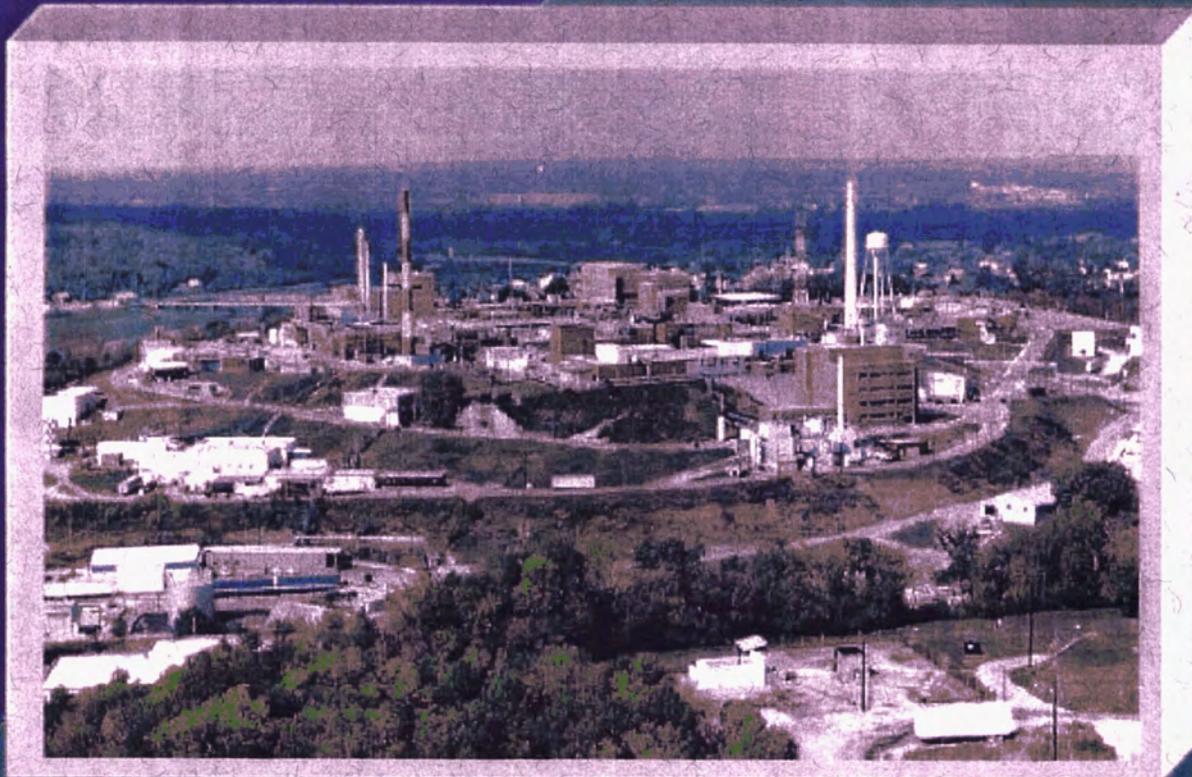


3006-0303310001



MOUND PLANT Closeout Report Building 55

Final
July 2002





BWXT Technologies, Inc.

a McDermott company

3006-0303310001

BWXT of Ohio, Inc.

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

SM-077/02
July 10, 2002

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

ATTENTION: Robert S. Rothman

SUBJECT: Contract No. DE-AC24-97OH20044
VARIOUS DOCUMENTS

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

Dear Mr. Provencher:

Attached are the Final Closeout Reports for **Buildings 51 and 55**. These reports provide summary information on the successful completion of these efforts.

The release of these documents to the regulators and the public has been authorized by Rob Rothman of your office.

Please advise if additional copies are required. If you require further information, please contact Bob Ransbottom at Extension 4220.

Sincerely,

C. D. Thompson
SMPP/TFV Project Manager

CDT/RCR:jdjg

cc: Tim Fischer, USEPA, (1) w/attachments
Brian Nickel, OEPA, (1) w/attachments
Ruth Vandegrift, ODH, (1) w/attachments
Frank Schmaltz, DOE/MEMP, (1) w/attachments
Randy Tormey, DOE/OH, (1) w/attachments
Terry Tracy, DOE/HQ, (1) w/ attachments
Bob Ransbottom, BWXTO, (1) w/attachments
Budd Thompson, BWXTO, (1) w/attachments
Public Reading Room (5) w/attachments
DCC

Closeout Report

Building 55

**DOE Mound Plant
Miamisburg, Ohio 45343**

Prepared for:

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

Prepared by:

BWXT of Ohio, Inc.

TABLE OF CONTENTS

Section	Page
1.0 Purpose	1
2.0 Background.....	1
3.0 Actions Taken	1
4.0 Problems Encountered	2
5.0 Resources Committed	2

Tables

Table 1: Materials Disposition	2
Table 2: Personnel Organization for the Demolition	2
Table 3: Total Cost	3

Appendices

Appendix A	Figures
	Figure 1: Location of Building 55
	Figure 2: Building 55 and Vicinity
	Figure 3: Building 55 – Before, During, and After Demolition
Appendix B	Work Package
Appendix C	Radiological Summary

1.0 PURPOSE

This is the final report documenting completion of the demolition of Building 55 located at the DOE Mound Site, as shown in Figures 1 and 2 (Appendix A). The building and pad were demolished per the Work Package for Building 55 Demolition (April 2002), which is included in Appendix B. The scope of work relating to this building is considered complete.

2.0 BACKGROUND

Building 55 was constructed in 1973 in an area known as the lower valley. It was a one-story, 330 square-foot, concrete block structure with a built-up membrane coal tar roof (Figure 3). The two-room building consisted of a former water testing laboratory (with a sink and electric water heater) and a storage/equipment room.

The building was serviced with central steam supplemented by an electric heater. Ventilation was provided via a self-contained electric dehumidifier/cooler. Potable water was provided by the Mound Plant facility. The sink and floor drain discharged to a sanitary sewer line. Electric service was 240 volts.

3.0 ACTIONS TAKEN

The Building 55 Building Data Package and Work Plan were submitted for simultaneous Core Team and Public Review on April 23, 2002. The 30-day Public Review period concluded on May 22, 2002. This Closeout Report documents the completion of the removal of the building, pad, foundation, and footer.

All preparation and demolition activities were performed in accordance with a detailed Work Plan (Appendix B) to perform safe shutdown of utilities, maintain site access control, and perform demolition and debris removal. There were no Potential Release Sites (PRSs) associated with Building 55.

Building 55 was radiologically surveyed before and after demolition. All radiological sampling results were below applicable surface release criteria (Appendix C).

Building demolition commenced on May 30, 2002, and pad demolition on June 3, 2002; site restoration was completed on June 10, 2002. The demolition was accomplished as a non-CERCLA project, per the Building Data Package. Photographs taken before, during, and after demolition are provided in Figure 3.

Demolition material was dispositioned as noted in Table 1.

Table 1 - Materials Disposition

Material	Quantity	Method	Location
Construction Debris (concrete/masonry)	56 cubic yards	Landfill	Stoney Hill
Clean Hard Fill Debris (concrete)	8 cubic yards	Reused	Spoils Area/ Concrete Crusher

4.0 PROBLEMS ENCOUNTERED

Building 55 was successfully demolished per the Work Package, with no variances reported.

5.0 RESOURCES COMMITTED

Table 2 lists the personnel organization for the demolition. Table 3 provides a summary of the total cost.

Table 2 - Personnel Organization for the Demolition

Agencies or Parties Involved	Contact	Description of Participation
US EPA HSRM-6J 77 W. Jackson Chicago, IL 60604 312-886-5787	Tim Fischer	Federal agency responsible for Mound Plant oversight.
Ohio EPA 410 E. Fifth Street Dayton, OH 45402-2911 937-285-6468	Brian Nickel	State agency responsible for Mound Plant oversight.
DOE/MEMP P.O. Box 66 1 Mound Road Miamisburg, OH 45343-0066 937-865-3620	Ronald Church / Frank Schmaltz	DOE/MEMP Project Manager responsible for project oversight and success.
BWXT of Ohio, Inc. Main Hill Project P.O. Box 3030 1 Mound Road Miamisburg, OH 45343-3030 937-865-4071	Budd Thompson	Provided the DOE/MEMP Project Manager with technical assistance, administrative support, sampling, decontamination, photo and site documentation, site safety, and report preparation.

Table 2 - Personnel Organization for the Demolition

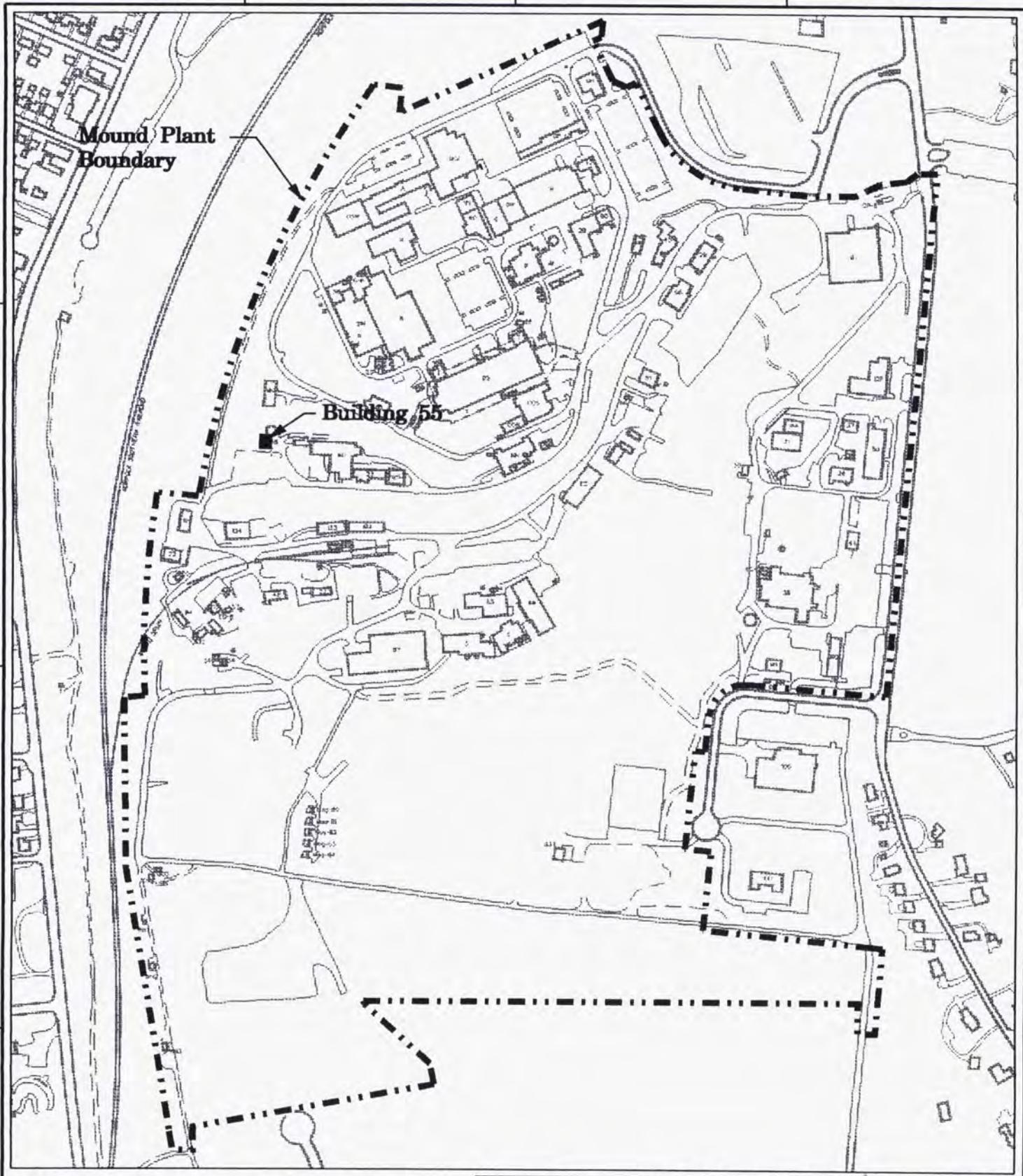
Agencies or Parties Involved	Contact	Description of Participation
BWXT of Ohio, Inc. General Superintendent and Equipment Manager P.O. Box 3030 1 Mound Road Miamisburg, OH 45343-3030 937-865-4071	Budd Thompson	Provided the personnel and equipment necessary for the demolition.

