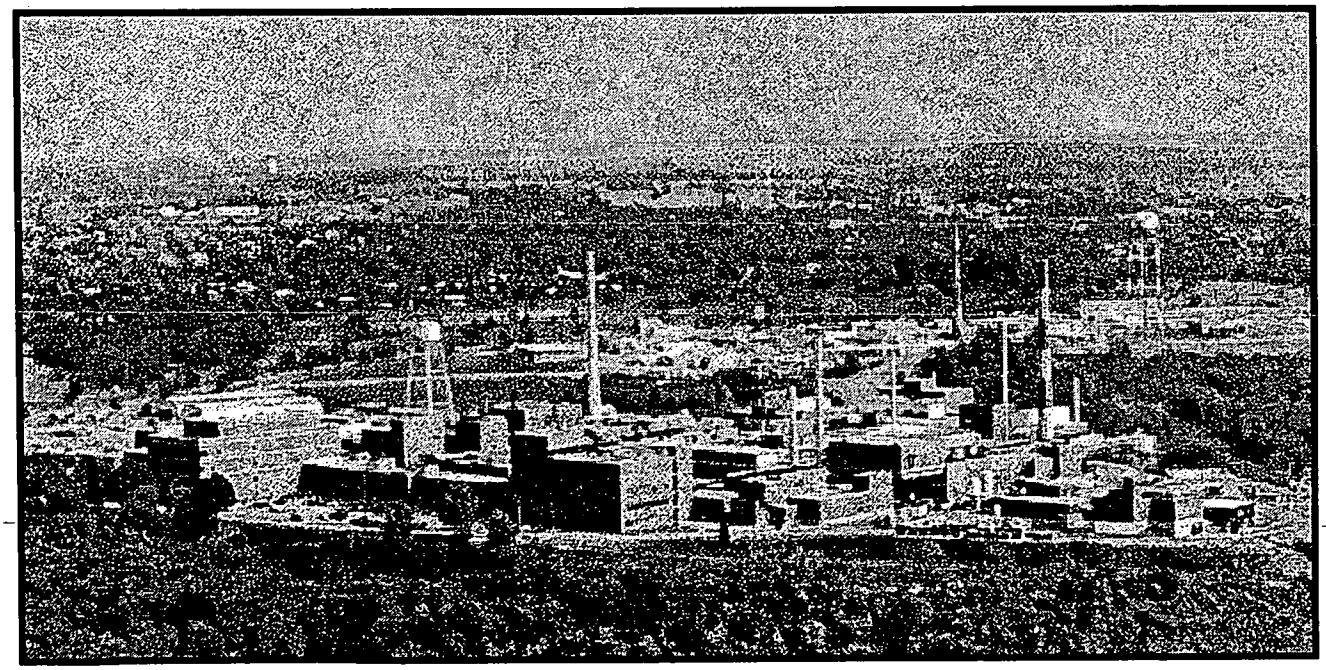
300402-0605150011

Environmental
Restoration
Program

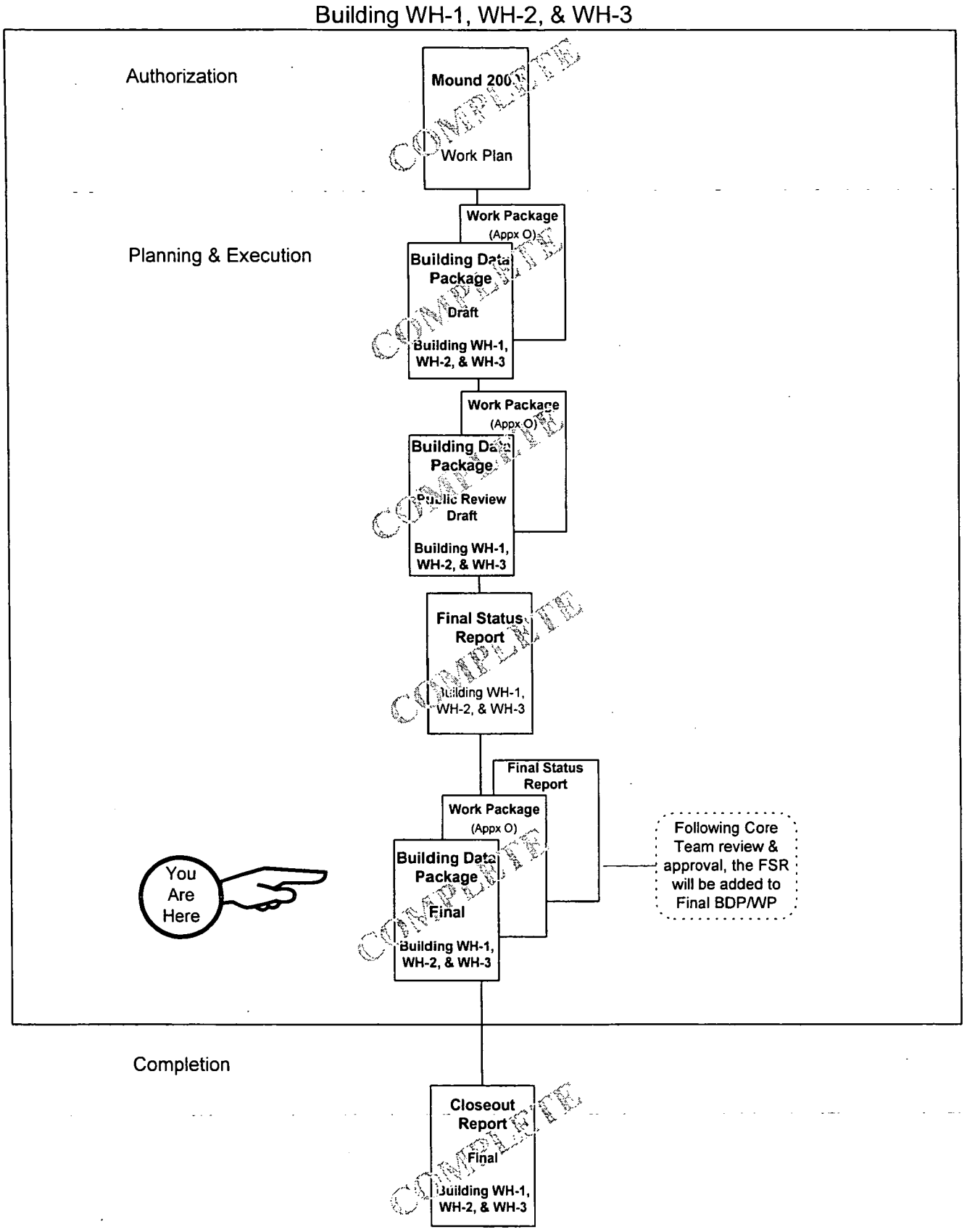
Miamisburg Closure Project
Building Data Package

Buildings WH-1, WH-2, and WH-3
(Demolition)

Final
January 2006



Building WH-1, WH-2, & WH-3



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The Mound Core Team
500 Capstone Circle
Miamisburg, OH 45342

May 2005

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

Dear Mr. Bullock:

The Core Team, consisting of the U.S. Department of Energy Miamisburg Closure Project (DOE-MCP), U.S. Environmental Protection Agency (USEPA), and the Ohio Environmental Protection Agency (OEPA), appreciates your comments on the Buildings WH-1, WH-2, and WH-3 Building Data Package, Public Review Draft, April 2005.

Attached is our response.

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

Sincerely,

DOE/MCP:	Paul Lucas	5/25/05
	Paul Lucas, Remedial Project Manager	date
USEPA:	Timothy J. Fischer	5/25/05
	Timothy J. Fischer, Remedial Project Manager	date
OEPA:		5/25/05
	Brian K. Nickel, Project Manager	date

Response to MMCIC/ EHS Technology Group, LLC Comments on the Buildings WH-1, WH-2, and WH-3 Building Data Package
Public Review Draft
April 2005

Comment 1.

Review Date: May 6, 2005

Reference Document: Buildings WH-1, WH-2, and WH-3 Data Package (Demolition); Public Review Draft, April 2005

Purpose: The purpose of this document is to notify the public of the Demolition Activity proposed for Buildings Well house 1 (WH-1), Well house 2 (WH-2), and Well house 3 (WH-3).

Assessment of Review: EHS has had the opportunity to review and comment on this Building Data Package. We concur with the planned demolition action for Buildings WH-1, WH-2, and WH-3. This data package was prepared in accordance with the requirements specified in the *Work Plan for Environmental Restoration (ER) of the DOE Mound Site, The Mound 2000 Approach.* As such, all appropriate inquiry was made into the condition of the building and any associated environmental concerns that would impact the demolition activities were assessed.

Technical Analysis: These three buildings discussed in the Data Package are well houses. They contain the pumps for three groundwater production wells the provided the plant with raw water for the site. This water was pumped from the ground, treated and distributed as service, fire system and potable water. WH-1 was constructed as the third well house in 1962. When this well house was constructed, it was designated as WH-1 and the two original well houses, both constructed in 1948, were then designated as WH-2 and WH-3. Each of the three deep well pumps housed in WH-1, WH-2, and WH-3 respectively are driven by electric motors with propane-fueled engines as back-up in case of a power failure. WH-2 and WH-3 were each originally equipped with gasoline powered backup motors. Each building had a 280-gallon underground storage tank located just north of each building which contained gasoline for these backup motors. In approximately 1973, these tanks were emptied and filled with inert material and capped. They remain in place, but will be removed as part of the demolition project by a BUSTR certified contractor in accordance with the State of Ohio Fire Marshall regulations. In 2005, the plant transferred to municipal water supplied provided by the City of Miamisburg. Therefore, these water production wells are no longer needed on-site.

Substantive Comments: EHS concurs with the planned demolition action for Buildings WH-1, WH-2, and WH-3. We understand that all chemicals will be removed prior to demolition and all equipment will either be removed prior to demolition or demolished with the structure. We also understand that the two underground storage tanks and any associated contaminated soils will be removed. These three wells are located near and to the south of an area of concern called OU-1, which is known to have caused groundwater contamination with volatile organic compounds (VOCs). The VOC

groundwater contamination plume flows south from OU-1 past these wells. Although these three wells were not part of the treatment process of the contaminated groundwater, they may have helped keep the plume of contamination from leaving the property boundary. EHS and MMCIC agree with the demolition of these buildings and closure of the wells since the DOE and regulatory agencies have committed to installing a new well, if needed, to keep the contamination plume within site boundaries. Coordination between CH2M Hill, the DOE and MMCIC is important to ensure the building areas (after demolition) are left in a condition consistent with the Mound Reuse Plan and that traffic is maintained to MMCIC business tenants during the demolition.

Response 1. Thank you for your review and input to the document. To clarify a statement made in the Technical Analysis, that "each of the three deep well pumps housed in WH-1, WH-2, and WH-3 respectively are driven by electric motors with propane-fueled engines as back-up in case of a power failure"; While all three well pumps are driven by electric motors, only the deep well pumps housed in WH-2 and WH-3 have propane-fueled engines as back-up in case of a power failure.

MMCIC is encouraged to coordinate with DOE and the clean-up contractor regarding demolition activities. The individual demolition Work Plans will specify any site restoration activities following structure removal. The roadway adjacent to the well houses will remain open during demolition activities, utilizing a flagman to coordinate traffic stoppages or reroutes of traffic, as needed. The Core Team understands MMCIC's request and encourages MMCIC to meet with DOE to obtain an agreeable end state.

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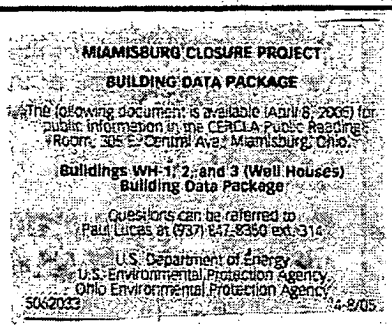
AFFIDAVIT OF PUBLICATION

State of Ohio

SS: CH2M HILL MOUND

Montgomery County



MIAMISBURG CLOSURE PROJECT

BUILDING DATA PACKAGE

The following document is available (April 8, 2005) for public information in the CERCLA Public Reading Room, 305 E. Central Ave., Miamisburg, Ohio.

Buildings WH-1, 2, and 3 (Well Houses) Building Data Package

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

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

5062033 4-8/05

Before me, the undersigned, a Notary public in and for said County, personally came Tina Sears, who being first duly sworn says she is the Legal Advertising Agent of the DAYTON DAILY NEWS, which she says is a newspaper of general circulation in Montgomery, Clark, Warren, Butler, Clinton, Greene, Preble, Miami, Darke, Mercer, Shelby, Fayette, Logan, Auglaize, and Champaign Counties, and State of Ohio, and she furthur says that the Legal Advertisement, a copy of which is hereunto attatched, has been published in the said DAYTON DAILY NEWS

18 Lines, 1 Time(s), last day of publication

being 4/8/05, and he/she furthur says

that the bona fide daily paid circulation of the said DAYTON DAILY NEWS was over Twenty-five Thousand (25,000) at the time the said advertisement was published, and that the price charged for same does not exceed the rates charged on annual contract for the like amount of space to other advertisers in the general display advertising columns.

Signed Tina Sears

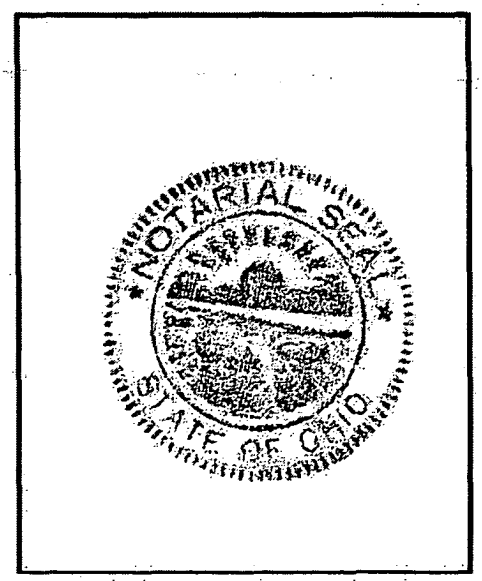
Sworn or affirmed to, and subscribed before me, this

8 day of April 2005

In Testimony Whereof, I have hereunto set my hand and affixed my official seal, the day and year aforesaid.

