asbestos is about 1 percent by area. Samples containing smaller amounts of asbestos are not reliably detected by this technique. Polarized light microscopes equipped with 10X eyepieces, 10X and 40X objective lenses and dispersion staining lenses were used to identify fibers present in the samples.

The side-by-side QA/QC samples were delivered to Environmental Hazards Services, L.L.C. in Richmond, Virginia for independent analysis to determine asbestos content by PLM.

Both Environmental Hazard Services, L.L.C. and Schneider Laboratories, Inc. maintain accreditation from the American Industrial Hygiene Association and have received accreditation through successful participation in the NIST National Voluntary Laboratory Accreditation Program (NVLAP) for bulk asbestos. AIHA-accredited laboratories are scrutinized on a regular basis to ensure that personnel, equipment, facilities and data are maintained. In addition, AIHA-accredited laboratories have well-developed assurance/quality control programs to ensure that analytical results accurately reflect conditions present during the sampling periods. Analytical results are attached in the appendices.

5. APPLICABLE STANDARDS

Asbestos

The U.S. EPA has established regulations which apply to friable and potentially friable materials with asbestos content in excess of 1%, as determined by PLM. These regulations establish required notification, removal techniques, and disposal of regulated asbestos-containing materials. The Ohio EPA has established additional regulations paralleling those of the U.S. EPA. "Friable" means that a suspect material can be reduced to a powder by hand pressure when dry and denotes a material that is capable of releasing significant amounts of asbestos fibers to the air. Potentially-friable materials are those that may release asbestos fibers to the air if they are extensively damaged during demolition operations, and include Category I Nonfriable materials in poor condition and Category II Nonfriable materials. Category I Nonfriable materials include bituminous roofing materials, resilient flooring materials, and gaskets, where the asbestos is mixed in a resilient matrix. Category I Nonfriable materials may be left in buildings when they are demolished, if the materials are not in poor condition. Category II Nonfriable materials include all other non friable materials, and they must be removed from buildings prior to their demolition, since demolition activities may release significant amounts of asbestos into the air (40 CFR 61 Subpart M). The Ohio EPA has established equivalent regulations for Ohio.

Additionally, U. S. EPA has promulgated regulations governing the management of asbestos in public and non-profit private school buildings, grades K-12 (40 CFR 763.80 ff), which detail the sampling and analytical protocols followed during a school asbestos inspection, as well as additional requirements for the training and certification of professionals involved in the inspection and management of asbestos materials. The requirements for training and certification have been extended by congressional action to cover all persons involved in asbestos inspection, project design, supervision and abatement work, as part of the Asbestos School Hazard Abatement Reauthorization Act (ASHARA). U. S. EPA has also promulgated regulations for the protection of public sector workers (40 CFR 763.120)

The Occupational Safety and Health Administration (OSHA) revised its asbestos regulations to reduce the eight-hour Time-Weighted Average (TWA) Permissible Exposure Limit to 0.1 fibers/cc (29 CFR 1910.1001, 29 CFR 1926.1101). A 30-minute Excursion Limit of 1 fiber/cc is also included with the standards. Asbestos-containing materials are defined as those that contain more than 1% asbestos. These regulations include complex requirements for asbestos abatement, dividing the

work with and around asbestos into four classes, with varying requirements for each class. An additional requirement calls for building owners and managers to keep information on asbestos-containing materials with each building, until all asbestos-containing materials have been removed from the building.

The American Conference of Governmental Industrial Hygienists (ACGIH) has proposed an airborne eight-hour TWA Threshold Limit Value of 0.1 fibers/cc (2001 TLVs). ACGIH TLVs denote concentrations and conditions to which it is believed that nearly all workers may be repeatedly exposed day after day without adverse effect.

The National Institute for Occupational Safety and Health (NIOSH) identifies asbestos as an occupational carcinogen, and recommends that occupational exposures be "limited to the lowest feasible concentration."

The Ohio Department of Health has established additional regulations for asbestos abatement, including a certification program for asbestos supervisors, workers, inspectors and management planners, project designers, and air monitoring technicians. ODOH regulations also require contractors to be licensed, and require 10 working day advance notifications for asbestos abatement in amounts over 50 LF or 50 SF of friable asbestos-containing material (OAC 3701-34).

Montgomery County, Ohio has adopted local regulations which require advance notification when more than 50 SF or 50 LF of friable asbestos-containing building material is removed.

6. ANALYTICAL RESULTS

The sample results are as follows:

TABLE 1: SUMMARY OF ASSUMED AND CONFIRMED ASBESTOS-CONTAINING MATERIALS AT BUILDING 30, MOUND, MIAMISBURG, OHIO, JULY 24, 2002

Sample Number	Lab Number	Location	Amount	Condition	Result
Hard Pipe Thermal System Insulation			23 LF	Good	Previously identified
Hard Pipe Joint Thermal System Insulation			4 PJ	Good	Previously identified
Fire Doors			6 Doors	Fair	Assumed
Roofing Materials			740 SF	Fair	Assumed

TABLE 2: SUMMARY OF CONFIRMED NON ASBESTOS MATERIALS AT BUILDING 30, MOUND, MIAMISBURG, OHIO, JULY, 2002

Sample Number	Lab Number	Location	Result
Drywall			
3200-7-24-01	2350408 Layer 1	Room 2, West wall at drain penetration	No Asbestos Detected
3200-7-24-02	2350409 Layer 1	Room 2, Doorway to Room 5 Above Door	No Asbestos Detected
3200-7-24-03	2350410 Layer 1	Room 5, Northeast corner, 6' height	No Asbestos Detected
Drywall Joint Compound			
3200-7-24-01	2350408 Layer 2	Room 2, West wall at drain penetration	No Asbestos Detected
3200-7-24-02	2350409 Layer 2	Room 2, Doorway to Room 5 Above Door	No Asbestos Detected
3200-7-24-03	2350410 Layer 2	Room 5, Northeast corner, 6' height	No Asbestos Detected

TABLE 3: QUALITY CONTROL/QUALITY ASSURANCE SAMPLES FROM BUILDING 30, MOUND, MIAMISBURG, OHIO, JULY, 2002

Sample Number	Lab Number	Location	Primary Lab Result	QA Lab Result	Comparison
Drywall and Joint Compound					
3200-7-24-01	07023458-04	Room 2, West wall at drain penetration	No Asbestos Detected	No Asbestos Detected	Equivalent

7. DISCUSSION AND RECOMMENDATIONS

A total of three bulk samples were collected to confirm the negative results of suspect-asbestos containing materials from two previous reports and to document the asbestos content of additional suspect materials identified in the building. Previously identified asbestos-containing materials were assumed to contain more than 1% asbestos, and Category I Nonfriable materials and fire doors were also assumed to contain asbestos.

The sampling results document the following confirmed and assumed asbestos-containing materials in Building 30:

- Hard Pipe Thermal System Insulation (Previous Inspection)
- Hard Pipe Joint Thermal System Insulation (Previous Inspection)
- Fire doors (assumed)
- Roofing materials (assumed)

The roofing materials are non-friable and in good to fair condition. Roofing materials are considered to be Category I Non-Friable materials and, under current U.S. EPA regulations, need not be removed from buildings prior to demolition if they are not in poor condition.

Other suspect materials were found to contain no detectable asbestos.

Quality assurance analysis of side-by-side samples found equivalent results for both samples, with no detectable asbestos reported from either laboratory.

Costs for the removal of the asbestos-containing materials in Building 30 are estimated to be as follows:

Material	Estimated Quantity	Est. Unit Cost	Est. Cost
Thermal System Pipe Insulation	23 LF	$10/LF	$ 230
Thermal System Pipe Joint	4 PJ	$25/PJ	$ 100
Fire Doors	6 Doors	$100/Door	$ 600
ESTIMATED TOTAL			$ 930

These estimated costs reflect asbestos removal and disposal costs in southwest Ohio, but may vary significantly, due to scheduling, bidding procedures and other factors.

They do not include costs for development of bid specifications or contractor surveillance and air monitoring expenses.

Work which disturbs asbestos-containing materials could result in airborne fiber releases and exposures to workers and building occupants. OSHA regulations require air sampling to document worker exposures to asbestos whenever these materials are disturbed, as well as training for all workers who perform such work. State and federal environmental regulations also apply to work which damages the materials during demolition. In Ohio, if more than 50 SF or 50 LF of friable regulated asbestos-containing materials must be removed using methods which may damage them, a certified asbestos abatement contractor would be required for this work. Advance notification (ten working days) is also required prior to the start of removal.

Based on the results, Helix Environmental, Inc. recommends that:

1. **BWXT of Ohio, Inc. maintain copies of the information from this asbestos inspection and sampling with Building 30 records.** This information must be maintained for the duration of ownership of the building, and must be transferred to subsequent owners. This may most easily be accomplished by maintaining a copy of this report in a secure location with other building records.

2. **Identified asbestos-containing materials should not be disturbed or removed except by properly trained and equipped personnel.** Since the planned demolition will disturb more than 50 SF or 50 LF of these materials, the regulated materials must be removed by a licensed asbestos abatement contractor prior to the start of demolition, in accordance with all regulatory requirements, using specifications developed by an accredited Asbestos Project Designer. The specifications will permit abatement contractors to provide competitive fixed cost proposals for the abatement work, ensuring the lowest reasonable cost for the work. Adherence to the specifications will also ensure that a "state of the art" abatement project occurs, which will minimize the potential for exposure outside of the abatement area.

3. **Air sampling should be performed during any work which disturbs the integrity of identified asbestos-containing materials, in accordance with OSHA regulations.** Air monitoring should be performed by experienced industrial hygienists under the direction of a Certified Industrial Hygienist to document airborne exposures to asbestos inside and outside of the work area, before, during and after the abatement work. Certified personnel and laboratories should be used to provide adequate documentation of airborne fiber levels. Records of the abatement

operation should be maintained for a minimum of thirty years.

4. **Provide ten working-day advance notification to the Regional Air Pollution Control Agency prior to the start of demolition.** Notification is required by U. S. EPA regulations (40 CFR 61M) even if no asbestos-containing building materials have been identified in the building, in order to allow regulatory officials to reinspect the building.

8. APPENDICES

APPENDIX A: ROOM-BY-ROOM INVENTORY OF ASSUMED ASBESTOS-CONTAINING MATERIALS

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HELIX ENVIRONMENTAL, INC.

ASSUMED ACBM RECORD

PROJECT NO..	BUILDING NO./NAME	PAGE
3200	Normal Bldg 30	
	SAMPLE AREA	DATE 7/24/02

TYPE OF MATERIAL
- ☐ CEILING TILES
- ☐ FLOOR TILES/FLOORING
- ☒ THERMAL SYS. INSUL.
- ☐ SURFACING
- ☐ MISCELLANEOUS

INSPECTORS: R. Amelich

HSA CODE	CONDITION	DESCRIPTION / AMOUNT	LOCATION
	Good	Hard Pipe Insulation Layered Paper 23 LF	Rm 1 Entrance Area
	Good	Hard Pipe Joint TSI 4 PJ	Rm 1 Entrance Area

NOTES

HELIX ENVIRONMENTAL, INC.

ASSUMED ACBM RECORD

PROJECT NO..	BUILDING NO./NAME	PAGE
3200	Pound Bldg 30	
	SAMPLE AREA	DATE 7/24/02

TYPE OF MATERIAL: ☐ CEILING TILES ☐ FLOOR TILES/FLOORING ☐ THERMAL SYS. INSUL. ☐ SURFACING ☒ MISCELLANEOUS

INSPECTORS: R. A. Grahlich

HSA CODE	CONDITION	DESCRIPTION / AMOUNT	LOCATION
	Fair	Drywall and Joint Compound 1225F	Rm 5 (Restroom
	Fair	Built up Roof	Roof

NOTES

$(5 \times 9.5 + 4 \times 9.5) - (3.5 \times 7)$

$(9 \times 9.5) - (24.5)$

$85.5 - 24.5 = 61 \times 2$

Rem. Concrete, Concrete Block, Metal

APPENDIX B: SAMPLE DATA SHEETS

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101 02 1404

HELIX ENVIRONMENTAL, INC.

1 East Stewart Street ♦ Dayton, Ohio 45409 ♦ (937) 226-0650 ♦ www.helixenv.com
FAX – (937) 226-0653 ♦ helix@helixenv.com

LABORATORY: Schneider
DATE SAMPLED: 7/24/02
RUSH – YES OR NO DATE REQUIRED: 7/26/02
LOCATION: Miamisburg, Ohio
CONTRACTOR/CLIENT: BWXT
BUILDING: Mound Bldg 30
INSPECTOR: R. Froehlich, CE Day
JOB NUMBER: 3200

BULK SAMPLE DATA SHEET | ANALYSES REQUESTED: Asbestos PLM

LAB SAMPLE NO.	HELIX SAMPLE ID NUMBER	AMOUNT	REPRESENTATIVE SAMPLE LOCATION	MATERIAL DESCRIPTION	FRIABLE/ NON	CONDITION	COMMENTS
	3200-7-24-01	122 SF	Rm 2, EW wall at drain penetration	Drywall and Joint Compound	N	Fair	
	3200-7-24-02	—	Rm 2, Doorway to Rm 5, Above Door	Drywall & Joint Compound	N	Fair	
	3200-7-24-03	—	Rm 5, NE Corner, 6' Ht.	Drywall and Joint Compound	N	Fair	

129 of 45

1Z 2E2 899 22 1019 886 5

5

THIS IS A CHAIN OF CUSTODY DOCUMENT. PLEASE COMPLETE, SIGN AND DATE. PLEASE RETURN ORIGINAL TO HELIX ENVIRONMENTAL, INC.

RECD	RELINQUISHED BY:	COMPANY:	DATE/TIME	RECD	RELINQUISHED BY:	COMPANY:	DATE/TIME
1	R. Froehlich	Helix Env. Inc	7/24/02 11:10	3	Cameron E. Day	Helix Env	7-24-02 / 5:00 pm
RECD	RECEIVED BY:	COMPANY:	DATE/TIME	RECD	RELINQUISHED BY:	COMPANY:	DATE/TIME

4-PLM EHS 07-02-3458

SAMPLE C[illegible]TION

HELIX ENVIRONMENTAL, INC.

1 East Stewart Street ♦ Dayton, Ohio 45409 ♦ (937) 226-0650 ♦ www.helixenv.com
FAX – (937) 226-0653 ♦ helix@helixenv.com

LABORATORY: EHS LLC
DATE SAMPLED: 7/22/02
RUSH – YES OR (NO) DATE REQUIRED: 7/25/02
LOCATION: Miamisburg, Ohio
CONTRACTOR/CLIENT: BWXTO
BUILDING: Mound Bldg 98
INSPECTOR: K. Froehlich, CEDay
JOB NUMBER: 3200

BULK SAMPLE DATA SHEET | ANALYSES REQUESTED: Asbestos PLM

LAB SAMPLE NO.	HELIX SAMPLE ID NUMBER	AMOUNT	REPRESENTATIVE SAMPLE LOCATION	MATERIAL DESCRIPTION	FRIABLE/ NON	CONDITION	COMMENTS
	3200-7-22-150A 1300 SF		Garage Rm 115, SE Corner	2'x4' Susp. Ceiling Tile, Textured	N	Good	
	3200-7-24-140A		BLD 31, SOUTH WALL WEST SIDE	SPRAYED ON FIRE PROOFING	F	POOR	
	3200-7-24-010A		BLD 80, RM 8 WEST WALL DRAIN PENETRATION	DRYWALL + JOINT COMPOUND	N	FAIR	
	3200-7-24-320A		BLD 46, RM 5 MEZZANINE ABOVE RM 3	HARD PIPE TSI	F	GOOD	
			Manager Check 7/25/02 9:30				

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APPENDIX C: ANALYTICAL RESULTS

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SCHNEIDER LABORATORIES

INCORPORATED
2512 W. Cary Street • Richmond, Virginia • 23220-5117
804-353-6778 • 800-785-LABS (5227) • (FAX) 804-353-6928
Excellence in Service and Technology
AIHA/ELLAP 100527, NVLAP 10150-0, NYELAP/NELAC 11413, CAELAP 2078, NC 593, SC 93003

LABORATORY ANALYSIS REPORT

Asbestos Identification by EPA Method 600/R-93/116

ACCOUNT: 904-02-1456.
CLIENT: HELIX ENVIRONMENTAL
ADDRESS: 1 East Stewart Street Ste B
DAYTON, OH 45409-2624
PO NO.:
PROJECT NAME: Mound Bldg 30
PROJECT NO.: 3200
JOB LOCATION: Miamisburg, Ohio

DATE COLLECTED: 07/24/2002
DATE RECEIVED: 07/25/2002
DATE ANALYZED: 07/25/2002
DATE REPORTED: 07/26/2002

Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
3200-7-24-01	2350408	Rm 2 W wall		
	Layer 1:	Drywall	No	White, Granular
	100% Non-Asbestos	CELLULOSE FIBER 10%, NON FIBROUS MATERIAL 90%		
	Layer 2:	Joint Compound	No	White, Brittle
	100% Non-Asbestos	NON FIBROUS MATERIAL 100%		
3200-7-24-02	2350409	Rm 2 to rm 5		
	Layer 1:	Drywall	No	White, Granular
	100% Non-Asbestos	CELLULOSE FIBER 12%, NON FIBROUS MATERIAL 88%		
	Layer 2:	Joint Compound	No	White, Brittle
	100% Non-Asbestos	NON FIBROUS MATERIAL 100%		
3200-7-24-03	2350410	Rm 5 NE corner		
	Layer 1:	Drywall	No	White, Granular
	100% Non-Asbestos	CELLULOSE FIBER 9%, NON FIBROUS MATERIAL 91%		
	Layer 2:	Joint Compound	No	White, Brittle
	100% Non-Asbestos	NON FIBROUS MATERIAL 100%		

ANALYST: MARK DELEONARDIS
Total no. of pages in report = 1

Lori A. Perez
REVIEWED BY **Lori A. Perez, Analyst**

Samples analyzed by the EPA Test Method are subject to the inherent limitations of light microscopy including interference by matrix components. Gravimetric reduction and correlative analyses are recommended for all non-friable, organically bound materials. For calibrated visual estimate, 1% is the concentration at which there is a quantitative uncertainty. This report relates only to the items tested, must not be reproduced except in full with the approval of the lab, and must not be used to claim NVLAP or other government agency endorsement.