Table 3 - Total Cost

Summary Activity	Cost
Work Planning	\$5,700
Safe Shutdown	8,600
Characterization	6,800
Decontamination and Demolition	10,000
Hauling and Disposal	800
Historical Costs	100
Total Cost	\$32,000

Appendix A

Figures



Mound Plant Boundary

Building 55

Legend

- Structures
- Paved roadway
- Unpaved roadway
- Mound Plant boundary
- Railroad



MOUND

Environmental
Restoration
Geographic
Information
System

06/03/02	*	SSP				
ISS	DATE	REVISION	BY	CHKD	ENCL	APVD

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	<p align="center">Figure 1 Location of Building 55</p>														
ISSUE																					
DRAWING CLASSIFICATION		SIZE		DRAWING NUMBER		JOB NUMBER															
UNCLASSIFIED				gen site plan.dgn																	
DWG TYPE		SCALE		CAGEC		SHEET 1 OF															
STE		ER-GIS				1															
STATUS MD-REL-##/##/##		ORIGN		MSTATION		/ J															

D C B A



**Figure 3:
Building 55**

**Before, During, and
After Demolition**

Appendix B

Work Package

X OFFICE MASTER COPY

200 3-

COPY

APPENDIX A — Work Package /Preliminary Hazard Analysis

<i>Note: The Project Engineer is responsible for completing Sections 1 through 10.</i>
1. WORK PACKAGE TITLE: BD-55 Demolition Preparation
2. WORK PACKAGE NUMBER: SMPP/TFV-29943-00
3. WORK PACKAGE SCOPE: Perform low hazard Demolition Preparation activities of rerouting & disconnection of electrical power, disconnect & gap domestic water, disconnect & gap telephone lines, disconnect & gap sanitary lines, dispose of PCB containing ballasts, and remove transite asbestos tabletop.
4. WORK LOCATION: Building #: 55 _____ Room #: _____ Other:
5. WORK PACKAGE PHASES: 1. Disconnect & Gap Domestic Water 2. Disconnect & Gap Sanitary Lines 3. Disconnect & Gap Telephone Lines 4. Disconnect & Reroute Electrical Power Lines 5. Remove Air Conditioner & Deliver to Electric Shop 6. Check Light Fixture Ballasts and Remove and Dispose, if required 7. Remove & Dispose of Transite Asbestos Tabletop 8. <i>PLUG SAMPLING LINES AT MANHOLE (SEE ATTACHED DRAWING)</i>
<i>Note: Insert the Work Package phases for the job. A phase is a separately definable portion or evolution of the project.</i>
6. SPECIAL MATERIALS AND EQUIPMENT: 1. Bucket Truck/Man-lift
<i>Note: Insert any materials that require long lead procurement or special order. Don't list common items such as PPE.</i>

8.COMMENTS: All tasks are Skill of the Craft work.

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: <u>Boston</u>	Date: <u>3/25/02</u> Phone: <u>3262</u>
Job Supervisor: <u>M.M. Stanley</u>	Date: <u>04/02/02</u> Phone: <u>3866</u>
Superintendent/Foreman: <u>Bonshu</u>	Date: <u>4/4/02</u> Phone: _____
Industrial Safety & Hygiene: <u>Paul Will</u>	Date: <u>4/01/02</u> Phone: <u>4096</u>
Rad. Controls: <u>Jim Celestz</u>	Date: <u>03/21/02</u> Phone: <u>4324</u>
ES&C: <u>Ronald Paulich</u>	Date: <u>4/2/02</u> Phone: _____
Waste Mgmt: <u>William Dan</u>	Date: <u>3/27/02</u> Phone: <u>3822</u>
Bldg. Mgmt: <u>Jimmy J. W. Simons</u>	Date: <u>03/27/02</u> Phone: <u>3241</u>
Classification: _____	Date: <u> / / </u> Phone: _____
Other: _____	Date: <u> / / </u> Phone: _____

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

10. USQ SCREEN / DETERMINATION REQUIRED? YES NO

Brief Explanation Not a Radiological or Nuclear Facility _____

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

11. AUTHORIZATION SIGNATURE:

Project Manager: CD Thompson Date: 4/9/02 Phone: _____

12. WORK PACKAGE CLOSURE:

Job Supervisor: _____ Date: / / Phone: _____

Project Manager: _____ Date: / / Phone: _____

RETURN PHA TO IS&H AT JOB COMPLETION.

APPENDIX A

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

SECTION A, INDUSTRIAL SAFETY - TO BE COMPLETED BY THE SAFETY AND HEALTH REPRESENTATIVE			
<i>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 D if additional space is needed.)</i>			
Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Lockout/tagout of hazardous sources			[LOTO ISO]
9 Electrical	YES	4	LOTO
9 Mechanical (steam, hydraulic, pneumatic)	N/A		
9 Interlocks	N/A		[ILOCK]
9 Chemical	N/A		
9 Radiological	N/A		
Machine guards	N/A		
Modification to Fire Wall/Door	N/A		[FIREWAL]
Obstruction of fire protection equipment (pull boxes, hydrants, fire department connections, control panels, fire extinguishers, etc.)	N/A		
Off-shift work	N/A		
Outages of the plant public announcement (PA) system or the emergency notification system	N/A		[OUTAGE]
Overhead or underground utilities (Identify)	YES	1, 2, 3, & 4	Electrical, water, & sanitary lines [UTIL]
Penetrations into walls, floors, etc.	N/A		[PENETR]
Plastic sheeting or wood framing/enclosures	N/A		
Powder-actuated tools	N/A		
Public utilities (Identify)	YES		Electrical, water, & sanitary lines [WATER]
Repetitive work	N/A		[ERGO]
Structural Modification	N/A		[STRUCT]
Special Fire Protection Equipment Required	N/A		[FIREQU]
Trenching/Shoring	YES		[DIG] only in event must dig greater than 4 feet deep for sanitary or water line disconnections
Temporary heating facilities	N/A		
Temporary/portable buildings or structures	N/A		[FACIL]

APPENDIX A

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

SECTION B, INDUSTRIAL HYGIENE - TO BE COMPLETED BY INDUSTRIAL HYGIENE REPRESENTATIVE			
<i>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 D if additional space is needed.)</i>			
Dusty operations	N/A		[POWDER]
Hazardous Waste Operations (HAZWOPER)*	N/A		
High Pressure systems	N/A		[HIPRES]
Insulation/man-made mineral fibers (MSDS available)*	N/A		
Lasers	N/A		
Lead	N/A		
Foam in Place Operations	N/A		
Mercury	N/A		
Noise in excess of 85 dBA	N/A		[NOISE]
Polychlorinated biphenyls (PCBs)	YES	6	Light fixture ballasts to be removed if not specifically marked as "Does not contain PCBs"
Removal of ceiling tiles*	N/A		
Spraying/generation of mists*	N/A		
Temperature extremes (heat or cold stress)	N/A		[CRYRO/COLD/HEAT]
Ventilation or Air Monitoring requirements	N/A		[VENTIL/IH]
Welding, brazing, or thermal cutting operations	YES	1 & 2	If needed [BURN]
Other (specify)	N/A		
*NOTE: Requires a description of the materials involved which present a hazard. Identify the physical location of the MSDS.			

Project/Activity: SMPP/TFV B-55 Safe Shutdown

Name: BD-55 Demolition Preparation, # SMPP/TFV-29943-00

JSHA CRITERIA CHECKLIST	YES	NO	N/A
1. Work performed with a 6-ft. or greater fall hazard, excluding portable ladders. See Item 14 for further requirements.	X		
2. Roof work requiring the use of fall protection (within 6 ft of an unprotected edge) or special fall protection procedures.		X	
3. Potential hazardous chemical exposure above action levels or permissible exposure limits (PELs), or ACGIH Threshold Limit Values (TLVs).		X	
4. Work activity in an immediately dangerous to life or health (IDLH) breathing hazard environment.		X	
5. Fire or explosion hazards. Are fire hazards beyond a Hot Work Permit? (Reference O2, MD-10286)		X	
6. Work within close proximity of live electrical than 50 volts, conductors, and/or work that requires multiple locks, multiple hazard sources, or complicated lockout/tagout circumstances. (Reference MD-10444, <i>Lockout/Tagout Procedure Manual</i> , for multiple energy lockout/tagout.)	X		
7. Any maintenance or repair of equipment under pressure where the pressure cannot be shut off and de-energized.		X	
8. Work with high or extreme exposure to ionizing or non-ionizing radiation (reference MD-80036, Op 10002), noise, or heat or cold stress (reference D9, D13 & D16, MD-10286).		X	
9. Determined by an appropriate core team, building manager, member of general or executive management, or the IS&H manager to require a JSHA.	X		
10. Any onsite construction or service project directed to have JSAs based on this procedure and/or instruction from project personnel or IS&H staff.	X		
11. Near-miss event with the potential for loss of life or limb or disabling injury/illness if repeated.		X	
12. Excessive trauma/motion/vibration work situations or manual lifting involving heavy, large, and/or awkward-to-handle objects (reference MD-10407, <i>Ergonomics Program</i>).		X	
13. Unguarded, unmarked close clearance, pinch point, exposed moving machinery parts.		X	
14. Known potential falling object hazards (e.g., employees working above other employees, potential for dropping tools, falling equipment or material) or working in areas with the potential for flying objects (flying chips, sandblasting, etc.), exposure to sharp or protruding objects (e.g., working inside plenums, air mover ducts, etc.).		X	

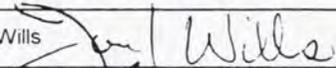
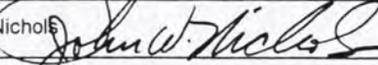
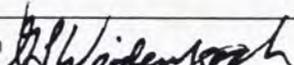
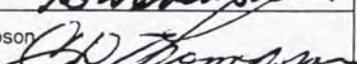
MANDATORY JSHA REQUIRED TO ADDRESS ANY/ALL (YES) RESPONSES

JOB SAFETY & HEALTH ANALYSIS

JSHA MASTER DOCUMENT CONTROL NO:
TFV-55-040402

DATE: April 4, 2002	<input checked="" type="checkbox"/> NEW <input type="checkbox"/> REV	BUILDING: 55	JOB: MSR# 29943, Bldg. Demo. Preparation
DEPARTMENT: SMPP/TFV		SECTION TFV	
OCCUPATIONS: electricians			

SIGNATURES

ORIGINATOR	Jared Wills	
REVIEW/REV	John Nichols	
REVIEW/REV	Bill Wahler	
REVIEW/REV	Gary Weidenbach	
APPROVED	Budd Thompson	

REQUIRED PERSONAL PROTECTIVE EQUIPMENT: General construction work safety equipment; safety glasses, gloves, safety shoes, hard hats, and level D clothing. Additional protective measures may be required under safe job procedures.

MSDS(s)/CHEMICALS ASSOCIATED WITH THE JOB: N/A

BASIC JOB STEPS	POTENTIAL ACCIDENT/ILLNESSES OR KNOWN HAZARDS	SAFE JOB PROCEDURES																		
<p>Break the job down into basic steps that tell what is done first, what is done next, and so on</p> <p>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:</p> <table border="0"> <tr> <td>1. Bring and set up ladder</td> <td>5. Replace light globe</td> </tr> <tr> <td>2. Ascend ladder</td> <td>6. Descend ladder</td> </tr> <tr> <td>3. Remove light globe & bulb</td> <td>7. Remove and store ladder</td> </tr> <tr> <td>4. Replace light bulb</td> <td></td> </tr> </table>	1. Bring and set up ladder	5. Replace light globe	2. Ascend ladder	6. Descend ladder	3. Remove light globe & bulb	7. Remove and store ladder	4. Replace light bulb		<p>Ask yourself for each job what accidents/illnesses could occur to the employee doing the job</p> <p>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.</p> <table border="0"> <tr> <td>SB - Struck by</td> <td>CO - Caught on</td> </tr> <tr> <td>CB - Contacted by</td> <td>1B - Caught between</td> </tr> <tr> <td>SA - Struck against</td> <td>F - Fall</td> </tr> <tr> <td>CW - Contact with</td> <td>SO - Strain-overexertion*</td> </tr> <tr> <td>CI - Caught in</td> <td>E - Exposure (occ. illness)</td> </tr> </table> <p>*Show ergonomic stresses as SO (repetitive trauma, single event strain, or awkward position)</p>	SB - Struck by	CO - Caught on	CB - Contacted by	1B - Caught between	SA - Struck against	F - Fall	CW - Contact with	SO - Strain-overexertion*	CI - Caught in	E - Exposure (occ. illness)	<p>For each potential accident/illness, ask yourself exactly what the employee should do or not do to avoid the accident/illness</p> <p>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.</p> <p>Describe ergonomic solutions (job redesign, new tools, worker lift assistance, etc.)</p>
1. Bring and set up ladder	5. Replace light globe																			
2. Ascend ladder	6. Descend ladder																			
3. Remove light globe & bulb	7. Remove and store ladder																			
4. Replace light bulb																				
SB - Struck by	CO - Caught on																			
CB - Contacted by	1B - Caught between																			
SA - Struck against	F - Fall																			
CW - Contact with	SO - Strain-overexertion*																			
CI - Caught in	E - Exposure (occ. illness)																			
Work scope defined, plan developed, job walkdown with involved project personnel, hazards analyzed, MSR submitted.	N/A	This project follows the principles of ISM including Enhanced Work Planning (EWP), a process that evaluates and improves the approach by which work is identified, planned, approved, controlled, and executed.																		
Pre-job meeting with all involved personnel to discuss work plan details and this JSHA	N/A	The key elements of Enhanced Work Planning are line management ownership; a graded approach to work management, based on risk and complexity; with worker and DOE involvement beginning at the earliest phases of work management.																		
Restrict access to the work area.	Worker Distraction	Limit area access to necessary personnel and maintain a clear route for emergency egress																		
Revue walkdown information/verify LOTO and isolation point(s) for electrical service.	N/A	Employ BUDDY system. Use radios for communication. SoC w/ best practice.																		
Set up bucket truck or other man-lift equipment Use lift as necessary.	Unsafe (unstable) set up F	Follow best practice, manufacture procedures. Follow tie-off procedures																		