Kelly J Shaver

Notary Public in and for the State of Ohio



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BDP Buildings WH-1, WH-2, and WH-3

REV	DESCRIPTION	DATE
WORKING DRAFT (to DOE)		**March 2005**
DRAFT (to Core Team)	BDPs for construction demolitions undergo simultaneous review by the Core Team and public.	
PUBLIC REVIEW DRAFT	Public review is from April 8, 2005 to May 8, 2005.	**April 2005**
DRAFT PROPOSED FINAL (incorporates Core Team comments)	Regulator comments were received and incorporated.	**May 2005**
FINAL	The Core Team response to public comments is provided at the front of this document. Corrected the dimensions between Well Houses stated on page 2 of 13 in the first paragraph of Section 2.0, Buildings WH-1, WH-2, and WH-3 Overview. Correct dimensions are reflected in the Closeout Report.	**January 2006**

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TABLE OF CONTENTS

Section Page

1.0 General Overview 1
- 1.1 Introduction 1
- 1.2 Scope 1

2.0 Buildings Wh-1, WH-2, and Wh-3 Overview 2
- 2.1 Past Uses of Buildings WH-1, WH-2, and WH-3 4
- 2.2 Current Uses of Buildings WH-1, WH-2, and WH-3 4
- 2.3 Summary of Environmental Concerns and Findings – Buildings WH-1, WH-2, and WH-3 5
- 2.4 Radiological Information for Buildings WH-1, WH-2, and WH-3 7
- 2.5 National Historic Preservation Act (NHPA) 8

3.0 Site Description 9
- 3.1 Site/Vicinity Location and Characteristics 9
- 3.2 Description of Structures, Roads, and Other Improvements in Proximity to Buildings WH-1, WH-2, and WH-3 9
- 3.3 Current and Past Uses of Buildings in Proximity to Buildings WH-1, WH-2, and WH-3 9

4.0 Records Review 10
- 4.1 General/Historical CERCLA Information 10
- 4.2 Specific Record Sources for Buildings WH-1, WH-2, and WH-3 12
  - 4.2.1 Occurrence Reports 12
  - 4.2.2 Spills and Releases for Buildings WH-1, WH-2, and WH-3 12
  - 4.2.3 Associated PRS Overview 12
- 4.3 Review of Building Prints 12
- 4.4 Aerial Photographs 12
- 4.5 Interviews 13

Tables

Table 1: Summary of Environmental Concerns and Findings 5

Table 2: Maximum Results Exceeding Screening Levels 8

Table 3: Radiological Summary 9

Table 4: PRSs in Proximity to Buildings WH-1, WH-2, and WH-3 12

TABLE OF CONTENTS

continued

Appendices

Appendix A General Listing of Acronyms
Appendix B Map of Montgomery County
Appendix C Figures
Appendix D Floor Plans
Appendix E Aerial Photographs
Appendix F Environmental Appraisal Report of the Mound Plant (Excerpt)
Appendix G Radiological Information
Appendix H Radon Information
Appendix I Asbestos Information
Appendix J Lead Information
Appendix K Chemical Information
Appendix L Soil Sampling, Vicinity
Appendix M Occurrence Reports
Appendix N PRS Information
Appendix O Work Plan

1.0 GENERAL OVERVIEW

1.1 Introduction

The purpose of this Building Data Package (BDP) is to prepare for the demolition of Buildings Wellhouse 1 (WH-1), Wellhouse 2 (WH-2), and Wellhouse 3 (WH-3) and to identify, if possible, any recognized environmental conditions (defined below) that may affect the subject property and buildings.

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

1.2 Scope

This document has been prepared in accordance with the agreements and requirements as specified in the *Work Plan for Environmental Restoration of the DOE Mound Site, The Mound 2000 Approach*. This document is a BDP for Buildings WH-1, WH-2, and WH-3 located at the Department of Energy (DOE) Miamisburg Closure Project (MCP) in Miamisburg, Ohio. The investigation performed to support this BDP models procedures found in *ASTM Standard Practice for Environmental Site Assessments; Phase I Environmental Site Assessment Process* (Designation E 1527-00).

The scope of the investigation included Buildings WH-1, WH-2, and WH-3, the soil beneath, and a 50-ft. wide perimeter around each of the buildings. The investigation of Buildings WH-1, WH-2, and WH-3 included the following:

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

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

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

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

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

2.0 BUILDINGS WH-1, WH-2, AND WH-3 OVERVIEW

The three site wellhouses are located in the southwestern portion of the site (Figure 1) and are adjacent to the site's west boundary fence. WH-1 is the northern-most of the three structures. WH-2 is located approximately 145 ft. south of WH-1 and WH-3 is located approximately 265 ft. south of WH-2.

WH-1 was constructed as the third wellhouse in 1962. When this wellhouse was constructed, it was designated as WH-1 and the two original Wellhouses were designated as WH-2 and WH-3. WH-1 covers one of the three site wells and houses one of the three site pumps that provides the plant with raw water for subsequent treatment and distribution as service, fire system, and potable water.

Building WH-1

WH-1 includes approximately 128 square feet of floor space (10-feet (ft.) 8-inches (in.) wide x 12-ft. long x 12-ft. high). The building is an Armco Steelox Zincgrip Type LS-1 metal building built on an 8-in. thick floor slab. Supporting the floor slab are 12-in. wide footers that extend approximately 3-ft. below grade. The WH-1 100 horsepower (H.P.) deepwell pump [rated at 700 gallons per minute (gpm)] is electric powered and does not have a backup/emergency source to drive the pump if the electric power supply fails. The outer 38-in. diameter steel well casing for the WH-1 deepwell pump is ¼-in. thick and the inner 26-in. diameter steel well casing is also ¼-in. thick. Unlike the deep wells in WH-2 and

WH-3, a 20-in. inner casing was not installed in deep well #1. A floor plan of the building is shown in Appendix D.

Buildings WH-2 and WH-3

WH-2 and WH-3 were two of the original structures constructed at Mound in 1948 and are located just south of WH-1. Constructed as the two original wellhouses (originally designated as WH-1 and WH-2), WH-2 and WH-3 cover the two original site wells and house their respective deepwell pumps that provide the plant with raw water for subsequent treatment and distribution as service, fire system, and potable water. The locations of WH-2 and WH-3 are shown in Figure 1 of Appendix C. Except for the locations of electrical and control circuit panels within the structures, the two structures are identical.

The structures are single story, approximately 375 square foot buildings (22-ft. long x 17-ft. wide x 12-ft. high). The walls of the structures are constructed of reinforced poured concrete. The north walls of both buildings, which contain the entrance door for each building, are 12-in. thick concrete. The side and rear (south) walls of both buildings are 8-in. thick concrete. For most of the floor area in each building, the floor slabs are 8-in. thick concrete reinforced with #4 rebar on 12-in. centers, each way, top and bottom. In the approximate center of the slab area is a 68-in. x 32-in. x 26-in. thick section of slab to support a backup/emergency engine to drive the well pump. Approximately 8-ft. from the center of the engine support area is a 32-in. x 32-in. x 12-in. thick slab section where the well shaft protrudes through the slab. Reinforced concrete foundation walls and footers that extend 4-ft. deep support the walls and floor slab of each building. The ceiling of each building is 5-in. thick reinforced concrete with a built up roof membrane. Additional roof support is provided by a center 12-in. x 18-in. east-west concrete beam, reinforced with two # 8 rebar. In the roof of each building, above the location of the deepwell pump, is a removable 4-ft. x 4-ft. cover that allows for the removal of the pump. Along the east and west sides of the 4-ft. x 4-ft. ceiling opening of each building, are two 8-in. x 14-in. concrete beams running north and south that are reinforced with two #6 rebar. Center-mounted on each roof is a gravity roof ventilator. Floor plans for both of the buildings are shown in Appendix D.

The deepwell pumps are rated at 700 gpm. Each pump is of the multi-stage water lubricated type, installed with a combination drive consisting of a direct connected vertical shaft 100 H.P. electric motor and a 150 H.P. propane-fueled engine (originally gasoline-fueled engines were used) connected to the pump shaft through an over-running clutch and a right angle gear. Under normal operation, the deep well pumps are driven by the electric motors. In the case of a power failure, sensing circuitry detects the power failure and engages the backup/emergency engines to drive the pumps. As part of their original construction, both WH-2 and WH-3 had a 280-gallon underground gasoline tank (for storage of fuel for the engines) located just north of their respective locations. In approximately 1973, the gasoline engines were replaced with propane-burning engines and both the gasoline tanks were drained, filled with inert material, and capped. The fuel lines from the gasoline tanks to the engines were also removed at that time. Propane tanks (to provide fuel for the backup/emergency engines) were installed at the southeast corners of

both WH-2 and WH-3. The historical 280-gallon underground gasoline tanks just north of WH-2 and WH-3 are still in place. These tanks and associated soils will be removed by a BUSTR certified contractor in accordance with State of Ohio Fire Marshal regulations. The removal of these two tanks will be documented in a report to the State Fire Marshal.

The outer 38-in. diameter steel well casing for each of the deepwell pumps is ¼-in. thick and the inner 26-in. diameter steel well casing is also ¼-in. thick. In 1995, a contractor installed an inner, 20-in. diameter steel well casing inside the original 26-in. diameter well casing for the deepwells in WH-2 and WH-3. The annulus space between the 26-in. and 20-in. pipes was then filled-in with grout.

Utilities

Supplied to all three of the wellhouses is 480-volt electric service. The electric service is used to power the deepwell pumps and wall-mounted electric heating units (two per wellhouse). The heating units are used to keep the raw water from freezing in winter. None of the wellhouses have cooling systems other than cooling provided by natural air circulation through louver vents. None of the wellhouses have potable or service water. None of the buildings are serviced by sanitary or storm drains. Also, none of the buildings have a fire sprinkler system. WH-2 and WH-3 each have a propane-fueled, direct-drive engine to drive the well pumps during electrical power outages.

2.1 Past Uses of Buildings WH-1, WH-2, and WH-3

WH-1

The building was constructed in 1962 and has been used for the same purpose (a wellhouse to supply raw water to Mound's water system) since construction. Since initial construction, there have been no modifications made to the structure.

WH-2 and WH-3

WH-2 and WH-3 were constructed in 1948 as the two original wellhouses that supply raw water to Mound's water system. The facilities have not been used for any other purpose since construction. Since initial construction, there have been no modifications made to the structures. In approximately 1973, use of the gasoline tanks to fuel the backup/emergency engines was discontinued and the gasoline engines were replaced with propane burning engines. Propane tanks were installed at the southeast corners of WH-2 and WH-3. The two 280-gallon underground gasoline tanks (just north of WH-2 and WH-3) are still in place.

2.2 Current Uses of Buildings WH-1, WH-2, and WH-3

WH-1

WH-1 is operational but is being used for emergency use only. All required equipment will be removed from the building during Safe Shutdown activities (in accordance with 41 CFR 101-200). Any remaining equipment will be left in place and demolished/disposed of with

the building. After demolition of the building and slab, a state-certified contractor will seal the well. Sealing of the well will be documented in a well closure report to the Ohio EPA.

WH-2

The electric pump for the WH-2 deepwell is broken but the well pump can still be operated/driven with the propane engine and thus is being used for emergency use only. All required equipment will be removed from the building during Safe Shutdown activities (in accordance with 41 CFR 101-200). Any remaining equipment will be left in place and demolished/disposed of with the building.). After demolition of the building and slab, a state-certified contractor will seal the well. Sealing of the well will be documented in a well closure report to the Ohio EPA.

WH-3

WH-3 is operational and is being used to supply raw water to the Mound water system. All required equipment will be removed from the building during Safe Shutdown activities (in accordance with 41 CFR 101-200). Any remaining equipment will be left in place and demolished/disposed of with the building. After demolition of the building and slab, a state-certified contractor will seal the well. Sealing of the well will be documented in a well closure report to the Ohio EPA.

2.3 Summary of Environmental Concerns and Findings – Buildings WH-1, WH-2, and WH-3

Table 1: Summary of Environmental Concerns and Findings

Description	Comment	Resolution
Lead-Based Paint	No previous lead surveys or sampling data could be found for Buildings WH-1, WH-2, or WH-3. A walk-through survey of the accessible areas of the referenced buildings was performed during January of 2005 in order to identify any existing or potential lead paint hazards. The paint coatings present were observed to be largely intact and no potential hazards observed. Since the buildings are scheduled for imminent demolition, painted surfaces will be tested for lead content as planned work indicates the need for such testing in order to avoid worker exposure to lead. (Appendix J).	No paint analysis would be necessary to protect occupant or worker health unless any coatings were to be disturbed by close worker contact (sanding, grinding, scraping, torch cutting, etc.). If these types of activities are planned, the affected paint coatings will be tested to verify the absence of lead. Waste Management performed worst-case scenario calculations to determine that building demolition debris containing lead-based paint meets the waste acceptance criteria at the landfill.
Chemicals	Appendix K provides a list of chemicals and products reportedly used or stored in Buildings WH-1, WH-2, and WH-3.	All chemicals will be removed prior to demolition, and dispositioned by Waste Management.
Ballasts associated with Fluorescent Lamps	Fluorescent lamps were used in the buildings. Ballasts may contain polychlorinated biphenyls (PCBs).	Ballasts that may contain PCBs will be removed prior to demolition, and disposed of by Waste Management.

Table 1: Summary of Environmental Concerns and Findings

Description	Comment	Resolution
Air Emissions	There were no processes that created air emissions in Buildings WH-1, WH-2, or WH-3.	N/A
Asbestos	During January of 2005 a comprehensive walk-through survey of all areas of Buildings WH-1, WH-2, and WH-3 were performed in order to identify all asbestos-containing materials (ACMs) prior to demolition of the facilities (Appendix I). Other than roofing materials for Buildings WH-2 and WH-3, no asbestos-containing materials were found in the three wellhouses.	The asphalt roofing on Buildings WH-2 and WH-3, which are assumed to contain asbestos, are considered Nonfriable Category I materials. As Nonfirable Category I materials, in accordance with NESHAP, these materials will remain in place during demolition and be disposed of as construction waste. All work will be performed in accordance with current state and federal regulations.
Drainage Sumps	There are no sumps in Buildings WH-1, WH-2, or WH-3.	N/A
Lead	WH-2 and WH-3 each have one lead-acid battery.	Batteries will be removed prior to demolition, and disposed of by Waste Management
Mercury	Electrical switches in Buildings WH-1, WH-2, and WH-3 may contain mercury.	Lighting fixtures and switches that may contain mercury will be removed prior to demolition, and disposed of by Waste Management
Radiological	No research, development, or production activities using radiological materials occurred in Buildings WH-1, WH-2, or WH-3. The Final Status Report for WH-1, WH-2, and WH-3 is provided in Appendix G.	Refer to Section 2.4
Septic System	N/A	N/A
Wastewater	N/A	N/A
Stains & Corrosion	N/A	N/A
Storage Tanks	Two 280-gallon underground gasoline tanks located just north of WH-2 and WH-3 (one tank each building). In approximately 1973, use of the underground tanks were discontinued. The 280-gallon underground gasoline tanks are still in place. In approximately 1973 two propane tanks were installed at the southeast corners of WH-2 and WH-3.	The two 280-gallon underground gasoline tanks and associated soils will be removed by a BUSTR certified contractor in accordance with State of Ohio Fire Marshal regulations. The removal of these two tanks will be documented in a report to the State Fire Marshal. The propane tanks at the southeast corners of WH-2 and WH-3 will be removed prior to demolition of the buildings.