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

7469 WHITE PINE ROAD - RICHMOND, VA 23237
804-275-4788 FAX 804-275-4907

BULK ASBESTOS SAMPLE ANALYSIS SUMMARY

CLIENT: Helix Environmental, Inc.
1 E. Stewart Street, Suite B
Dayton, OH 45409-2624

DATE OF RECEIPT: 25 JUL 2002
DATE OF ANALYSIS: 29 JUL 2002
DATE OF REPORT: 29 JUL 2002

CLIENT NUMBER: 36-2170 A
EHS PROJECT #: 07-02-3458
PROJECT: Miamisburg, Ohio; Mound Bldg 98; 3200

EHS SAMPLE #	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	% ASBESTOS	OTHER MATERIALS
01	3200-7-22-15QA/ White Powder; Brown Fib.	NAD	10% Cellulose 90% Non-Fibrous
02	3200-7-24-14QA/ White Fib.	NAD	95% Fibrous Glass 5% Non-Fibrous
03	3200-7-24-01QA/ Brown Fib.; White Powder	NAD	10% Cellulose 90% Non-Fibrous
04	3200-7-24-32QA/ Gray Powder	NAD	10% Cellulose 15% Fibrous Glass 75% Non-Fibrous

QC SAMPLE: M11992-1

QC BLANK: SRM 1866 Fiberglass

REPORTING LIMIT: 1% Asbestos

METHOD: Polarized Light Microscopy, EPA Method 600/R-93/116 •

ANALYST: Laura Holder

Reviewed By Authorized Signatory:

Howard Varner, Laboratory Director
Irma Faszewski, Quality Assurance Coordinator
David Xu, MS, Senior Chemist
Feng Jiang, MS, Senior Geologist
Michael A. Mueller, Quality Assurance Manager

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

CLIENT NUMBER: 36-2170 A
EHS PROJECT #: 07-02-3458
PROJECT: Miamisburg, Ohio; Mound Bldg 98; 3200

Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided t the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Governmer This report shall not be reproduced except in full, without the written consent of Environmental Hazards Services, L.L.C. Califom Certification #2319 NY ELAP #11714. All information concerning sampling location, date, and time can be found on Chain-c Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmissic Electron Microscopy (TEM), for enhanced detection capabilities) for materials regulated by the EPA NESHAP (National Emissic Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscop (PLM). Both services are available for an additional fee.

- All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND	NAD = no asbestos detected
	SCF = suspected ceramic fibers

plm1.dot/07JAN2002/ pd

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APPENDIX D: SAMPLE LOCATIONS

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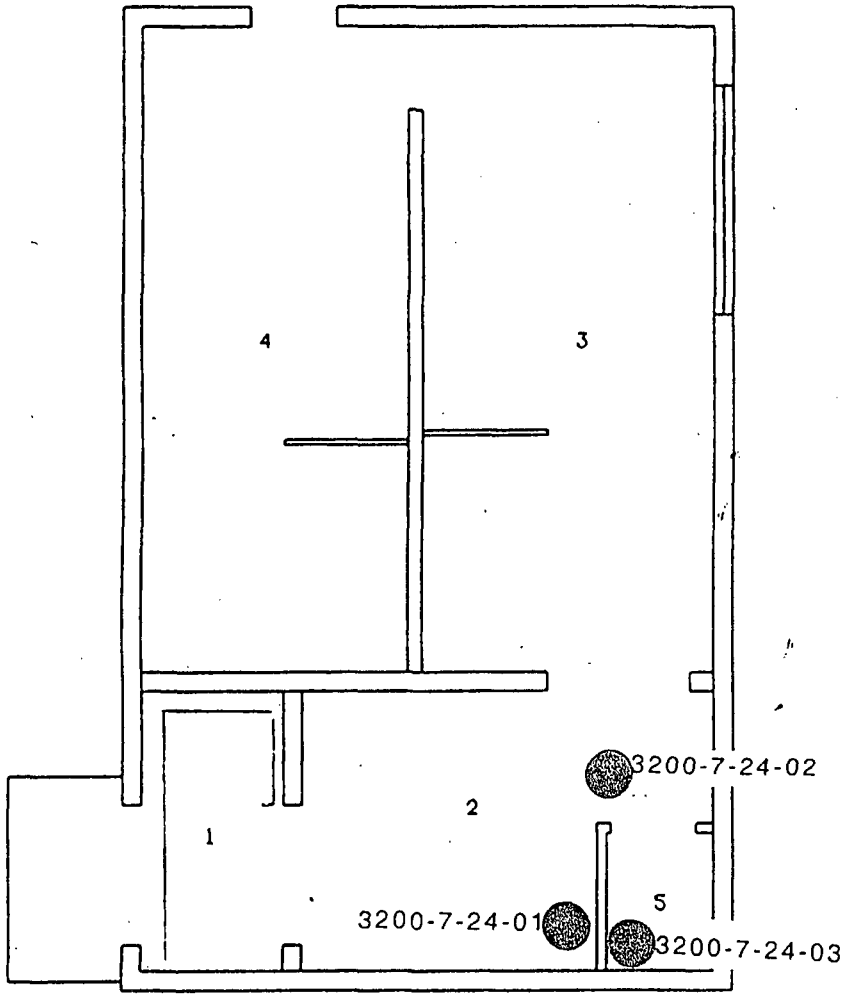
REV	DATE	REVISION	BY	CHKD	ENG	APVD	APVD	R
B	12/12/91	ASBUILT ISSUE	DCW				DVD	



Asbestos Sample Location

BLDG #30
FIRST FLOOR
BLDG CODE:3030

MOUND FACILITY
BUILDING 30
MIAMISBURG, OHIO

HELIX ENVIRONMENTAL, INC.
1 East Stewart Street, Suite B
Dayton, OH 45409

Not to Scale

Aug 2002

First Floor

SHEET	1	2	3	4	5	6	TITLE (U) TITLE CLASSIFICATION
TOTAL	8						BLDG #38 FLOOR PLANS

DRAWING CLASSIFICATION: UNCLASSIFIED | TYPE: C | DRAWING NUMBER: FSC911242 | JOB NUMBER: 12335

ENG TYPE: SFP | PROJ: BLDG #38 | CODE: 14065 | SCALE AS NOTED | SHEET 1 OF 1

STATUS: MO-REL.-12/12/91 | MODEL: MO-BA3-V3.8

APPROVALS: DATE:
SAFETY COMMITTEE REQUIRED:
___ NONE ___ FMEDMC ___ TEMC ___ CHMC
TECH. REVIP. ___
BL. ADM. ___
FMEDMC ___
TEMC ___
CHMC ___

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APPENDIX E: PHOTO LOG AND PHOTOGRAPHS

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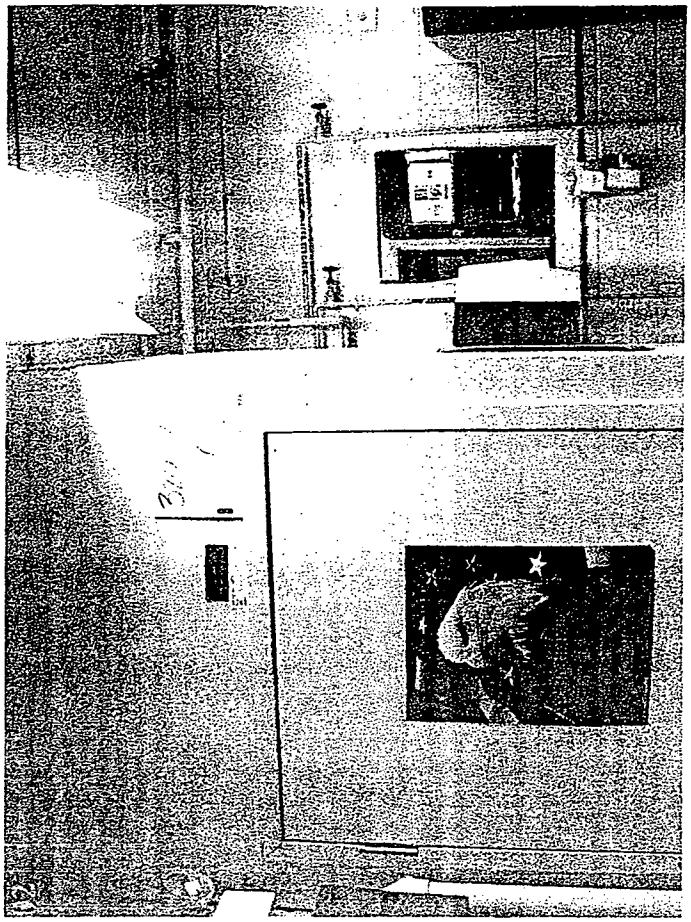
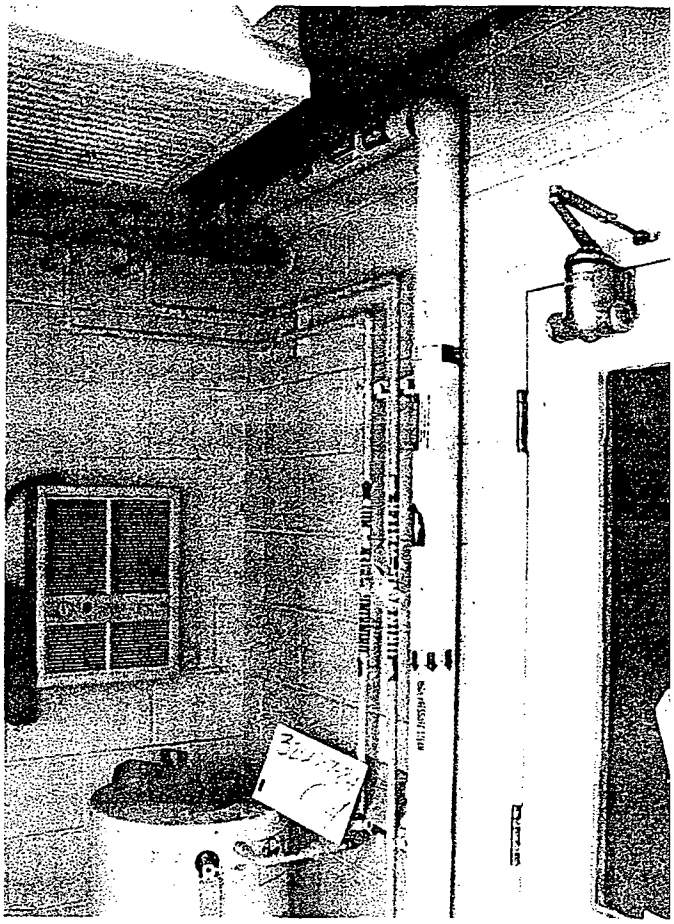
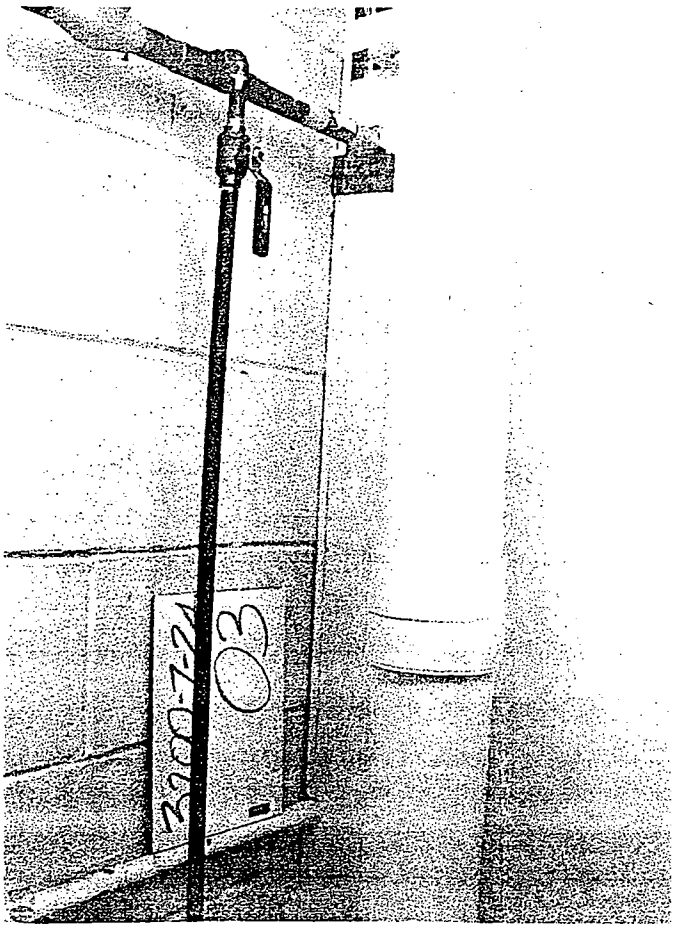
Photo Log Building 30

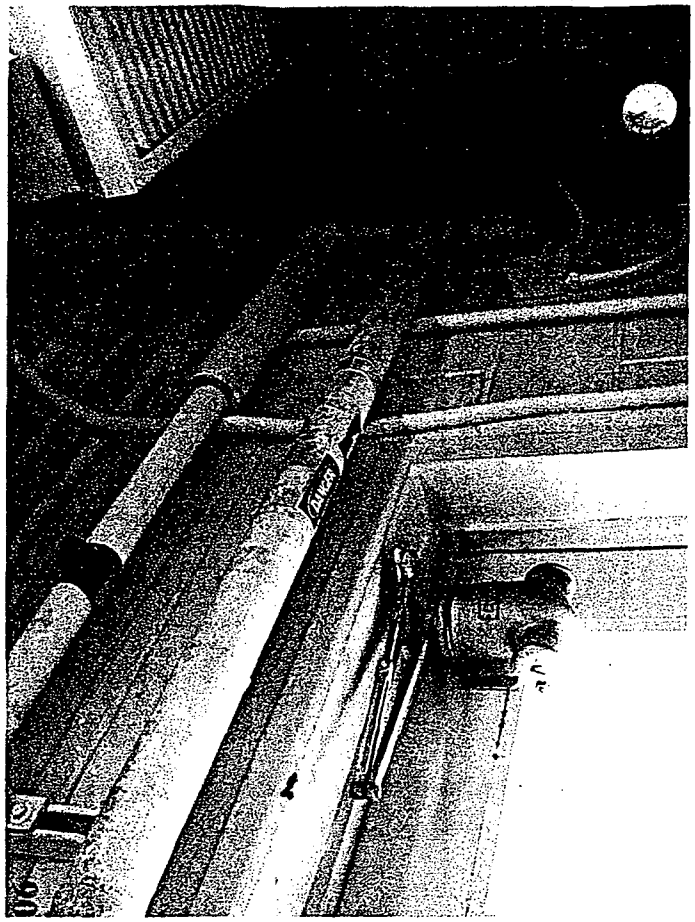
Photo	Description
01	Department of Energy Mound Facility, Miamisburg, Building 30, Room 2, showing Drywall and joint compound sampling location on West wall at drain penetration, Sample 3200-7-24-01.
02	Department of Energy Mound Facility, Miamisburg, Building 30, Room 2, showing Drywall and joint compound sampling location in doorway to Room 5, above door, Sample 3200-7-24-02.
03	Department of Energy Mound Facility, Miamisburg, Building 30, Room 5, showing Drywall and joint compound sampling location in Northeast corner at 6' Height, Sample 3200-7-24-03.
04	Department of Energy Mound Facility, Miamisburg, Building 30, Room 1, showing Labeled asbestos-containing Hard Pipe Thermal System Insulation in Southwest corner.
05	Department of Energy Mound Facility, Miamisburg, Building 30, Room 1, showing Labeled asbestos-containing Hard Pipe Joint Thermal System Insulation in Southwest corner.
06	Department of Energy Mound Facility, Miamisburg, Building 30, Room 1, showing Labeled asbestos-containing Hard Pipe Insulation in Northwest corner.