BASIC JOB STEPS	POTENTIAL ACCIDENT/ILLNESSES OR KNOWN HAZARDSSAFE JOB PROCEDURES	SAFE JOB PROCEDURES
Turn off & LOTO CKT. NOTE: Visual inspection, circuit appears to service Bldg. 19 & 94. Separate lines supply monitoring equipment shed and a pole mounted sodium vapor light.	Potential Shock/Electrocution	Notify 5100 and follow LOTO Procedure - MD-10444 Use VOM or equivalent to verify electrical service is off per procedure.
Separate and remove Bldg. 55 wiring, from lighting panel to the pole splice. Retain all other systems.	A wide variety of incidents occur on a regular basis that potentially could result in injury or illness Potential future incident F	Be cognizant of your own safe work practices as well as those of your co-workers Best practice. SoC Tie-off while using man-lift equipment
Remove phone wiring etc., from the Bldg. to local pole.	A wide variety of incidents occur on a regular basis that potentially could result in injury or illness F	Be cognizant of your own safe work practices as well as those of your co-workers. SoC Tie-off while using man-lift equipment
Return remaining wiring to safe mode	Potential future incident	Best practice. SoC Tie-off while using man-lift equipment
Secure from this phase of work activity.	N/A	Notify 5100 and cancel LOTO per Procedure - MD-10444

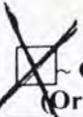
POST JOB CONFERENCE

WHAT WENT WELL?

What could be improved?

Other Comments:

WORK PACKAGE / PRELIMINARY HAZARD ANALYSIS



~ Office Master Copy



~ Field Working Copy



~ Review Copy



~ Other Copy

(Original Approval Signatures)

(Original Field Sign -Offs)

[Note: Mark this section in color]

The Project Engineer is responsible for completing Sections 1 through 10. On subcontractor projects, the subcontractor shall complete sections 6, 9, and 10.

1. WORK PACKAGE TITLE: Building 55 Demolition

2. WORK PACKAGE NUMBER. SMPP/TFV- 29945 – 00

3. WORK PACKAGE SCOPE: Demolish Building 55. Building 55 is a one-story, 330-square-foot concrete block structure with masonry exterior overlay. It is built slab-on-grade and has a built-up membrane coal tar roof. The two-room structure consists of a former water-testing laboratory. It contains a sink, an electric water heater, and a storage/equipment room. The building has 240V electrical service (Mound Facility Physical Characterization, 12-1-93). Building 55 was constructed in 1955 (Capital Assets Management Process Camp Report, FY96). It was used for storing water sampling equipment, supplies, and containers.

4. WORK PACKAGE PHASES:

1. Establish Work Zone
2. Demolition of Building 55
3. Remove Concrete Slab and Foundation
4. Site Restoration

5. WORK LOCATION:

Building #:55
Room #: N/A

6. SPECIAL MATERIALS AND EQUIPMENT:

1. Concrete pulverizer
2. Excavator w/hoe ram
3. Front end loader
4. Heavy equipment as required.

Insert the proper sequence of Work Package phases for the job. A phase is a separately definable portion of the project.

7. DETAILED WORK STEPS:

Note – Safe shutdown MSR 29943

7.1 ESTABLISH WORK ZONE

1. Fence and post area surrounding Building 55.
2. Obtain excavation permit to identify underground utilities and obstacles (excavation permit required).
3. Communicate such postings to site personnel.
4. Establish run-off/run-on erosion control. Plug all inlets to storm, sampling, and sanitary systems.

7.2 DEMOLITION OF BUILDING 55

1. Verify power has been disconnected by checking electrical outlets with a volt meter and by cycling light switches.
2. Using the La Bounty Pulverizer and the track excavator with hoe ram attachment, demolish Building 55.
3. Perform dust control using fire hoses and water trucks to distribute water to wet soil and debris to minimize dust creation.
4. Using the front end loader, load debris for transport to landfill.
5. If necessary use torch or mechanical methods to remove rebar. (Hot work permit is required)
6. Coordinate with Waste Management (Willis Daniel x-3822) for Disposal.

Caution

Keep heavy duty equipment at least 10 feet away from overhead electrical line. LOTO overhead line.

7.3 REMOVE CONCRETE SLAB AND FOUNDATION

1. Using the La Bounty Pulverizer and the track excavator with hoe ram attachment, remove slab and foundation (down to 3' below grade), size reduce. (Excavation permit required.)
2. Allow rad controls to perform radiological screening of the concrete and soil. Based on radiological screening results, transport to Mound's spoils area or rail spur as directed by Waste Management.

7.4 SITE RESTORATION

3. Restore ground elevation to surrounding grade. Use a excavator to compact via track walking the back filled soil and disturbed area with heavy equipment to seal against erosion.
4. Seed and mulch area – minimize seed and mulch since follow on work for rail spur will disturb area.
5. Clean up area. Remove the construction postings.
6. Identify and mark any remaining tripping hazards with hazard yellow paint.
7. Perform topographical survey to capture current area topography and remaining utilities

Notify the building manager (Gary Weidenbach x-3241) when complete.

Appendix A JSHA/HASP

Appendix B Not used

Appendix C Pre-Job Checklists and Updates

Appendix D Not Used

Appendix E Drawings and Sketches

Appendix F References/Lessons Learned

Appendix G Miscellaneous (USQ, RWP, Permits)

Appendix H Post-Job Conference

Lessons Learned Form

8. Note: Comments, to identify activities/hazards that are common to multiple phases of the project. Identification of these items will facilitate the option of addressing the items once in the pre-job briefing, as opposed to redundantly listing them in the JSH.As for different phases. COMMENTS:

NONE.

Enter any review comment or issues in this section and/or information generated as a result of completing detailed work steps

9. REVIEW SIGNATURES:

Project Superintendent: <u>[Signature]</u>	Date: <u>04/10/02</u>	Phone: <u>x-3866</u>
Project Foreman: <u>[Signature]</u>	Date: <u>4/10/02</u>	Phone: <u>3663</u>
Industrial Safety & Hygiene: <u>[Signature]</u>	Date: <u>4/10/02</u>	Phone: <u>3737-2090</u>
Rad. Controls: <u>[Signature]</u>	Date: <u>4/10/02</u>	Phone: <u>3178</u>
ES&C: <u>[Signature]</u>	Date: <u>4/11/02</u>	Phone: <u>4030</u>
Waste Mgmt: <u>[Signature]</u>	Date: <u>04/10/02</u>	Phone: <u>x3822</u>
Bldg. Mgmt: <u>[Signature]</u>	Date: <u>04/11/02</u>	Phone: <u>3241</u>
Craft: <u>[Signature]</u>	Date: <u>1/1</u>	Phone: _____
Craft: <u>[Signature]</u>	Date: <u>04/10/02</u>	Phone: _____
Craft: _____	Date: <u>1/1</u>	Phone: _____
Craft: _____	Date: <u>1/1</u>	Phone: _____

10. USQ SCREEN / DETERMINATION REQUIRED? YES NO

Brief Explanation _____

USQ Trained Person: [Signature] Date: 4/11/02 Phone: x4285

10. AUTHORIZATION SIGNATURE:

Project Manager: [Signature] Date: 04/11/02 Phone: x4071

11. WORK PACKAGE CLOSURE:

Job Supervisor: _____ Date: 1/1 Phone: _____

Project Manager: _____ Date: 1/1 Phone: _____

RETURN PHA TO IS&H AT JOB COMPLETION.

Job Specific Work Plan

1. WORK SCOPE

1.1 Introduction

This Job Specific Work Package (JSWP) follows the outline of PP-1059A Integrated Work Control Program at the Mound Site, Miamisburg, Ohio. Included are a General Work Planning Checklist and a Job Safety & Hazard Analysis (JSHA). A Pre-Job Briefing Form (ML-9657) and the Project Manager's Authorization to Commence Work signature will be completed to document that the workers were briefed on the activities covered in this JSWP before work begins.

1.2 Description

The purpose of this effort is to demolish Building 55, remove the debris, and restore the area. This will be accomplished by confirming that all utilities have been isolated, removing miscellaneous equipment, establishing a construction zone, and demolish the building using heavy duty equipment. After this, the concrete slabs, foundations, and footers will be demolished/removed down to 3-feet below grade. The last step will be to remove the debris and grade/reclaim the area. Concrete waste and miscellaneous construction debris will be disposed of at a landfill. Building floor slab and footers will be flipped, surveyed by RCT's and then taken to the crusher. (Note: Concrete debris that meets radological survey release criteria may be sent to the onsite concrete crusher if it can be size reduced and rebar removed so as to be acceptable to the crusher.)

1.3 Site Information

- 1.3.1 Building 55 is a one-story, 330-square-foot concrete block structure with masonry exterior overlay. It is built slab-on-grade and has a built-up membrane coal tar roof. The two-room structure consists of a former water-testing laboratory. It contains a sink, an electric water heater, and a storage/equipment room. The building has 240V electrical service (Mound Facility Physical Characterization, 12-1-93). Building 55 was constructed in 1955 (Capital Assets Management Process Camp Report, FY96).
- 1.3.2 The building was used for storing water sampling equipment, supplies, and containers.
- 1.3.3 There are no D&D Potential Release Sites (PRSs) associated with this building. Building 55 will be demolished as a Non-CERCLA project.

2. DRAWINGS AND REFERENCES

PP-1059A, Issue 7, "Integrated Work Control Program
MD-50000, Issue 10, "Maintenance Work Order and Material Processing"

3. INITIAL CONDITIONS AND PREREQUISITES

3.1 Lessons Learned

A search of the Lessons Learned Database found the following relevant item:

- Catastrophic Failure of 15,000 Pound Demolition Shear

See Appendix F for the full report. The result of the Lessons Learned is that the shear should not be used as a hammer and the shear should be inspected periodically for cracks and signs of failure.

3.2 Industrial Safety and Health Requirements

- 3.2.1 A Job Specific Hazards Analysis (JSHA) is required. The construction zone, as defined in Appendix A, identifies construction boundaries, evacuation routes, the take shelter area, and the assembly area. Debris will be cleared from the immediate demolition zone as required to promote safe equipment activity.
- 3.2.2 An excavation/soil disturbance permit will be required prior to demolition activities of the slab and footers.
- 3.2.3 Monitoring for crystalline silica (concrete dust) will be performed periodically as determined by previous monitoring results and site Safety and Health. Site Safety and Health will be notified before the demolition of concrete begins.
- 3.2.4 Whole body vibration will be administratively controlled and by reviewing topic at Pre-job meeting.
- 3.2.5 A Hot Work Permit will be required if a torch is used for cutting and possibly for generator operation. Coordinate with site Safety and Health.
- 3.2.6 Monitoring of noise levels will be performed as determined by previous monitoring results and site Safety and Health (> 85 dBA therefore heavy-duty operators will use hearing protection).

4. RADIATION PROTECTION REQUIREMENTS

In January of 2002, confirmatory surveys were performed using large area gas proportional detector(s) and following guidance in "Generic Process for the Disposition of Buildings That Have Potential or Actual Radiological Contamination". All radiological readings were less than applicable limits. Therefore, the review team concludes that the building is radiologically clean and no further radiological surveys are warranted.

5. ENVIRONMENTAL COMPLIANCE REQUIREMENTS

5.1 CERCLA

Building 55 demolition will be accomplished as non-CERCLA project.