Table 1: Summary of Environmental Concerns and Findings

Description	Comment	Resolution
Solid Waste Disposal	N/A	N/A
Migratory Hazards	N/A	N/A
Radon	Radon level is not applicable for open-air demolitions.	N/A
HVAC	N/A	N/A
Energetic Materials	N/A	N/A
Soil Contamination	Appendix L contains a graphic showing soil sample locations within 50-ft. of the perimeters of each of the structures, and provides tables for detected compounds (results above laboratory detection limits) and non-detected compounds (results below laboratory detection limits). One surface sample location (S0905) shows Thorium-232 results above Cleanup Objective (reference Table 2). One surface sample location (S0910) shows Cesium-137 results above screening criteria (reference Table 2). Results for all other sample locations within the 50-ft. perimeters of the buildings are less than the screening level (Core Team approved or the more stringent of either 10^{-6} Risk-Based Guideline Value [RBGV] plus background or Hazard Index = 1).	One surface sample location (S0905 near WH-1) shows Thorium-232 results above Cleanup Objective (reference Table 2). One surface sample location (S0910 near WH-2) shows Cesium-137 results above screening criteria but below Cleanup Objective. A walkover survey will be performed at sample location S0905. If elevated levels are detected, the area will be marked and a barrier erected to prevent the area from being disturbed during demolition activities; therefore, potential soil contamination at this location will not affect worker safety during demolition activities. This sample location will be included in the residual risk evaluation for the parcel.

N/A: Not applicable

Table 2: Maximum Results Exceeding Screening Levels

Analyte	Sample Location	Maximum Result	Background	RBGV (10^{-6})	Screening Level
Cesium-137 (pCi/g)	S0910	1.500	0.42	0.34	0.76
Thorium-232 (pCi/g)	S0905	2.460[1]	1.4	0.07	1.47

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

[1] - Result exceeds Cleanup Objective (2.1 pCi/g) for Thorium-232 but is below Hot Spot Criteria (3.5 pCi/g).

2.4 Radiological Information for Buildings WH-1, WH-2, and WH-3

A radiological assessment of Well Houses 1, 2, and 3 was performed, by reviewing historic and operational records and performing radiological surveys.

Well Houses 1, 2, & 3 were constructed for the purpose of supplying fresh water for site operations. Well Houses 2 and 3 were constructed in 1948, and that time were designated as "Well Houses 1 and 2". In the 1962/1963 time frame, a third well house was constructed, and was designated as "Well House 1", and the previous two well houses were then designated as "Well Houses 2 and 3". Well Houses 1, 2, and 3 were built to supply raw water for Mound site operations, and have been used for the same purpose since construction.

Surveys were performed throughout the buildings in accordance with the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM). The fixed point, scanning, and smear surveys found no residual activity above the $DCGL_W$. Smear samples taken in floor drains, and water samples from pits found no activity above site limits.

The review team has concluded that the building meets radiological surface release criteria established by DOE Order 5400.5 and no further radiological surveys are required. Subsurface material (under-slab, footers, etc) and associated soil is not evaluated in this survey, but will be assessed separately when surfaces are accessible.

Supporting documentation for the information summarized in the following table is contained in Appendix G.

Table 3 - Radiological Summary

TYPE	RSDS (Radiological Survey Data Sheet)	LOCATION	SURVEY RESULTS (dpm/100 cm^2)	SURFACE CONTAMINATION GUIDELINES (dpm/100 cm^2) (Note 1)
Highest Alpha Smearable Activity	05-TF-0131	Interior Wall	3.53	20
Highest Alpha Fixed Activity	05-TF-0119	Exterior Wall	152	300*
Highest Beta Smearable Activity	05-TF-0131	Interior Wall	9.33	1,000
Highest Beta Fixed Activity	05-TF-0116	Roof	632	5,000
Highest Tritium Smearable Activity	05-TF-0129	Interior Vent	114	10,000

Note 1: Guideline values per DOE Order 5400.5 (DCGLw), Radiation Protection of the Public and the Environment.
*300 dpm/100cm^2 $DCGL_{EMC}$; Square meter average is <100 dpm/100cm^2

2.5 National Historic Preservation Act (NHPA)

Buildings WH-2, and WH-3 are two of Mound's original structures built as the two original wellhouses to supply raw water to Mound's water system. However, the Ohio Historic Preservation Office (OHPO) has determined that WH-2 and WH-3 are not historic structures. WH-1, constructed in about 1962, is also not listed as a historic structure with the OHPO. No mitigative document package is required for any of the three structures. However, if any items or artifacts are discovered as this project progresses, the Cultural

Resource Representative will be notified at extension 4080. If necessary, work will be suspended until which time the items or artifacts have been recovered.

3.0 SITE DESCRIPTION

3.1 Site/Vicinity Location and Characteristics

Buildings WH-1, WH-2, and WH-3 are located at the DOE MCP site, formerly known as the Mound Plant. The MCP site is situated in the City of Miamisburg, Miami Township, Montgomery County, State of Ohio as shown in Appendix B.

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

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

3.2 Description of Structures, Roads, and Other Improvements in Proximity to Buildings WH-1, WH-2, and WH-3

As shown in Appendix C, Figure 1, Buildings WH-1, WH-2, and WH-3 are bordered on the east by an asphalt roadway and further to the east is a storage site that was the former location of a concrete processing unit; on the north by Buildings 300, 301, 301A, and Trailer 16; on the south by an open field; and on the west by the site boundary fence. Located between WH-2 and WH-3 is air-sampling station #215.

3.3 Current and Past Uses of Buildings in Proximity to Buildings WH-1, WH-2, and WH-3

Current buildings in proximity (Figure 1) to Buildings WH-1, WH-2, and WH-3 include:

- Building 300, located north of Building WH-1, houses the Operable Unit 1 (OU-1) pump and treat system using an air stripper for VOCs. Construction of the pump and treat system was completed in November 1997. The facility has been used for the same purpose since construction. The building is a 290 square-foot, single-

story, prefabricated metal structure built with slab-on-grade. The facility is not supplied with utilities other than 480V, three-phase power to run the system and provide electric space heat. Demolition of the building as an industrial demolition is planned to occur in 2005.

- Building 301, located north of Building WH-1 adjacent to Building 300, houses the OU-1 air sparging/soil vapor extraction process. Constructed in 1997, the facility has been used for the same purpose since construction. The facility is a 329 square-foot, single-story, prefabricated metal structure on skids. The facility is not supplied with utilities other than 480V, three-phase power to run the system and provide electric heat. Demolition of the building as an industrial demolition is planned to occur in 2005.

- Building 301A, located north of Building WH-1 adjacent to Building 301, houses a gas chromatograph to analyze gases removed in the air sparging/soil vapor extraction process in Building 300. Set in place in 1997, Building 301A is a 30 square-foot converted prefabricated guard post building with electrical service. Demolition of the building as an industrial demolition is planned to occur in 2005.

- Trailer 16, located north of Building WH-1 adjacent to Building 301A, is a 460 square-foot single-wide trailer used as an analysis laboratory and office area in support of the OU-1 air sparging/soil vapor extraction process. It is unknown when the trailer was initially purchased and brought to the Mound site. However it is known that the trailer was used at the Rail Spur as an office trailer beginning in 1996. The trailer was refurbished and moved to its present location in 1998 to provide temporary laboratory and office space in support of OU-1. The plan is to demolish the structure as an industrial demolition when it is no longer needed to support the OU-1 air sparging/soil vapor extraction process.

Previous buildings in close proximity to Buildings WH-1, WH-2, and WH-3.

- Midway between WH-2 and WH-3 was a trash incinerator. The construction date of the incinerator is unknown. It is believed to have been demolished in approximately 1961. No other information is known concerning the incinerator.

The above listed buildings are believed to have had no adverse environmental impact on Buildings WH-1, WH-2, and WH-3.

4.0 RECORDS REVIEW

4.1 General/Historical CERCLA Information

In compliance with permit requirements under Resource Conservation and Recovery Act (RCRA), the Clean Water Act (CWA), the Safe Drinking Water Act (SDWA), and the Clean Air Act (CAA), Mound Plant has applied for or has received permits for its surface water discharges, air emissions, and hazardous waste program. The site had operated a hazardous waste storage facility under a RCRA Part B permit dated October 18, 1996. The site currently maintains a National Pollutant Discharge Elimination System (NPDES)

surface water discharge permit with Facility I.D. number OH 0009857. Operations that produce particulate or vaporous emissions are either permitted or registered with RAPCA and the Ohio Environmental Protection Agency (OEPA). The site also submits annual Emergency and Hazardous Chemical Inventory forms to OEPA, pursuant to the Superfund Amendment and Reauthorization Act (SARA), Title III, the Emergency Planning and Community Right-to-Know Act. The March 2002 version of this report indicated that no reportable chemicals were stored in Buildings WH-1, WH-2, or WH-3 (Appendix K).

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

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

Through the process described above, the specific PRSs in the vicinity of Buildings WH-1, WH-2, and WH-3 (Section 4.2.3) are listed in Table 4 along with their binning status. The locations of the PRSs are shown on Figure 2 of Appendix C. Three of the four PRSs in the vicinity of Buildings WH-1, WH-2, and WH-3 have been determined by the Core Team to require No Further Assessment (NFA). One PRS (PRS 414) has been retired (the Core Team retired PRS 414 on 12/01/04; the PRS Package Public Review period was 12/09/04 to 1/08/05). For a PRS to be binned NFA or as a completed RA, the Core Team has reviewed the PRS data and agrees that all existing environmental issues associated with that PRS have been resolved and the PRS is protective of human health and the environment. No other PRSs associated with Buildings WH-1, WH-2, and WH-3 have been identified.

4.2 Specific Record Sources for Buildings WH-1, WH-2, and WH-3

4.2.1 Occurrence Reports

A search of the occurrence reporting system revealed no occurrence reports for Buildings WH-1, WH-2, or WH-3.

4.2.2 Spills and Releases for Buildings WH-1, WH-2, and WH-3

- None

4.2.3 Associated PRS Overview

As a result of the investigations and documentation accomplished to comply with the CERCLA cleanup process via the Federal Facilities Agreement (FFA)/DOE Environmental Restoration (ER) Program, DOE and the site contractor tabulated all the PRSs identified under the various regulatory programs in effect at the site. Four PRSs are at or near Buildings WH-1, WH-2, and WH-3 as identified in Table 4. The PRS locations are shown on Figure 2 of Appendix C. Recommendation sheets for the PRSs are provided in Appendix N.

Table 4 - PRSs in Proximity to Buildings WH-1, WH-2, and WH-3

PRS	CERCLA or Bldg. Related	Binning Status	Comments
13	CERCLA	NFA	Trash incinerator in the old burn area which is part of operable unit 1.
282	CERCLA	NFA	Spoils disposal area.
414	CERCLA	Retired	South Area Groundwater and Soil Evaluation.
419	CERCLA	NFA	Drainage outflow reroute.

4.3 Review of Building Prints

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

4.4 Aerial Photographs

Aerial photographs from 1949 [following construction of WH-2 and WH-3 (originally designated as WH-1 and WH-2, respectively)], 1959 (following construction of WH-2 and WH-3 and prior to construction of new WH-1), 1965 (following construction of new WH-1), and 2004 (most recent aerial photo) were reviewed and no significant items were identified. Aerial photographs are presented in Appendix E.

4.5 Interviews

The past/current Building Manager, A. W. Upshaw, was interviewed via a building manager questionnaire (Appendix F: WH-1, F1 through F45; WH-2, F47 through F91; and WH-3, F93 through F137) and in-person regarding past facility operations and current conditions. No significant items in the building were identified based on the questionnaire or interviews.

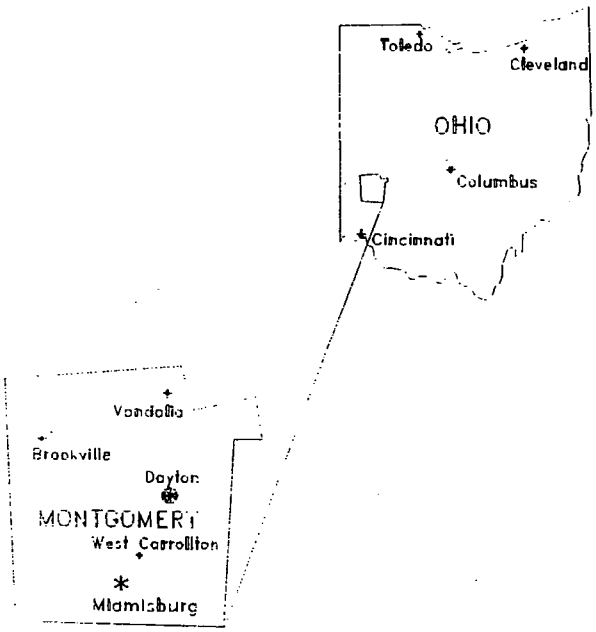
Appendix A

General Listing of Acronyms

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

Appendix B

Map of Montgomery County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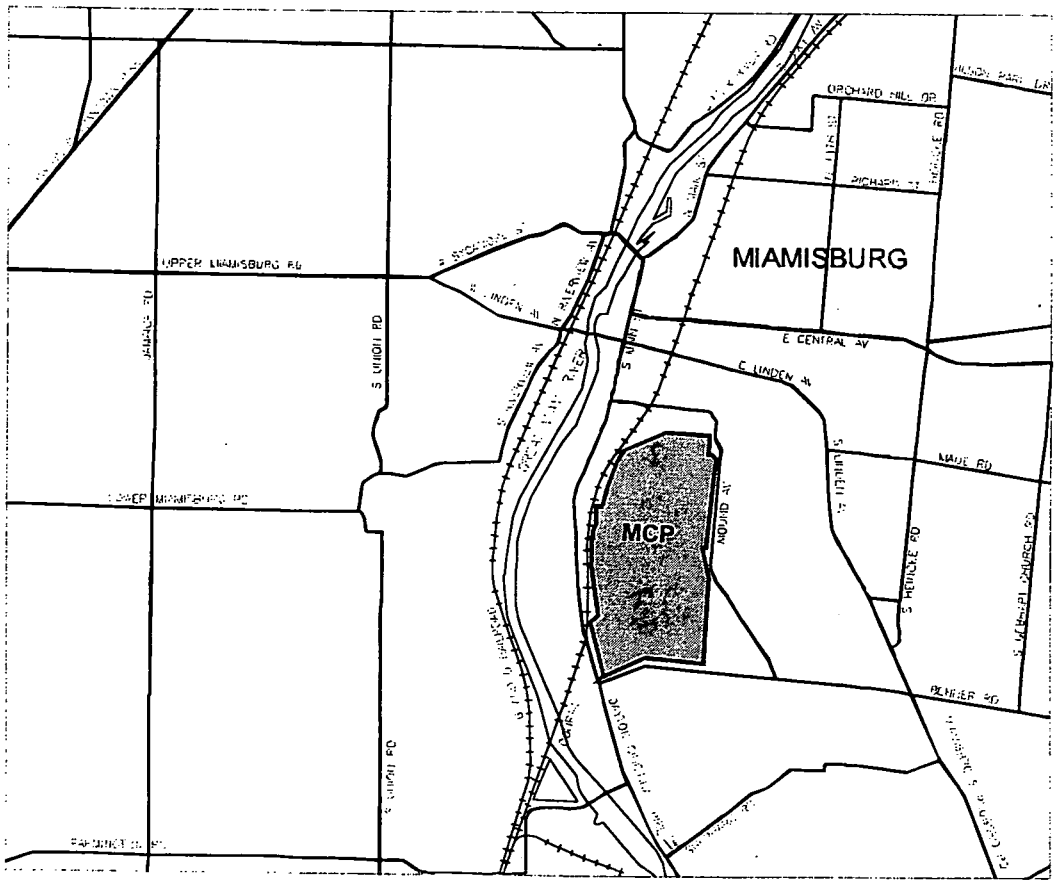
Cleveland
OHIO
Columbus
Cincinnati
Vandalia
Brookville
Dayton
MONTGOMERY
West Carrollton
Miamisburg