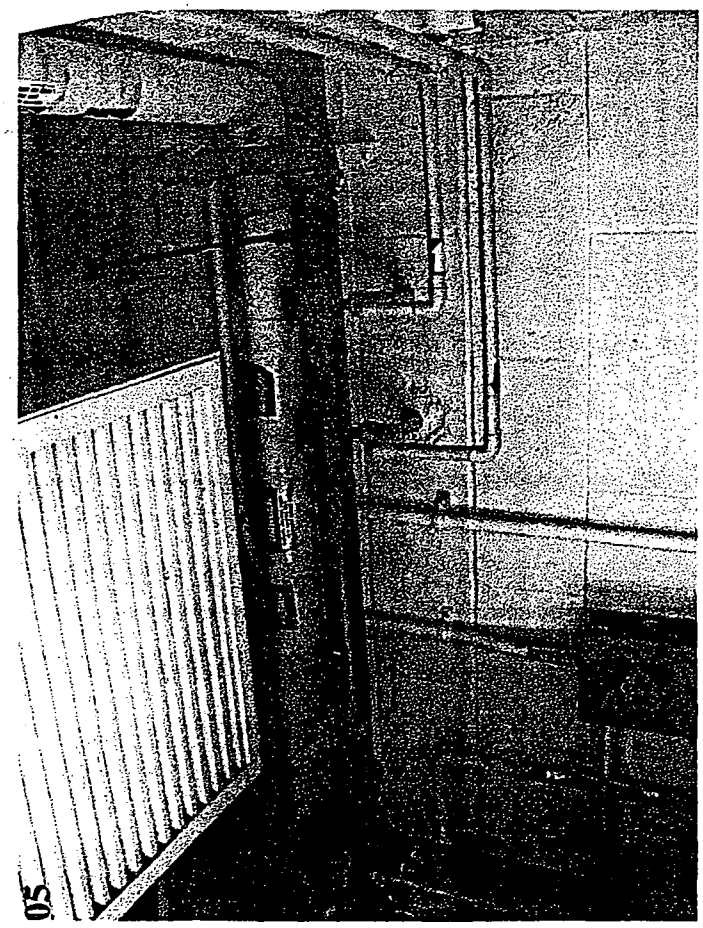




THIS SIDE UP


3200-7-24
03





Appendix J

Lead Information

From: Christopher Ahlquist
To: Darnell, Val; Kramer, Donald
Date: 4/22/04 1:24PM
Subject: Bldg 30, rev.

Don/Val -

For Building 30 asbestos and lead paint concerns, the following is provided for your use:

Asbestos

No previous asbestos survey information was found for Building 30.

During July of 2002, Helix Environmental, Inc., under contract to BWXT of Ohio, Inc., performed a comprehensive walk-through survey of all areas of Building 30 in order to identify all asbestos-containing materials prior to demolition of the facility. During their survey Helix Environmental utilized Ohio Department of Health Certified Asbestos Hazard Evaluation Specialists as required by State regulations for individuals assessing asbestos-containing materials. Six (6) fire rated doors within Building 30 were assumed to contain asbestos and were identified as requiring removal prior to demolition; twenty-seven (27) linear feet of asbestos-containing pipe insulation were identified as requiring removal. The fire doors were subsequently determined by Mr. Chris Ahlquist (Industrial Hygienist and State Certified Asbestos Hazard Evaluation Specialist with CH2M Hill Mound) to not contain asbestos linings as previously assumed. The pipe insulation was removed and packaged by American Services Group, an Ohio Department of Health Licensed Asbestos Abatement Contractor, on December 4, 2003. The pipe insulation was removed in accordance with NESHAP requirements and placed into a container for disposal by the Mound Waste Management Group.

In addition, Helix Environmental identified 740 square feet of asphalt-based roofing as assumed asbestos-containing material. However, as a Nonfriable Category I material in accordance with NESHAP, this material will remain in place during demolition and be disposed of as construction waste.

Lead

No previous lead surveys or sampling data were found for Building 30. Since the building is scheduled for imminent demolition, painted surfaces will be tested for lead content as planned work indicates the need for such testing in order to avoid worker exposure to lead. This restriction will be 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

CC: Ransbottom, Robert

J 1 of 1

Appendix K

Chemical Information

A list of chemicals known to have been in Building 30 is provided.

The applicable page of CY2001 Emergency and Hazardous Chemical Inventory Report (dated March 2002) is also provided.

Chemicals and Products Used or Stored in Building 30

alcohol
argon
chlorodifluoromethane
dichlorodifluoromethane
isopropyl alcohol
P-10 gas
Ultima Gold
Window Shine
Window Wash

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

STAPLE

Emergency and Hazardous Chemical Inventory Form

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

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

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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~~				~~X~~	~~T16~~			~~A~~	~~2,7~~		~~04~~	~~04~~	~~C~~	~~365~~
2	7440-37-1	argon	X					X	X		X				X	T17			A	2,7		04	04	C	365
3	~~7440-37-1~~	~~argon~~	~~X~~					~~X~~	~~X~~		~~X~~				~~X~~	~~T18~~			~~A~~	~~2,7~~		~~04~~	~~04~~	~~C~~	~~365~~
4																									
5																									

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

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

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

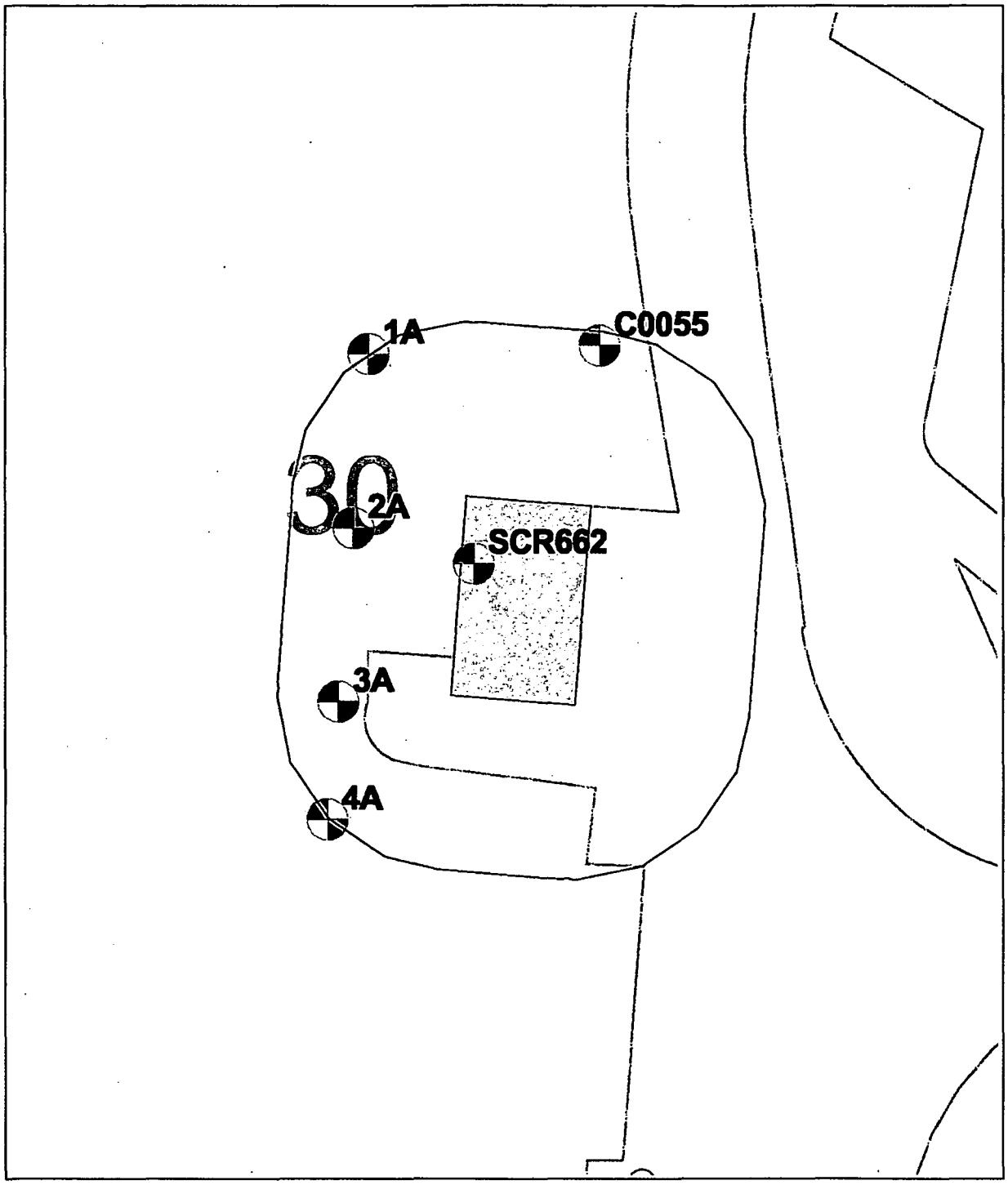
SIGNATURE

2/27/02 — DATE SIGNED

Appendix L

Soil Sampling, Vicinity

Historic Sample Locations within 30 feet of Building 30



25 0 25 50 75 100 Feet

■ Sample Detect

⊕ borehole
Δ surface

N
W E
S

MOUND
Environmental Restoration Geographic Information System

01/27/03

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Building 30 Detects

Location_	Sample_id	Collection_d	Value_name	Measured_va	Value_ur	Detectio	Chem_cl	Start_	End_c	Lab_c	Data_	Project_code	Comments
SCR662	9402916	19940405	Plutonium-238	36.0000	PCI/G		RAD	0.0	0.0			SCRDATA	12
SCR662	9402911	19940405	Plutonium-238	35.0000	PCI/G		RAD	0.0	0.0			SCRDATA	12
SCR662	9402919	19940405	Plutonium-238	27.0000	PCI/G		RAD	0.0	0.0			SCRDATA	12
SCR662	9402917	19940405	Plutonium-238	26.0000	PCI/G		RAD	0.0	0.0			SCRDATA	12
SCR662	9402924	19940405	Plutonium-238	25.0000	PCI/G		RAD	0.0	0.0			SCRDATA	12
SCR662	9402914	19940405	Plutonium-238	25.0000	PCI/G		RAD	0.0	0.0			SCRDATA	12
SCR662	9402913	19940405	Plutonium-238	25.0000	PCI/G		RAD	0.0	0.0			SCRDATA	12
2A	90072360	19900723	Plutonium-238	17.0000	PCI/G		RAD	1.0	2.0	NJ		SCRDATA	12
2A	90072364	19900723	Plutonium-238	14.0000	PCI/G		RAD	5.0	6.0	NJ		SCRDATA	12
2A	90072359	19900723	Plutonium-238	14.0000	PCI/G		RAD	0.0	1.0	NJ		SCRDATA	12
4A	90071133	19900711	Plutonium-238	13.0000	PCI/G		RAD	2.0	3.0	NJ		SCRDATA	12
4A	90071135	19900711	Plutonium-238	12.0000	PCI/G		RAD	4.0	5.0	NJ		SCRDATA	12
1A	90072356	19900723	Plutonium-238	12.0000	PCI/G		RAD	3.0	4.0	NJ		SCRDATA	12
1A	90072358	19900723	Plutonium-238	12.0000	PCI/G		RAD	5.0	6.0	NJ		SCRDATA	12
2A	90072362	19900723	Plutonium-238	11.0000	PCI/G		RAD	3.0	4.0	NJ		SCRDATA	12
4A	90071132	19900711	Plutonium-238	10.0000	PCI/G		RAD	1.0	2.0	NJ		SCRDATA	12
1A	90072353	19900723	Plutonium-238	10.0000	PCI/G		RAD	0.0	1.0	NJ		SCRDATA	12
1A	90072357	19900723	Plutonium-238	10.0000	PCI/G		RAD	4.0	5.0	NJ		SCRDATA	12
3A	90081052	19900810	Plutonium-238	8.0000	PCI/G		RAD	1.0	2.0	NJ		SCRDATA	12
2A	90072361	19900723	Plutonium-238	8.0000	PCI/G		RAD	2.0	3.0	NJ		SCRDATA	12
1A	90072354	19900723	Plutonium-238	8.0000	PCI/G		RAD	1.0	2.0	NJ		SCRDATA	12
4A	90071131	19900711	Plutonium-238	7.0000	PCI/G		RAD	0.0	1.0	NJ		SCRDATA	12
4A	90071136	19900711	Plutonium-238	7.0000	PCI/G		RAD	5.0	6.0	NJ		SCRDATA	12
3A	90081051	19900810	Plutonium-238	7.0000	PCI/G		RAD	0.0	1.0	NJ		SCRDATA	12
1A	90072355	19900723	Plutonium-238	7.0000	PCI/G		RAD	2.0	3.0	NJ		SCRDATA	12
3A	90081053	19900810	Plutonium-238	6.0000	PCI/G		RAD	2.0	3.0	NJ		SCRDATA	2
2A	90072363	19900723	Plutonium-238	5.0000	PCI/G		RAD	4.0	5.0	NJ		SCRDATA	2
C0055	1229	19821201	Plutonium-238	1.1900	PCI/G	0.0100	RAD	1.5	1.5			RSS	2
C0055	1231	19821201	Plutonium-238	1.1600	PCI/G	0.0100	RAD	4.5	4.5			RSS	2
4A	90071134	19900711	Plutonium-238	1.0000	PCI/G		RAD	3.0	4.0	NJ		SCRDATA	2
C0055	1232	19821201	Plutonium-238	0.5000	PCI/G	0.0100	RAD	6.0	6.0			RSS	2
C0055	1235	19821201	Plutonium-238	0.4200	PCI/G	0.0100	RAD	10.5	10.5			RSS	2
C0055	1230	19821201	Plutonium-238	0.3200	PCI/G	0.0100	RAD	3.0	3.0			RSS	2
C0055	1233	19821201	Plutonium-238	0.0800	PCI/G	0.0100	RAD	7.5	7.5			RSS	

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Location_	Sample_id	Collection_d	Value_name	Measured_va	Value_ur	Detectio	Chem_cl	Start_	End_c	Lab_c	Data_	Project_code	Comments
C0055	1234	19821201	Plutonium-238	0.0200	PCI/G	0.0100	RAD	9.0	9.0			RSS	
2A	90072360	19900723	Thorium-232	1.4000	PCI/G		RAD	1.0	2.0	NJ		SCRDATA	1
2A	90072362	19900723	Thorium-232	1.3000	PCI/G		RAD	3.0	4.0	NJ		SCRDATA	1
1A	90072357	19900723	Thorium-232	1.2000	PCI/G		RAD	4.0	5.0	NJ		SCRDATA	1
4A	90071136	19900711	Thorium-232	1.1000	PCI/G		RAD	5.0	6.0	NJ		SCRDATA	1
2A	90072359	19900723	Thorium-232	1.1000	PCI/G		RAD	0.0	1.0	NJ		SCRDATA	1
1A	90072358	19900723	Thorium-232	1.1000	PCI/G		RAD	5.0	6.0	NJ		SCRDATA	1
2A	90072361	19900723	Thorium-232	1.0000	PCI/G		RAD	2.0	3.0	NJ		SCRDATA	1
1A	90072354	19900723	Thorium-232	0.8000	PCI/G		RAD	1.0	2.0	NJ		SCRDATA	1
1A	90072356	19900723	Thorium-232	0.8000	PCI/G		RAD	3.0	4.0	NJ		SCRDATA	1
4A	90071135	19900711	Thorium-232	0.7000	PCI/G		RAD	4.0	5.0	NJ		SCRDATA	1
3A	90081053	19900810	Thorium-232	0.7000	PCI/G		RAD	2.0	3.0	NJ		SCRDATA	1
2A	90072364	19900723	Thorium-232	0.7000	PCI/G		RAD	5.0	6.0	NJ		SCRDATA	1
2A	90072363	19900723	Thorium-232	0.7000	PCI/G		RAD	4.0	5.0	NJ		SCRDATA	1
1A	90072353	19900723	Thorium-232	0.7000	PCI/G		RAD	0.0	1.0	NJ		SCRDATA	1
1A	90072355	19900723	Thorium-232	0.7000	PCI/G		RAD	2.0	3.0	NJ		SCRDATA	1
4A	90071133	19900711	Thorium-232	0.5000	PCI/G		RAD	2.0	3.0	NJ		SCRDATA	1
3A	90081052	19900810	Thorium-232	0.5000	PCI/G		RAD	1.0	2.0	NJ		SCRDATA	1
4A	90071131	19900711	Thorium-232	0.4000	PCI/G		RAD	0.0	1.0	NJ		SCRDATA	1
4A	90071134	19900711	Thorium-232	0.4000	PCI/G		RAD	3.0	4.0	NJ		SCRDATA	1
3A	90081051	19900810	Thorium-232	0.3000	PCI/G		RAD	0.0	1.0	NJ		SCRDATA	1
4A	90071132	19900711	Thorium-232	0.2000	PCI/G		RAD	1.0	2.0	NJ		SCRDATA	1

