300502-0605010006

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

ER/WM-181/04
December 22, 2004

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
Statement of Work Requirement 055 - Regulator Reports
BUILDING 30 Structure OSC REPORT, FINAL

Dear Ms. Marks:

Paul Lucas from your office authorized the release of the following final document:

- Building 30 Structure OSC Report, Final

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

Sincerely,

David A. Rakel
CERCLA Lead

DAR/ms

Enclosures

cc: Tim Fischer, USEPA, (1) w/attachments
Brian Nickel, OEPA, (1) w/attachments
Ruth Vandegrift, ODH, (1) w/attachments
Mary Wojciechowski, Tetra Tech, (1) w/attach
Frank Schmaltz, DOE/MCP, (1) w/attachments
Lisa Rawls, MCP, w/o attachments
Randy Tormey, DOE/OH, (1) w/attachments
Robert Perrygo, DOE/HQ, (1) w/attachments
Frank Bullock, MMCIC, (2) w/attachments
Public Reading Room, (4) w/attachments
Chris Watson, CH2M Hill, (1) w/attachs
CERCLA Records, CH2M Hill, (1) w/attachs
ER Records, CH2M Hill, (1) w/attachs
Administrative Record (2) w/attachments
DCC (1) w/attachments
John Lehew, CH2M Hill, w/o attachments
Dave Rakel, CH2M Hill, w/o attachments
Val Darnell, CH2M Hill, w/o attachments
Bo Weir, CH2M Hill, w/o attachments
file