WORK SCOPE FOR DEMOLITION OF BUILDING 55

TABLE OF CONTENTS

Job Specific Work Plan

1.	<u>WORK SCOPE</u>	1
	1.1 <u>Introduction</u>	1
	1.2 <u>Description</u>	1
	1.3 <u>Site Information</u>	1
2.	<u>DRAWINGS AND REFERENCES</u>	1
3.	<u>INITIAL CONDITIONS AND PREREQUISITES</u>	2
	3.1 <u>Lessons Learned</u>	2
	3.2 <u>Industrial Safety and Health Requirements</u>	2
4.	<u>RADIATION PROTECTION REQUIREMENTS</u>	2
5.	<u>ENVIRONMENTAL COMPLIANCE REQUIREMENTS</u>	2
	5.1 <u>CERCLA</u>	2
	5.2 <u>National Emissions Standards for Hazardous Air Pollutants (NESHAPs)</u>	3
	5.3 <u>PRSS associated with Building 55</u>	3
	5.4 <u>Restriction of emission of fugitive dust (OAC 3745-17-08)</u>	3
	5.5 <u>Clean Water Act</u>	3
	5.6 <u>Storm Water Pollution Prevention</u>	3
	5.7 <u>National Historic Preservation Act (NHPA)</u>	4
	5.8 <u>Safe Drinking Water Act</u>	4
	5.9 <u>Emergency Spill Response</u>	4
6.	<u>CHEMICAL AND WASTE MANAGEMENT REQUIREMENTS</u>	4
7.	<u>EMERGENCY PREPAREDNESS</u>	4
	7.1 <u>Site Notification Procedures</u>	4
	7.2 <u>Evacuation Route/Assembly Areas</u>	5
	7.3 <u>Take Shelter Area</u>	5
8.	<u>PRE-DEMOLITION SEQUENCE OF WORK</u>	5
	8.1 <u>Site Characterization</u>	5
	8.2 <u>Site Preparation</u>	5
	8.3 <u>Temporary Utilities</u>	6
	8.4 <u>Preliminary Activities</u>	6
9.	<u>BUILDING DEMOLITION SEQUENCE OF WORK</u>	6

5.2 National Emissions Standards for Hazardous Air Pollutants (NESHAPs)

Per Environmental Practice 2.2, if buildings to be demolished have a surface area less than 72 million square feet, direct readings below MDA, and wipe results below applicable action levels, additional dose calculations are not necessary. Building 55's surface area is 330 square feet and direct readings and wipes were below applicable thresholds. No further calculations are necessary.

5.3 PRSs associated with Building 55

- 5.3.1 There are no D&D Potential Release Sites (PRSs) associated with this building. This PRS was binned as No Further Action (NFA) by the DOE/EPA. Building 55 will be demolished as a Non-CERCLA project.
- 5.3.2 A 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. There was no asbestos to be abated.

5.4 Restriction of emission of fugitive dust (OAC 3745-17-08)

Reasonably available control measures must be employed to prevent fugitive dust from becoming airborne. Visual particulate emissions from any fugitive dust source shall not exceed 20% opacity as a three-minute average. Appropriate activities would include:

- 5.4.1 Water misting or other suitable dust suppression will be used to minimize fugitive dust arising from demolition activities.
- 5.4.2 Periodic application of water or other suitable dust suppression to adjacent roadways and parking lots will be used to prevent dust from becoming airborne.
- 5.4.3 Trucks hauling debris to the onsite spoils area should be covered while in transit.
- 5.4.4 If present, segregate any lead pipe conduits from concrete debris going to the spoils area in order to avoid producing lead dust and particulate.

5.5 Clean Water Act

Water source permitting requirements do not apply, as there is no significant new or increased discharge related to this project. All inlets to the sanitary and storm systems will be plugged to prevent accidental discharges to the wastewater treatment plant or the environment.

5.6 Storm Water Pollution Prevention

The site's National Pollutant Discharge Elimination System (NPDES) Permit No. 11000005*HD requires the use of control measures to ensure the quality of stormwater leaving the site. These control measures and practices are outlined in the sites' Storm Water Pollution Prevention Plan OPA980099. Appropriate activities would include:

- 5.6.1 Redirect flow patterns around the project site to prevent storm water run-on.

- 5.6.2 Provide inlet protection to the storm sewer system by covering catch basins immediately adjacent to the project site and plugging roof drains at ground level until which time the underground pipes can be appropriately abandoned.
- 5.6.3 Exercise good housekeeping techniques by segregating materials in a timely manner, including the prompt disposal of wastes, and sweeping debris from the streets to prevent stormwater pollution.
- 5.6.4 Water that has collected in an open excavation or in sumps, must be monitored prior to discharging to the sanitary or storm sewer systems. Contact Environmental Monitoring at extension 4188 for monitoring and review of these non-routine discharges.

5.7 National Historic Preservation Act (NHPA)

Building 55 is not listed as a historic structure with the Ohio Historic Preservation Office (OHPO)

No mitigative documentation package is required. 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 suspended until which time the items or artifacts have been recovered.

5.8 Safe Drinking Water Act

The potable water supply to Building 55 was turned-off and capped to protect the integrity of the water supply to that portion of the plant site.

5.9 Emergency Spill Response

Building 55 has been disconnected from all utility services. There should be no regulated component that will be encountered. In the event of a major spill of any regulated substances, or the rupture of a non-isolated utility line (fire, domestic water, ethylene glycol) call 911 if using an onsite phone, or 937-865-4040 if using a cell or other outside phone to report it. All spills must be contained onsite and should be prevented from entering the storm drains if possible. If spills enter the storm drains, all effluent must be retained onsite at the overflow pond.

6. CHEMICAL AND WASTE MANAGEMENT REQUIREMENTS

All waste will be managed in accordance with the Waste Management Plan for the Mound Exit Project, MD-10499. The Waste Coordinator will ensure that this is accomplished and summarized in a Job Specific Waste Management Plan, which is included below.

7. EMERGENCY PREPAREDNESS

7.1 Site Notification Procedures

- 7.1.1 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**. This number will ring into the plant 911 system.

- 7.1.2 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.
- 7.1.3 Employees working will be notified of emergency or abnormal conditions by the plant paging system or project two-way radios. Additionally, unique sheltering and evacuation signals are available should site-wide protective actions be necessary.

7.2 Evacuation Route/Assembly Areas

The assembly area is northeast of Building 55 on the road that accesses the site. See map per Appendix E.

7.3 Take Shelter Area

The take shelter area is in the center of Building 19. See map per Appendix E.

8. PRE-DEMOLITION SEQUENCE OF WORK

8.1. Site Characterization

- 8.1.1. Physical Characterization -A structural engineering survey was performed and documented for Building 55 to meet the requirements of OSHA 29 CFR 1926.850(a). A walkdown of the structure was used to identify potential hazards as listed in 29 CFR 1926.850(e) through (i). It has been determined the building does not meet the criteria that cause the structure to be historically significant.
- 8.1.2. Radiological Characterization -Based on the radiological characterization summaries that have been performed for Building 55, annual surveys, and process history, there are no radiological concerns and a Radiation Work Permit will not be required.
- 8.1.3. Chemical and Metals Characterization -To the best of the Project Team's knowledge, no chemicals were used in the building. All Freon has been previously removed and recycled.
- 8.1.4. Asbestos Characterization -All asbestos-containing materials identified in connection with Building 55 have been removed prior to demolition.

8.2. Site Preparation

- 8.2.1. Site Access Control
- 8.2.2. The demolition area will be identified utilizing the existing fence around the building, or at the discretion of the project superintendent, marked off with barricade tape/fencing.

8.3. Temporary Utilities

8.3.1. The only temporary utility that may be required is electrical. A portable generator would be utilized. A Hot Work Permit may be required to operate the generator. Coordinate with site Safety and Health.

8.3.2. Temporary Facilities

This project may use the existing Test Fire Valley project trailer and the new shower/restroom trailer.

8.3.3. Temporary Communications

Temporary communications are required (cell phone, radios) due to the difficulty of hearing plant announcements and emergency notifications. At the job site, plant announcements and emergency notifications can be heard on the Plant radio channel.

8.3.4. Staging Areas

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

8.4. Preliminary Activities

MSR 29943 for Safe shutdown activities for the following electrical, HVAC units and domestic water isolation.

9. BUILDING DEMOLITION SEQUENCE OF WORK

9.1. A work zone boundary will be established using the existing fence or with barricade tape or fencing as directed by the Project Superintendent. 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 Superintendent first.

Do not begin any demolition activities until items 9.2–9.5 are completed.

9.2. **All new workers assigned to this project have received a pre-job briefing prior to performing work and a walkdown of the project area, including:**

9.3. The *Pre-Job Briefing Record* is complete must be signed.

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

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.

9.5. Confirm electric/communication has been disconnected to Building 55.

9.6. Confirm all utilities have been isolated and blanked-off.

HAZARD	MITIGATION
Struck by flying debris Struck by moving equipment Noise Hazard	Establish construction boundary. Wear hard hat, safety glasses, safety shoes, reflective vest inside construction area. Maintain the following distances from operating equipment: Shear – 75 feet Hoe Ram – 50 feet Other heavy duty equipment – 30 feet Bobcat – 15 feet Wear hearing protection while running heavy duty equipment. Follow the requirements of MD-10286 D9.
Burns from torch cutting	Obtain and follow Hot Work permit per MD-10286 O2.
Heat/Cold Stress	Follow the requirements of MD-10286 D13/D16.

9.7. Begin concrete demolition of Building 55 by using a hoe ram along with shear and grapple as required. Working the top of the building and exterior walls, demolish and size for disposal. Rebar will require sizing with the shear. Torch cut the rebar as required to support demolition and downsizing. A Hot Work Permit is required.

9.8. Continue until the building is completely demolished. Note: The progressions of the building demolition will ultimately be determined in the field.

9.9. Begin process of waste/rubble removal and transfer to the appropriate waste stream per Waste Management.

9.10. Remove all waste and prepare the area for demolition of the concrete slab.

9.11. Slab Removal

Break apart the building slab using a Hoe-Ram, and allow rad control personnel to perform radiological screening of the concrete. Based on radiological screening results, transport to Mound's spoils area or rail spur as directed by Waste Management.

HAZARD	MITIGATION
Strike underground utilities Potential radiological contamination on underside of slab or foundation	Obtain excavation permit and follow its requirements per MD-10286 O5. RCT survey underside of slab and foundation prior to further handling, to determine disposition of waste.

Break apart the building footer and foundation down to a depth of 3 feet below grade and allow rad controls to perform radiological screening of the concrete. Based on radiological screening results, transport to Mound's spoils area or rail spur as directed by Waste Management.

9.12. Site Restoration

After the slab and foundation are removed, allow rad control to perform radiological screening. Backfill and grade the area to match the surrounding area. After the area

has been graded with appropriate topsoil material, seed the area, mulch, and water periodically to promote the growth of new grasses. Refer to the *Storm Water Pollution Prevention Plan* OPA980099 for details.

**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 D if additional space is needed.)

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Blockage of exits or means of egress	NO	N/A	
Blockages/obstructions (Identify)	YES	N/A	Overhead lines on east side of Building LOTO electrical lines
Burning, welding, hot-work (Fire Watch)	YES	1,2	Torch cutting rebar [BURN]
Chemical compatibility of corrosives/flammables	NO	N/A	
Chemical process safety	NO	N/A	
Compressed gas cylinders	NO	N/A	
Confined space entry	NO	N/A	[CONFINE]
Crane operations, overhead or mobile	NO	N/A	
Critical lifts (heavy or high value loads)	NO	N/A	[CLIFT]
Electrical hazards	NO	N/A	[LIVEL]
Elevated work/fall protection	NO	N/A	[ELEV]
Emergency eyewash/shower available	NO	N/A	[EWASH]
Emergency alarms or evacuation plans required	YES	1,2,3	Maintain communication with site for outside work.
Explosive/flammable atmosphere	NO	N/A	
Explosives	NO	N/A	
Fire protection system/equipment outage	NO	N/A	[FIRE/EFIRE]
Fire Hazards Analysis Required of Demolition	NO	N/A	[FHA/ADJA]
Flammable liquids/gases	NO	N/A	[FLAM]
Forklifts, aerial lifts or material handling equipment	NO	N/A	
Grounding of electrical equipment	YES	1,2,3	Use GFCI .
Hazards due to condition of facility or terrain (Identify)	NO	N/A	
Hoisting and rigging	NO	N/A	[HOIST]
Lighting/illumination/adequacy	NO	N/A	[MLITE]

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 D if additional space is needed.)

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Lockout/tagout of hazardous sources:	YES	1,2,3	[LOTO/ISO]
Electrical	YES	1,2,3	LOTO power feed to light circuit to RR crossing gates 55 and overhead lines verify completed as part of the safe shutdown activities.
Mechanical (steam, hydraulic, pneumatic)	NO	N/A	
Interlocks	NO	N/A	[ILOCK]
Chemical	NO	N/A	
Radiological	NO	N/A	
Machine guards	NO	N/A	
Modification to Fire Wall/Door	NO	N/A	[FIREWAL]
Obstruction of fire protection equipment (pull boxes, hydrants, fire department connections, control panels, fire extinguishers, etc.)	NO	N/A	
Off-shift work	NO	N/A	
Outages of the plant public announcement (PA) system or the emergency notification system	NO	N/A	[OUTAGE]
Overhead or underground utilities (Identify)	YES	1,2,3	Overhead lines over Building 55. [UITL]
Penetrations into walls, floors, etc.	NO	N/A	[PENETR]
Plastic sheeting or wood framing/enclosures	NO	N/A	
Powder-actuated tools	NO	N/A	
Public utilities (Identify)	NO	N/A	[WATER]
Repetitive work	NO	N/A	[ERGO]
Structural Modification	NO	N/A	[STRUCT]
Special Fire Protection Equipment Required	NO	N/A	[FIREQU]
Trenching/Shoring	NO	N/A	[DIG]
Temporary heating facilities	NO	N/A	
Temporary/portable buildings or structures	NO	N/A	[FACIL]
Temporary service hook-ups (Identify)	NO	N/A	
Traffic control/flagman	NO	N/A	[TRAFFIC]
Work in attics, ceilings, chases, or crawlspaces	NO	N/A	
Work impacting adjacent normally occupied areas	NO	N/A	[ADJAC/BMAPP/SIGNS/NOTIF]
Work Requiring Scaffolding, construction and inspection	NO	N/A	[SCAFF]
Other (Specify)	N/A	N/A	

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 D if additional space is needed.)