*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

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 30 Non-Detects

Location_n	Sample_id	Collection_date	Value_name	Measured_value	Value_un	Detection	Chem_	Start_	End_	Lab	Data	Project_code	Media
SCR662	9402921	19940405	Plutonium-238	22.000000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil
SCR662	9402918	19940405	Plutonium-238	21.000000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil
SCR662	9402923	19940405	Plutonium-238	20.000000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil
SCR662	9402925	19940405	Plutonium-238	20.000000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil
SCR662	9402915	19940405	Plutonium-238	19.000000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil
SCR662	9402922	19940405	Plutonium-238	18.000000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil
SCR662	9402912	19940405	Plutonium-238	15.000000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil
SCR662	9402920	19940405	Plutonium-238	9.000000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil
C0055	1233	19821201	Thorium-232	2.000000	PCI/G	2.0000	RAD	7.5	7.5	U		RSS	Soil
C0055	1232	19821201	Thorium-232	2.000000	PCI/G	2.0000	RAD	6.0	6.0	U		RSS	Soil
C0055	1234	19821201	Thorium-232	2.000000	PCI/G	2.0000	RAD	9.0	9.0	U		RSS	Soil
C0055	1235	19821201	Thorium-232	2.000000	PCI/G	2.0000	RAD	10.5	10.5	U		RSS	Soil
C0055	1231	19821201	Thorium-232	2.000000	PCI/G	2.0000	RAD	4.5	4.5	U		RSS	Soil
C0055	1230	19821201	Thorium-232	2.000000	PCI/G	2.0000	RAD	3.0	3.0	U		RSS	Soil
C0055	1229	19821201	Thorium-232	2.000000	PCI/G	2.0000	RAD	1.5	1.5	U		RSS	Soil
SCR662	9402915	19940405	Thorium-232	1.900000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil
SCR662	9402921	19940405	Thorium-232	1.800000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil
SCR662	9402916	19940405	Thorium-232	1.800000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil
SCR662	9402911	19940405	Thorium-232	1.700000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil
SCR662	9402924	19940405	Thorium-232	1.600000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil
SCR662	9402913	19940405	Thorium-232	1.600000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil
SCR662	9402923	19940405	Thorium-232	1.400000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil
SCR662	9402919	19940405	Thorium-232	1.400000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil
SCR662	9402922	19940405	Thorium-232	1.100000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil
SCR662	9402925	19940405	Thorium-232	1.100000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil
SCR662	9402918	19940405	Thorium-232	1.100000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil
SCR662	9402917	19940405	Thorium-232	1.100000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil
SCR662	9402912	19940405	Thorium-232	1.000000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil
SCR662	9402920	19940405	Thorium-232	0.800000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil
SCR662	9402914	19940405	Thorium-232	0.500000	PCI/G		RAD	0.0	0.0	U		SCRDATA	Soil

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

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LABORATORY DATA QUALIFIERS (LABQUAL)

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

ORGANICS

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

INORGANICS

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

DATA QUALIFIER CODES (DATAQUAL)

ORGANICS AND INORGANICS

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

SUB-QUALIFIER CODES

ORGANICS

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

INORGANICS

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

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

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

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Comparison for Soil Analytical Results

		Screening Level (RBGV 10-6 + background, or as agreed)	
7440-38-2	Arsenic	1.06E+01	MG/KG
7440-41-7	Beryllium	2.25E+03	MG/KG
7440-43-9	Cadmium	3.00E+03	MG/KG
18540-29-9	Chromium VI	4.50E+02	MG/KG
7440-02-0	Nickel	1.13E+04	MG/KG
55684-94-1	1,2,3,6,7,8-HxCDF	1.99E-04	MG/KG
19408-74-3	1,2,3,7,8,9-HxCDD	4.81E-04	MG/KG
57117-41-6	1,2,3,7,8-PeCDF	3.97E-05	MG/KG
57117-31-4	2,3,4,7,8-PeCDF	3.97E-04	MG/KG
1746-01-6	2,3,7,8-TCDD	1.99E-05	MG/KG
51207-31-9	2,3,7,8-TCDF	1.99E-04	MG/KG
37871-00-4	HpCDD	1.99E-03	MG/KG
38998-75-3	HpCDF	1.99E-03	MG/KG
34465-46-8	HxCDD	1.99E-04	MG/KG
3268-87-9	OCDD	1.99E-02	MG/KG
39001-02-0	OCDF	1.99E-02	MG/KG
36088-22-9	PeCDD	3.97E-05	MG/KG
118-96-7	2,4,6-Trinitrotoluene	9.94E+01	MG/KG
121-82-4	RDX	2.71E+01	MG/KG
72-54-8	4,4'-DDD	1.66E+01	MG/KG
72-55-9	4,4'-DDE	1.31E+01	MG/KG
50-29-3	4,4'-DDT	2.18E+01	MG/KG
309-00-2	Aldrin	1.75E-01	MG/KG
319-84-6	Alpha-BHC	4.73E-01	MG/KG
12674-11-2	Aroclor-1016	1.49E+00	MG/KG
11104-28-2	Aroclor-1221	1.49E+00	MG/KG
11141-16-5	Aroclor-1232	1.49E+00	MG/KG
53469-21-9	Aroclor-1242	1.49E+00	MG/KG
12672-29-6	Aroclor-1248	1.49E+00	MG/KG
11097-69-1	Aroclor-1254	5.95E+01	MG/KG
11096-82-5	Aroclor-1260	1.49E+00	MG/KG
319-85-7	Beta-BHC	1.66E+00	MG/KG
60-57-1	Dieldrin	1.86E-01	MG/KG
58-89-9	Gamma-BHC (Lindane)	2.29E+00	MG/KG
76-44-8	Heptachlor	6.62E-01	MG/KG
1024-57-3	Heptachlor Epoxide	3.28E-01	MG/KG
1336-36-3	Polychlorinated Biphenyls (PCBs)	1.49E+00	MG/KG
8001-35-2	Toxaphene	2.71E+00	MG/KG
122-66-7	1,2-Diphenylhydrazine	3.73E+00	MG/KG
106-46-7	1,4-Dichlorobenzene	1.24E+02	MG/KG
108-60-1	2,2'-oxybis(1-chloropropane)	4.26E+01	MG/KG
88-06-2	2,4,6-Trichlorophenol	2.71E+02	MG/KG
121-14-2	2,4-Dinitrotoluene	4.38E+00	MG/KG
606-20-2	2,6-Dinitrotoluene	4.38E+00	MG/KG
91-94-1	3,3'-Dichlorobenzidine	6.62E+00	MG/KG
99-09-2	3-Nitroaniline	7.84E+01	MG/KG
100-01-6	4-Nitroaniline	7.84E+01	MG/KG

L9/13

92-87-5	Benzidine	1.30E-02	MG/KG
56-55-3	Benzo(a)anthracene	4.08E+00	MG/KG
50-32-8	Benzo(a)pyrene	4.08E-01	MG/KG
205-99-2	Benzo(b)fluoranthene	4.08E+00	MG/KG
207-08-9	Benzo(k)fluoranthene	4.08E+01	MG/KG
111-44-4	Bis(2-chloroethyl)ether	2.71E+00	MG/KG
117-81-7	Bis(2-ethylhexyl)phthalate	2.13E+02	MG/KG
86-74-8	Carbazole	1.49E+02	MG/KG
218-01-9	Chrysene	4.08E+02	MG/KG
53-70-3	Dibenz(a,h)anthracene	4.08E-01	MG/KG
118-74-1	Hexachlorobenzene	1.86E+00	MG/KG
87-68-3	Hexachlorobutadiene	3.82E+01	MG/KG
67-72-1	Hexachloroethane	2.13E+02	MG/KG
193-39-5	Indeno(1,2,3-cd)pyrene	4.08E+00	MG/KG
78-59-1	Isophorone	3.14E+03	MG/KG
621-64-7	N-Nitroso-di-n-propylamine	4.26E-01	MG/KG
62-75-9	N-Nitrosodimethylamine	5.84E-02	MG/KG
86-30-6	N-Nitrosodiphenylamine	6.08E+02	MG/KG
87-86-5	Pentachlorophenol	2.48E+01	MG/KG
630-20-6	1,1,1,2-Tetrachloroethane	6.95E+00	MG/KG
79-34-5	1,1,2,2-Tetrachloroethane	8.88E-01	MG/KG
79-00-5	1,1,2-Trichloroethane	1.90E+00	MG/KG
96-18-4	1,2,3-Trichloropropane	4.26E-01	MG/KG
96-12-8	1,2-Dibromo-3-Chloropropane	2.12E+00	MG/KG
107-06-2	1,2-Dichloroethane	7.61E-01	MG/KG
78-87-5	1,2-Dichloropropane	4.38E+01	MG/KG
107-13-1	Acrylonitrile	5.15E-01	MG/KG
71-43-2	Benzene	5.42E+01	MG/KG
100-44-7	Benzyl Chloride	1.75E+01	MG/KG
75-27-4	Bromodichloromethane	4.81E+01	MG/KG
75-25-2	Bromoform	3.77E+02	MG/KG
56-23-5	Carbon Tetrachloride	5.38E-01	MG/KG
67-66-3	Chloroform (Trichloromethane)	5.15E-01	MG/KG
74-87-3	Chloromethane	2.71E+00	MG/KG
124-48-1	Dibromochloromethane	3.55E+01	MG/KG
75-09-2	Dichloromethane (Methylene Chloride)	2.03E+01	MG/KG
106-93-4	Ethylene Dibromide (1,2-Dibromoethane)	3.37E-02	MG/KG
127-18-4	Tetrachloroethene	1.87E+01	MG/KG
79-01-6	Trichloroethene	5.25E+00	MG/KG
75-01-4	Vinyl Chloride	4.14E-01	MG/KG
14952-40-0	Actinium-227	4.48E+00	PCI/G
14952-40-0	Actinium-227+D	5.63E-01	PCI/G
14952-40-0	Actinium-227 long lived decay	5.63E-01	PCI/G
14331-83-0	Actinium-228	1.93E-01	PCI/G
14596-10-2	Americium-241	6.31E+00	PCI/G
14683-10-4	Antimony-124	9.84E-02	PCI/G
14234-35-6	Antimony-125	4.83E-01	PCI/G
14234-35-6	Antimony-125+D	4.83E-01	PCI/G
13981-41-4	Barium-133	6.07E-01	PCI/G
13981-41-4	Barium-133m	4.41E+00	PCI/G
14798-08-4	Barium-140	1.13E+00	PCI/G
13966-02-4	Beryllium-7	4.11E+00	PCI/G

13982-38-2	Bismuth-207	1.75E-01	PCI/G
14331-79-4	Bismuth-210	5.51E+01	PCI/G
14331-79-4	Bismuth-210m	1.00E+00	PCI/G
15229-37-5	Bismuth-211	4.66E+00	PCI/G
14913-49-6	Bismuth-212	9.87E-01	PCI/G
14733-03-0	Bismuth-214	1.17E-01	PCI/G
13967-74-3	Cerium-141	3.80E+00	PCI/G
14762-78-8	Cerium-144	8.87E+00	PCI/G
14762-78-8	Cerium-144+D	3.21E+00	PCI/G
13967-70-9	Cesium-134	1.23E-01	PCI/G
13967-70-9	Cesium-134m	1.74E+01	PCI/G
10045-97-3	Cesium-137	3.81E+01	PCI/G
10045-97-3	Cesium-137 +D	7.62E-01	PCI/G
10045-97-3	Cesium-137 long lived decay	7.62E-01	PCI/G
14392-02-0	Chromium-51	6.89E+00	PCI/G
13981-50-5	Cobalt-57	2.46E+00	PCI/G
13981-38-9	Cobalt-58	1.95E-01	PCI/G
13981-38-9	Cobalt-58m	4.78E+03	PCI/G
10198-40-0	Cobalt-60	7.06E-02	PCI/G
10198-40-0	Cobalt-60m	4.71E+01	PCI/G
13981-15-2	Curium-244	9.20E+00	PCI/G
14683-23-9	Europium-152	1.65E-01	PCI/G
14683-23-9	Europium-152m	6.57E-01	PCI/G
15585-10-1	Europium-154	1.50E-01	PCI/G
14391-16-3	Europium-155	6.98E+00	PCI/G
14596-12-4	Iron-59	1.50E-01	PCI/G
13981-28-7	Lanthanum-140	7.61E-02	PCI/G
14255-04-0	Lead-210	2.10E+00	PCI/G
14255-04-0	Lead-210+D	1.80E+00	PCI/G
14255-04-0	Lead-210 long lived decay	1.82E+00	PCI/G
15092-94-1	Lead-212	1.66E+00	PCI/G
15067-28-4	Lead-214	8.92E-01	PCI/G
13966-31-9	Manganese-54	2.25E-01	PCI/G
13982-78-0	Mercury-203	9.47E-01	PCI/G
13994-20-2	Neptunium-237	7.01E+00	PCI/G
13994-20-2	Neptunium-237+D	1.04E+00	PCI/G
13967-76-5	Niobium-95	2.48E-01	PCI/G
13967-76-5	Niobium-95m	3.73E+00	PCI/G
13981-16-3	Plutonium-238	5.50E+01	PCI/G
PU-238/239	Plutonium-238/239	6.21E+00	PCI/G
15117-48-3	Plutonium-239	6.21E+00	PCI/G
PU-239/240	Plutonium-239/240	6.21E+00	PCI/G
14119-32-5	Plutonium-241	5.06E+02	PCI/G
13982-10-0	Plutonium-242	6.33E+00	PCI/G
13981-52-7	Polonium-210	2.09E+00	PCI/G
13966-00-2	Potassium-40	3.81E+01	PCI/G
14331-85-2	Protactinium-231	2.83E+00	PCI/G
14331-85-2	Protactinium-231+D	4.00E+00	PCI/G
14331-85-2	Protactinium-231 long lived decay	1.28E+00	PCI/G
13981-14-1	Protactinium-233	1.01E-01	PCI/G
15100-28-4	Protactinium-234	1.27E+01	PCI/G
15100-28-4	Protactinium-234m	1.20E+00	PCI/G

15623-45-7	Radium-223	3.24E+00	PCI/G
13233-32-4	Radium-224	5.91E+00	PCI/G
13981-53-8	Radium-225	2.17E+00	PCI/G
13982-63-3	Radium-226	2.10E+00	PCI/G
13982-63-3	Radium-226+D	2.09E+00	PCI/G
13982-63-3	Radium-226 long lived decay	2.73E+00	PCI/G
15262-20-1	Radium-228	1.47E+00	PCI/G
15262-20-1	Radium-228+D	1.47E+00	PCI/G
15262-20-1	Radium-228 long lived decay	1.83E+00	PCI/G
13968-53-1	Ruthenium-103	1.40E+01	PCI/G
13967-48-1	Ruthenium-106	8.77E-01	PCI/G
13967-48-1	Ruthenium-106+D	9.09E-02	PCI/G
13967-63-0	Scandium-46	1.22E-01	PCI/G
14391-65-2	Silver-108m	1.14E+02	PCI/G
14378-38-2	Silver-109m	8.50E-02	PCI/G
13966-32-0	Sodium-22	3.98E-01	PCI/G
13967-73-2	Strontium-85	1.07E+00	PCI/G
13967-73-2	Strontium-85m	3.55E+01	PCI/G
14158-27-1	Strontium-89	1.80E+01	PCI/G
10098-97-2	Strontium-90	1.01E+01	PCI/G
10098-97-2	Strontium-90+D	7.70E-01	PCI/G
14133-76-7	Technetium-99	2.14E+02	PCI/G
14913-50-9	Thallium-208	4.98E-02	PCI/G
15623-47-9	Thorium-227	2.09E+00	PCI/G
14274-82-9	Thorium-228	7.08E+00	PCI/G
14274-82-9	Thorium-228+D	1.61E+00	PCI/G
14274-82-9	Thorium-228 long lived decay	1.61E+00	PCI/G
15594-54-4	Thorium-229	1.89E+00	PCI/G
15594-54-4	Thorium-229+D	5.06E-01	PCI/G
15594-54-4	Thorium-229 long lived decay	5.06E-01	PCI/G
14269-63-7	Thorium-230	1.01E+01	PCI/G
14269-63-7	Thorium-230+D	2.00E+00	PCI/G
14269-63-7	Thorium-230 long lived decay	1.99E+00	PCI/G
7440-29-1	Thorium-232	8.60E+00	PCI/G
7440-29-1	Thorium-232+D	1.47E+00	PCI/G
15065-10-8	Thorium-234	1.76E+01	PCI/G
13966-06-8	Tin-113	3.56E+01	PCI/G
15832-50-5	Tin-126	6.91E+00	PCI/G
10028-17-8	Tritium	7.58E+03	PCI/G
14158-29-3	Uranium-232	2.90E+00	PCI/G
13968-55-3	Uranium-233	1.03E+01	PCI/G
13968-55-3	Uranium-233+D	4.80E-01	PCI/G
13968-55-3	Uranium-233 long lived decay	4.82E-01	PCI/G
U-233/234	Uranium-233/234	4.82E-01	PCI/G
13966-29-5	Uranium-234	1.16E+01	PCI/G
13966-29-5	Uranium-234+D	1.20E+00	PCI/G
15117-96-1	Uranium-235	1.67E+00	PCI/G
15117-96-1	Uranium-235+D	1.60E+00	PCI/G
15117-96-1	Uranium-235 long lived decay	4.20E-01	PCI/G
U-235/236	Uranium-235/236	3.10E-01	PCI/G
7440-61-1	Uranium-238	1.28E+01	PCI/G
7440-61-1	Uranium-238+D	5.31E+00	PCI/G

7440-61-1	Uranium-238 long lived decay	1.29E+00	PCI/G
13982-39-3	Zinc-65	3.11E-01	PCI/G
13967-71-0	Zirconium-95	2.57E-01	PCI/G

Appendix M

Occurrence Reports

Occurrence Reports

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

- Discovery of fixed alpha on vacuum gage being surveyed for release for unrestricted use (June 1991).