300502-0605010006

BUILDING 30 STRUCTURE REMOVAL ACTION

No PRSs are closed via this OSC Report

OSC REPORT

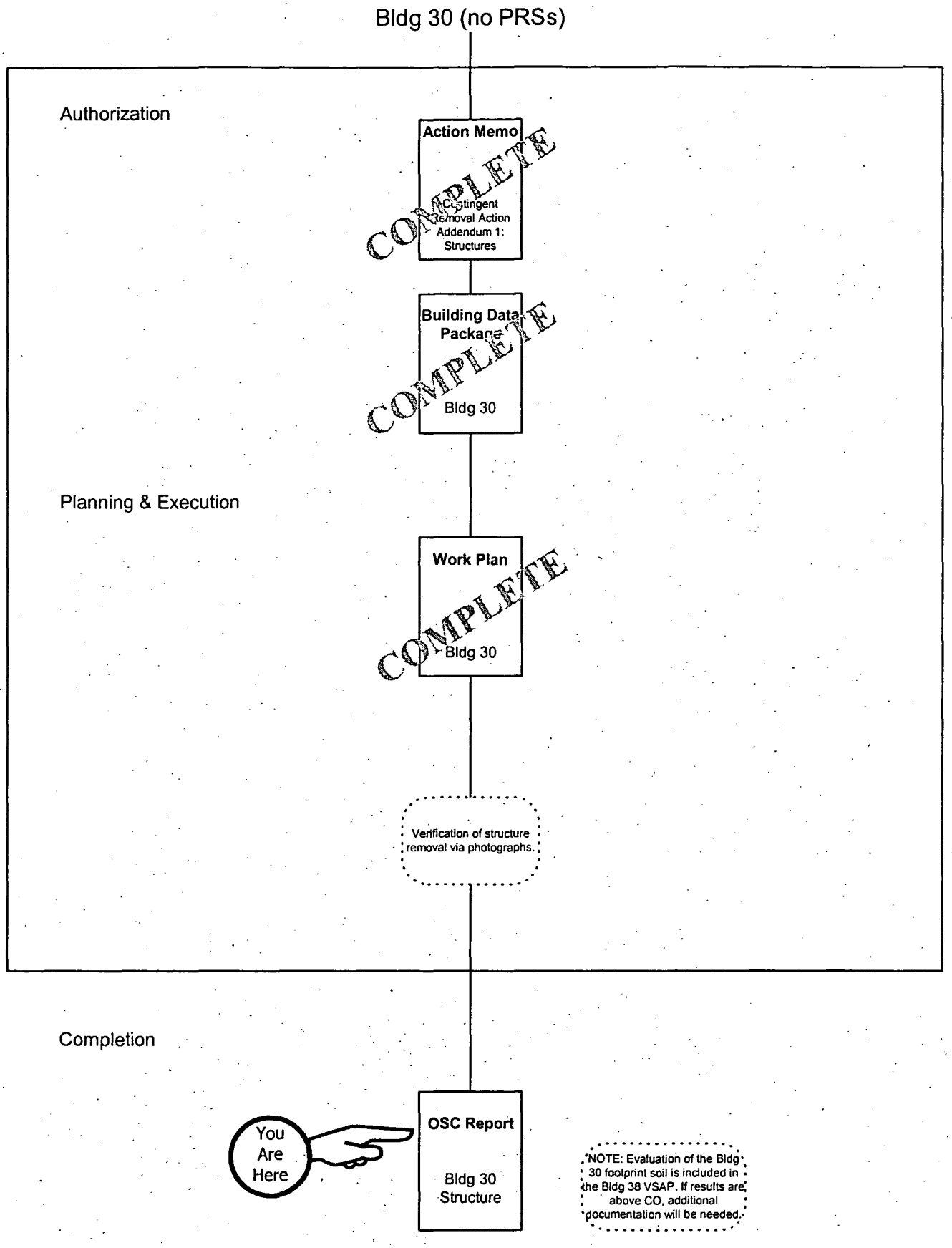
December 2004

Final

Department of Energy
Miamisburg Closure Project

CH2MHILL

Building 30



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Acronyms

BOSS	Balance of Site Structures
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
cm^2	square centimeters
COC	Contaminant of Concern
CRA	Contingent Removal Action
D&D	Decontamination and Decommissioning
DAC	Derived air concentration
DOE	Department of Energy
dpm	disintegrations per minute
ER	Environmental Restoration
LSA	Low Specific Activity
MCP	Miamisburg Closure Project
OEPA	Ohio Environmental Protection Agency
OSC	On-Scene Coordinator
PRP	Potentially Responsible Party
PRS	Potential Release Site
RA	Removal Action
SM	Special Metallurgical
USEPA	United States Environmental Protection Agency
VSAP	Verification Sampling and Analysis Plan

Recommendation

Building 30 was the Health Physics Count Laboratory/SM [Special Metallurgical] Storage Building. Initial plans were to decontaminate the building and demolish it as an industrial demolition project; however, radiological surveys identified elevated levels of fixed plutonium-238 on the building floor, which warranted the structure's demolition as a CERCLA Removal Action (RA). Contamination was present at multiple locations on the floor, with the highest isotopic analysis result (alpha spec) being 294,197-dpm/sample plutonium-238. Plutonium-238 was the only radionuclide observed by this analysis, and therefore is the only contaminant of concern for this RA.

The RA resulted in the demolition of Building 30, and the disposal of 242.9 cubic yards of low-level radioactive waste. The radiologically contaminated debris will be sent to Envirocare; and the debris meeting surface release criteria, asbestos and PCB debris, was sent to Stoney Hollow Landfill and Clean Harbors, respectively.

Contingent Removal Actions (CRA) for Contaminated Soils, Addendum 1: Structures Public Review Draft was approved in April of 2004 authorizing removal of the Building 30 structure and slab. This OSC Report closes the CRA activities related to Building 30. Evaluation of the Building 30 footprint soil is addressed in the Building 38 Area VSAP. If results are above cleanup objective, additional documentation will be required.

Recommendation:

After a thorough review of the Building 30 On-Scene Coordinator report, the Core Team agrees that the Removal Action of the Building 30 structure and slab is complete, and that all previously existing environmental issues associated with Building 30 have been resolved.

Paul Lucas 12/15/04

Paul Lucas, OSC
U.S. Department of Energy
Miamisburg, Ohio

Timothy Fischer 12/15/04

Timothy Fischer, Remedial Project Manager
USEPA
Chicago, Illinois

Brian Nickel 12/15/04

Brian Nickel, Project Manager
OEPA
Dayton, Ohio

1.0 SUMMARY OF EVENTS

This section describes the site background and events leading up to the removal action, parties involved in supporting the removal action, chronological narrative of the removal action, and resources committed to complete the project.

1.1 Site Conditions and Background

The Contingent Action Memo /EE/CA, Addendum 1: Structures, April 2004, Public Review Draft authorized removal of the Building 30 superstructure and slab. This On-Scene Coordinator (OSC) Report documents the completion of the removal action for Building 30. The levels of radiological contamination present in Building 30 warranted a Removal Action (RA) under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and subsequent demolition of Building 30.

The Building 30 footprint soil will be evaluated per the Building 38 Soil Verification Sampling and Analysis Plan (VSAP), with results documented in the Building 38 Soil OSC Report. If results exceed Cleanup Objective, additional documentation will be required.