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Abrasive blast (MSDS available)*	NO	N/A	
Asbestos	NO	N/A	[ASBEST]
Beryllium	NO	N/A	
Blood-borne pathogens*	NO	N/A	
Cadmium	NO	N/A	
Carcinogens (MSDS available)*	NO	N/A	[CARC]
Chemicals/solvents (MSDS available)*	NO	N/A	[CHEM/MSDS]
Chlorofluorcarbon (CFC)	NO	N/A	[CFC]
Coal, tar or asphalt products	NO	N/A	
Coating/painting (MSDS available)*	NO	N/A	
Corrosives/acids/caustics (MSDS available)*	NO	N/A	
Dusty operations	YES	1,2,3	Use water misting and traffic area wetting to minimize dust generation [POWDER]
Hazardous Waste Operations (HAZWOPER)*	NO	N/A	
High Pressure systems	NO	N/A	[HIPRES]
Insulation/man-made mineral fibers (MSDS available)*	NO	N/A	
Lasers	NO	N/A	
Lead	NO	N/A	
Foam in Place Operations	NO	N/A	
Mercury	NO	N/A	
Noise in excess of 85 dBA	YES	1,2,3	Wear hearing protection. For HD operators. [NOISE]
Polychlorinated biphenyls (PCBs)	NO	N/A	
Removal of ceiling tiles*	NO	N/A	
Spraying/generation of mists*	NO	N/A	
Temperature extremes (heat or cold stress)	NO	N/A	[CRYRO/COLD/HEAT]
Ventilation or Air Monitoring requirements	NO	N/A	[VENTIL/IH]
Welding, brazing, or thermal cutting operations	YES	1,2	Cutting of rebar may require permit. [BURN]
Other (specify)	N/A	N/A	

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

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 D if additional space is needed.)

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
<i>Location</i> Controlled Area	NO	N/A	
Contamination Area	NO	N/A	[STP]
High Contamination Area	NO	N/A	[STP]
Radioactive Materials Storage Area	NO	N/A	
Airborne Radioactivity Area (STP or OBT)	NO	N/A	
Radiation Area	NO	N/A	
High Radiation Area	NO	N/A	
Very High Radiation Area	NO	N/A	
Other (Specify)	N/A	N/A	
<i>Activities</i> Criticality Safety Concerns		N/A	
Digging/Soil Removal	YES	1,2,3	[DIG]
Surface destruction of radioactively contaminated materials or equipment?	NO	N/A	[SURFAC]
Welding, burning, or grinding?	YES	Cutting of rebar with torch	[SURFAC]
Hammering, chipping or scraping?	NO	N/A	[SURFAC]
Abrasive blasting?	NO	N/A	[SURFAC]
Dust-collecting equipment or systems?	NO	N/A	
Decontamination and clean-up?	NO	N/A	
Rad Waste Storage and Disposal Required	NO	N/A	[RWSTOR/WASTE/CHAR]
Other (Specify)	N/A	N/A	
<i>Sources</i> X-Ray machine/generator	NO	N/A	[XRAY]
Sealed radioactive sources	NO	N/A	
Unsealed radioactive sources	NO	N/A	
<i>Controls</i> Radiological Work Permit	NO	N/A	[RWP/RWP=JS/RWP=N/R/RPGEN]
ALARA Plan	NO	N/A	[ALARA]
Air Flow Studies	NO	N/A	[AIRFLOW/CAM]
Urinalysis program	NO	N/A	
Preliminary or in-process characterization	NO	N/A	[SURVPS/SURVIP]
Anti-contamination clothing	NO	N/A	
Respiratory protection	NO	N/A	[RESP]
Needs Analysis Evaluation	NO	N/A	
Hazards Analysis	NO	N/A	
Engineering Controls	YES	1,2,3	Use water misting, and restricted entry
Administrative Controls	NO	N/A	
Supplemental dosimetry	NO	N/A	

Shielding	NO	N/A	
Personnel monitoring (frisking)	NO	N/A	

SECTION D - OTHER CONDITIONS, CONCERNS, OR SUPPLEMENTAL INFORMATION FROM SECTIONS A THROUGH C

Identify Assembly Points:

Appendix A

JSHA/HASP

Project/Activity: Building 55 Demolition

Name: Lee Koehmstedt

JSHA CRITERIA CHECKLIST	YES	NO	N/A
1. Work performed with a 6 ft. or greater fall hazard, excluding portable ladders. See Item 14 for further requirements.		X	
2. Roof work requiring the use of fall protection (within 6 ft of an unprotected edge) or special fall protection procedures.		X	
3. Potential hazardous chemical exposure above action levels or permissible exposure limits (PELs), or ACGIH Threshold Limit Values (TLVs).	X		
4. Work activity in an immediately dangerous to life or health (IDLH) breathing hazard environment.		X	
5. Fire or explosion hazards. Are fire hazards beyond a Hot Work Permit? (Reference O2, MD-10286)		X	
6. Work within close proximity of live electrical than 50 volts, conductors, and/or work that requires multiple locks, multiple hazard sources, or complicated lockout/tagout circumstances. (Reference MD-10444, <i>Lockout/Tagout Procedure Manual</i> , for multiple energy lockout/tagout.)	X		
7. Any maintenance or repair of equipment under pressure where the pressure cannot be shut off and de-energized.		X	
8. Work with high or extreme exposure to ionizing or nonionizing radiation (reference MD-80036, Op 10002), noise, or heat or cold stress (reference D9, D13 & D16, MD-10286).	X		
9. Determined by an appropriate core team, building manager, member of general or executive management, or the IS&H manager to require a JSHA.	X		
10. Any onsite construction or service project directed to have JSAs based on this procedure and/or instruction from project personnel or IS&H staff.	X		
11. Near-miss event with the potential for loss of life or limb or disabling injury/illness if repeated.		X	
12. Excessive trauma/motion/vibration work situations or manual lifting involving heavy, large, and/or awkward-to-handle objects (reference MD-10407, <i>Ergonomics Program</i>).		X	
13. Unguarded, unmarked close clearance, pinch point, exposed moving machinery parts.		X	
14. Known potential falling object hazards (e.g., employees working above other employees, potential for dropping tools, falling equipment or material) or working in areas with the potential for flying objects (flying chips, sandblasting, etc.), exposure to sharp or protruding objects (e.g., working inside plenums, air mover ducts, etc.).	X		

MANDATORY JSHA REQUIRED TO ADDRESS ANY/ALL (YES) RESPONSES

JOB SAFETY & HEALTH ANALYSIS

JSHA MASTER DOCUMENT CONTROL NO:
SMPP/TFV- 29945 - 00

SIGNATURES

DATE: 3/15/02	<input checked="" type="checkbox"/> NEW <input type="checkbox"/> REV	BUILDING: 55	JOB: Building 55 Demolition
DEPARTMENT/COMPANY: SMPP/TFV		SECTION: N/A	
OCCUPATIONS: Construction Craft: Demo tech, Fab mechanic, pipe-fitter welder, electricians, etc. <i>HEAVY Duty Rev</i>			

ORIGINATOR: Lee Koehnstedt <i>Lee Koehnstedt</i>
REVIEW/REV: Jared Wilks <i>Jared Wilks</i>
REVIEW/REV: Bill Wahler <i>Bill Wahler</i>
REVIEW/REV: Gary Werdenbach <i>Gary J. Werdenbach 04-11-02</i>
APPROVE: C D Thompson <i>C D Thompson 04/11/02</i>

REQUIRED PERSONAL PROTECTIVE EQUIPMENT: General Construction Safety Equipment inclusive of Safety Glasses, Hard Hats, Safety Shoes, Gloves, and level D Clothing. Additional protective measures may be required under safe work practices.	MSDS(s)/CHEMICALS ASSOCIATED WITH THE JOB: N/A
---	---

BASIC JOB STEPS	POTENTIAL ACCIDENT/ILLNESSES OR KNOWN HAZARDS	SAFE JOB PROCEDURES
<p>Break the job down into basic steps that tell what is done first, what is done next, and so on.</p> <p>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:</p> <p>1 Bring and set up ladder 5 Replace light globe 2 Ascend ladder 6 Descend ladder 3 Remove light globe & bulb 7 Remove and store ladder 4 Replace light bulb</p>	<p>Ask yourself for each job what accidents/illnesses could occur to the employee doing the job.</p> <p>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:</p> <p>SB - Struck by CO - Caught on CB - Contacted by IB - Caught between SA - Struck against F - Fall CW - Contact with SO - Strain-overexertion* CI - Caught in E - Exposure (occ. illness)</p> <p>*Show ergonomic stresses as SO (repetitive trauma, single event strain, or awkward position)</p>	<p>For each potential accident/illness, ask yourself exactly what the employee should do or not do to avoid the accident/illness.</p> <p>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.</p> <p>Describe ergonomic solutions (job redesign, new tools, worker lift assistance, etc.)</p>
General Safety Note	A wide variety of incidents occur on a regular basis that potentially could result in injury or illness.	<p>1) Be cognizant of your own safe work practices as well as those of your co-workers.</p> <p>2) Review any related safety procedures of which you are unsure.</p> <p>3) Utilize STOP WORK Authority as necessary.</p>
Pre-job meeting with involved personnel to discuss the work plan and safety requirements.	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.
Restrict access to work area.	Worker distraction	Limit area access to necessary personnel and maintain a clear route for egress.
Demolish Building 55 and foundations.	Injury from flying material.	Establish exclusion zones during operations: 75 feet while shear is operating; 50 feet while the hoe ram is operating, and 30 feet while all other heavy equipment while operating.
Demolition Building 55 and foundations.	Injury in construction area	Wear hard hat, safety glasses, and steel toe shoes at all times while inside construction area. Wear safety vest while mechanical machinery are in operation. (Exemption: equipment operators do not need to wear hard hats, safety glasses, or vests while inside the enclosed cab.

Demolition Building 55 and foundations.	Hearing loss	Identify hearing protection necessary zones. All operators or employees inside zone are to institute hearing protection measures.
Demolition Building 55 and foundations.	Hand injury	Workers to wear gloves when handling demolition debris.
Demolition Building 55 and foundations.	Electrical Lockout/Tagout	Verify electrical lockout/tagout preform as part of safe shutdown activities.
Demolition Building 55 and Foundations.	Fire hazard	Obtain and follow hot work permit per MD-10286 O2 when performing hot work such as torch cutting rebar.

Work Package Revision Form

Work Package Revision Form			
Work Package No.	Revision No.		
Revision Description: (attach page revisions to form)			
	Name	Signature	Date
PREPARED BY:			
Revision Preparer:			
REVIEWED BY:			
Job Supervisor:			
Project Superintendent/ Foreman:			
Industrial Safety & Hygiene P o C:			
Radiological Point of Contact:			
Environmental Safeguards & Compliance P o C:			
Waste Management PoC:			
Building Manager:			
Other:			
Other:			
USQ Trained Person			
USQ SCREEN / DETERMINATION REQUIRED? <input type="checkbox"/> YES <input type="checkbox"/> NO Brief Explanation _____ _____ _____			
APPROVED BY:			
Project Manager:			

Appendix C

PRE-JOB BRIEFING

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	SIGNATURE	HP#	SIGNATURE

BRIEFING CHECK OFF LIST

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

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

PRE-JOB BRIEFING RECORD (Page 2)

- 9. Related past problems, unusual events, and occurrences were discussed _____
- 10. All personnel understand egress procedures and egress areas. _____
- 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 bereted, discuss the "anticipated activity" to be expected after the breach _____
 - b. Dosimetry requirements. _____
 - c. Protective clothing and respiratory protection requirements (cite location of doffing instructions). _____
 - d. Job coverage requirements (continuous vs. intermittent). Explain that continuous means "within line of sight and field of control of RCT at all times." _____
 - e. Stop Work Levels (SWLs) and other applicable limitations. _____
 - f. POCs/RCTs 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. _____
 - g. Dose reduction/contamination control techniques (e.g., use of; shielding, capture velocity, containment devices). _____
 - h. Personnel and equipment monitoring requirement (including control point locations). _____
 - 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. _____
 - j. Effective date and expiration date of RWP reviewed. _____
 - k. Briefly cover **WORKER RESPONSIBILITIES** (Article 123 of DOE RADCON MANUAL) _____
- 12. Necessary instrumentation is adequately tested and calibrated. _____
- 13. Key task steps in which radiological conditions may change and where the RCT will perform in-process surveys to assess radiological conditions. _____
- 14. If an ALARA Job Review was required, then this would be an appropriate time for a review. _____
- 15. Radiological hold points, if any. _____
- 16. Discuss any appropriate response actions to emergencies, such as CAM, alarms, criticality alarms, or increasing radiation levels. _____
- 17. **When radiological 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. _____
- 18. Communications and coordination with other groups. _____
- 19. Provisions for waste management and job cleanup. _____
- 20. Open floor to questions. _____

The above minimum requirements have been met; this PJB has been conducted in sufficient detail to ensure safe 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.