MIAMISBURG
MCP
UPPER MIAMISBURG RD
S UNION RD
E CENTRAL AV
E LINDEN AV
MAUE RD
S HEINCKE RD
BENNER RD
ORCHARD HILL DR

B 1 of 1

Appendix C

Figures

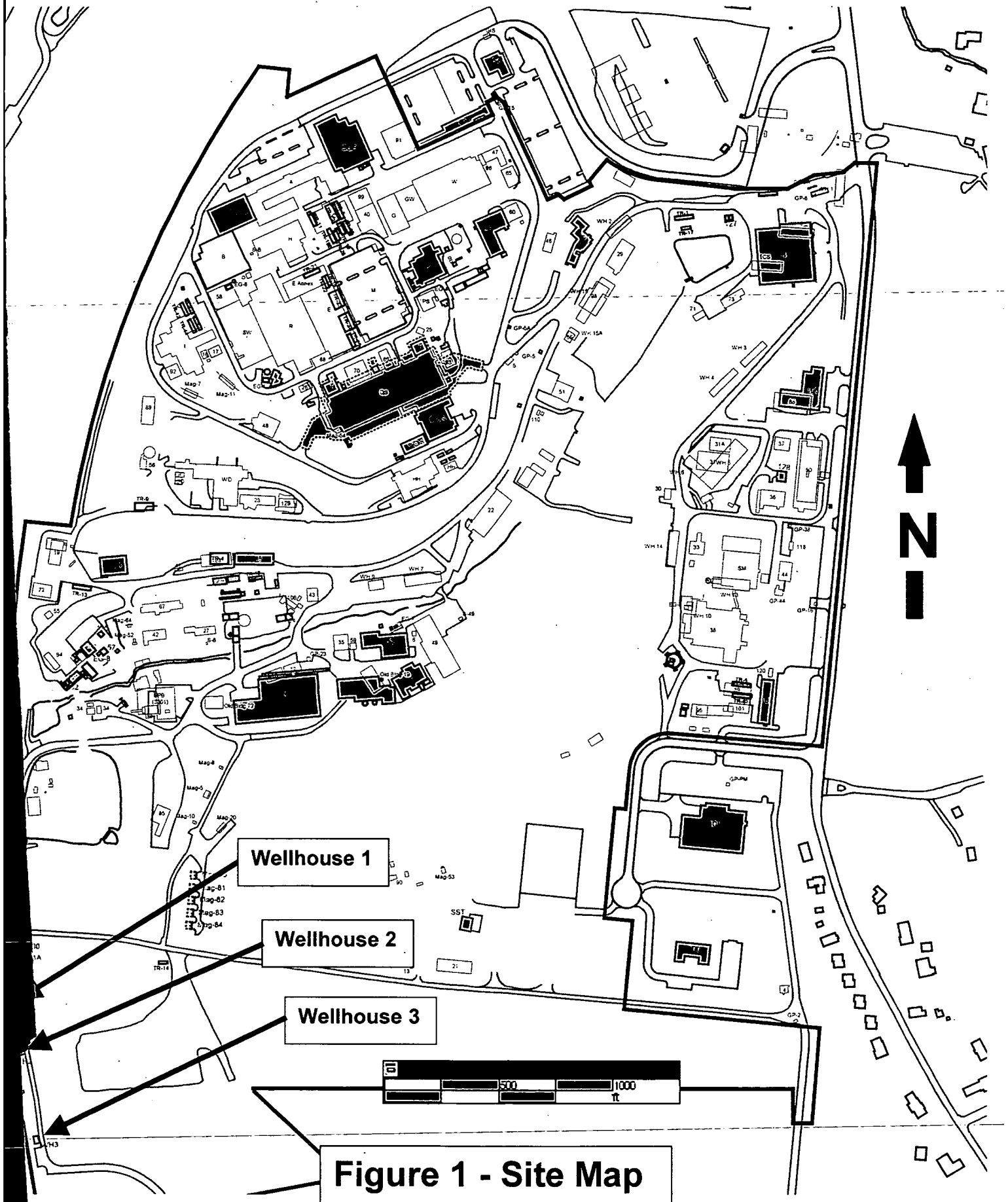


Figure 1 - Site Map

C1of6

PRS Point

PRS Area

PRS Line

20 10 0 20 40FT
GRAPHIC SCALE

Aerial Photograph dated April 5, 2004

DATE	REVISION	BY	CHKR	ENG	LPREC	APVD	#
/10/04		SSF					

MOUND

Environmental Restoration Geographic Information System

SHEET	7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
ISSUE	
SHEET	1 2 3 4 5 6
ISSUE	
PART CLASSIFICATION	
DRAWING CLASSIFICATION	UNCLASSIFIED
SIZE	
DRAWING NUMBER	vicinity.dgn
JOB NUMBER	
DGN TYPE	STE
PRNG	ER-GIS
CADD	
SCALE	
SHEET	1 OF
STATUS	MD-REL-00/00/00
ORIGIN	MSTATION / J

Figure 2
Well Houses 1,2,3 and Vicinity

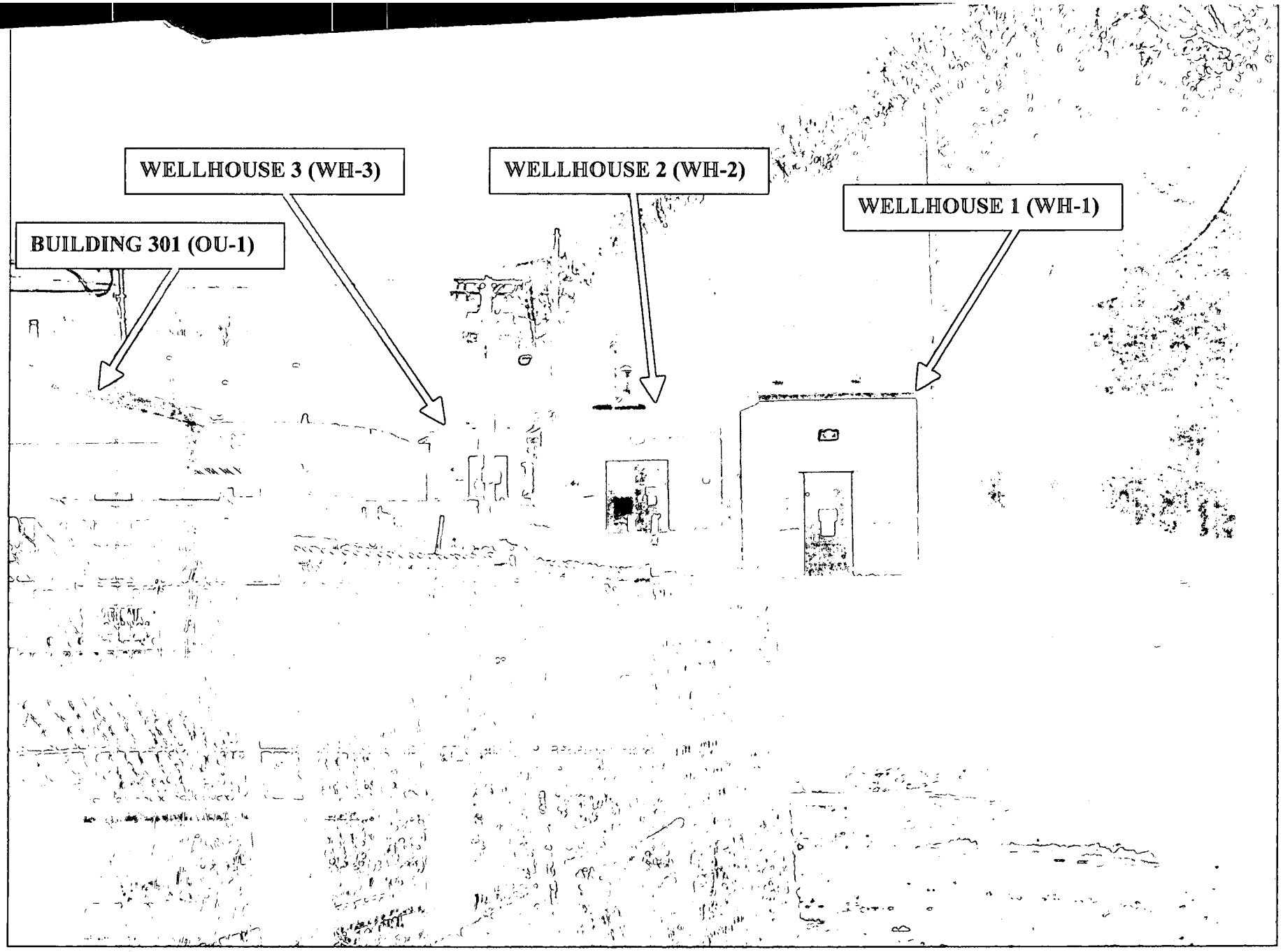
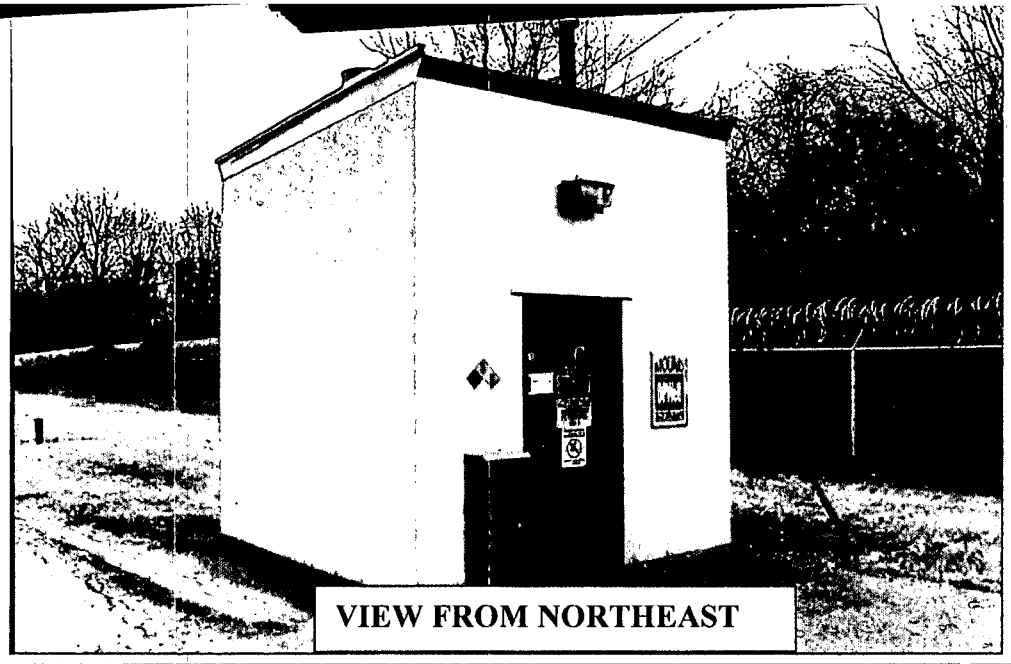
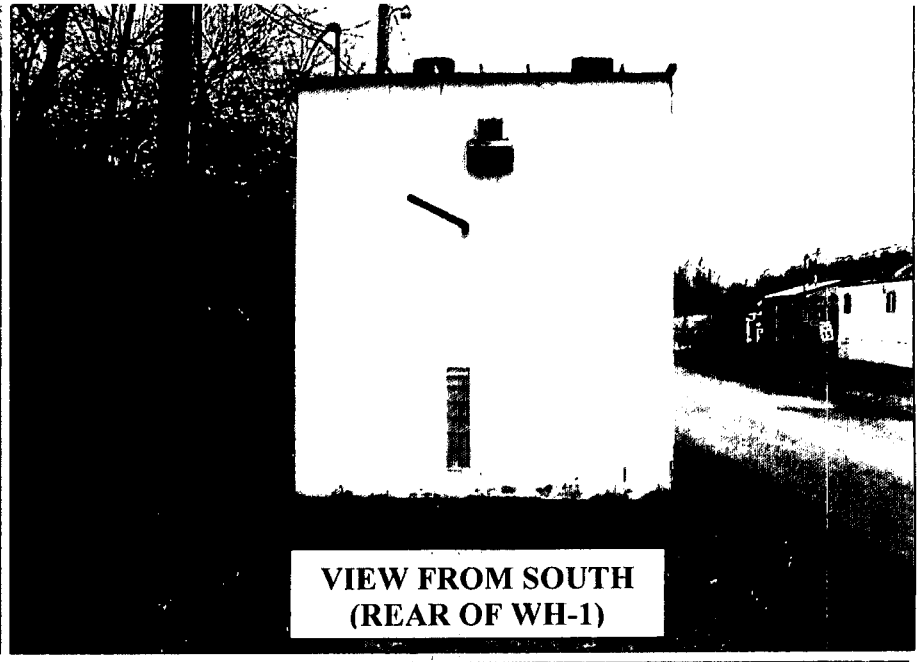