Building 30 Background

Building 30 was known as the Health Physics Count Lab/SM (Special Metallurgical) Storage Building, and was located as shown on Figure 1. Building 30 was constructed in 1965 and served four main functions: the SM storage building (1965 to late 1970s); a gamma scanning facility for drums and boxes of radioactively contaminated materials (late 1970s to early 1990s); a health physics office (early 1990s to 1996); and a counting laboratory for the analysis of radionuclides (1996 to October 2003). 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.

Plutonium-238 was present on the building floor. The highest isotopic analysis result by alpha spec was 294,197-dpm/sample plutonium-238. This exceeded the surface contamination guideline (100 dpm/100cm^2). Only plutonium-238 was observed by this analysis. Soil around the perimeter of the building was surveyed and results found no contamination. Since extensive remediation of the floor was not considered practical, the floor contamination was encapsulated with the application of a paint fixative. Building 30 was demolished in its entirety as a radiological facility and the debris disposed of as low-level waste per Waste Management direction. The Contaminant of Concern for Building 30 is plutonium-238.

Appendix D provides photographs of the building before, during, and after demolition.

Associated Potential Release Sites (PRSs) and Previous Investigations.

No PRSs are associated with Building 30, or are closed out via this Building 30 Structure OSC Report. Refer to the Building Data Package, Building 30 for information about PRSs in the vicinity.

Removal Action. The RA for Building 30 began in 2004 with the authorization of the Action Memorandum for Contingent Removal Actions for Contaminated Soils, Addendum 1: Structures. The Building 30 demolition was initially planned as an industrial demolition project. However, when the extent of contamination on the floor was discovered, the Contingent Action Memorandum was revised to expand the scope of work to include the Building 30 demolition. The authorization of the Contingent Removal Action for Building 30 was made by the Core Team in April, 2004 and was made available for public review and comment in April 2004.

Since DOE is the sole responsible party for cleanup of contamination in Building 30, no Potentially Responsible Parties (PRPs) were sought to clean up the site. Monsanto Research Corporation, EG&G Mound Applied Technologies, and BWXT of Ohio, Inc. were the operating contractors at the site from 1948 to 30 September 1988, from 1 October 1988 until 30 September 1997, and from 1 October 1997 until 31 December 2002 respectively. CH2M Hill Mound, Inc. became the site contractor for the Miamisburg Closure Project (MCP) effective January 1, 2003.

1.2 Organization of the Removal Action

Table 1 (Appendix B) lists the parties supporting the removal action and their responsibilities.

1.3 Objectives

Documentation Objective. The objective of this Building 30 Structure OSC Report is to describe the removal action fieldwork, report the air monitoring results, and document successful completion of the project. Demolition debris quantities and disposition locations are presented in Table 2. The cost breakdown of the RA is presented in Table 3.

Soil under the Building 30 footprint will be evaluated per the Building 38 Area VSAP, and is not included in the scope of this RA.

During demolition activities, Radiological Control performed air monitoring to confirm a safe work environment and document that no radiological contamination was released from the demolition site. Air monitoring results from the building demolition are provided in Appendix E. The highest recorded air monitoring result was 2.911E-05 derived air concentration (DAC). All results were below the 0.3 DAC Mound posting criteria.

Removal Action Objectives: This RA includes the demolition of the Building 30 superstructure. Verification of the Building 30 demolition and removal is provided in the photographs included in Appendix D.

1.4 Chronological Narrative of the Removal Action

The following is a chronological narrative of events surrounding the Building 30 structure removal action.

Timeframe	Activity
1965	Construction Completed
1965 To Mid 1970's	Special Material Storage
Late 1970's to early 1990's	Gamma Scanning Facility
Early 1990's to 1996	General Area Health Physics Office
1996 to October 2003	Counting Laboratory
November 18 2003	Pre-demolition survey completed
November 03 to June 04	Equipment removed
December 5, 2003	Asbestos removal completed
March 2004	Turned over to CH2MHILL BOSS
April 2004	Core Team authorized removal of Building 30 via Contingent Removal Action Addendum 1: Structures
June 9, 2004	Safe shutdown completed
June 11,2004	Superstructure demo completed
July 7, 2004	Slab/foundation removed completed
November 2004	Structure OSC Report generated

2.0 EFFECTIVENESS OF THE REMOVAL ACTION

The Building 30 superstructure has been demolished, foundation removed and the debris removed and properly disposed of per the Work Package. Photographs taken before, during and after demolition are included in Appendix D.

2.1 Actions Taken by Site Contractor

The Balance of Site Structures (BOSS) project and onsite personnel planned and performed the removal action, building dismantlement and demolition, and onsite transportation and staging of debris. The project met the removal action objectives as outlined in the Contingent Removal Actions for Contaimated Soils Addendum 1: Structures (authorized April 2004). CH2M Hill Mound, Inc. personnel prepared the Structure OSC Report, which shows that the Removal Action objectives related to the building were achieved.