  Contamination was discovered during a routine survey of excess equipment scheduled for lot sale. The gage was secured in the Health Physics Laboratory in Building 30 pending further decontamination and release.

- Building 30 contamination (October 1999).

  An incident occurred in Building 30 (Radiological Count Room), involving personnel contamination and area contamination. A radiological smear (wipe) submitted for analysis was found to be in excess of the prescreening levels for smears. This finding precipitated a radiological survey of personnel in the Building 30 and the building itself at the direction of the Radiological Point of Contact (RPOC). The survey revealed that the fingertips of the right hand of the Count Room Technician were contaminated. At the direction of the RPOC, the technician washed his hands and was surveyed again and was found to be free from contamination. Nose wipes taken from the technician and all technicians involved in Building 30 radiological surveys were negative. Radiological surveys of the building indicated that the floor was contaminated, with no wipeable contamination present. The finding of unmarked fixed contamination areas on the floor of Building 30 could be attributed to the degradation of existing floor coating due to aged paint and foot traffic. The technician had traveled offsite before the RPOC notification and the precipitating event. Extensive surveys were performed on the technician's vehicles and in the immediate area surrounding Building 30 to determine if any radiological tracking occurred. All surveys indicated no radiological contamination; therefore, the likelihood of contamination having been tracked offsite is highly remote. Protective paint was applied on the identified Fixed Contamination Areas (FCAs). Unique (numbered) FCA identifiers were applied to the FCAs. The building was posted as a Radioactive Material Management Area (RMMA) and as an FCA.

- Inadequate characterization and disposal of liquid scintillation waste (February 1996).

  As a result of an assessment of Building 30 counting laboratory activities, it was discovered that low level radionuclide scintillation fluids had been disposed of at three hazardous waste incineration facilities which did not possess licenses for radioactive material. All collection of such waste was suspended. The three vendors who transported and disposed of the fluids as well as the three incineration facilities were informed of the type and quantities of low level radioactive waste sent to each site. A conservative dose assessment was performed and indicated that the maximum hypothetical dose had a negligible impact on environment, safety, and health.

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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)

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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.

15. Nature of Occurrence:

02) Environmental
C. Hazardous Material Contamination

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

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health physics office in 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

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the gage was ever used in a radiation control area. In 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

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32. User-defined Field #1:

33. User-defined Field #2:

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.:

OH-MB-BWO-BWO04-1999-0006 Final Report

Occurrence Report

Sites and Grounds

(Name of Facility)

Balance-of-Plant

(Facility Function)

Mound Plant Babcock and Wilcox of Ohio, Inc.

(Laboratory, Site, or Organization)

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

(Facility Manager/Designee)

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

(Originator/Transmitter)

Name: **Date:**

(Authorized Classifier (AC))

1. Occurrence Report Number: OH-MB-BWO-BWO04-1999-0006

Building 30 Contamination

2. Report Type and Date: Final

	Date	Time
Notification:	10/13/1999	13:19 (MTZ)
Initial Update:	12/14/1999	14:46 (MTZ)
Latest Update:	01/04/2000	12:56 (MTZ)
Final:	01/06/2000	12:21 (MTZ)

3. Occurrence Category: Off-Normal

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

5. Division or Project: Babcock & Wilcox of Ohio, Inc.

6. Secretarial Office: EM - Environmental Management

7. System, Bldg., or Equipment: Building 30

8. UCNI?: No

9. Plant Area: Building 30

10. Date and Time Discovered: 10/12/1999 13:00 (ETZ)

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11. Date and Time Categorized: 10/13/1999 12:00 (ETZ)

12. DOE Notification:

13. Other Notifications:

Date	Time	Person Notified	Organization
10/12/1999	15:00 (ETZ)	Howard Etkind	OFO/MEMP

14. Subject or Title of Occurrence:

Building 30 Contamination

15. Nature of Occurrence:

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

04) Personnel Radiological Protection
B. Personnel Contamination

16. Description of Occurrence:

(1)At approximately 1330 hours on October 12, 1999, the Building Manager for Building 30 was informed by the SM/PP area RPOC of an incident in Building 30, known as the Radiological Count Room, involving a personnel contamination and area contamination.

Building 30 provides the entire site with radiological count room services. The building was posted as a RMMA and as a Fixed Contamination Area, due to existing localized fixed contamination areas on the floor in the building, at the time of the incident.

A radiological smear (wipe) submitted for analysis was found to be in excess of the prescreening levels for smear -submittal by the Count Room technician. This finding precipitated a radiological survey of personnel in the Count Room and inside the building itself by SM/PP Project RCT's at the direction of the RPOC. A personnel frisk of the attending Count Room technician indicated contamination of approximately 100 dpm/100 cm2 alpha on the fingertips of the right hand. Timing of the contamination event relative to smear submittal and to personnel movements is not yet determined. The technician had traveled offsite during the period preceding the notification of the RPOC of the precipitating event. The RCT directed the technician to wash the hand with soap and water. After this action, the hand was frisked again and found to be free from contamination. A urine bioassay will be submitted by the noted technician.

Another Count Room technician who was present at the time of the counting of the submitted smear was frisked and found to be free from contamination. Extensive surveys were performed on both technicians' vehicles and the immediate area surrounding Building 30 to determine if any radiological contamination tracking had occurred. All surveys indicated no radiological contamination, therefore the likelihood of contamination having been tracked offsite is highly remote. Nose wipes taken from both technicians and all RCT's involved in the Building 30 radiological surveys were negative.

(2)Immediate area direct and removable radiological surveys indicated a maximum contamination of 7,800 dpm/100 cm2 direct alpha on the floor and 67 dpm/100cm2 removable alpha on the floor of Building 30. Subsequent radiological surveys indicated a maximum of 50,000 dpm/100cm2 direct alpha, with no wipeable contamination present, in a location removed from the area of the original floor surveys. However, chipping paint flakes from the same location on the floor indicated direct levels of 4,000 dpm/100 cm2 from the flakes.

17. Operating Conditions of Facility at Time of Occurrence:

Does not apply

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18. Activity Category:

03 - Normal Operations

19. Immediate Actions Taken and Results:

The DOE Facility Representative was notified at approximately 1500 hrs. Building 30 was appropriately posted as a radiological Contamination Area and will remain as such pending the results of additional radiological surveys. Alpha spectroscopy is being performed on the original submitted (high count) smear and on the maximum count floor smear to determine isotopes of concern. Decontamination activities will be performed upon completion of follow-up radiological surveys to define the extent of contamination.

20. Direct Cause:

3) Personnel Error
A. Inattention to Detail

21. Contributing Cause(s):

3) Personnel Error
B. Procedure Not Used or Used Incorrectly

22. Root Cause:

3) Personnel Error
A. Inattention to Detail

23. Description of Cause:

1. Inattention to detail with regard to the submittal of the contaminated sample. The sample had not been prescreened to ensure that it was less than the administrative limit of 1,000 dpm/100 cm2 alpha. This most likely led to the cross-contamination of the planchet and could have been a source of the Count Room technician's finger tips.

2. The finding of unmarked fixed contamination areas on the building's floor could be attributed to the degradation of existing floor coating due to aged paint and foot traffic. The prior history of Building 30 included a period where drums of thorium were stored in the building and spills or leaks may have caused the original contamination of the concrete floor.

24. Evaluation (by Facility Manager/Designee):

Corrective Actions identified during this event's critique have been completed.

25. Is Further Evaluation Required?: No

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

1.	1. Thorough housekeeping of Building-30, including mopping the floor.	
	Target Completion Date: 10/18/1999	**Completion Date:** 10/18/1999
2.	2. Application of protective paint on the identified Fixed Contamination Areas (FCA)	
	Target Completion Date: 10/22/1999	**Completion Date:** 10/22/1999
3.	3. Application of the uniquie (numbered) FCA identifiers.	
	Target Completion Date: 10/28/1999	**Completion Date:** 10/28/1999
4.	4. The FCA's in high traffic areas covered by paper and rubber mats.	
	Target Completion Date: 12/01/1999	**Completion Date:** 12/01/1999

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27. Impact on Environment, Safety and Health:

None

28. Programmatic Impact:

None

29. Impact on Codes and Standards:

None

30. Lessons Learned:

The event of personnel contamination could have been avoided by following in detail the administrative limits set for prescreening of contaminated samples.

31. Similar Occurrence Report Numbers:

1. OH-MB-BWO-BWO01-1998-0004
2. OH-MB-BWO-BWO01-1999-0003
3. OH-MB-BWO-BWO01-1999-0011
4. OH-MB-BWO-BWO01-1999-0018
5. OH-MB-BWO-BWO01-1999-0019
6. OH-MB-BWO-BWO01-1999-0024
7. OH-MB-EGGM-EGGMAT01-1995-0033
8. OH-MB-EGGM-EGGMAT01-1996-0001
9. OH-MB-EGGM-EGGMAT01-1997-0020
10. OH-MB-EGGM-EGGMAT04-1995-0025
11. OH-MB-EGGM-EGGMAT04-1996-0006
12. OH-MB-EGGM-EGGMAT04-1997-0003

32. User-defined Field #1:

33. User-defined Field #2:

34. DOE Facility Representative Input:

35. DOE Program Manager Input:

36. Approvals:

Approved by: WEIDENBACH, GARY L, Facility Manager/Designee
Date: 01/04/2000
Telephone No.: (937) 865-3241

Approved by: BERRY, RONALD E, Facility Representative/Designee
Date: 01/06/2000
Telephone No.: (513) 865-4836

Approved by: Approval delegated to FR
Date: 01/06/2000
Telephone No.:

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OH-MB-EGGM-EGGMAT04-1996-0003 Final Report

Occurrence Report

Sites and Grounds

(Name of Facility)

Balance-of-Plant

(Facility Function)

Mound Plant EG&G Mound Applied Technologies

(Laboratory, Site, or Organization)

Name: Dan M. Kapsch
Title: Technical Specialist **Telephone No.:** (513) 865-4207

(Facility Manager/Designee)

Name: KAPSCH, DANIEL
Title: TECHNICAL SPECIALIST **Telephone No.:** (513) 865-4207

(Originator/Transmitter)

Name: Harold F. Anderson **Date:** 07/10/1996

(Authorized Classifier (AC))

1. Occurrence Report Number: OH-MB-EGGM-EGGMAT04-1996-0003

Inadequate Characterization and Disposal of Liquid Scintillation WasteIncineration Facility

2. Report Type and Date: Final

	Date	Time
Notification:	02/07/1996	15:18 (MTZ)
Initial Update:	02/13/1996	14:21 (MTZ)
Latest Update:	07/11/1996	08:04 (MTZ)
Final:	08/27/1996	11:56 (MTZ)

3. Occurrence Category: Unusual

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

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

6. Secretarial Office: EM - Environmental Management

7. System, Bldg., or Equipment: Counting Laboratory Waste - Bldg. 30, R, SW, T, H, and E

8. UCNI?: No

9. Plant Area: Plant wide

10. Date and Time Discovered: 02/07/1996 10:00 (ETZ)

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11. Date and Time Categorized: 02/07/1996 10:15 (ETZ)

12. DOE Notification:

Date	Time	Person Notified	Organization
02/07/1996	11:51 (ETZ)	Ted Beck	DOE/HQ

13. Other Notifications:

Date	Time	Person Notified	Organization
02/07/1996	11:00 (ETZ)	Ray Powell	DOE/MB
02/07/1996	11:15 (ETZ)	Tim Marcus	DOE/OH
02/07/1996	11:51 (ETZ)	Michael Torbert	DOE/HQ

14. Subject or Title of Occurrence:

Inadequate Characterization and Disposal of Liquid Scintillation WasteIncineration Facility

15. Nature of Occurrence:

02) Environmental
A. Radionuclide Releases

16. Description of Occurrence:

On February 7, 1996, as a result of an Integrated Environmental Management Project (IEMP) assessment of Building 30 counting laboratory activities, it was discovered that low level radionuclide scintillation fluids had been disposed of at three hazardous waste incineration facilities. From April 1991 through September 1995 199 drums of non-RCRA regulated scintillation fluids were sent to hazardous waste treatment and disposal facilities which did not possess licenses for radioactive material. The material was sent to these facilities even though it was non-RCRA regulated because the Ohio EPA had expressed concerns about releasing this scintillation fluid after treatment from the on site waste water treatment facility to the Great Miami River. This waste was not known to contain any hazardous constituents and was believed to contain levels of radioactivity that were below applicable regulatory thresholds. During an ongoing self-assessment of the environmental and waste management practices in use at Mound, it was determined that the radioactivity in the liquid scintillation fluids may not have qualified for disposal as non-radioactive wastes. The fluids sent offsite in the 199 drums were ultimately incinerated at three hazardous waste incineration facilities located in the states of Kentucky, Louisiana, and Arkansas. All three states have authority from the Nuclear Regulatory Commission to regulate radioactive materials within their state boundaries.

Based on information collected, the laboratory personnel generating liquid scintillation waste believed that the waste was disposed of as low level radioactive waste. However, based on existing procedures and waste labeling supplied by these labs, Waste Management staff responsible for the collection and disposal of the wastes believed the fluids were below applicable regulatory thresholds for tritium exemption

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levels specified in 10CFR20.2005 and adopted by DOE. This regulation allows minute amounts of tritium and carbon-14 containing scintillation fluid wastes to be disposed of as non-radioactive materials. Carbon-14 is not used at Mound Facility. No other isotopes have this exemption from regulation.

Data collected on the 199 drums of scintillation vials suggest the tritium levels (low level beta emitter) met the criteria for being managed as non-radioactive, but alpha emitters were detected in a portion of the scintillation vials. Counting Laboratory records from 1991 - 1996 indicated approximately 14% of the results had gross alpha activity above the minimum detectable activity (MDA). Among the 14% above the MDA, the average gross alpha activity was 29 disintegrations per minute per vial. Counting Laboratory records from 1991 - 1996 indicated that other beta (other than tritium) emitting radionuclides were detected in approximately 5% of the scintillation vials processed. Among the 5% above the MDA, the average beta activity was 5.4 dpm per vial. Neither gamma spectroscopy nor radionuclide specific analysis was performed on the liquid scintillation waste, therefore, pure gamma emitters may have also been present in the waste. Scintillation wastes were not segregated based on the specific radionuclide(s) present within the scintillation fluid.

A MORT based root cause analysis was conducted between February 9, 1996 and April 16, 1996. Prior to 1987 manifests and shipping papers as required by regulation gave little or no waste inventory information. Therefore, the quantity of scintillation fluids sent off site for disposal during this period is not known. However, there are approximately 130 drums of radioactive scintillation fluids generated before 1987 currently in storage on site. An additional 52 drums of liquid scintillation vial wastes were disposed of between 1987 and 1990. Other scintillation fluid drums generated between 1987 and 1990 were "mixed waste" by definition and are currently stored in building 23. The tritium exemption does not provide de minimis levels for alpha, gamma, or beta emitting isotopes other than tritium. Mound implemented the tritium exemption in the 1984-1985 timeframe. The three types of hazardous scintillation fluids historically used at the plant before 1990 (prior to the adoption of the non-hazardous ULTIMA GOLD scintillation fluid in mid-1990) were: ATOMLIGHT (containing organic solvents), Insta-Gel (containing xylene), and Bray's Solution (dioxane based). The 52 drums were processed as hazardous waste and incinerated at the same hazardous waste incineration facility in Arkansas in the 1987 to 1991 timeframe. These wastes were thought to meet the tritium exemption. Data on the gross alpha, gamma, and beta levels were not available for these 52 drums and therefore could not be incorporated into the dose analyses.