FIGURE 3 – VIEW OF ALL THREE WELLHOUSES FROM NORTHEAST

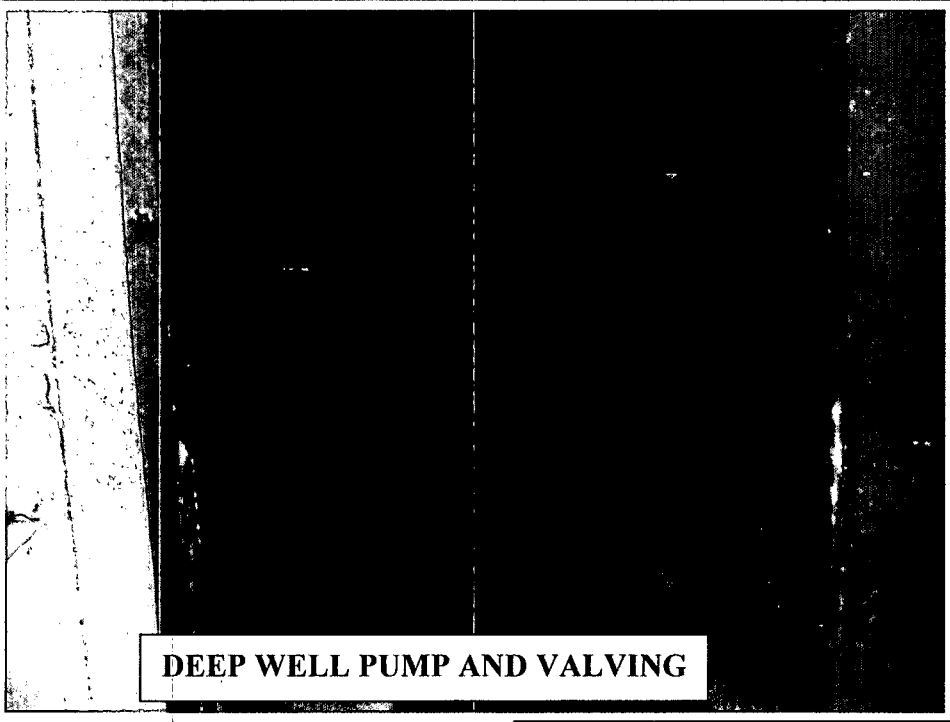
C3 of 6



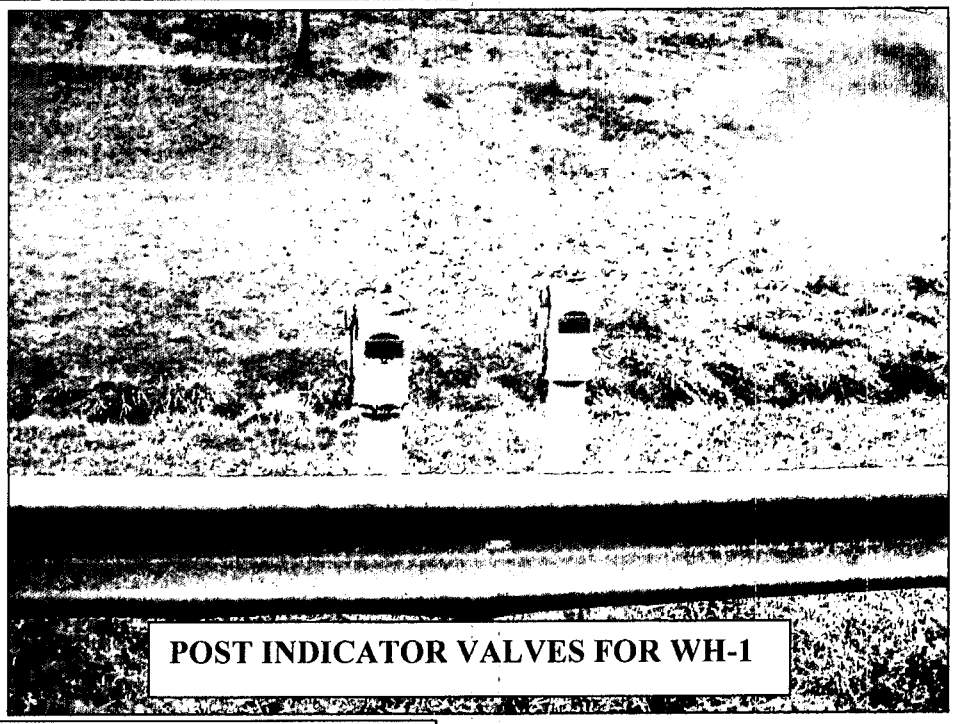
VIEW FROM NORTHEAST



VIEW FROM SOUTH
(REAR OF WH-1)



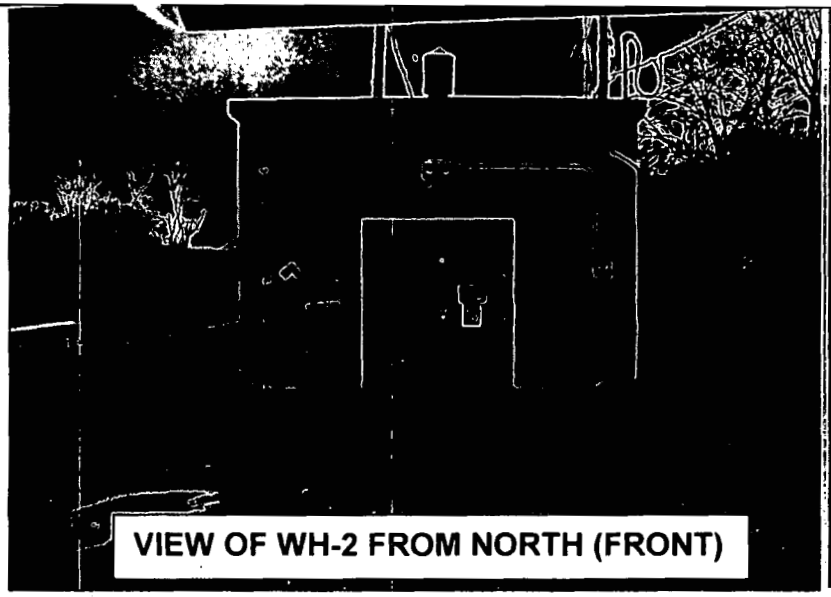
DEEP WELL PUMP AND VALVING



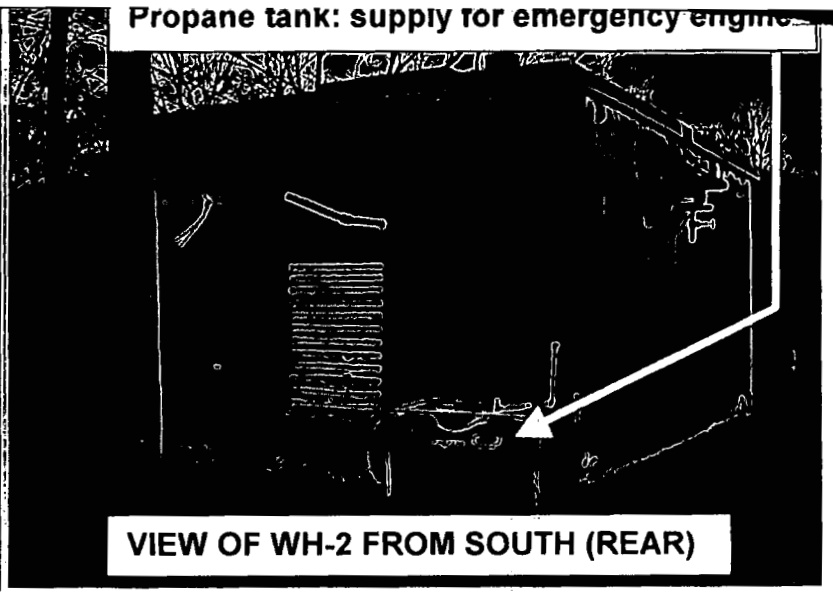
POST INDICATOR VALVES FOR WH-1

FIGURE 4 – WELLHOUSE 1 PHOTOS

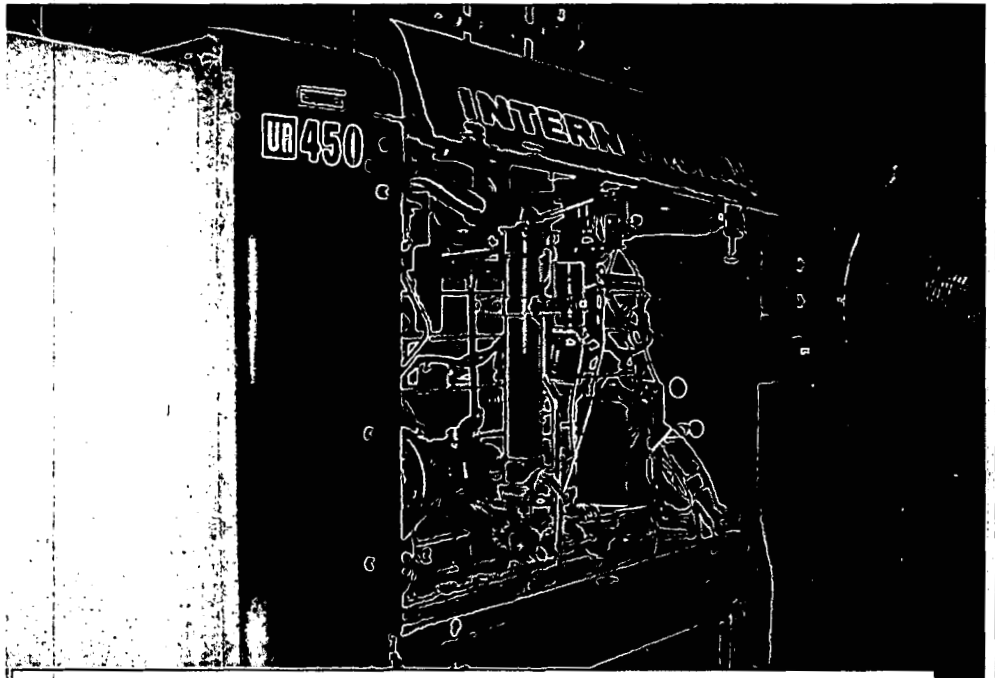
C4 of 6



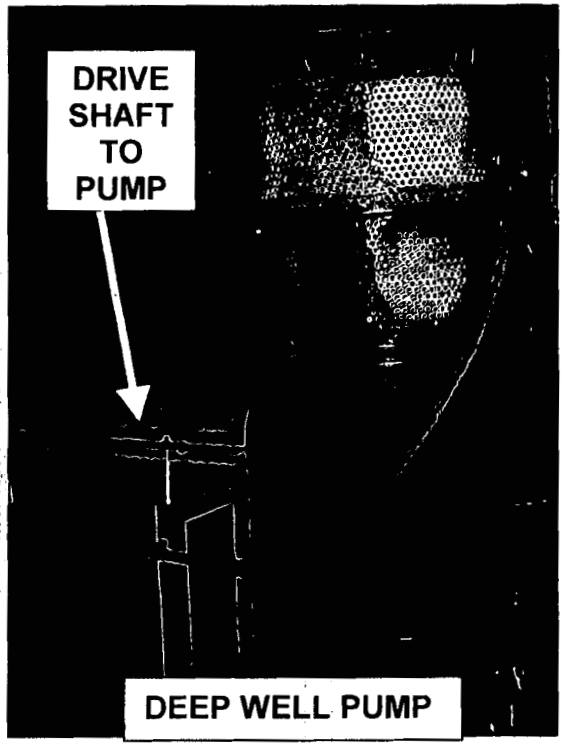
VIEW OF WH-2 FROM NORTH (FRONT)



VIEW OF WH-2 FROM SOUTH (REAR)



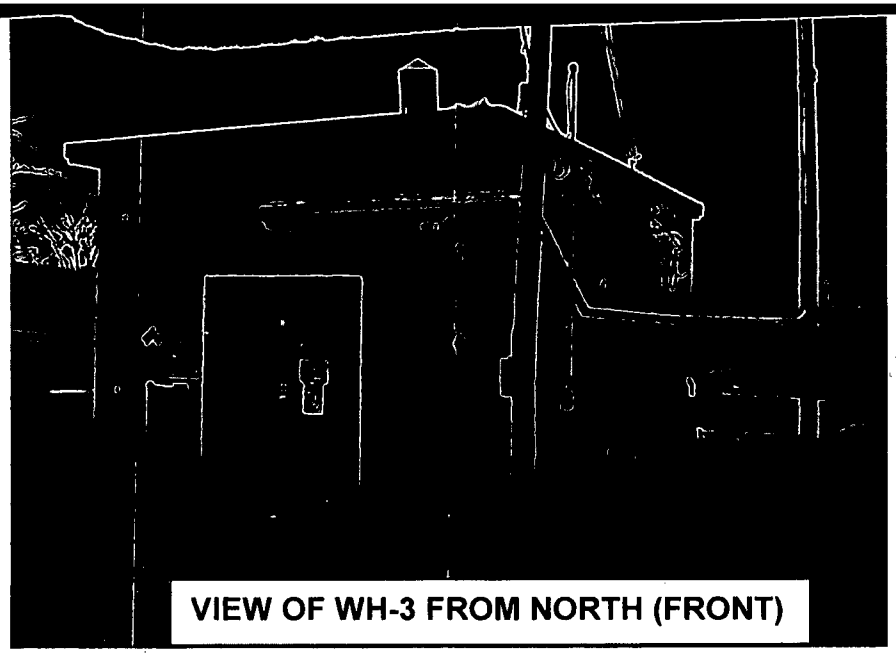
EMERGENCY/STANDBY ENGINE FOR DEEP WELL PUMP