In accordance with the RA, the following actions were taken: public notification of the RA, demolition of the structure, and proper disposal of the debris. This Structure OSC Report provides the documentation of completion for the removal of Building 30. Soil below Building 30 is not included in this RA, but is addressed in the Building 38 Soil VSAP.

The resulting demolition debris was disposed of as low-level radiological waste. Prior to demolition, acid etching was done as part of the isotopic analysis of certain contaminated areas of the concrete floor. The resulting samples were analyzed by gamma and/or alpha spectroscopy as appropriate. The sample was then disposed of through the appropriate waste stream. Water misting was performed with the goal of eliminating fugitive dust. Any contamination potentially spread by fugitive dust would be found during the soil sampling effort in the Building 38 Soil VSAP.

Building Dismantlement and Demolition

Photographs of Building 30 before, during, and after demolition are provided in Appendix D. To prevent the generation of airborne radioactive contamination during demolition activities, engineering controls were employed. These controls included (but were not limited to) fixing contamination using paint fixatives, acid etching fixed contamination locations to remove the contamination, and using water misting to prevent fugitive dust emissions.

Prior to demolition, Radiological Controls performed an evaluation of the radiological history of the building, and radiological surveys to identify debris within the building that met surface release criteria. Only material that met surface release criteria was released to Stoney Hollow Landfill (see Table 2). All radioactively contaminated debris was size reduced and packaged to meet the Envirocare waste acceptance criteria.

Air Monitoring for Worker Safety

During demolition activities, the Mound Radiological Control organization performed air monitoring to confirm a safe work environment, in accordance with 10 CFR 835. Air monitoring results measured during building demolition are provided in Appendix E. The monitors were repositioned up and downwind from the demolition activities in response to changes in wind direction.

The DAC is a calculated value for occupationally exposed radiological workers based on continuous, non-shielded exposure. For the purpose of the Building 30 demolition, the DAC was calculated based on the isotopic mix of 100% plutonium-238. The highest recorded result was 2.911E-05 DAC. All results were well below the 0.3 DAC, which is a Mound Administrative Control level based on 10 CFR 835. During demolition activities, radiological personnel identified contaminated floor areas to ensure demolition craft employ appropriate controls to minimize dust-producing activities during size reduction of the contaminated sections of flooring.

The air monitoring results indicate that there was no airborne worker radiological exposure, and therefore it can be extrapolated that the demolition activities did not pose any risk to human health and the environment.

2.2 Actions Taken by Local, State, and Federal Agencies

The Department of Energy (DOE)/MCP, the United States Environmental Protection Agency (USEPA), and Ohio EPA (OEPA) had oversight responsibility for the removal action. The DOE/MCP was the lead agency for the RA and provided the funding and oversight for the RA. The USEPA and OEPA had oversight responsibility for the RA and review of the Action Memorandum and OSC Report to ensure that the objectives are/were met.

2.3 Actions Taken by Subcontractors

There were no subcontractors involved in the project.

3.0 DIFFICULTIES ENCOUNTERED

3.1 Items that Affect the Removal Action

No difficulties were encountered that affected the RA.

3.2 Issues of Intergovernmental Coordination

All DOE/USEPA/OEPA interactions were good. The agencies were updated informally on a regular basis, and formally at monthly Core Team meetings. The Mound 2000 Process worked well.