PRE-JOB UPDATE

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

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 envelop for work: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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 the floor to questions. |

The above minimum requirements have been met; this PJB 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.

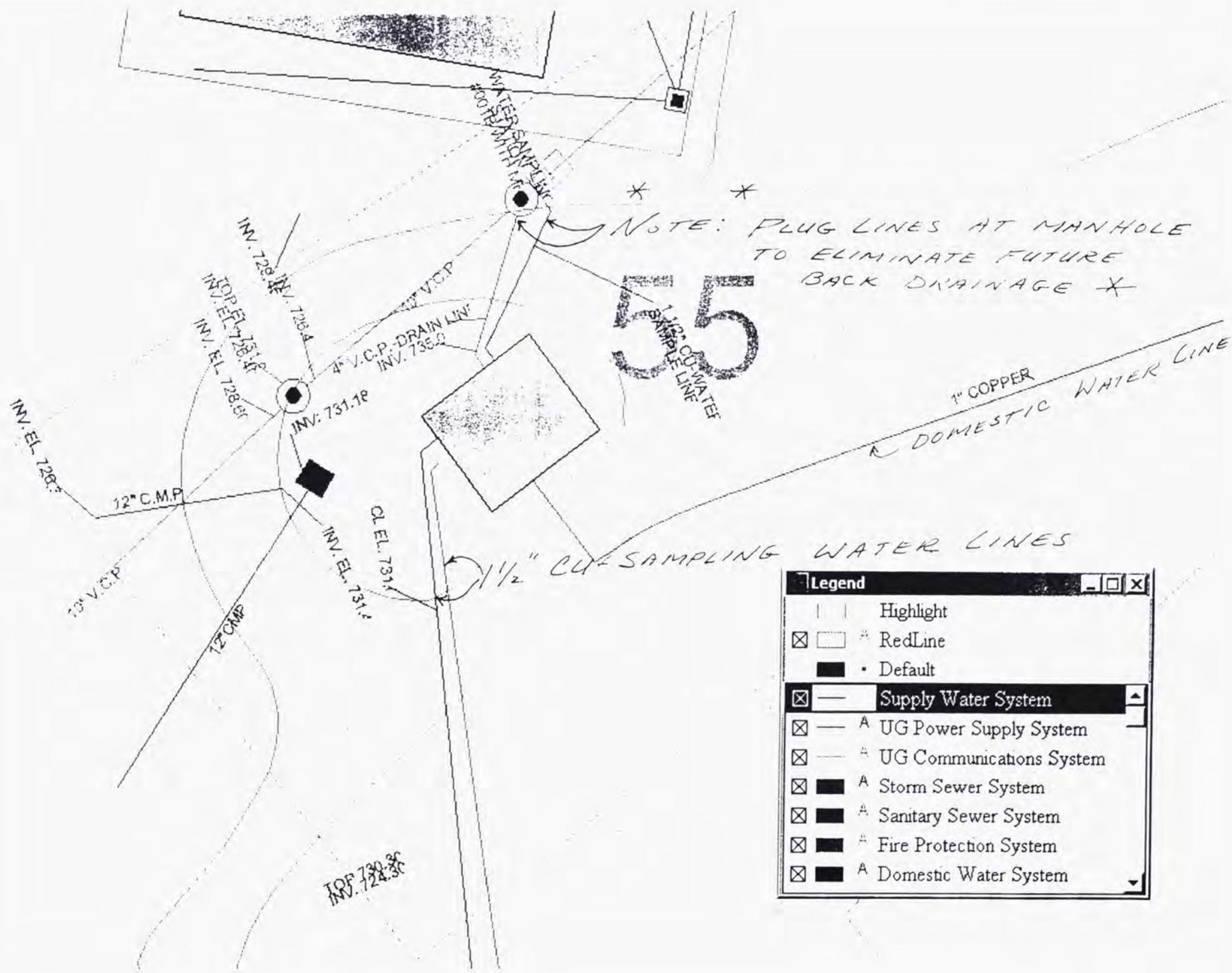
Job Supervisor/Foreman

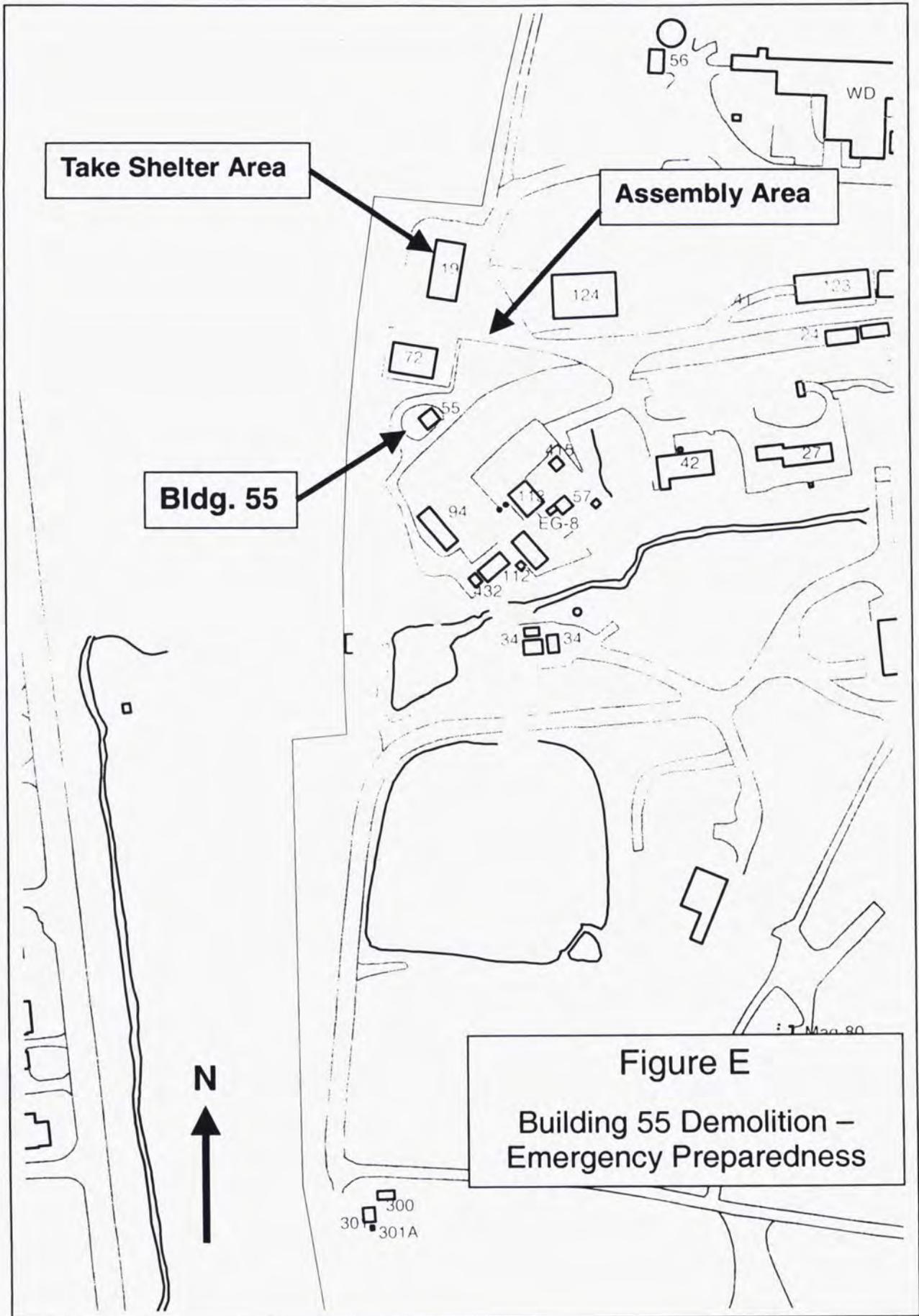
Date

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

JOB SPECIFIC WORK PLAN

Appendix E
**DRAWINGS/
SKETCHES**





Take Shelter Area

Assembly Area

Bldg. 55

Figure E
Building 55 Demolition -
Emergency Preparedness



Mar 80

JOB SPECIFIC WORK PLAN

Appendix F
**REFERENCES/
LESSONS LEARNED**

LESSON
DATA

Title: Catastrophic Failure of 15,000 Pound Demolition Shear
Identifier: FN-FF-2000-001
Date: 2000-02-28

Lesson Learned Statement:

Rotating demolition shears must be used in accordance with the manufacturer's operating manual to prevent damaging the shear head. Unexpected failure of the rotating shear may occur if the operating manual is not followed.

**Discussion:**

Fernald recently experienced a catastrophic failure of a rotating shear head assembly during demolition of a concrete tank. The 15,000 lb. shear head broke loose from the boom and fell to the ground. No personnel were injured. Rotating shears used for demolition of steel and concrete have a bearing assembly between the shear head and the boom connector to provide rotation of the shear head. In this incident, the shear head assembly broke apart at the junction of the inner and outer bearing race assembly. .

**Analysis:**

Investigation revealed that the outer race of the bearing assembly had been cracked prior to this use, as shown by rust on part of the crack surface with clean crack and torn metal over the rest of the failed area. The original (rusty) portion of the crack ran across the outer race aligned with the shear head's "straight ahead" position, not rotated.

The cause of this failure is unknown, but a crack like this one could be caused by a sharp blow to the side of the shear head assembly from using it to "hammer" something. All shear head manufacturers warn against such use of shears with rotating heads. The size of the bearing assembly is small in relation to the mass of the shear head. Operators used to operating non-rotating shear heads can be deceived into thinking the rotating device has the same bending strength as a non-rotating head. If the bearing assembly and its limitations are not understood, and the operator's manual is not followed, failure may occur without warning.

Recommended Actions:

A rotating shear head should be considered limited in its capability to withstand external forces when compared with a shear head without a rotating bearing. Following is a quote from the operator's manual: "On rotating shears, the operator must avoid slamming, hitting, or striking inanimate objects with the rotating end of the shear to avoid damaging the slew ring bearing on which

the shear rotates."

During evaluation of the event, it was concluded that all rotating bearing assemblies are very similar in design regardless of manufacturer. Organizations should consider inspecting rotating shear heads that may have been used in a manner that inconsistent with the operator's manual warnings to find any defects before a catastrophic failure.

It is important to enforce strict observance of a safety zone of at least 75 feet during all shearing operations.

Originator:

Fluor Fernald

Validator:

N/A

Contact:

Craig Daniels (513) 648-6422

Name Of Authorized Derivative Classifier:

Joe Neyer

Name Of Reviewing Official:

Jeff Wagner

Priority Descriptor:

Yellow / Caution

Keywords:

demolition; shears

References:

occurrence report OH-FN-FDF-FEMP-2000-0003

Information in this report is accurate to the best of our knowledge. As means of measuring the effectiveness of this report please use the "Comment" link at the bottom of this page notify the Lessons Learned Web Site Administrator of any action taken as a result of this report or of any technical inaccuracies you find. Your feedback is important and appreciated.

DOE Function / Work Categories:

Conduct of Operations - Procedure Adherence
Construction
Decontamination & Decommissioning
Demolition
Maintenance - Heavy Equipment
Operations - Heavy Equipment

ISM Category:

Analyze Hazards

Hazard:

Personal Injury / Exposure - Mechanical Injury (Striking / Crushing)

End of Lesson!

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JOB SPECIFIC WORK PLAN

Appendix G
MISCELLANEOUS
(USQ, RWP, Permits, etc.)

INTER OFFICE MEMO B W XT.

Date: April 8, 2002

cc. L. Koehmstedt

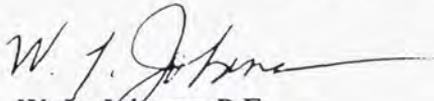
From: W. L. Johanan – OSW-430

Subject: Structural Survey of 55 Building RE: 29 CFR 1926.850 (a)

To: Bud Thompson – Project Manager

Please be advised that we have performed a structural review and walkdown and found them to be satisfactory based on the demolition process and the work plan.

Please call me if you have any further questions.



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



JOB SPECIFIC WORK PLAN

No USQs or RWPs are required at this time. An excavation permit will be required for the slab removal and a burn permit will be required for torch cutting rebar.