The impact to human health and the environment associated with the 199 drums incinerated between 1991 an 1995 was negligible. The total amount of alpha-emitting material potentially associated with the 1991 to 1995 shipments was on the order of 0.00000007 grams. Potential health effects based on the maximum worker and maximum offsite dose scenarios were analyzed. Using conservative estimates for the maximum amount of radioactivity potentially handled, the doses from drums handled between 1991 and 1995 would likely have been on the order of 1 X 10 -4 millirem.

The impact to human health and the environment associated with

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the 52 drums incinerated between the 1987 to 1991 is likely to be in the same range as the impacts resulting from the 1991-1995 disposal of 199 drums of scintillation vial waste.

This Occurrence Report was reviewed by an Authorized Derivative Classifier (Harold F. Anderson, Nuclear Technologist) on 7/10/96 at 1630 hours (ETZ) and contains no Classified or UCNI Information.

17. Operating Conditions of Facility at Time of Occurrence:

Normal Plant Operation

18. Activity Category:

03 - Normal Operations

19. Immediate Actions Taken and Results:

The three vendors who transported and disposed of these fluids were informed of the situation on February 8, 1996. The 36 recently generated drums of scintillation waste, which remain on site, were secured in a radiologically controlled area. All collection of such wastes by Waste Management personnel was suspended as of February 9, 1996.

All plant personnel participated in a February 12, 1996 operational review to identify all wastes, radiological and non-radiological, generated by their organizations. Further, any liquid scintillation vials generated by laboratories during ongoing operations are segregated based on the radionuclide content and activity levels or are all considered to be radioactive waste. Any vial with detectable concentrations of radionuclides other than tritium is now managed as low level radioactive waste. The tritium exemption criteria will still be utilized to segregate nonhazardous liquid scintillation wastes which contain only tritium.

A critique was held February 13, 1996. Apparent causes of the occurrence were discussed.

The three incineration facilities were provided information on the type and quantities of material sent to each. On February 15, 1996, a meeting was held with the Louisiana Department of Environmental Quality, EG&G representatives, and DOE staff in Louisiana. No unresolved issues were generated. A meeting was held with Louisiana stakeholder's on March 6, 1996. No further action is expected.

On February 21, 1996, a meeting was held with the Arkansas Department of Health, DOE representatives, and EG&G staff in Arkansas. No unresolved issues were generated. No further action is expected.

The State of Kentucky was satisfied with the written information provided and did not request a meeting. No further action is expected.

A review of the Counting Laboratory records from 1991 through

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1996 included the examination of 350,000 radionuclide activity results. Data associated with a review of the counting laboratories records was submitted to DOE/MB on March 11, 1996. The data review revealed the following information:

a.) Approximately 14% of the results had gross alpha activity above the minimum detectable activity (MDA).

b.) Among the 14% above the MDA, the average gross alpha activity was 29 disintegrations per minute per vial.

c.) The highest gross alpha activity seen in any vial was 3,490,398 disintegrations per minute. It is not known if this vial was shipped to an incineration facility. The activity levels detected from this vial were included in the conservative scenarios.

d.) Approximately 5% of the results had gross beta activity above the minimum detectable activity. Among the 5%, the average beta activity was 5.4 disintegrations per minute per vial. The highest beta activity (other than tritium) seen in any vial was 580,377 disintegrations per minute. It is not known if this vial was shipped to one of the incinerator sites but the vial was included in the conservative scenarios. The beta activity (other than tritium) could have been attributable to a number of different radionuclides. For dose estimation purposes, all activity was attributed to strontium-90 as a conservative estimate. Strontium-90 has historically been handled at Mound Plant. Strontium-90 emits beta radiation which is representative of the gross beta measurements typically made by the Mound Counting Laboratories.

e.) Tritium activity, based on all records collected, averaged 5620 disintegrations per minute per vial. This average included all results, not just the results below the exemption level. For this reason, it is biased high.

On March 7, 1996, the Department of Energy Ohio Field Office chartered a Waste Management Technical Assistance Team to review and provide recommendations for improvements in Mound Waste Management practices and operations. The team conducted its investigation March 11, 1996 through March 21, 1996. The "Waste Management Technical Assistance Project Report" was issued April 1, 1996. In mid-April, DOE requested EG&G to provide a response to the technical assistance team's recommendations by May 6, 1996. EG&G responded May 6, 1996 and is in the process of implementing the recommendations.

A MORT based root cause analysis was completed April 16, 1996 which identified the root causes of the occurrence as inadequate management oversight and inadequate implementation of the liquid scintillation vial waste stream characterization process.

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20. Direct Cause:

2) Procedure Problem
A. Defective or Inadequate Procedure

21. Contributing Cause(s):

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3) Personnel Error
C. Communication Problem

5) Training Deficiency
A. No Training Provided

22. Root Cause:

6) Management Problem
A. Inadequate Administrative Control

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23. Description of Cause:

The direct cause of the occurrence was due to inadequate procedures. Neither counting laboratory procedures nor Waste Management procedures addressed NRC's tritium exemption criteria in sufficient detail for waste generators to segregate scintillation vial waste appropriately.

The contributing causes of the occurrence were due to communication problems and lack of training. There were no formal communications between counting laboratory personnel and Waste Management which would have resulted in understanding the application of NRC's tritium exemption criteria. Counting laboratory personnel were not aware that their waste was being disposed under the tritium exemption criteria. Waste generators did not have appropriate training to recognize possible concerns associated with the characterization of their "operation specific" waste streams.

The root cause of this occurrence was due to inadequate administrative control. Had the NRC tritium exemption been implemented correctly by management in 1984/1985 time frame, the inadequate characterization and disposal of liquid scintillation waste would have been prevented.

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24. Evaluation (by Facility Manager/Designee):

The inadequate characterization and disposal of liquid scintillation vial waste between 1987 and 1995 occurred due to inadequate administrative controls. In July of 1995, radiological operations personnel issued procedure 90014, entitled "Restricted and Unrestricted Release of Property/Waste" which provides guidance on the release of waste and property to uncontrolled areas. The procedure is located in Mound Manual MD-80036 entitled "Mound Radiological Operations Procedures". Procedure 90014 references an Appendix 2, entitled "On Site Transfer List". The purpose of Appendix 2 is to provide a list of non-RMMAs (Radiological Material Management Areas) which do not require Radiological Operations support for the release property or waste from the areas. From approximately 1992 to June 1996, Waste Management maintained a listing of proposed RMMAs for use as a guide to determine the type of waste being generated from each facility. Counting laboratories were not listed in Waste Management's proposed listing of RMMAs. Defining RMMA's was the first step in the implementation of Albuquerque's Waste Moratorium performance objectives. It is important that RMMA's are adequately defined and the Waste Moratorium performance objectives, which include NRC exemptions, are implemented to minimize potential for reoccurrence.

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25. Is Further Evaluation Required?: No

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

1. Modify MD80036, procedure 90014, entitled "Restricted and Unrestricted Release of Property/Waste" to complete the On Site Transfer List (non RMMA's).

Target Completion Date: 08/15/1996	**Completion Date:** 08/13/1996

2. Upgrade Trash Awareness Training Module, NVO-325, and Hazardous Waste Generator training to include Waste Moritorium explanation, usage of the tritium exemption criteria, and responsibilities related to transferring waste into/out of Radioactive Materials Management Areas.

***Target Completion Date:** 10/31/1996	***Completion Date:** 12/19/1996

3. During FY97 the general plant population as waste generators will receive their normal annual Trash Awareness Training with emphasis on the DOE/AL Waste Moratorium, the tritium exemption criteria, and responsibilities associated with movement of waste into/out of Radioactive Materials Management Areas in one of the following courses: Trash Awareness training, NVO-325 training, or Hazardous Waste Generator training.

Target Completion Date: 09/30/1997	***Completion Date:** 09/25/1997

4. MD70523, operation 608, entitled "Management of Scintillation Vials", shall be revised to incorporate processing of wipes/materials from RMMA's and correct specified tritium levels.

Target Completion Date: 07/30/1996	**Completion Date:** 02/26/1996

5. Identify Waste Coordinators for each major waste generating organization to improve waste stream characterization, verify compliance with waste acceptance criteria, enhance communications with Waste Management personnel, and resolve discrepancies and/or concerns associated with waste characterization.

Target Completion Date: 07/30/1996	**Completion Date:** 04/30/1996

6. Develop and incorporate a new procedure into Radiological Operations procedure manual MD-80036 to address the release of bulk or volume contaminated materials from RMMA.

Target Completion Date: 12/15/1996	***Completion Date:** 09/30/1996

7. Modify MD-80036, procedure 90014, entitled "Restricted and Unrestricted Release of Property/Waste" to add requirements for the release of property and waste from the RMMAs.

Target Completion Date: 11/30/1996	***Completion Date:** 08/30/1996

27. Impact on Environment, Safety and Health:

A conservative dose assessment for the drums incinerated between 1991 and 1995 has been performed and indicates that the maximum hypothetical dose was on the order of 1 x 10 -4 millirem. This dose has a negligible impact on environment, safety, and health.

28. Programmatic Impact:

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Implementation of the Albuquerque's Waste Moratorium Performance Objectives will minimize the potential for similar occurrences in the future. The NRC tritium exemption criteria must only be applied to scintillation fluid waste streams that contain (only) tritium at concentrations below 110,000 disintegration per minute per gram of waste material.

29. Impact on Codes and Standards:

The occurrence has no impact on national codes and standards, program standards, or DOE orders. It is the direct result of a failure to properly implement the NRC tritium exemption in Mound policy and procedures.

30. Lessons Learned:

It is very important to define all types of contamination present in volume contaminated waste to verify proper application of NRC's tritium exemption criteria. Failure to fully understand and properly apply the NRC tritium exemption criteria can result in the improper characterization and disposal of radioactive contaminated waste.

Defining Radioactive Materials Management Areas (RMMA's) is the first step in implementing Waste Moratorium Performance Objectives. Without RMMA's defined, radiological operations personnel do not have adequate guidance to determine what waste or property requires survey and evaluation prior to release. Each person involved with the release of property or waste from an RMMA must be informed and understand their responsibilities associated with the release of waste and/or property.

31. Similar Occurrence Report Numbers:

1. SR--WSRC-SLDHZD-1992-0021
2. ORO--LMES-X10CHEMTEC-1995-0001
3. SR--WSRC-SLDHZD-1993-0010
4. CH-BH-BNL-BNL-1995-0020
5. OH-MB-EGGM-EGGMAT04-1996-0004

32. User-defined Field #1:

33. User-defined Field #2:

34. DOE Facility Representative Input:

35. DOE Program Manager Input:

36. Approvals:

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Approved by: Dan M. Kapsch, Facility Manager/Designee
Date: 07/11/1996
Telephone No.: (513) 865-4207

Approved by: POWELL, RAYMOND J, Facility Representative/Designee
Date: 07/18/1996
Telephone No.: (513) 865-3041

Approved by: TRACY, TERRANCE, Program Manager/Designee
Date: 08/27/1996
Telephone No.: (301) 903-2173

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Appendix N

PRS Information

Recommendation pages are not generated for PRSs that require Further Assessment (FA) or that are unbinned. Accordingly, there is no recommendation page included for PRS 286.

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)

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Appendix O

Work Plan

The drawings listed on the flysheet for Appendix C of the Work Plan are oversized and therefore are not included in the Work Plan in this appendix (Appendix O). However, the oversized drawings are included in field and record copies of the Work Plan.

Copies of the oversized drawings are available upon request.

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 30**

2. WORK PACKAGE NUMBER: **BOSS-37549 - 01**

3. WORK PACKAGE SCOPE:

- The purpose of this project is the demolition and disposal of Buildings 30, using heavy duty 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 will have been completed before initiation of this project.

4. WORK LOCATION:

Building 30 – SM/PP Area

5. WORK PACKAGE PHASES:

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

LIST OF APPENDIXES:

A – PHA/JSHA

B – Pre-Job Briefing/Job Status Log

C – Drawings/Sketches/Photographs

D – Miscellaneous (RWP, USQ, etc.)

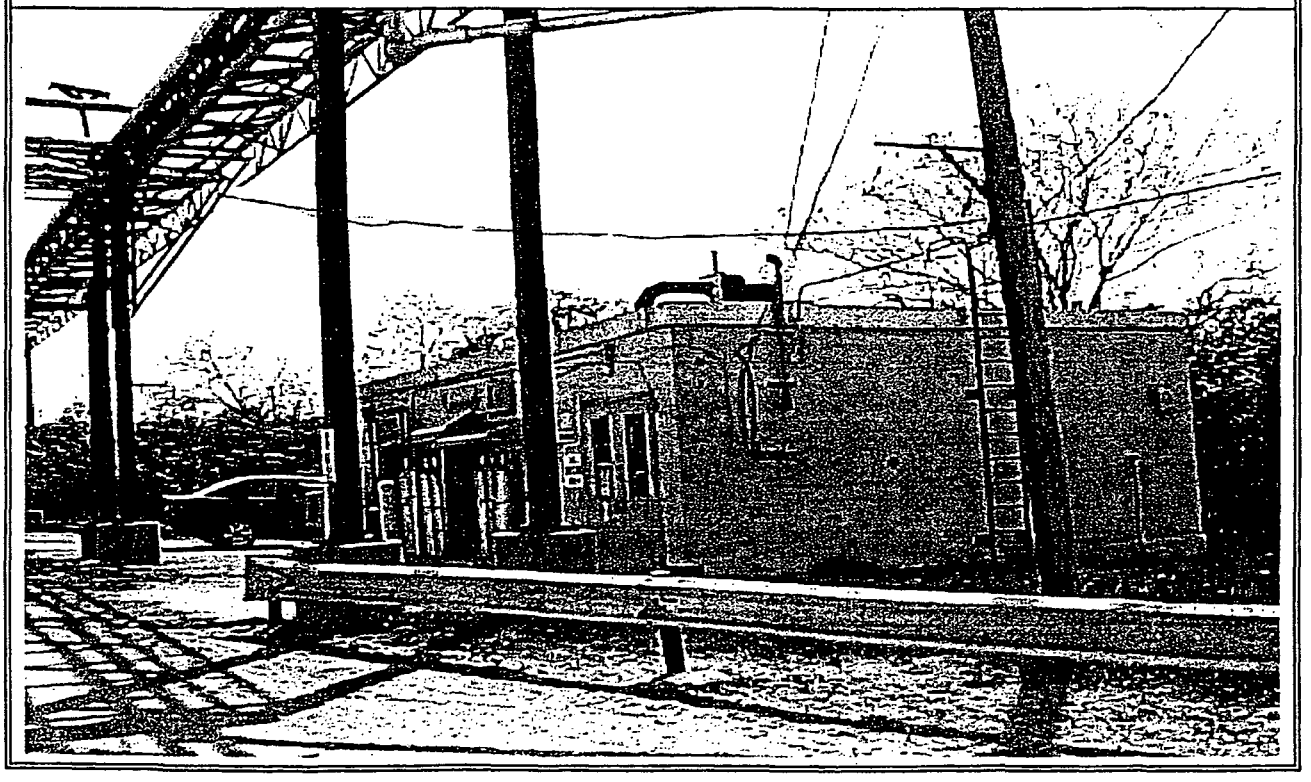
E – Post-Job Conference/Lessons Learned

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
8. LSA Boxes

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



IMPORTANT: All Field Changes to this Work Package Must be Documented in the Job Status Log!

7. DETAILED WORK STEPS:

7.1 SITE INFORMATION:

Building 30 was constructed in 1965 as an approximately 740 square foot, one-story concrete block building. The original interior walls forming Room 1, Room 2 (now,Rooms 2 and 5), and Room 3 (now Rooms 3 and 4) were constructed of hollow concrete block.

Footers are set at 3' below grade, with a 6" reinforced concrete floor. Footers under the original interior block walls are 14"-18" wide at depth, and 1 ½ foot deep.

7.2 NATIONAL HISTORIC PRESERVATION ACT (NHPA)

Building 30 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.

Provide flagmen/traffic control during demolition, coordinate with MMCIC & Mound Fire Department.

7.3.2 Clear Area and Mark/Protect Utility Equipment

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

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

Install storm drain protection by utilizing a grating slipcovers. Utilize GPS shoot-in locations of all outside grate drains that may be covered and difficult to re-locate. See Demolition Site Drawing Appendix C.

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. Cover/Protect FCA concrete Floor

Utilize plywood sheeting to protect/cover the fixative – coated FCA concrete floor.

7.3.4 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.

7.3.5 Temporary Facilities

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

7.3.6 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.

7.3.7 Staging Areas

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

7.3.8 Erosion/Dust Control Measures

Control measures will be instituted to mitigate effects of excess storm water run-on/ run-off and the effects of erosion. The site Storm Water Pollution Prevention Plan, OPA980099 (latest issue) is written to comply with the site National Pollutant Discharge System (NPDES) Permit {OAC 3435-33}. Reference Table 1, Airborne Contamination Protection Methods, below.