4.0 RECOMMENDATIONS

4.1 Means to Prevent Spread of Contamination

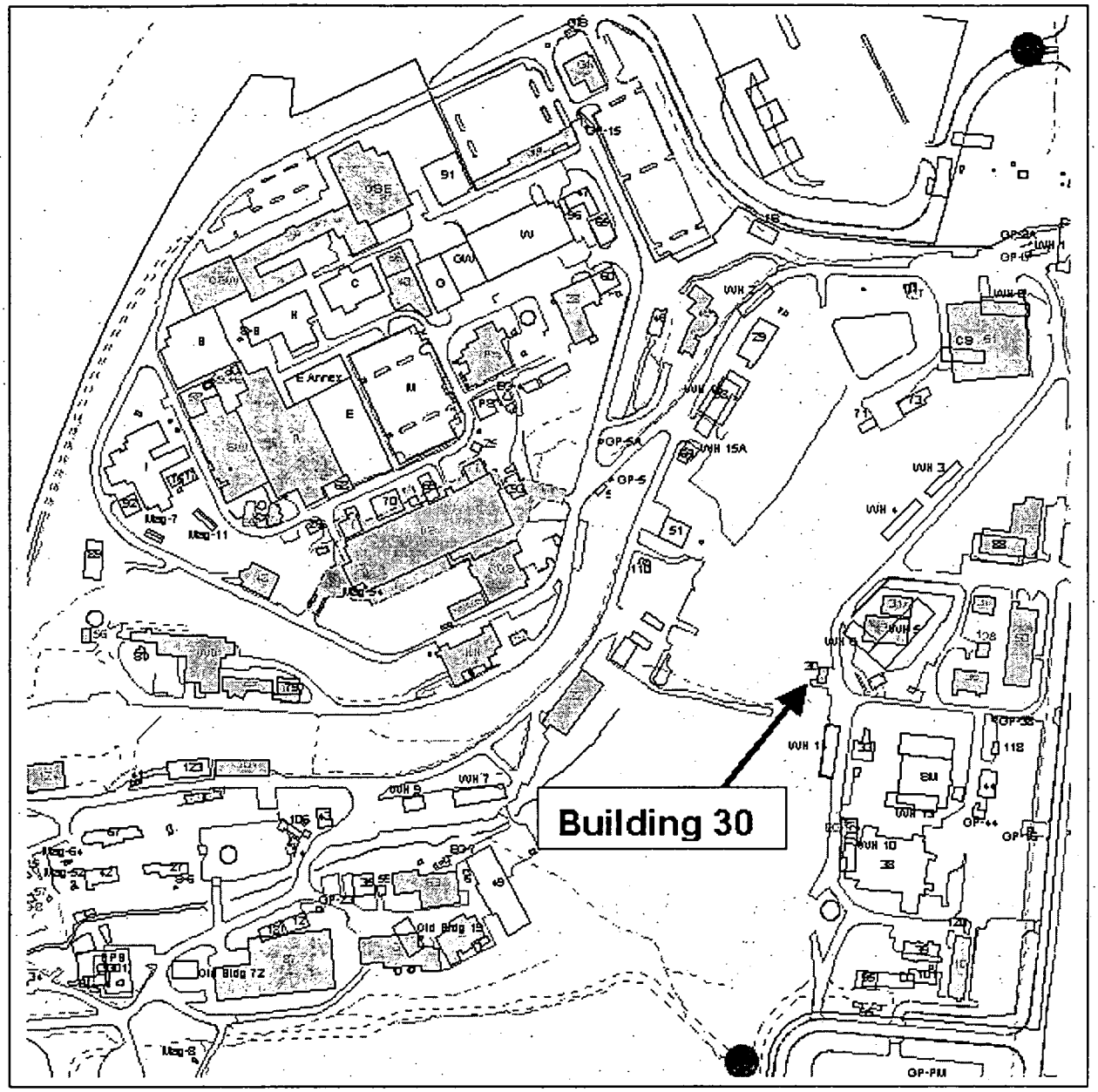
The building debris was removed and properly disposed of per the Core Team-approved work plan; therefore, the spread of contamination is prevented. Removal of the Building 30 superstructure and slab concludes the scope of this RA.

Building 30 footprint soil will be evaluated per the Building 38 VSAP, and documented in the Building 38 Soil OSC Report. If results are above Cleanup Objective, additional documentation will be required. Once the soil evaluation is complete (with results below CO), the area will be transferred from federal to private ownership. All State and Federal disposal rules will apply.

APPENDIX A

FIGURES

Figure 1: Site Map/Building 30



APPENDIX B

TABLES

Table 1: Organization of the Removal Action

Agency or Party Involved	Contact	Description of Participation
US EPA (SR-6J) 77 W. Jackson Chicago, IL 60604 312-886-7058	Timothy Fischer	Federal agency responsible for MCP oversight.
Ohio EPA 410 E. Fifth Street Dayton, OH 45402-2911 937-285-6468	Brian Nickel	State agency responsible for MCP oversight.
DOE/ MCP P.O. Box 66 1 Mound Road Miamisburg, OH 45343-0066 937-847-8350, ext. 304	Frank Schmaltz	DOE/ MCP Project Manager responsible for project oversight and success.
CH2M Hill Mound, Inc. BOSS Project P.O. Box 3030 1 Mound Road Miamisburg, OH 45343-3030 937-608-8007	Chris Watson	Provided the DOE/ MCP Project Manager with technical assistance, administrative support, sampling, decontamination, photo and site documentation, site safety, and report preparation.
CH2M Hill Mound, Inc. General Superintendent and Equipment Manager P.O. Box 3030 1 Mound Road Miamisburg, OH 45343-3030 937-865-4278	Max Edington	Provided the equipment necessary for the demolition.