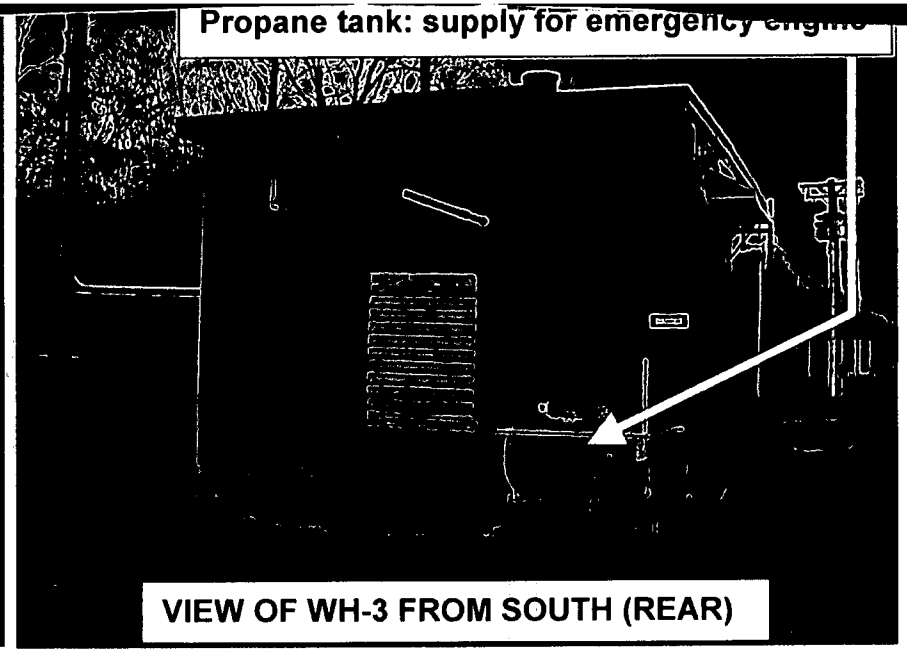
DEEP WELL PUMP

FIGURE 5 - WELLHOUSE 2 PHOTOS

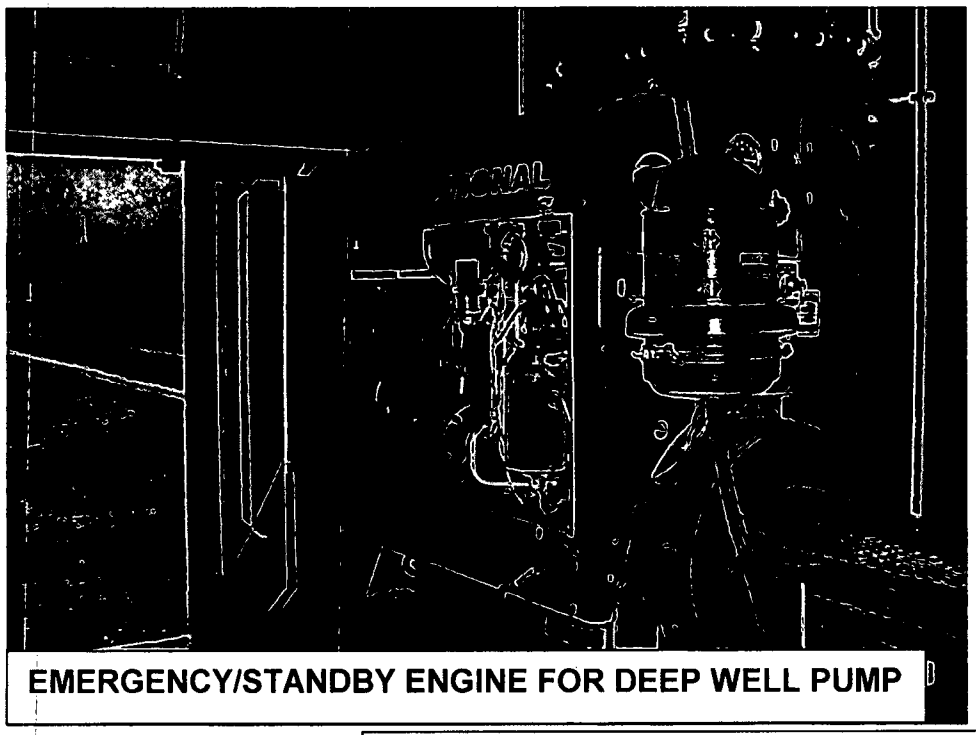
C5 of 6



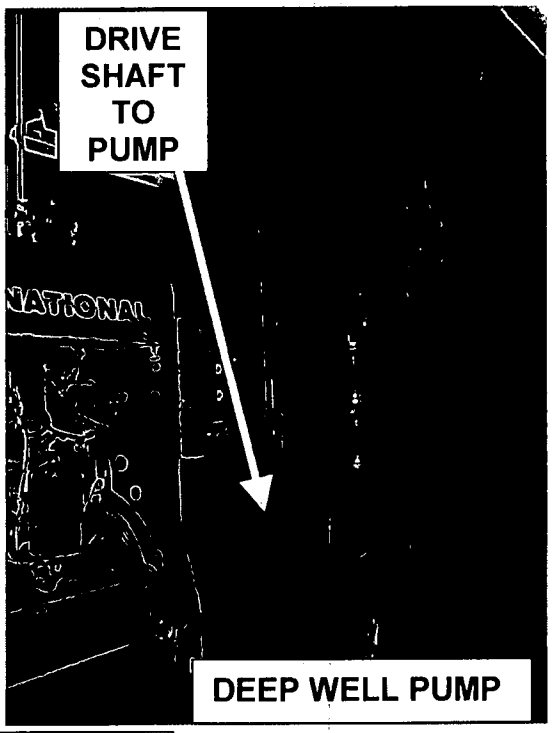
VIEW OF WH-3 FROM NORTH (FRONT)



VIEW OF WH-3 FROM SOUTH (REAR)



EMERGENCY/STANDBY ENGINE FOR DEEP WELL PUMP



DEEP WELL PUMP

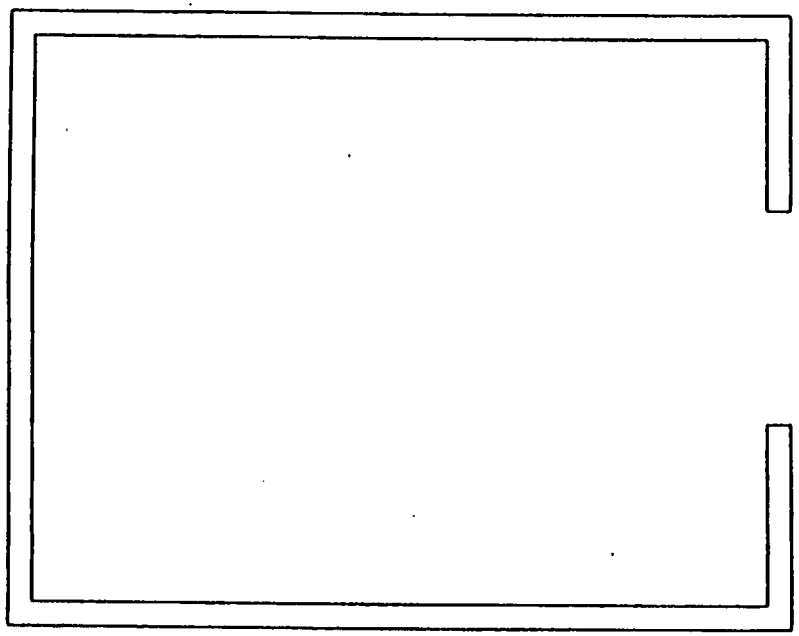
FIGURE 6 - WELLHOUSE 3 PHOTOS

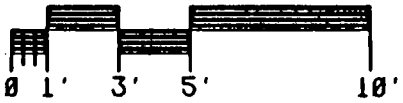
6 of 6

Appendix D

Floor Plans

0	12/12/91	ASBUILT ISSUE	DL	1	DVD





WELL HOUSE #1
FIRST FLOOR
BLDG CODE:3318

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PART CLASSIFICATION								
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STATUS	MD-REL-12/12/91				ORIGIN	MD-BRJ-V3.0		

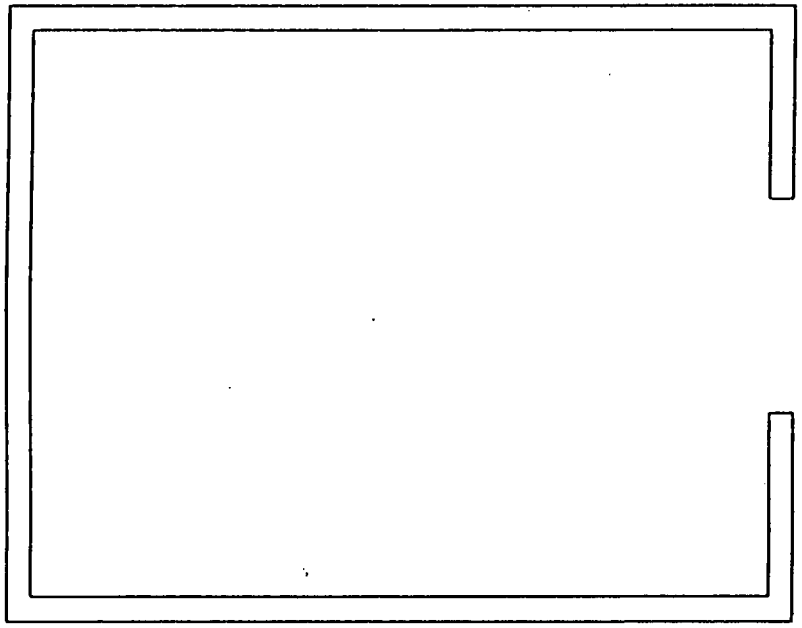
APPROVALS: DATE:
SAFETY COMMITTEE REVIEWED:
___ NONE ___ TRUDOC ___ TEDOC ___ CVDOC
TECH. REP. ___ ___
GR. MGR. ___ ___
TRUDOC ___ ___
TEDOC ___ ___
CVDOC ___ ___

REVISION DWG		PROJ MGR	
SPECIALIST		DWG SUPV	
LP & CC		PROJ REV	
DWG MGR			
APPR		DATE	

D 1 of 4

9.33-57

ISS	DATE	REVISION				APVD	N
0	12/12/91	ASBUILT ISSUE	DCW			DVD	



WELL HOUSE #2
FIRST FLOOR
BLDG CODE:3317

APPROVALS: DATE:
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TECH. REWP. ___ ___
BR. MGR. ___ ___
TRUEDOC ___ ___
TEDOC ___ ___
EMDOC ___ ___

DESIGN CHK	PROJ MGR
SPONS	CHG SUPV
LP & DC	MECH REV
CHG MGR	
APVD	DATE

SHEET	1	2	3	4	5	6	TITLE (U) TITLE CLASSIFICATION
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PART CLASSIFICATION							
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D2 of 4

9.34-57

REV	DATE	REVISION			
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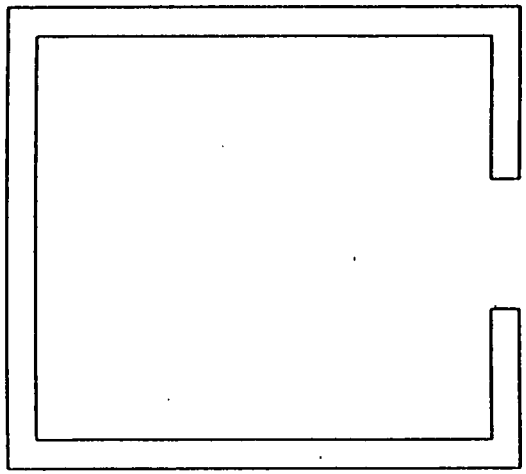

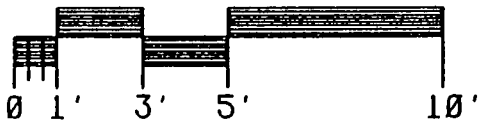

WELL HOUSE #3
FIRST FLOOR
BLDG CODE:3318

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PART CLASSIFICATION							
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APPROVALS: DATE:
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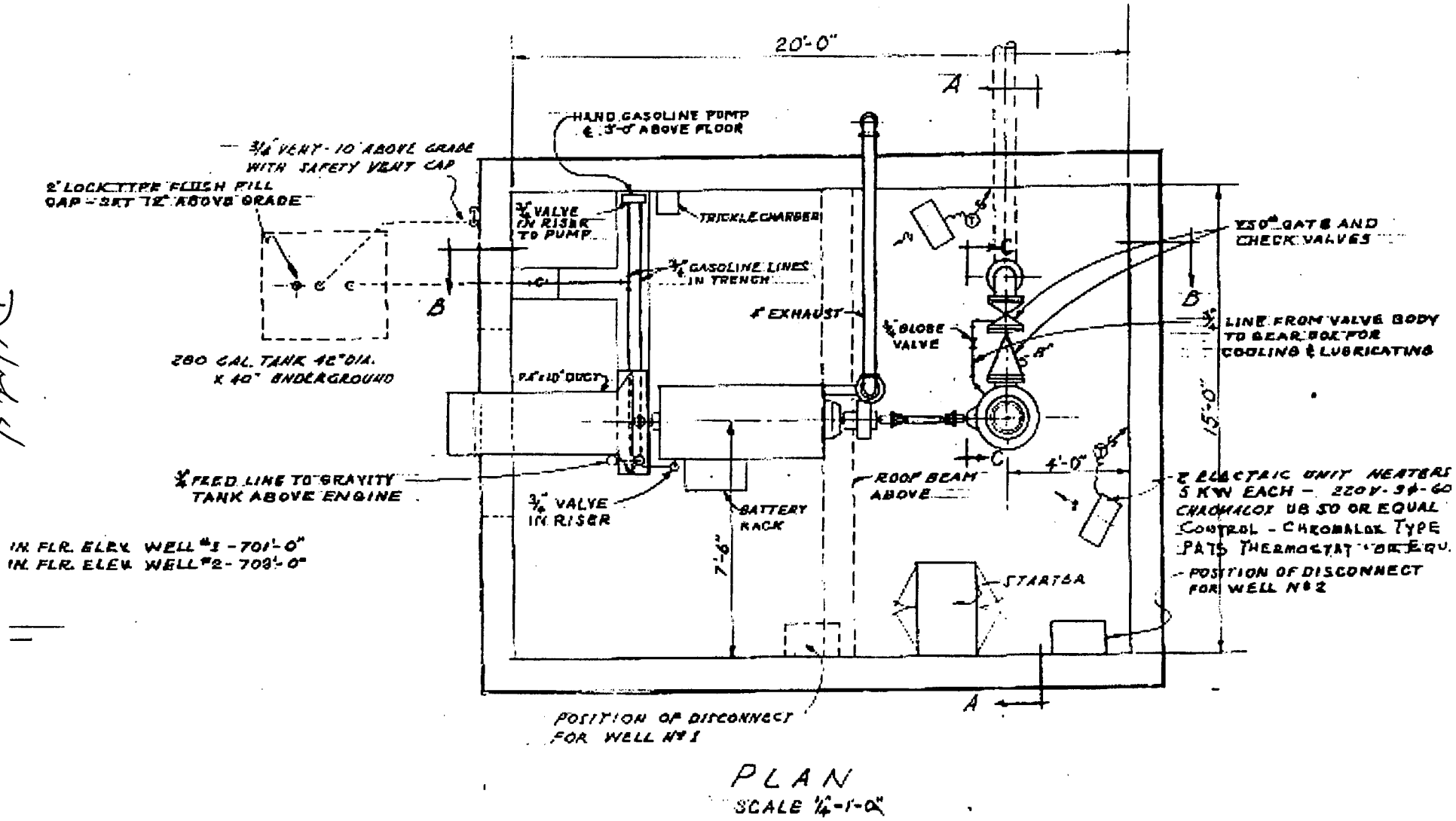
TECH. REVIP. ___ ___
BR. MGR. ___ ___
TRUEDOC ___ ___
TEDOC ___ ___
DVDOC ___ ___