Appendix C

Radiological Summary

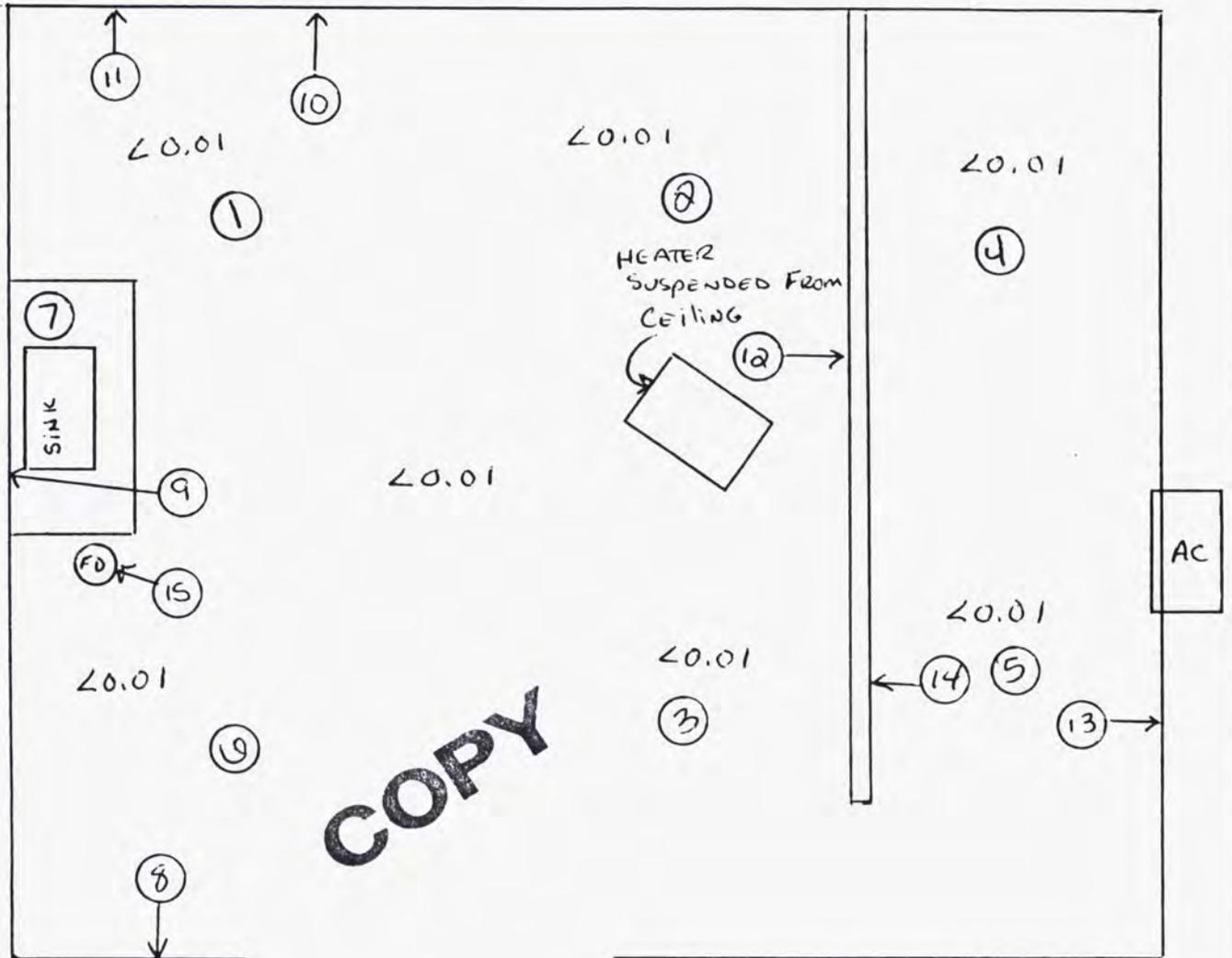
RSDSs Prior to Demolition

RADIOLOGICAL SURVEY DATA SHEET

PAGE 1 of 8

LOCATION: (BLDG./AREA/ROOM)	55	SURVEY NO.	02-TR-0152
PURPOSE:	GENERIC Disposition Survey	RWP NO.	N/A
		DATE:	1-24-02
		TIME:	1030

MAP/DRAWING



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

Δ # = mrem/hr neutron
 # = air sample number

= swipe number / MEASURE MEAS LOCATIONS
 or/ β = direct cont. measurement in dpm/100cm²

FD - FLOOR DRAIN AC - AIR CONDITIONER

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
BICRON REM	3930	8-6-02
ELECTRA	5439/5298	12-10-02
2350	5671/5675/5148	9-21-02
N		

Completed by: (Signature)	HP # 6196	Date:
<i>Michael J. Rubadue</i>	6178	2-12-02
Completed by: (Print Name)	MICHAEL J. RUBADUE DANIEL J. HARVEY	
Counted by: (Signature)	HP #	Date:
SEE		
Counted by: (Print Name)	ATTACHED	
Reviewed/Approved by: (Signature)	HP #	Date:
<i>RMCoblentz</i>	7707	02/13/02
Reviewed/Approved by: (Print Name)	RMCoblentz	

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm ²)				LOCATION
Sample #	βγ	Alpha	Tritium	Comments
1	SEE ATTACHED			FLOOR / F01
2				F02
3				F03
4				F04
5				F05
6				↓ F06
7				SINK / S01
8				WALL / W01
9				↓ W02
10				↓ W03
11				VENT / V01
12				WALL / W04
13				↓ W05
14	↓	↓	↓	↓ W06
15	SEE ATTACHED			FLOOR DRAIN / D01
A				
N				

Removable Contamination				
Swipes (dpm/100cm ²)				Comments
Sample #	βγ	Alpha	Tritium	Comments
A				
N				

COPY

COMMENTS: LARGE AREA WIPES TAKEN ON FLOOR, AIR CONDITIONER & HEATER: α 1100 dpm/wipe
β < 5000 dpm/wipe

- NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
 2. To request RO Count Room analysis for βγ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
 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)

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG. / ROOM / AREA) 55	SURVEY NO. 02-TF-0152
PURPOSE: GENERIC Disposition Survey	RWP NO. N/A
	DATE: 1-24-02
	TIME: 1030

MAP / DRAWING

DIRECT MEASUREMENTS TAKEN AT ALL SMEAR LOCATIONS
 BETA MEASUREMENTS TAKEN WITH NE ELECTRA: $\beta < 25000 \text{ dpm}/100 \text{ cm}^2$
 ALPHA MEASUREMENTS TAKEN WITH LUDLUM 2350: $\alpha < 2100 \text{ dpm}/100 \text{ cm}^2$
 *EXCEPT FOR SMEAR LOCATION 11: $\alpha: 143 \text{ dpm}/100 \text{ cm}^2$
 AFTER ALLOWING FOR RADON DECAY, THIS AREA WAS
 RESURVEYED: $\alpha < 2100 \text{ dpm}/100 \text{ cm}^2$

COPY

LEGEND: # = mrem/hr (γ) whole body Δ = mrem/hr neutron \odot = swipe number
 #E = mrem/hr ($\beta + \eta + \gamma$) extremity on contact
 K = factor of 1000
 - - - - = radiological boundary \square = air sample number \odot/α or β = direct contamination measurement in dpm/100 cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
BICRON NREM	3930	8-6-02
ELECTRA	5439/5298	12-10-02
2350	5671/5675/5148	9-21-02
N/A		

Completed by: (Signature) <i>[Signature]</i>	HP# 0196	Date: 2-12-02
Completed by: (Print Name) <i>MICHAEL J. RUBADUE</i>		
Counted by: (Signature) <i>[Signature]</i>	HP#	Date:
Counted by: (Print Name) <i>DANIEL J. HARVEY</i>		
Reviewed/Approved by: (Signature) <i>[Signature]</i>	HP#	Date:
Reviewed/Approved by: (Print Name)		

55-BLDG M-2350 SURVEY

RSDS# 02-TF-0152 RCT: MSL RCT: DJA

LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
43-20 BKG:	0	EFF:	0.193	PROBE AREA:	181	cm	Surface Eff:	0.5		
43-37 BKG:	0	EFF:	0.183	PROBE AREA:	584	cm	Surface Eff:	0.5		
SRCBKG	5671	6178	5675	4		1/24/02	7:27	46	300	17
SRCCHECK	5671	6178	5675	4		1/24/02	7:29	2273	60	4254
SRCCHECK	5671	6178	5675	4		1/24/02	7:31	2261	60	4231
SRCCHECK	5671	6178	5675	4		1/24/02	7:32	2148	60	4020
SRCCHECK	5671	6178	5675	4		1/24/02	7:35	2183	60	4085
SRCCHECK	5671	6178	5675	4		1/24/02	7:37	2196	60	4110
SRCCHECK	5671	6178	5675	4		1/24/02	7:38	2205	60	4126
SRCBKG	5671	6178	5148	3		1/24/02	7:45	0	300	0
SRCCHECK	5671	6178	5148	3		1/24/02	7:49	2046	60	11714
SRCCHECK	5671	6178	5148	3		1/24/02	7:51	2083	60	11926
SRCCHECK	5671	6178	5148	3		1/24/02	7:56	2024	60	11588
SRCCHECK	5671	6178	5148	3		1/24/02	7:57	2019	60	11559
BLD55 F01	5671	6178	5675	4	1	1/24/02	10:34	7	24	33
BLD55 F02	5671	6178	5675	4	2	1/24/02	10:35	8	24	37
BLD55 F03	5671	6178	5675	4	3	1/24/02	10:37	12	24	56
BLD55 F04	5671	6178	5675	4	4	1/24/02	10:38	6	24	28
BLD55 F05	5671	6178	5675	4	5	1/24/02	10:38	9	24	42
BLD55 F06	5671	6178	5675	4	6	1/24/02	10:40	6	24	28
BLD55 S01	5671	6178	5148	3	7	1/24/02	10:57	2	24	29
BLD55 W01	5671	6178	5148	3	8	1/24/02	10:58	2	24	29
BLD55 W02	5671	6178	5148	3	9	1/24/02	10:59	1	24	14
BLD55 W03	5671	6178	5148	3	10	1/24/02	11:00	1	24	14
BLD55 V01	5671	6178	5148	3	11	1/24/02	11:01	10	24	143
BLD55 W04	5671	6178	5148	3	12	1/24/02	11:02	6	24	86
BLD55 W05	5671	6178	5148	3	13	1/24/02	11:03	6	24	86
BLD55 W06	5671	6178	5148	3	14	1/24/02	11:04	2	24	29
BLD55 D01	5671	6178	5148	3	15	1/24/02	11:05	1	24	14

* SEE EXPLANATION ON PAGE 3

COPY

COPY

CONTAMINATION PROBE INTEGRATED COUNT MDA

<SELECT> Probe Type		181	Model 43-20 cm2	Active Probe Area
<ENTER> Isotopic Efficiency Listed on Probe	Ei	0.166	c/d	Instrument Efficiency (c/d-on Probe)
<SELECT> Contamination Type (Alpha Or Beta)	Es	0.083	0.5	Surface Efficiency (1 for beta/0.5 for alpha)
	E			Total Efficiency (CALCULATED =Ei * Es)
<ENTER> Background Count Rate	Rb	0	CPM	Background Count Rate
<ENTER> Background Count Time (minutes)	Tb	5	min.	

Enter the above information in the 'gray areas'. Then adjust sample intergrated count time to obtain desired MDA.

Sample Integrated Count Time (sec.)	24	sec.
Sample Count Time (minutes) (Tsb)	0.40	min.
* MDA	50	dpm/100 cm2

Minimum Activity Detected
Per Probe Area (dpm/Probe)

90

Performed by: *Daniel G. Hany*

HP#: 6178

Date: 1-24-2002

• MDA Equation Source: NUREG 1507, Eq. 3-11 (Strom & Stansbury 1992), where $K = E \cdot A / 100$

CONTAMINATION PROBE INTEGRATED COUNT MDA

<SELECT> Probe Type		584	Model 43-37 cm ²	Active Probe Area
<ENTER> Isotopic Efficiency Listed on Probe	Ei	0.166	c/d	Instrument Efficiency (c/d-on Probe)
<SELECT> Contamination Type (Alpha Or Beta)	Es		0.5	Surface Efficiency (1 for beta/0.5 for alpha)
	E	0.083		Total Efficiency (CALCULATED = Ei * Es)
<ENTER> Background Count Rate	Rb	9.2	CPM	Background Count Rate
<ENTER> Background Count Time (minutes)	Tb	5	min.	

Enter the above information in the 'gray areas'. Then adjust sample intergrated count time to obtain desired MDA.