Table 2: Building 30 Waste Disposition

Building 30 Material	Quantity	Disposal Method	Destination
Asbestos Abatement (Debris)	0.062 cubic yards	Landfill	Stoney Hollow
PCB Light ballasts	0.0244 cubic yards	Treatment	Clean Harbors
Radiation debris	157.3 cubic yards	Rail	Envirocare
Radiation debris slab	85.6 cubic yards	Rail	Envirocare

Table 3: Building 30 Estimated Costs

	Bldg 30
Work Planning	$25,000
Facility Prep	$7,000
Demolition	$14,000
Hauling and Disposal	$5,000
Total	$51,000

APPENDIX C

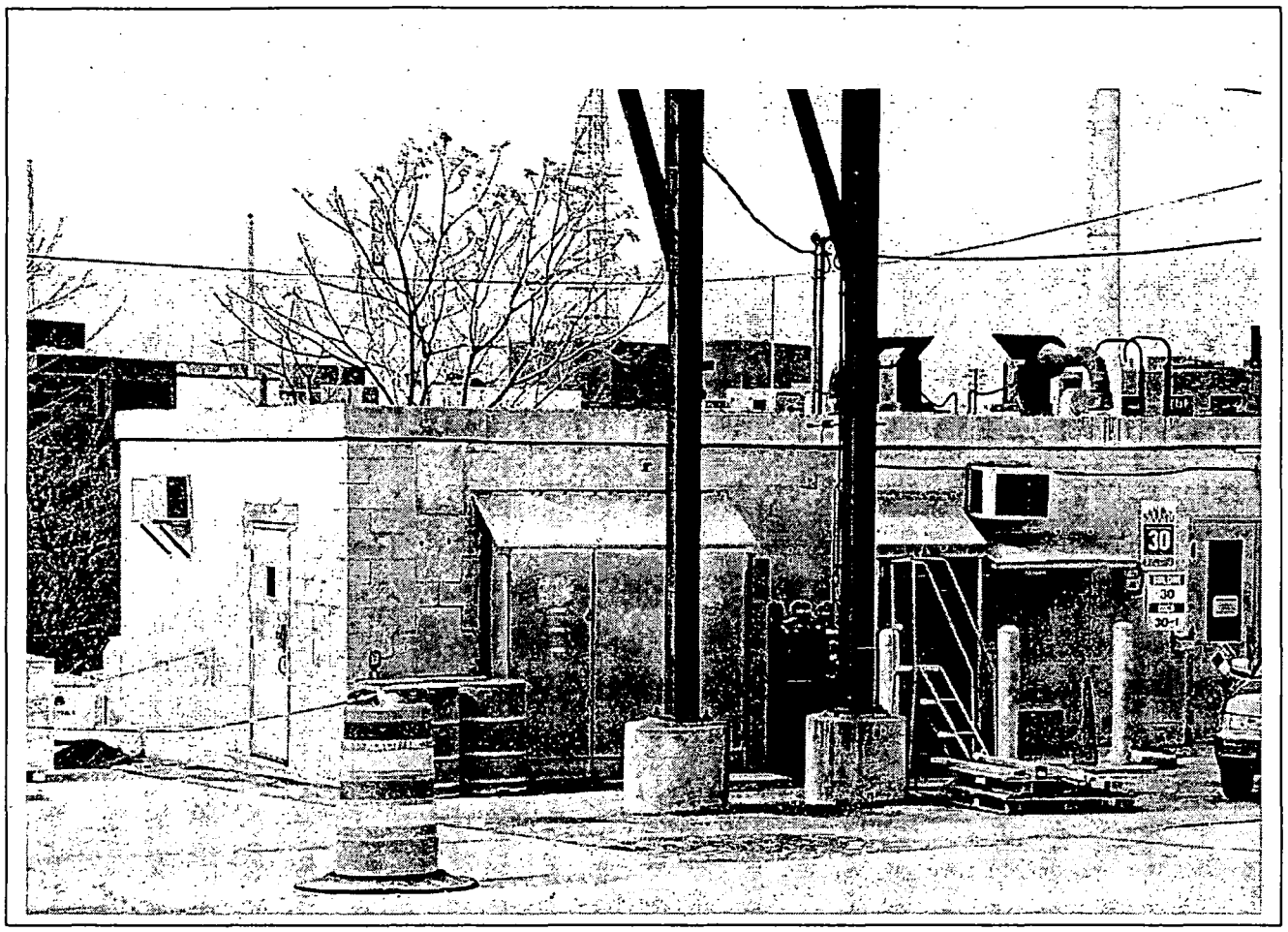
GENERAL MEDIA INFORMATION

No Media Information Exists