DESIGN DM | PROJ MGR
BPOM | DWG SUPV
LP & DC | PROD REV
DWG MGR
APVD | DATE

D3 of 4

9.35-57

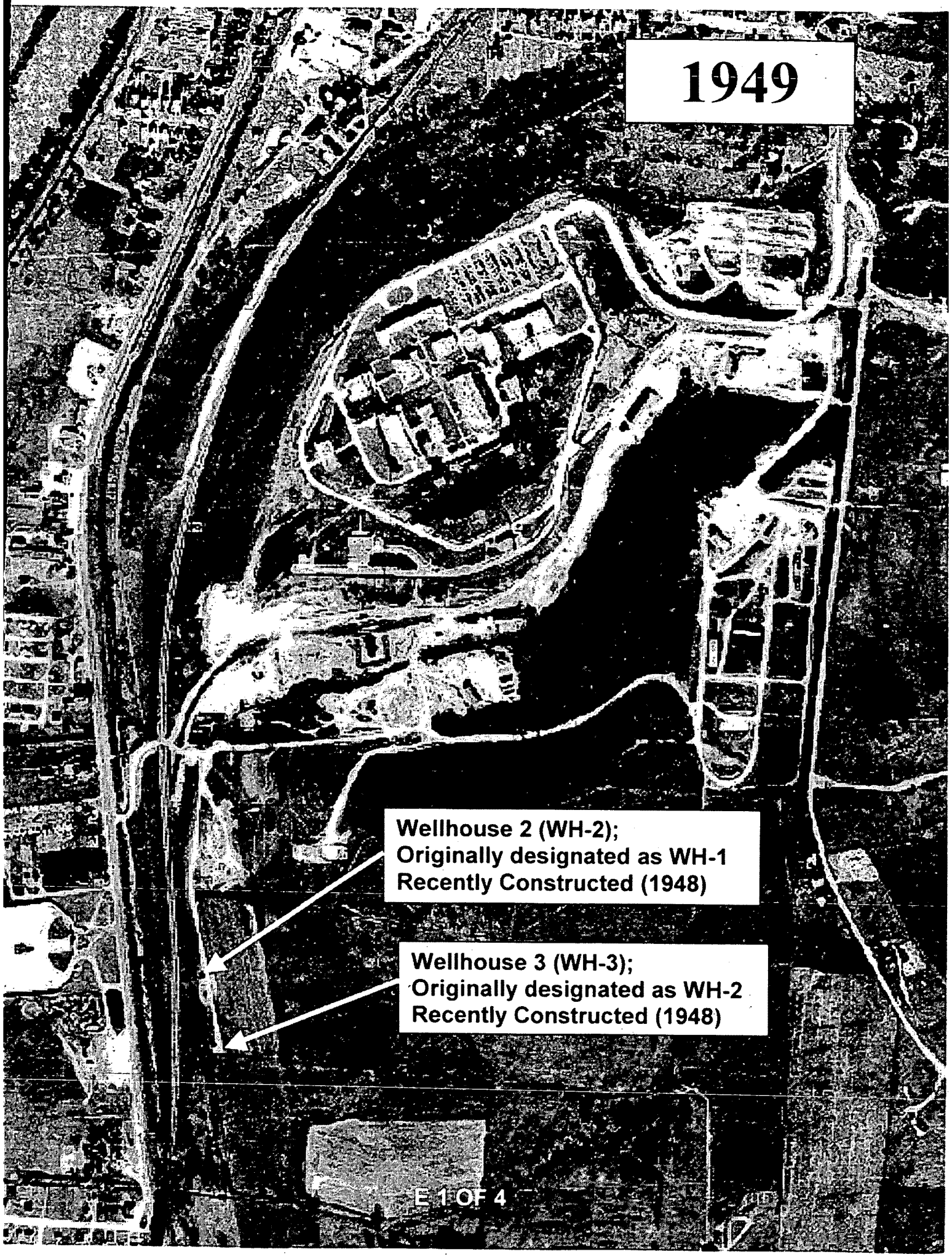


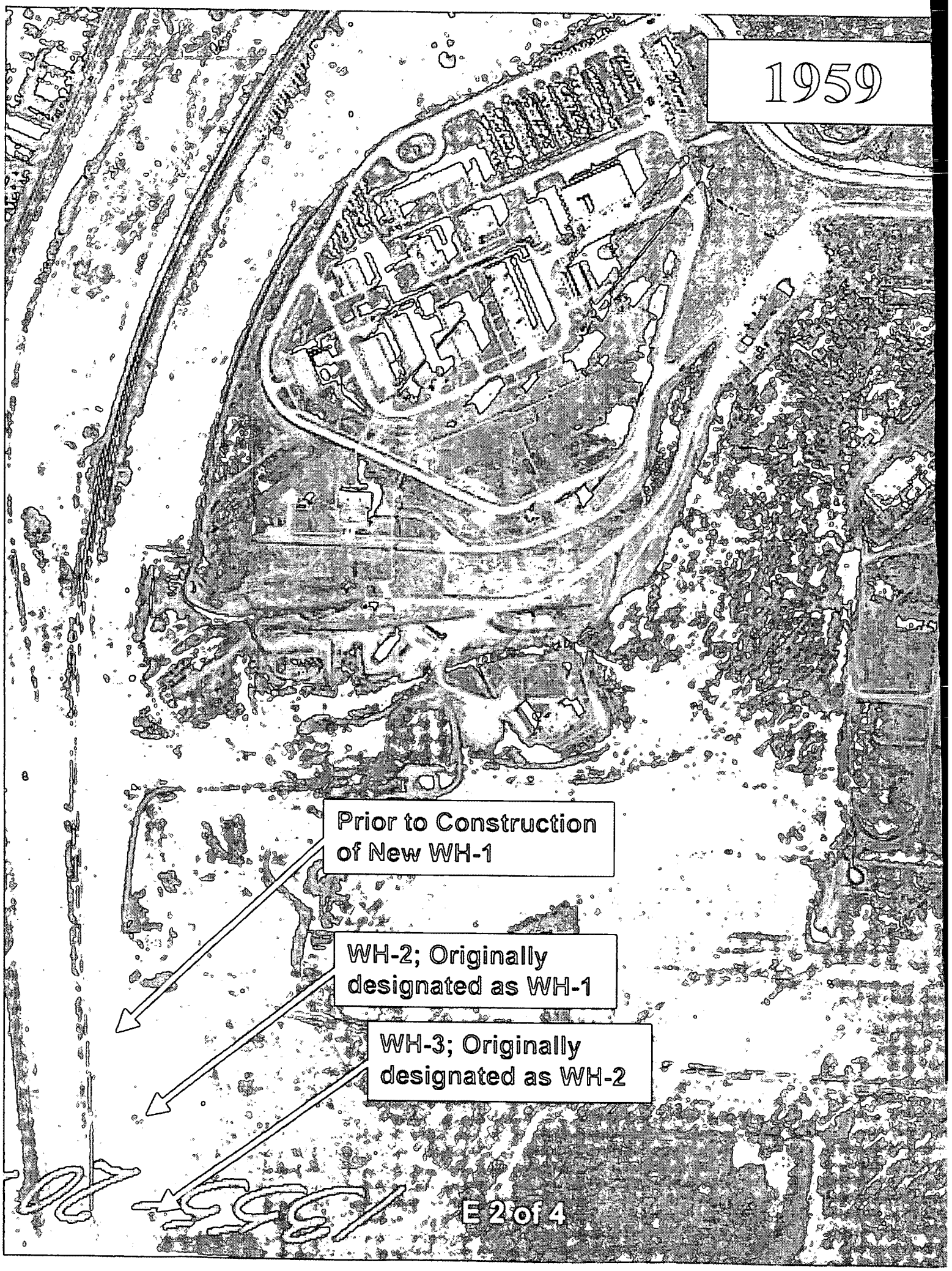
PLAN
SCALE 1/4"-1'-0"

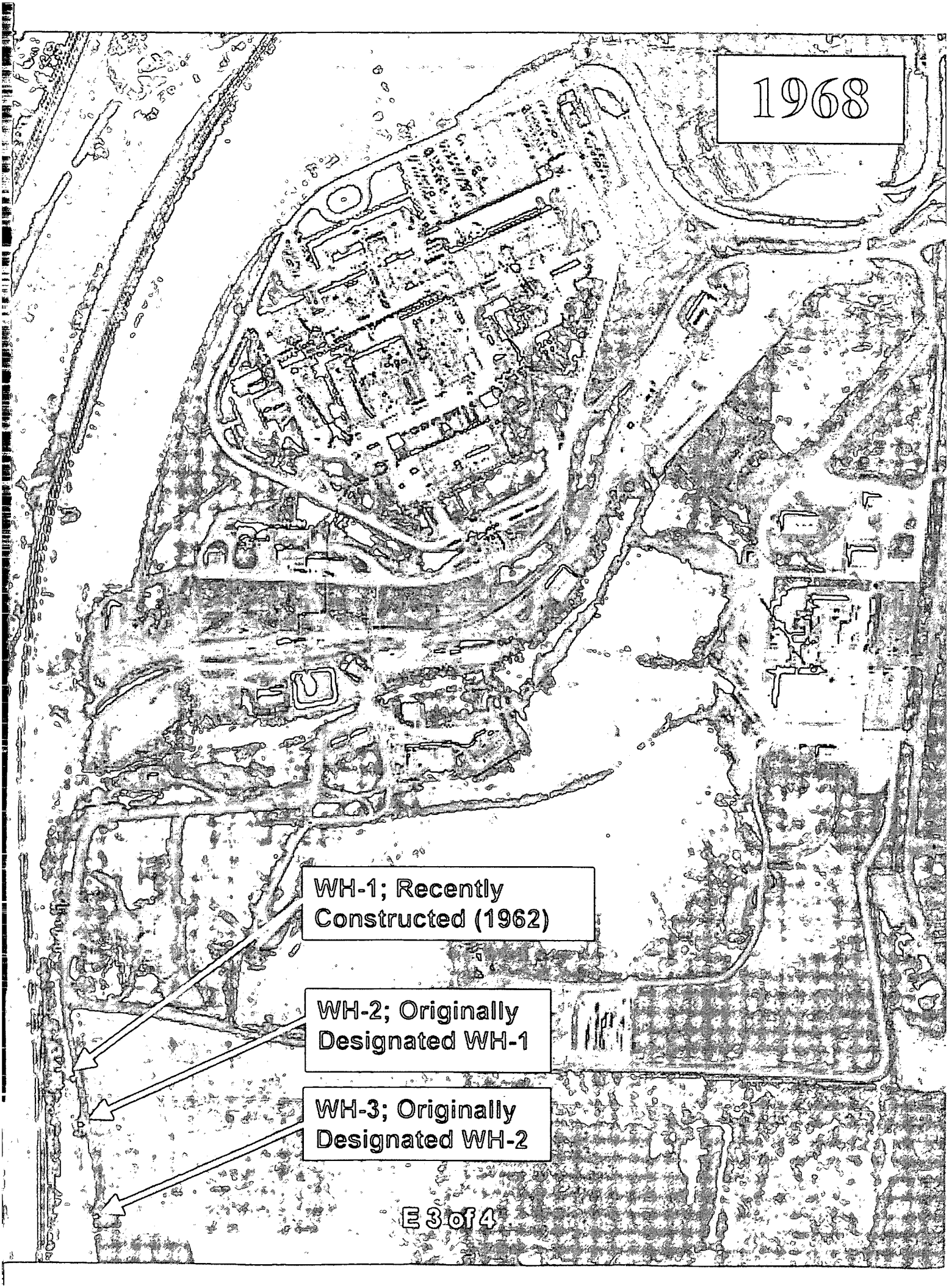
ORIGINAL CONSTRUCTION FLOOR PLAN LAYOUT FOR WH-2 AND WH-3 (ORIGINALLY DESIGNATED AS WH-1 AND WH-2)