7.3.8.1 Installation of Silt Fence

In order to prevent excess debris, soils, silt or other deleterious materials from entering surface streams or the storm sewer system a retention barrier will be erected where appropriate. This barrier will consist of straw bales or equivalent and industry standard "silt fence". Periodic inspections will be made by the project Superintendent or designee to ensure the fence is functioning properly. If, in the opinion of the Job Superintentent, the fence is not functioning properly, steps will be taken to re-enforce or alter the configuration until satisfactory results are achieved.

7.3.8.2 Installation of Fugitive Emissions Controls

The goal of fugitive emission controls is no visible dust/emissions. Best available technology (BAT) determination for the demolition of Building 30 is reasonably available control measures (RACM). Reasonably available control measures (RACM) will be employed to maintain fugitive particulate emissions as low as reasonably achievable. Visual particulate emissions shall not exceed 20% opacity as a three-minute average for building demolition. Mitigating controls to be employed include, but are not limited to:

- Use of fixatives on internal and external surfaces, removal of loose paint and decontamination prior to demolition.
- Use of fixatives in-situ during work or prior to pauses in work (i.e. weekends and holidays)
- Controlled water misting of the building demolition area and common waste zone by misters installed on equipment, portable towers or operated by trained personnel.

The intent will be to add enough water to control fugitive emissions without over-saturating the area and creating undesirable run-off. Periodic inspections will be made by the Job Superintendant or designee to assure fugitive emissions controls are achieving the desired effect and meeting acceptable standards. Reference Table 1, Airborne Contamination Protection Methods, below.

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 • 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

Table 1 Airborne Contaminant Protection Methods (continued)

Dust Generating Activities	Administrative and Engineering Dust Control Measures
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

7.4 PRELIMINARY ACTIVITIES AND VERIFICATIONS

7.4.1 Verify all Building Utility Isolation activities have been completed per FTS-37551 Building 30 Mechanical Utilities Isolation Work Package and FTS-37550 Building 30 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
FTS-37551 Building 30 Mechanical Utilities Isolation Work Package and
FTS-37550 Electrical Utilities Isolation Work Package

Bo Wear via Telecon [signature] Date/Time 6/10/04 1815
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 Install sediment/storm water control slip covers over storm drains located East of Building 30 (see drawing in Appendix C). Coordinate with Environmental Compliance PoC. Reference site Storm Water Pollution Prevention Plan, OPA980099 (latest issue),

NOTE: <u>All</u> Materials Must be Radiologically Surveyed before Free Release and Removal from the Building

7.4.6 Remove doors and hardware. Return door lock cylinders to Security/Cindy Parr (865-4379 or 673-8761). Verify no asbestos lining prior to disposal, coordinate with IH PoC. **CAUTION:** Do not breach door skin. Utilize Asbestos awareness trained workers only

7.4.7 Remove all hazardous materials from building and circuit boards from electronic equipment/DDC panels that contain solder joints, including computer equipment & monitors. Containerize into appropriately sized containers (Mound bags/drums) and contact Waste Management PoC for disposal.

7.4.8 Remove refrigerant from the building equipment/systems (heat pumps & window/room air conditioners); utilize CFC certified tradesmen.

7.4.9 Collect and dispose all chemicals in building; All chemicals that are identifiable; locate in a common area, package in appropriate sized containers such as plastic bags for small quantities, and drums for larger quantities and contact Waste Management for pickup. All chemicals that are not identifiable; contact the Waste Management PoC for instructions for sampling, identification, and disposal. **CAUTION:** Wear gloves & proper PPE. Contact IH if any leaking containers are observed.

7.4.10 Install temporary water supply, as needed, for misting during demolition activities

7.4.11 Perform general building/area cleanup

~~7.4.12 Paint Fixed Contamination Areas (FCA) with magenta colored paint fixative. Coordinate with Rad Con PoC.~~ See status log.

~~7.4.13 Cover/Protect fixative painted FCA with plywood or metal sheeting to prevent contamination of equipment or personnel during demolition.~~

HOLD POINT: Verification that paint fixative was applied to floor ~~and sheeting installed.~~ [signature] 7/13/04

[signature] Date /Time 6/11/04 0730
Project Supervisor signature or email confirmation

7.4.14 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

Ron Parkhill via telecon Date to Proceed with Demo 6/11/04 6:30

Environmental Compliance PoC signature or email confirmation

HOLD POINT: Regulatory requirements met.

Verified by R.C. Ransbottom Date & Time : 6/11/04 06:30

Robert Ransbottom or designee/email

7.4.15 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 : 6/11/04 6:10

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

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 or remove paint prior to torch cutting.

CAUTION ASBESTOS HAZARD: Asphalt roof 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.

HOLD POINT:

Radiological Contaminated Material & Airborne Contamination Hazardous Work
Ensure all Workers are signed onto RWP for this phase of project
Follow all requirements of RWP for PPE, Monitoring, and Contamination Control

Project Supervisor signature _____ Date/Time 6/11/04 0725

7.5 BUILDING DEMOLITION SEQUENCE OF WORK

NOTE: The progression of the building demolition and selection/sizing of demolition equipment will ultimately be determined in the field. However, when a decision is made in the field to deviate from the work plan, the deviation will be discussed with and approved by the Job Supervisor and the Job Status Log will be filled out to document the change. Changes will be evaluated for any increased collapse potential.

7.5.1 Demolish the structures using heavy duty equipment to cut or dismantle and pull down the joists, roofing materials, wall sections, and support beams.

CAUTION: Exercise caution to prevent damage to plywood that protects fixative – painted radiologically contaminated concrete floor. Contact RCT immediately if damage occurs.

NOTE: Waste shall be size reduced, Radiologically characterized, categorized by wasted disposition and loaded into appropriate LSA waste containers for hauling and disposal as determined by RadCon and Waste Management PoCs.

7.5.2 Concrete Slab and Foundation Demolition

HOLD POINT: Obtain & follow completed Excavation/Soil Disturbance Permit, MD_10286, O5. Ensure entire area is clearly marked, or remarked, after building demolition activities, denoting all underground utilities as required by the permit

Project Supervisor or email confirmation _____ Date & Time 6/11/04 6:15

HOLD POINT:

Radiological Contaminated Material & Airborne Contamination Hazardous Work
Ensure all Workers are signed onto RWP for this phase of project
Follow all requirements of RWP for PPE, Monitoring, and Contamination Control

Project Supervisor signature _____ Date/Time 6/11/04 0718

NOTE: The progression of the building demolition and selection/sizing of demolition equipment will ultimately be determined in the field. However, when a decision is made in the field to deviate from the work plan, the deviation will be discussed with and approved by the Job Supervisor and the Job Status Log will be filled out to document the change. Changes will be evaluated for any increased collapse potential.

NOTE: During the concrete demolition, use heavy duty equipment to assist RCTs to perform a radiological survey and categorize the waste for disposition.

Using heavy duty 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.

Waste shall be size reduced, Radiologically characterized, categorized by wasted disposition and loaded into appropriate LSA waste containers for hauling and disposal as determined by Rad Con and Waste Management PoCs.

7.6 SITE REMEDIATION & DEMOBILIZATION

7.6.1 Site Remediation will not be performed within the scope of this work package. The demolition site will be Radiologically surveyed, evaluated, and the area will be posted with appropriate Radiological Signage. Coordinate with Environmental Restoration Group.

7.6.2 Maintain erosion control/protection in accordance with Environmental Compliance PoC instructions; remove any unnecessary remaining sediment/storm water control fences

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

7.6.4 Demobilize Construction Equipment

Remove dust control water distribution system, temporary power and water, fencing and any traffic control. Scan equipment for radiological contamination and de-contaminate 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: J.J. Boston	Date: 01/07/04	Phone: 3262
Superintendent: Michael M. Stewart	Date: 01/29/04	Phone: 3866
Foreman: James Hanna	Date: 01/29/04	Phone: 3880
Project Eng. Mgr: R.C. Vanplatten	Date: 1/7/04	Phone: 4220
Industrial Safety & Hygiene: [illegible]	Date: 1/29/04	Phone: 608-8058
Rad. Controls: [illegible]	Date: 1/7/04	Phone: 4522
ES&C: Donald Paulick	Date: 1/7/04	Phone: 4080
Waste Mgmt: Dan Kyn	Date: 01/07/04	Phone: 4132
Bldg. Mgmt: Gary D. Weidenbach	Date: 02/02/04	Phone: 3241
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 Explanation: Building 30 is not categorized as a Nuclear Facility and the work scope will not affect any Radiological or Nuclear Facilities

USQ Trained Person: J.J. Boston Date: 01/07/04 Phone: 3262

11. AUTHORIZATION SIGNATURE:

Project Manager: [illegible] Date: 2/4/04 Phone: 4169

12. WORK PACKAGE CLOSURE:

Job Supervisor: M.M. Stewart Date: 7/14/04 Phone:

Project Manager: [illegible] Date: 7/14/04 Phone:

RETURN PHA TO IS&H AT JOB COMPLETION.

APPROVAL CONTINUATION SHEET

Reviews:

Name	Signature	Date	Department

Reference Drawings	Rev.	Reference Procedures	Rev.

FIELD COPY

WORK PLAN REVISION SHEET

1. WORK PACKAGE TITLE: Demolition of Building 30
2. WORK PACKAGE NUMBER: BOSS-37549 - 01

[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) Revise Work Package: Add Section 7.3.8, Steps 7.45 through 7.4.13, and Hold points to add environmental requirements and safe shutdown confirmatory steps. Add updated cautionary wording for the progression of demolition. Also add updated Pre-Job Briefing Record/Update sheets in Appendix B and new Acceptance Checklist for Waste Shipments to Rail Staging Area in Appendix D. Revise step 7.6.2 BSD. 6/10/04

Reviewed by:	Name	Signature	Date
Project Engineering:	R C Dawson	R C Dawson	5/27/04
Project Superintendent/Foreman:	M.M. Stromberg	M. M. Stromberg	6/12/04
Radiological Operations:	R. Case	[illegible]	5/27/04
Industrial Safety & Hygiene:	Doug Hansor C. Ahlquist	[illegible]	6-1-04 6/1/04
Waste Management:	DAN KAPSCH	Dan Kapsch	06/10/04
Environmental Safeguards & Compliance:	JK Puckett	JK Puckett	6/10/04
Building Manager:	G. Weidenbach	Gary J. Weidenbach	6/10/04
Other:	NA	NA	—

Approved by:			
CH2M HILL Project Manager	[illegible]	Christopher R [illegible]	6/11/04
	Name	Signature	Date

REVISION LOG

1. WORK PACKAGE TITLE: Demolition of Building 30			
2. WORK PACKAGE NUMBER: BOSS-37549 - 01			
Revision	**Reason**	**By**	**Date**
1	Revise Work Package: Add Section 7.3.8, Steps 7.45 through 7.4.13, and Hold points to add environmental requirements and safe shutdown confirmatory steps. Add updated cautionary wording for the progression of demolition. Also add updated Pre-Job Briefing Record/Update sheets in Appendix B and new Acceptance Checklist for Waste Shipments to Rail Staging Area in Appendix D. Revise Step 7.6.2	Steve Davis	5/26/04
—	~~Steps 7.4.6 to 7.4.13 Direct Loadout~~ 7.4.12 Discussed. DELETE. CM 6/1/04	~~Chris Watson~~ ~~Rod Case~~	~~6/1/04~~

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	No		[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.)	No		
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		[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, HI
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, HI
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	No		[ELEV]
Forklifts, aerial lifts or material handling equipment	No		
Hoisting and rigging	No		[HOIST]
Overhead utilities (Identify)	Yes	All	[UITL] Street Lighting Circuit

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	Yes	All	Electrical isolation of the facility is accomplished during Utilities Isolation Activities. LOTO Street Lighting Circuit as needed during demoliton.
• Mechanical (steam, hydraulic, pneumatic, gravity)	No		Utility isolation of the facility is accomplished during Utilities Isolation Activities and Safe Shutdown 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	No		[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
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

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	Yes	All	Exposure to airborne lead during torch cutting. Contact Industrial Hygiene to verify absence of lead in paint or remove paint prior to torch cutting
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.

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)			
	Fixed Contamination Area	Yes	All	RWP Required
	Other (Specify)	None		
Activities:	Digging/Soil Removal (permit)	Yes	3 & 4	[DIG] Excavation permit required for slab/foundation removal and site remediation activities
	• URMA	No		No URMA located with in project site boundary
	Welding, burning, grinding, hammering, chipping, or scraping of contaminated materials	No		
	Decontamination	No		
	- Site Remediation	No	None	None Performed as part of this work package scope
	Waste Disposal	Yes	All	See waste disposal plan Section E
	Other (Specify) – Radiological Survey, Evaluation & Posted	Yes	4	The demolition site will be Radiologically surveyed, evaluated, and the area will be posted with Radiological Signage
Sources:	X-Ray equipment, sealed, or unsealed sources	No		
Controls:	Radiological Work Permit	Yes	All	[RWP/RWP=JS/RWP=N/R/RPGEN] All work to be performed utilizing RWP
	ALARA Plan	No		[ALARA] No
	Other	None		

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**)	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 30 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
	• Potable water	No	N/A	Potable water was disconnected for building during Utilities Isolation Work Package.
	• 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		

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 Cu. Ft.	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	None				
Hazardous Waste: • RCRA Hazardous Waste • Asbestos • Other	None				
Mixed Waste	None				
Low Level Radiological Waste: • Building Debris • Below grade	6,231	All	TBD during disposal	LSA Boxes	Nevada Test Site or Envirocare
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-20180 Attachment 1 (see below)	N/A				
Material sent to concrete crusher Fill out MD-20180 Attachments 1 & 2 (see below)	N/A				

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 East of Building 30 outside the Site Boundary Fence.

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

  The take shelter area is Building 126.

APPLICABLE LESSONS LEARNED – See Appendix E

JOB SAFETY & HEALTH ANALYSIS

JSHA MASTER DOCUMENT CONTROL NO:
BOSS – 30 - 111003

DATE: 04/21/04	_X_ NEW ___ REV	**BUILDING:** 30	**JOB:** Demolish Building 30 MSR #37549
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:	**MSDS(s)/CHEMICALS ASSOCIATED WITH THE JOB:**
Hard Hat, Safety Glasses with side shields, safety shoes, safety vest	

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. CW – Radiological Contamination	-Demolition preparation is defined by 29CFR1926.850; workers, unfamiliar with construction standards must notify the project supervision and/or project health and safety personnel. -All workers to be Rad Worker Trained & signed onto RWP
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

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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	-All work performed per RWP
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. - All work performed per RWP
3a. Rough grading	Equipment/ personnel mixture	-Stay clear of operating heavy equipment

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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

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Appendix B

Pre-Job Briefings/Job Status Log

PRE-JOB BRIEFING RECORD

MSR/PROCEDURE (if applicable):	JOB SUPERVISOR:

A. Time, Date and Location of PJB: _____

B. Applicable Procedure Number: _____

C. Job Description: _____

D. Personnel Attending:

HP#	SIGNATURE	HP#	SIGNATURE

BRIEFING CHECK OFF LIST

JOB SUPERVISOR:	**Check When Completed***
1. Scope of work reviewed:	
a. The assignments and responsibilities of each individual were specifically identified.	Done ☐ N/A☐
b. The current facility conditions, tagouts, valve lineups, and work permits relating to this job have been discussed.	Done ☐ N/A☐
c. The precautions, limitations, initial conditions, and prerequisites were adequately reviewed.	Done ☐ N/A☐
d. Potential hazards associated with the job have been discussed (JSHA).	Done ☐ N/A☐
e. Specific work covered by RWP (any limitations).	Done ☐ N/A☐
2. All necessary safety equipment and PPE is available.	Done ☐ N/A☐
3. All required personnel have satisfied initial and continuing training requirements to perform the job including training specified on the RWP.	Done ☐ N/A☐
4. All required personnel have reviewed the applicable documentation listed in B above as it applied to their part of the job.	Done ☐ N/A☐
5. Reliable and adequate communications are available.	Done ☐ N/A☐
6. The required tools and equipment are available.	Done ☐ N/A☐
7. Appropriate lob sheets, material transfer, and data recording forms are available.	Done ☐ N/A☐
8. All required documents available at the PJB are approved and current.	Done ☐ N/A☐

*For items not applicable, write in N/A.