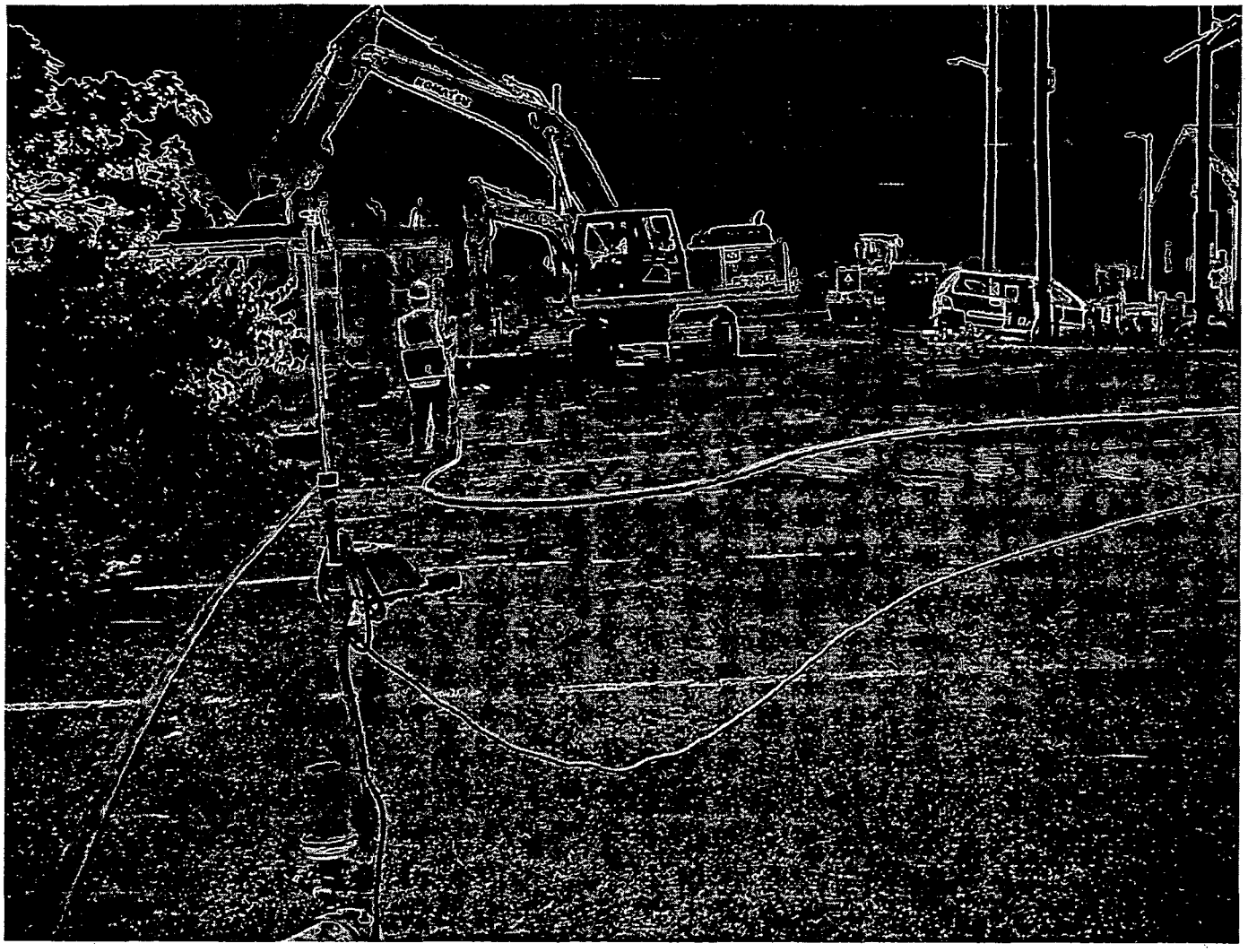
APPENDIX D

PHOTOGRAPHIC DOCUMENTATION

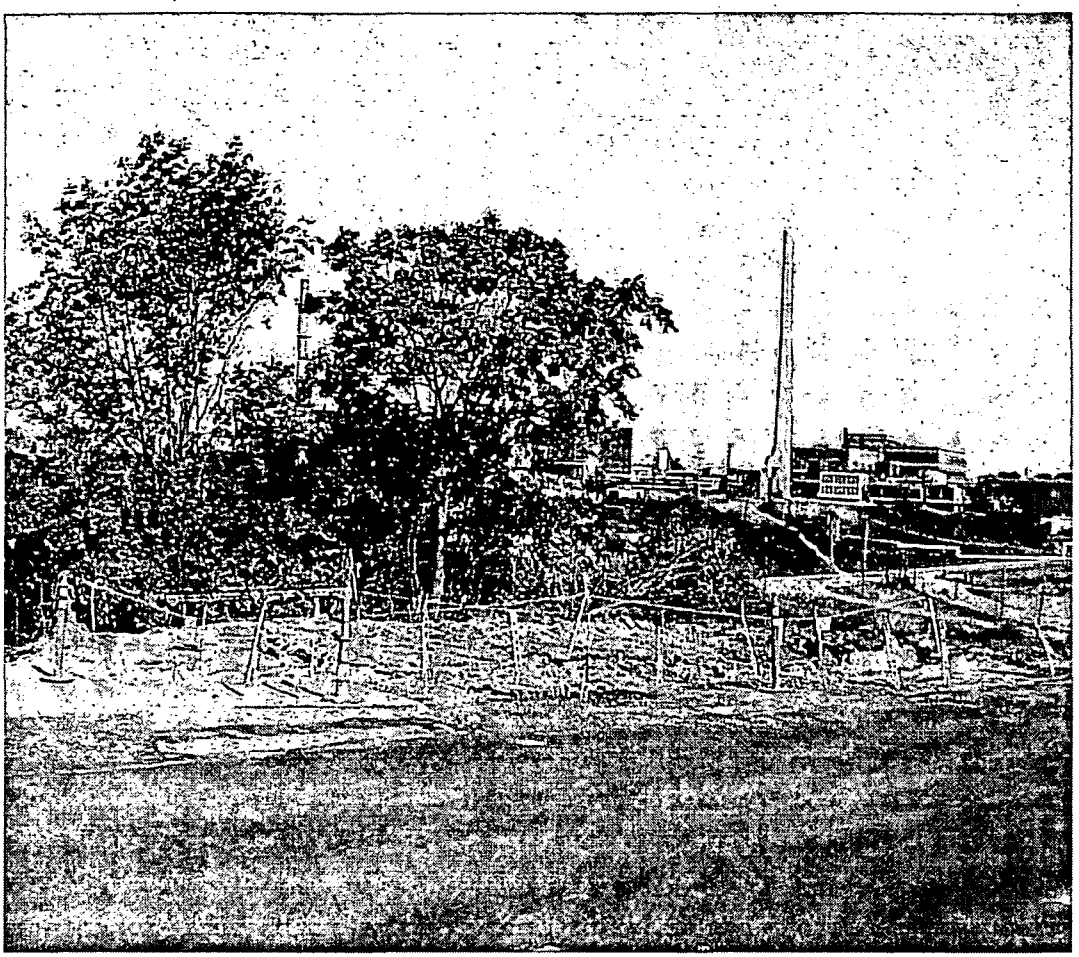
Photograph 1: Building 30 Before Demolition



Photograph 2: Building 30 During Demolition



Photograph 3: Building 30 After Demolition



APPENDIX E

RADIOLOGICAL AIR MONITORING RESULTS

RADIOLOGICAL AIR MONITORING RESULTS

Rwp No	Sample Id	StartTime	RSDS No	Building	Room	Purpose	Total Dac
1588	27066	6/11/2004	0164	30	DOWNWIND	Boundary Verification	0.000E+00
1588	27067	6/11/2004	0164	30	UPWIND	Boundary Verification	0.000E+00
1588	27068	6/12/2004	0168	30-31	DOWNWIND	Boundary Verification	0.000E+00
1588	27069	6/12/2004	0168	30-31	UPWIND	Boundary Verification	0.000E+00
0	27195	7/1/2004	0194	30/31	UPWIND	Boundary Verification	2.911E-05
0	27196	7/1/2004	0194	30/31	DOWNWIND	Boundary Verification	2.025E-05
0	27228	7/6/2004	0198	30	UPWIND	Boundary Verification	0.000E+00
0	27229	7/6/2004	0198	30	DOWNWIND	Boundary Verification	1.524E-05
0	27237	7/7/2004	0203	30	UPWIND	Boundary Verification	0.000E+00
0	27238	7/7/2004	0203	30	DOWNWIND	Boundary Verification	0.000E+00

Max	2.911E-05
Average	6.460E-06
Standard Deviation	1.092E-05
Confidence Interval	6.765E-06