Sample Integrated Count Time (sec.)	24	sec.
Sample Count Time (minutes) (Tsb)	0.40	min.
* MDA	49	dpm/100 cm ²

Minimum Activity Detected
Per Probe Area (dpm/Probe)

288

Performed by:

David J. Haney

HP#:

6178

Date:

1-24-2002

• MDA Equation Source: NUREG 1507, Eq. 3-11 (Strom & Stansbury 1992), where K = E*A/100

Smear Analysis

Unit Type: LB4100/W
 Counting Unit ID: Aqua
 Data file name: SMEAR008
 Batch Ended: 1/30/02 9:01

COPY

Crosstalk correction performed

Recalibration Date: 4/3/02
 Serial Number: 26966-1

Batch ID: RUBADUE 02-TF-9152 (15) CYR

Detector ID	Sample ID	Alpha Activity		
		DPM	σ	flags
A1	1	0.00	2.19	
A2	2	0.00	2.24	
A3	3	0.00	2.04	
A4	4	0.00	2.01	
B1	5	0.00	2.05	
B2	6	0.00	2.06	
B3	7	0.00	1.92	
B4	8	0.00	1.88	
C1	9	0.00	2.25	
C2	10	0.00	2.14	
C3	11	0.00	2.00	
C4	12	0.00	1.94	
D1	13	0.00	2.21	
D2	14	0.00	2.15	
D3	15	0.00	2.06	

Beta Activity		
DPM	σ	flags
0.00	1.63	
0.00	1.49	
0.00	1.41	
0.00	2.37	
1.54	2.06	
0.00	1.22	
0.99	2.05	
0.00	1.12	
0.41	4.53	
0.88	3.32	
1.19	2.72	
1.37	2.32	
1.13	2.02	
0.00	1.42	
0.00	1.44	

MSR

MSR

JAH

Blenda String 1-30-C2

T-413

Cycle 1 Results

S#	Count	Time	CPMA	CPMB	CPMC	LUM	tsIE	DPM1	A:2S%	MESSAGES
-1	10.00		23	21	5	0	558.90	0	13.3	B
0	2.00		218	197	1	0	527.11	414	10.2	
1	2.00		0	0	2	0	574.79	0	0.0	
2	2.00		0	0	1	0	578.95	0	0.0	
3	2.00		0	0	0	0	596.51	0	0.0	
4	2.00		0	0	4	0	624.13	0	0.0	
5	2.00		0	0	0	0	554.07	0	0.0	
6	2.00		0	0	0	0	559.45	0	0.0	
7	2.00		0	0	0	0	395.05	0	0.0	
8	2.00		0	0	0	0	583.54	0	0.0	
9	2.00		0	0	0	0	614.29	0	0.0	
10	2.00		0	0	2	0	578.84	0	0.0	
11	2.00		0	0	2	0	536.28	0	0.0	
12	2.00		0	0	1	0	530.42	0	0.0	
13	2.00		0	0	0	0	542.93	0	0.0	
14	2.00		0	0	0	0	648.39	0	0.0	
15	2.00		0	0	0	0	561.42	0	0.0	

ms

7/21

COPY

E. Buda String 1-30-02

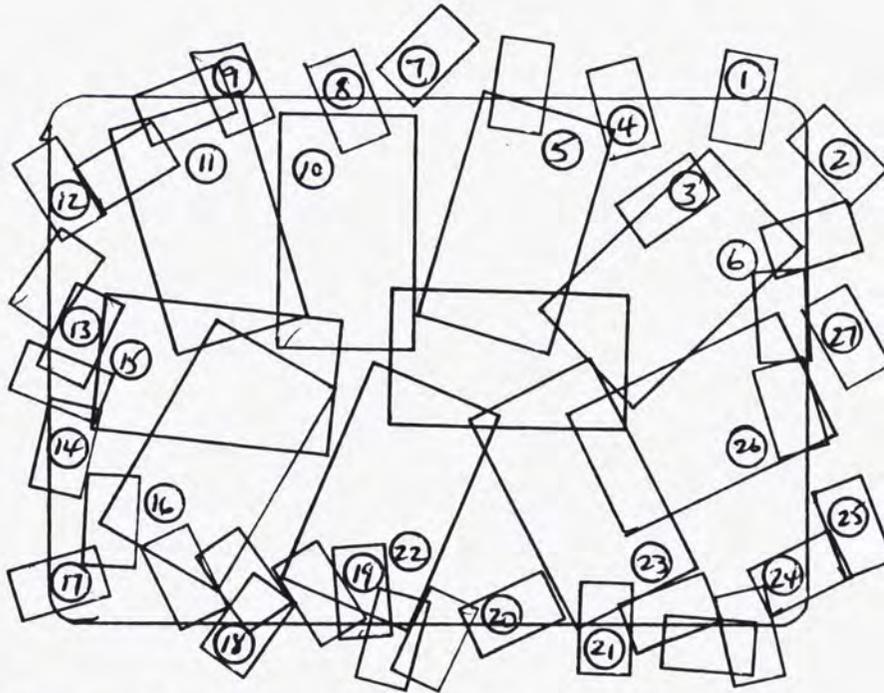
RSDSs After Demolition

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG /AREA/ROOM) 55-BUILDING OUTSIDE	SURVEY NO 02-TF-0833
PURPOSE: DEBRIS SURVEY TO WASTEMANAGEMENT	RWP NO. N/A
	DATE: 5-31-2002
	TIME 1430

COPY

MAP / DRAWING



INTERGRATED COUNT PERFORMED IF AUDIBLE COUNT DETECTED.

DIRECT FRISK READINGS INDICATE $\frac{2100}{\alpha}$ $\frac{25K}{\beta}$

* NOTE: BICRON FIDLER USED FOR INDICATION ONLY. RESULTS WERE NON-DETECTABLE.

LEGEND: # = mrem/hr (γ) whole body
 #E = mrem/hr ($\beta + \eta + \gamma$) extremity on contact
 K = factor of 1000
 - - - - = radiological boundary

\triangle # = mrem/hr neutron # = swipe number
 \square # = air sample number #/ α or #/ β = direct contamination measurement in dnm/100 cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
ELECTRA	5364/5377	5-1-03
N/A		

Completed by: (Signature) <i>Daniel J. Harvey</i>	HP# 6178	Date 5-31--2002
Completed by: (Print Name) DANIEL J. HARVEY		
Counted by: (Signature) RECORD ON FILE	HP# NA	Date: NA
Counted by: (Print Name) NA		
Reviewed/Approved by: (Signature) <i>R.M. Coblenz</i>	HP# 7707	Date: 6-3-02
Reviewed/Approved by: (Print Name) R.M. Coblenz		

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm ²)				
Sample #	β/γ	Alpha	Tritium	Comments
1-4	SEE			CONCRETE
5-6	ATTACHED			ROOFING
7-9			N/A	CONCRETE
10-11				ROOFING
12-14				CONCRETE
15-16				ROOFING
17-21				CONCRETE
22-23				ROOFING
24-25				CONCRETE
26				ROOFING
27	↓	↓	↓	CONCRETE
N/A				

Removable Contamination				
Swipes (dpm/100cm ²)				
Sample #	β/γ	Alpha	Tritium	Comments
N/A				

COMMENTS: N/A

- NOTES:**
- See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
 - 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.
 - 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: SMEAR012
 Batch Ended: 5/31/02 12:24

Crosstalk correction performed.

Recalibration Date: 4/3/03
 Serial Number: 26966-1

Batch ID: HARVEY 02-TF-0833 (27) CYR

Detector ID	Sample ID	Alpha Activity		
		DPM	σ	flags
A1	1	0.00	2.11	
A2	2	0.00	2.12	
A3	3	0.00	1.95	
A4	4	0.00	1.95	
B1	5	0.00	2.09	
B2	6	0.00	2.16	
B3	7	0.00	1.83	
B4	8	0.00	1.91	
C1	9	0.00	2.13	
C2	10	0.00	2.07	
C3	11	0.00	2.03	
C4	12	0.00	2.29	
D1	13	1.77	2.16	
D2	14	0.00	2.07	
D3	15	0.00	1.99	
D4	16	0.00	2.02	
A1	17	0.00	2.11	
A2	18	0.00	2.14	
A3	19	0.00	1.96	
A4	20	1.61	1.98	
B1	21	0.00	2.06	
B2	22	0.00	2.14	
B3	23	0.00	1.84	
B4	24	0.00	1.91	
C1	25	1.65	2.14	
C2	26	0.00	2.04	
C3	27	1.78	2.03	

27A

Beta Activity		
DPM	σ	flags
2.72	2.59	
0.00	1.42	
0.00	1.42	
0.00	1.99	
1.44	2.17	
0.27	1.90	
0.00	1.40	
0.00	1.23	
0.00	1.54	
6.26	3.50	
0.00	1.37	
0.00	1.55	
0.00	1.49	
0.00	1.45	
4.59	3.22	
2.38	2.31	
2.72	2.59	
2.30	2.32	
0.23	1.87	
2.70	3.13	
0.00	1.34	
0.00	1.44	
0.00	1.84	
0.00	1.23	
0.00	1.54	
0.00	1.57	
0.00	1.37	

27A

Carol G. Robinson

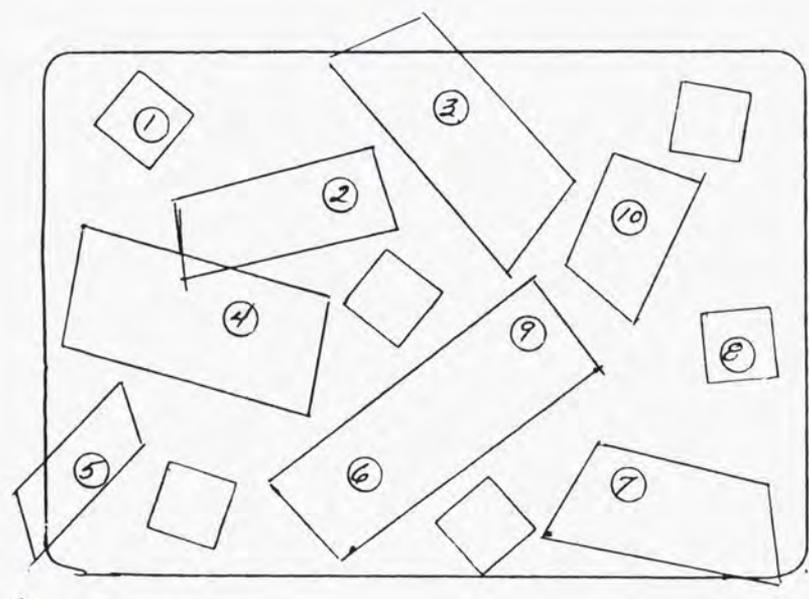
RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) <i>Bldg. 55 Rubble Pile</i>	SURVEY NO. <i>02-TF-0834</i>
PURPOSE: <i>Debris Survey for Waste Disposition. Follow up survey: Slab underside (newly exposed)</i>	RWP NO. <i>n/a</i>
	DATE: <i>06-05-02</i>
	TIME: <i>1015</i>

Electra Bkg. = 3.5 dpm/100cm² α

MAP/DRAWING

COPY



*Integrated count performed if audible response detected.
Direct Scan of Matt's:
α < 100 dpm/100 cm² α
β < 5000 dpm/100 cm² β -*

*Bicron Fidler used for indication only ~
Direct Scan of Matt's.
None Detectable*

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

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
<i>Electra</i>	<i>5435 - 5495</i>	<i>05-08-03</i>
<i>Fidler</i>	<i>3815 - 3846</i>	<i>01-02-03</i>
<i>~ A ~</i>		

Completed by: (Signature) <i>William Jones / P.D. Radley</i>	HP # <i>7868</i>	Date: <i>06-05-02</i>
Completed by: (Print Name) <i>JONES, W. / P.D. RADLEY</i>	<i>7287</i>	
Counted by: (Signature) <i>See Attached</i>	HP # <i>n/a</i>	Date: <i>A</i>
Counted by: (Print Name) <i>- n/a</i>		
Reviewed/Approved by: (Signature) <i>R. Coblenz</i>	HP # <i>7707</i>	Date: <i>6-5-02</i>
Reviewed/Approved by: (Print Name) <i>R. Coblenz</i>		

Smear Analysis

Unit Type: LB4100/W
 Counting Unit ID: Green
 Data file name: SMEAR096
 Batch Ended: 6/5/02 8:53
 Cal. Due Date: 4/25/03
 Serial Number: 26966-3

Batch ID: 02-TF-0834 JONES(10) BSB

Detector ID	Sample ID
A1	1
A2	2
A3	3
A4	4
B1	5
B2	6
B3	7
B4	8
C1	9
C2	10

Alpha Activity		
DPM	σ	flags
0.00	2.05	
1.58	1.98	
0.00	2.14	
1.47	2.01	
0.00	2.04	
0.00	2.00	
0.00	2.12	
1.45	2.02	
1.57	2.08	
1.32	1.86	

Beta Activity		
DPM	σ	flags
0.00	1.28	
2.66	2.40	
0.44	1.75	
0.20	1.67	
1.54	2.17	
0.00	1.20	
1.37	2.22	
1.19	2.01	
0.00	1.25	
0.36	1.64	

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[Handwritten signature]

Bill Brown

3/3