PRE-JOB BRIEFING RECORD (Page 2)

9. Related past problems, unusual events, and occurrences were discussed. Done ☐ N/A☐
10. All personnel understand egress procedures and egress areas. Done ☐ N/A☐
11. RWP requirements:
    a. Radiological conditions of the workplace. This should include a review of the most recent survey of the area. It is important to ensure that the survey is specific to the work area. In cases where a system of unquantified activity will be breached, discuss the "anticipated activity" to be expected after the breech. Done ☐ N/A☐
    b. Dosimetry requirements. Done ☐ N/A☐
    c. Protective clothing and respiratory protection requirements (cite location of doffing instructions). Done ☐ N/A☐
    d. Job coverage requirements (continuous vs. intermittent). Explain that continuous means "within line of sight and field of control of RCT at all times." Done ☐ N/A☐
    e. Stop Work Levels (SWLs) and other applicable limitations. Done ☐ N/A☐
    f. POC's/RCT's must discuss the type of radiological monitoring to be employed at the job site during and subsequent to the work. Personnel assigned to do the work MUST EXPRESS THEIR FULL UNDERSTANDING of the monitoring to be employed and of the alarm signals if applicable. Workers MUST CONCUR in the type and scope of monitoring planned at the job site before work can begin. Done ☐ N/A☐
    g. Dose reduction/contamination control techniques (e.g., use of; shielding, capture velocity, containment devices). Done ☐ N/A☐
    h. Personnel and equipment monitoring requirements (including control point locations). Done ☐ N/A☐
    i. Bioassay requirements. Discuss; isotopes to be encountered, proper use of the bioassay information form, use of nosewipes as appropriate (and disposition of nosewipe results), and bioassay frequency if this will be a long term task. Done ☐ N/A☐
    j. Effective date and expiration date of RWP reviewed. Done ☐ N/A☐
    k. Briefly cover WORKER RESPONSIBILITIES (Article 123 of the DOE RADCON MANUAL) Done ☐ N/A☐
12. Necessary instrumentation is adequately tested and calibrated. Done ☐ N/A☐
13. Key task steps in which radiological conditions may change and where the RCT will perform in-process surveys to assess radiological conditions. Done ☐ N/A☐
14. If an ALARA Job Review was required, then this would be an appropriate time for the review. Done ☐ N/A☐
15. Radiological hold points, if any. Done ☐ N/A☐
16. Discuss any appropriate response actions to emergencies, such as CAM, alarms, criticality alarms, or increasing radiation levels. Done ☐ N/A☐
17. When nonradiological health monitoring (e.g. asbestos) is to be employed at the job site *during and subsequent to the work, the personnel assigned to do the work* MUST EXPRESS THEIR FULL UNDERSTANDING of the monitoring to be employed and of the alarm signals if applicable. Workers MUST CONCUR in the type and scope of the monitoring planned at the job site before work can begin. Done ☐ N/A☐
18. Communications and coordination with other groups. Done ☐ N/A☐
19. Provisions for waste management and job cleanup. Done ☐ N/A☐
20. Open floor to questions. Done ☐ N/A☐

The above minimum requirements have been met; this PJB has been conducted in sufficient detail to ensure save conduct of the job.

_____

Job Supervisor/Foreman Date

NOTE: Completed pre-job briefing sheet must be retained with the work package or maintained in your record file.

CAUTION: Working on or Near Live, Active Lines/Utilities
Consider Alternative Means of Protection (Blocking, Shielding, etc.)
And Alternative Manual Methods for Removal

PRE-JOB UPDATE RECORD

MSR/PROCEDURE (if applicable):	JOB SUPERVISOR:

A	Time, Date and Location of PJU:
B	Applicable Procedure Number:
C	Job Description:
D	Personnel Attending:

HP#	SIGNATURE	HP#	SIGNATURE

JOB SUPERVISOR – This is a reminder checklist for the update. The supervisor need only discuss and note changes from the previous day's briefing or update. (Use NC for No Change).

1. Any changes/revisions to safety envelope for work:
a. New/added assignments and responsibilities of any individual
b. Changes in facility conditions, tagouts, valve lineups
c. New or changed precautions/hazards
d. Valid RWP or other required work permits still in effect
2. Adequate supply of PPE
3. New Training, any training coming up on expiration
4. New changes to relevant Category "A" or Category "B" procedures
5. Equipment and tools calibrations in effect
6. Relevant lessons learned, critique reports
7. RWP revisions:
a. Changes to radiological conditions of the workplace, particularly with respect to postings
b. Change in scope, especially if it is a reduction in scope or Stop Work Levels
8. Changes to radiological and/or health monitoring
9. Open floor to questions

The above minimum requirements have been met; this PJU has been conducted in sufficient detail to maximize continued safe conduct of the job, and all personnel have been through a previous Pre-Job Brief.

Job Supervisor/Foreman _____ Date _____

NOTE: Completed pre-job update sheet must be retained with the work package or maintained in your record file.

CAUTION: Working on or Near Live, Active Lines/Utilities
Consider Alternative Means of Protection (Blocking, Shielding, etc.)
And Alternative Manual Methods for Removal

JOB STATUS LOG

Work Package Title: Demo Bldg 30 wP BOSS-37549-01 Work Package No: BOSS-37549-01

DATE	TIME	WORK PKG. SECTION	% Complete	BY	STATUS
6/11/04	6:10	7.4.12 to 7.4.13	100	CRW	Direct Load Debris. Delete Steps (Chris Watson & ROD Case)
6/11/04	7:45	—			Lightning Sighted Return 8:30
6/28/04	1630	7.5.1		JH.	Load Out of Material started and finished today. Hauler Hauled material to rail spur.
7/01/04	1630	7.5.2		JH	Removed Pad - Stockpiled. Excavation Permit in Place
7/06/04	1630	7.5.2		JH	Two Loads to Rail Spur Cleaned up Slab. Two Loads Foundation today. Demo. East side walk & ~~Foundation~~ Asphalt #1 & South today swiped & placed in stockpile
7/07/04	1630	7.5.2	100	JH	Two loads finished foundation to Rail Spur. ~~East~~ South concrete driveway Removed today. Driveway swiped & Released. Bldg 30 Demo Pkg finished today.
7/12/04	1500	7.4.12 and .13		MC	FCA PREVIOUSLY DRAINED. SHORING NOT REQUIRED DEBRIS GOING TO PAD

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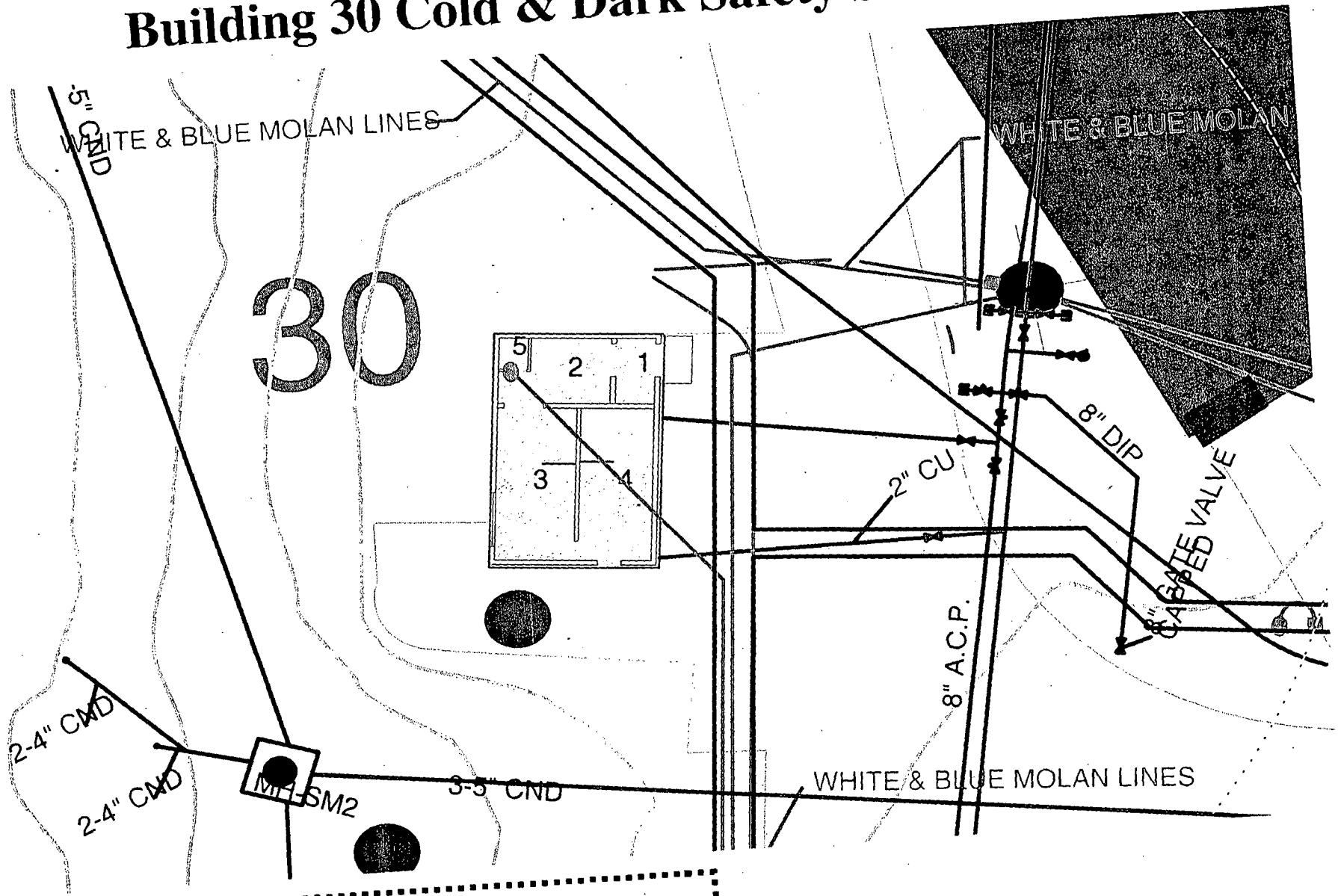
Appendix C

Drawings/Sketches/Photographs

- Drawings
  - **Building 30 Cold & Dark Safety Sketch**
  - **Building 30, Floor Plans, Dwg No. FSC911242**
  - **Building 30, Canopy Layout, Dwg. No. 4-8228**
  - **Building 30, Plumbing Fixtures & Piping Layout, Dwg No. FSD-19667**
  - **Building 30, Ventilation Plan, Dwg No. FSD-19668**
  - **Building 30, Electrical Plan, Dwg No. FSD-19669**

Building 30 Cold & Dark Safety Sketch



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

04/26/04 2:51 PM

Jeffrey L. Boston

Appendix D

Miscellaneous

- No USQ required for this Work Package
- RWP to be Supplied at Demolition Startup
- Structural Engineering Survey letter, per OSHA CFR1926.
- MSR 37549
- Request To Stage Clean Hard Fill Debris at Construction Spoils Area – None Required for this Work Package
- ACCEPTANCE CHECKLIST FOR WASTE SHIPMENTS TO RAIL STAGING AREA

INTER OFFICE MEMO CH2MHILL MOUND, INC.

Date: February 3, 2004 cc. J. Boston

From: W. L. Johanan – Blg. 61-220B

Subject: Structural Survey of Building 30, RE: 29 CFR 1926.850 (a)

To: Kurt Kehler-Project Manager

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

Please call me if you have any further questions.

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

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

MSR # : 37549 **CH2MHILL** - ***Maintenance Service Request*** Date Printed: 02/03/2004

Date called in : 09/15/2003

Charge # : **EE030J** Area assigned to: SMPPTF Awaiting action by : WEIDENBACH

Bldg/Room : 30 Equipment # : 30BUILDING RWP # : Priority:

DEMOLITION OF BUILDING 30 Requestor : WEIDENBACH 4228 3241

Building Manager / Core Team Review Notes :

This section documents the Preliminary Hazards Analysis for work orders processed electronically using Proteus.
For each hazard identified here, it is expected that the Work Planning Details will specify appropriate mitigating control measures.

BM Review	Description
CORE=Y	CORE TEAM HAS REVIEWED THIS MSR
UNIQUE	UNIQUE WORK PACKAGE PER IWCP

Work Planning Details:

THE WORK SCOPE IS TO BE DEFINED IN THE WORK PACKAGE FOR THE DEMOLITION OF BUILDING 30. THE BOSS (SMPPTF) CORE TEAM WILL REVIEW AND APPROVE THE PACKAGE, SEE SIGNATURE SHEET OF THE PACKAGE. GARY WEIDENBACH.

02/03/2004 :

Tradesman notes and closeout

1. Is this job complete and ready to closeout ? YES/NO (circle one) [If no, what work remains to be done ???]
2. Was advance planning and coordination of work activities adequate for this type job ? YES/NO (circle one) [If not, please explain}
3. Should a post-job review be done on this job ? YES/NO (circle one)
4. Do you have any suggestions for improvements ?

Hours spent on this job : _____ Name : _____ Date : _____

Foreman (signature) : _____ Date : _____

RETURN SIGNED PAPERWORK TO EM/PM GROUP FOR CLOSEOUT 0 34 of 42

ACCEPTANCE CHECKLIST FOR WASTE SHIPMENTS TO RAIL STAGING AREA (Page 1)

PROJECT/AREA: _____ Area includes : _____
WASTE COORDINATOR: _____ Area excludes: _____

WASTE PROFILE

VOLUME _____ Delivery Start Date _____
Delivery End Date _____

WASTE DESCRIPTION (debris/soil/etc): _____

ACTIVITY: _____ REMOVABLE?: Y/N
FIXATIVE APPLIED? Y/N
Waste Coordinator Approval:
Name: _____
Signature: _____
Date: _____

OTHER:

ENVIROCARE ACCEPTANCE

Meets Profile for radiological activity? Y/N
Meets Profile for size envelope? Y/N

Envirocare POC Approval
Name: _____
Signature: _____
Date: _____

OTHER:

DOT ACCEPTANCE

DOT Classification: _____

Shipping POC Approval
Name: _____
Signature: _____
Date: _____

OTHER:

RAD CON ACCEPTANCE

Level Control (HCA/CA): _____
Personnel monitoring: _____
PPE: _____
Air monitoring: _____
Boundary postings: _____
Fixative Required? Y/N Details: _____
Wetting required? Y/N Details: _____
OTHER:

Rad POC Approval:
Name: _____
Signature: _____
Date: _____

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ACCEPTANCE CHECKLIST FOR WASTE SHIPMENTS TO RAIL STAGING AREA (Page 2)

AB ACCEPTANCE

Meets inventory limit? Y/N
Meets tritium limit? Y/N
Meets volume limit? Y/N
OTHER:

Facility Manager Approval:
Name: _____
Signature: _____
Date: _____

OPERATIONAL ACCEPTANCE

Delivery window (days/times): _____ Size < 6' x 6' x 10"? Y/N
Delivery method: _____ Delivery location: _____
New Fixative at project? Y/N Details: _____
New Fixative at pit? Y/N Details: _____
In-pit segregation? Y/N Details: _____
In-pit mixing? Y/N Details: _____
Lids required? Y/N Details: _____
Additional equipment? Y/N Details: _____
OTHER:

PROJECT POC APPROVAL
Name: _____
Signature: _____
Date: _____

WASTE OPERATIONS POC APPROVAL
Name: _____
Signature: _____
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

. WORK PACKAGE TITLE: Demolition of Building 30
. WORK PACKAGE NUMBER. BOSS-37549 - 01.

What went well?

What could be improved?

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

041/42

Building 30 Demolition Review Comments/Notes

37549-01

Work package36052 demolished the building.

A closure review was performed for this packages on 7/13/04. The work package was written with the understanding the slab would be left for the ER group to remediate. Steps 7.4.12 and 7.4.13 were requirements to place the slab in a long-term storage condition to await the ER remediation effort. As the debris was scheduled to proceed directly to the depot these steps were no longer required. After consulting with the radiation engineer and confirming the fixed contamination areas had previously been painted, the requirement to paint the entire floor and place sheeting on the floor was changed. This step reduced the potential contaminated debris. Discussions with the craft and the RCT indicated the FCA areas were identified, the affected areas turned upside down prior to downsizing as a good contamination control measure.

A post job conference not was conducted. as this was a routine demolition.

Bo Wier

Appendix P

Core Team Recommendation from
Action Memo / EE/CA for
Contingent Removal Actions for Contaminated Soils
Addendum 1: Structures
April 2004, Public Review Draft

RECOMMENDATION

This decision document represents concurrence to incorporate Building 30, the Building 50 red drain line system, and similar structures that are simple removals, easily verified, with a small number of contaminants into the Contingent Removal Action. Plutonium-238 was observed on the floor of Building 30 by alpha spec at 284,197 dpm/sample. This exceeds the surface contamination guideline (100 dpm/100cm^2). A sediment sample from the Building 50 red Drain Line was analyzed and Th-232 was observed (13.84 pCi/g) in excess of the cleanup objective (2.1 pCi/g). Th-228 was also found in the same sample (12.16 pCi/g) in excess of the cleanup objective (2.6 pCi/g).

Presentation of the information in this addendum models the approved Contingent Action Memorandum that was prepared 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.

Information provided in this Addendum 1 is consistent with actions already proposed for buildings and we recommend that they be initiated as described herein.

Paul Lucas 4/14/04

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