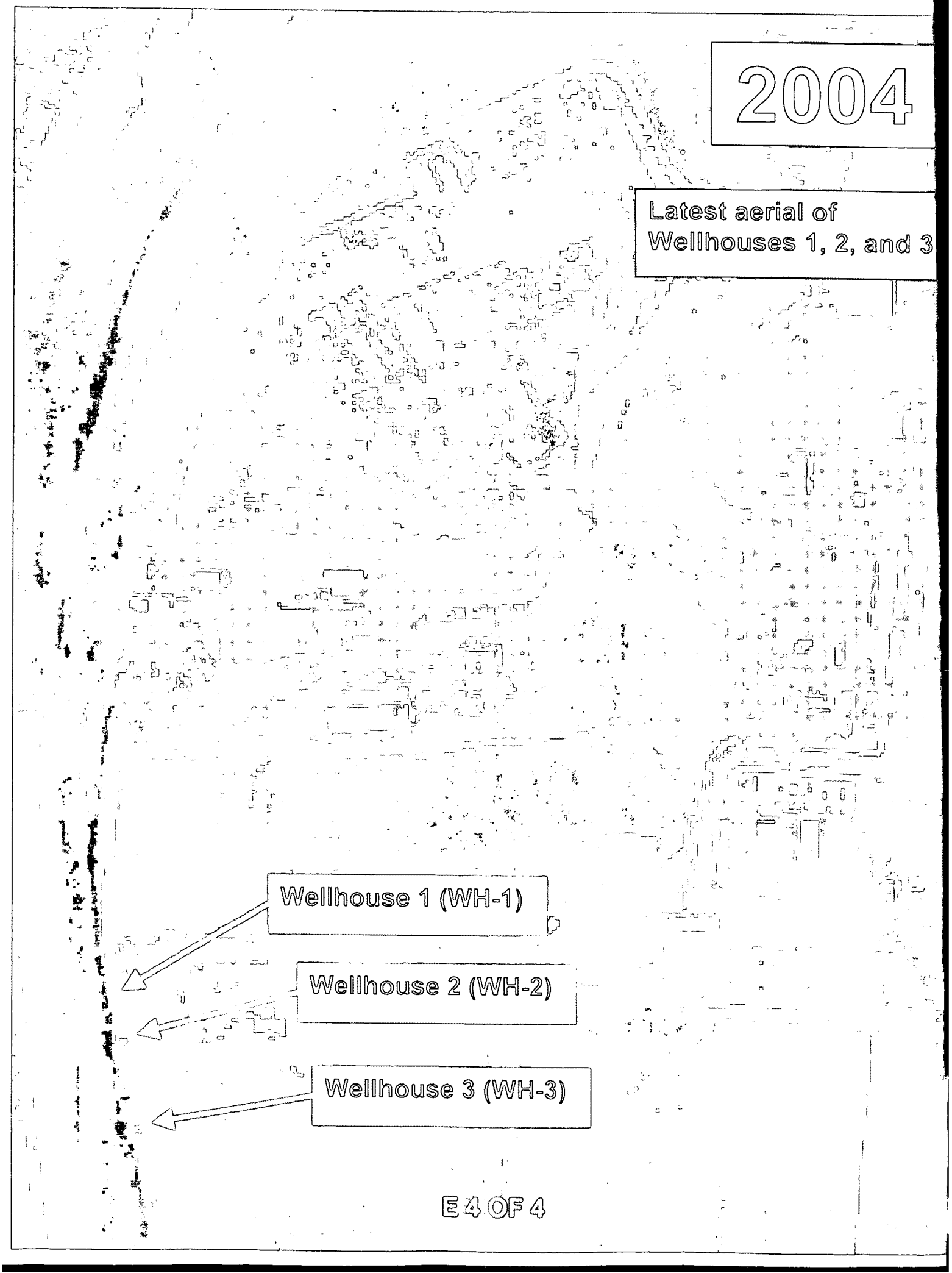
Appendix E

Aerial Photographs


1949
Wellhouse 2 (WH-2);
Originally designated as WH-1
Recently Constructed (1948)
Wellhouse 3 (WH-3);
Originally designated as WH-2
Recently Constructed (1948)


1959
Prior to Construction of New WH-1
WH-2; Originally designated as WH-1
WH-3; Originally designated as WH-2


1968
WH-1; Recently Constructed (1962)
WH-2; Originally Designated WH-1
WH-3; Originally Designated WH-2


2004
Latest aerial of Wellhouses 1, 2, and 3
Wellhouse 1 (WH-1)
Wellhouse 2 (WH-2)
Wellhouse 3 (WH-3)

Appendix F

Environmental Appraisal Report of the Mound Plant (excerpt)

	Pages
• Wellhouse 1	F1 through F45
• Wellhouse 2	F47 through F91
• Wellhouse 3	F93 through F137

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

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

Environmental Appraisal of the Mound Plant

9.33 BUILDING WH-1

9.33.1 Scope of Building WH-1 Report

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

The appraisal team performed a walk-through of Building WH-1 on the morning of January 22, 1996. The Environmental Appraisal Checklist (EAC) (Attachment 1—Section 9.33.6.1) was used to record findings. The appraisers were accompanied by the building manager. Other information was supplied by the building manager and recorded on the Building Manager's Questionnaire (BMQ), included as Attachment 2 (Section 9.33.6.2).

9.33.2 Description of Building WH-1

Building WH-1, a wellhouse, is a ~128 ~~374~~-square-foot, structure built slab-on-grade with steel ~~concrete block~~ walls and a metal roof. The Building covers the well and houses a pump to help supply water to the Mound facility. The location is shown in Attachment 3 (Section 9.33.6.3). A floor plan of the building is shown in Attachment 4 (Section 9.33.6.4).

The building was constructed in 1962 ~~1948~~ and has been used for the same purpose since construction. The facility is not supplied with utilities other than 480V three phase power to run the water well pump and two ~~an~~ electric space heaters.

9.33.3 Summary of Findings

A facility walk-through was conducted and the facility was found to be in good condition. There were no issues of environmental concern identified during the walk-through.

9.33.4 Observations

9.33.4.1 Air Emissions

There were no sources of air emissions identified at the facility. There was no evidence of fugitive dust at or around Building WH-1.

9.33.4.2 Wastewater Emissions

The Mound Facility has three wastewater collection systems: a sanitary wastewater system; a storm water system; and a radioactively contaminated process wastewater system. Sanitary wastewater is treated at an onsite tertiary treatment plant and subsequently discharged by hard

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

* Subsequently, MCP effluent was re-routed around the canal via a covered pipe to the Mound Overflow Creek. Stephen Davis 2-24-05

9.33.4.2.1 Sanitary Wastewater

The building houses one of the three site pumps that provide the plant with raw water for subsequent treatment and distribution as service, fire system, and potable water. There are no wastewater streams associated with the facility and as such the building is not serviced by a sanitary line.

9.33.4.2.2 Storm Wastewater

The facility is not equipped with exterior storm drains according to the underground utility lines diagram in Attachment 5 (Section 9.33.6.5).

9.33.4.2.3 Chemicals

*** Lubricating Pump oil was used for the well pump. See Appendix K, Chemical Inform

No chemicals are stored or used at the facility. A vendor periodically inspects and uses chemicals to treat the wellbore and well screens. Unused chemicals are removed by the vendor. No priority pollutant chemicals listed in the Clean Water Act (CWA) are used in Building WH-1. There is no record or evidence of a spill.

9.33.4.3 Potable and Service Water

The building houses one of the three site pumps that provide the plant with raw water for treatment and subsequent distribution as potable water.

9.33.4.4 Chemical Storage and Hazardous Materials

There is no chemical storage or hazardous materials storage in the facility (with the exception of the pump oil housed within the pump). When the pump oil is changed, the used oil is placed in a container and handled as waste oil.

There was no evidence of asbestos in the facility; it is not insulated. The building also contains no polychlorinated biphenyls (PCB's).

** WD Building was demolished in May, 2004 as a CERCLA Removal Action.

9.33.4.5 Solid, Hazardous, and Radioactive Wastes

No wastes are routinely generated at the facility. Pump oil, when changed during periodic pump servicing, is placed in a container and handled by Mound Waste Management.

9.33.4.6 Waste Minimization and Pollution Prevention

There is no routine generation of wastes at the facility and no real opportunity for waste minimization or pollution prevention.

9.33.5 Findings and Recommendations

Photographs were taken to document the environmental appraisal. They are included as Attachment 6 (Section 9.33.6.6). The environmental appraisal of Building WH-1 indicates that there are no action items which need to be planned.

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ENVIRONMENTAL APPRAISAL CHECKLIST

Building Name WH-1 -(DEEP WELL # 1)

Appraisers:

Name	Discipline
MARCIA VANNET	CHEMIST
MARK GILLIAT	ENGINEER
MYRON SMITH	ENGINEER

Building Manager: ALLEN UPSHAW

Process Manager: FRANK BAKER

Date: 1/22/96

ENVIRONMENTAL APPRAISAL CHECKLIST

Table of Contents

Checklist	Page
Clean Water Act	1
Clean Air Act	2
Hazardous Materials	4
Safe Drinking Water Act	7
RCRA Hazardous Waste	8
TSCA and NESHAP Requirements for Asbestos	13
TSCA—PCB	14
Low-level and Transuranic Waste	17
Waste Minimization/Pollution Prevention Activities	22

Building Name: MH-1 Appraisers: TEAM 4 Date: 1/22/96

Clean Water Act (CWA) Screening Checklist

Question	Response	Comments
Does the outside drain spouting of the building discharge directly to a storm sewer/sanitary system?	Y / N	If the answer to any of these questions is yes, proceed with the following checklist.
Are there sinks, toilets and floor drains in the building?	Y / N	
Are chemicals being used in the building?	Y / N *	Lubricating oil was used for the well pump.
Is there a process which discharges to the storm or sanitary system?	Y / N	3/16/95

CWA Checklist

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

F7 of 137

9.33-9

Environmental A raisal Checklist

Building Name: Appraisers: Date:

Clean Air Act (CAA) Screening Checklist

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

CAA Checklist

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

F8 of 137

9.33-10

Building Name: WH-1 Appraisers: TEAM 4 Date: 1/22/96

CAA Checklist

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

TABLE A

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

BLANK

Source:

Page 59 of 137

9.33-11

9.33-12

F10 of 137

Environmental Appraisal Checklist

Building Name: Appraisers: Date:

Hazardous Materials (HM) Screening Checklist

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

HM Checklist

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

BLANK

* The well is periodically serviced, the vendor takes all unused

Building Name: WH-1 Appraisers: TEAM 4 Date: 1/22/96

HM Checklist

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

E11 of 137

9.33-13

F12 of 137

Environmental Appraisal Checklist

Building Name: Appraisers: Date:

HM Checklist

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

BLANK

Above Ground Storage Tanks Inventory

TABLE B—Above Ground Storage Tanks Inventory

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

Source: _____

Building Name: NH-1 Appraisers: Team 4 Date: 1/22/96

Safe Drinking Water Act (SDWA) Screening Checklist

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

SDWA Checklist

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

TABLE C—Water Fountain Survey

Building	Location	Model #	Comments / Date of Analysis for Lead

Source: _____

F13 of 137

9.33-15

Environmental Appraisal Checklist

Building Name: Appraisers: Date:

RCRA Screening Checklist

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

RCRA Checklist

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

F14 of 137

Building Name: WH-1 Appraisers: TEAM 4 Date: 1/22/96

RCRA Checklist

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

F15 of 137

9.33-17

Environmental Appraisal Checklist

Building Name: Appraisers: Date:

RCRA Checklist

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

BLANK

F16 of 137

Building Name: WH-1 Appraisers: TEAM 4 Date: 1/22/96

RCRA Checklist

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

BLANK

F17 of 137

9.33-19

Building Name: Appraisers: Date:

RCRA Checklist

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

General Comments:

F 18 of 137

Building Name: [illegible]-1 Appraisers: [illegible] Date: 1/22/96

Asbestos Screening Checklist

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

Asbestos Checklist

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

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

F19 of 137

9.33-21

9.33-22

F20 of 137

Environmental Appraisal Checklist

Building Name: Appraisers: Date:

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

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

TSCA Checklist

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

Building Name: unit-1 Appraisers: Team 4 Date: 1/11/96

TSCA Checklist

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

F21 of 137

9.33-23

9 33-24

F22 of 137

Environmental Appraisal Checklist

Building Name: Appraisers: Date:

TSCA Checklist

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

GENERAL COMMENTS:

Building Name: NH-1 Appraisers: TEAM 4 Date: 1/12/96

Low-Level Waste and Transuranic Waste Screening Checklist

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

Low-Level Waste and Transuranic Waste Checklist

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

F23 of 137

9.33-25

Environmental Appraisal Checklist

Building Name: Appraisers: Date:

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
DOE Order 5820.2A Chapter III, 3.d.	Based on field data, is the characterization of the materials in this area sufficient to assure proper segregation to assure proper segregation, treatment, storage, and disposal?	Y / N	
	Based on field data does the characterization as documented at the time of generation of the waste ensure that the actual physical and chemical characteristics, and major radionuclide content of this material are recorded and known at all stages of the waste management process?	Y / N	
	Do characterization data include the following:		
	Physical and chemical characteristics of the waste?	Y / N	
	Volume of the waste (including solidification and absorbent material)?	Y / N	
	Weight of the waste (including solidification and absorbent material)?	Y / N	
	Major radionuclides and their concentrations?	Y / N	
	Packaging date, package weight, external volume?	Y / N	
	How were the concentration of radionuclides determined? Direct methods?	_____ _____	
	How were the concentrations of radionuclides determined? Indirect methods?	_____ _____	
DOE Order 5820.2A Chapter III, 3.h	Is the storage configuration in long term storage sufficient to meet the performance standard?	Y / N	
	Are records maintained at the facility enabling this waste to be traced from its origin?	Y / N	

BLANK

F24 of 137

Building Name: WH-1 Appraisers: Team 4 Date: 1/22/96

Low-Level Waste and Transuranic Waste Checklist

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

F25 of 137

9.33-27

Building Name: Appraisers: Date:

Low-Level Waste and Transuranic Waste Checklist

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

F26 of 137

Building Name: WH-1 Appraisers: Team 4 Date: 1/21/96

Low-Level Waste and Transuranic Waste Checklist

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

GENERAL COMMENTS:

F21 of 137

9.33-29

Environmental Appraisal Checklist

Building Name: Appraisers: Date:

* Lubricating oil is used for the well pump. SP 3/4/05

Waste Minimization/Pollution Prevention Activities Screening Checklist

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

Waste Minimiaztion/Pollution Prevention Activities Checklist

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

F28 of 131

Building Name: [illegible]-1 Appraisers: Team 4 Date: 1/22/95

Waste Minimization/Pollution Prevention Activities Checklist

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

BLANK

F29 of 137

9.33-31

Environmental Appraisal Checklist

Building Name: Appraisers: Date:

Waste Minimization/Pollution Prevention Activities Checklist

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

BLANK

F30 of 137

Building Name: [illegible]-1 Appraisers: TEAM 4 Date: 1/22/96

Waste Minimization/Pollution Prevention Activities Checklist

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

BLANK

F31 of 137

9.33-33

Environmental Appraisal Checklist

Building Name: Appraisers: Date:

Waste Minimization/Pollution Prevention Activities Checklist

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

F 32 of 137

Building Name: 4H-1 Appraisers: Team 4 Date: 1/22/96

Waste Minimization/Pollution Prevention Activities Checklist

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

F33 of 137

9.33-35

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Building Manager's Questionnaire

Building Name: WH-1 Building Manager: A.W. Upshaw Phone: 865-4894 Date: 12-07-95
Alternate: F. Zaker Phone: 865-3438

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

NONE

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

SAFETY GLASSES

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

4. Provide a physical description of the building.

Building WH1 is a ~~374~~ 128-ft² building. 3/14/05

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

5. Provide a drawing of the building.

No drawing provided

6. What is the current building use?

Houses pump for plant water supply.

Source: Mound Buildings, 5-9-95

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

NONE

Source: Mound Buildings, 5-9-95

Building Manager's Questionnaire

Building Name: WH-1 Building Manager: A.W. Upshaw Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

Process(es) Housed: Water supply pumping.

How Wastes Are Generated:

No hazardous wastes are generated in this building.

Contact: A. Upshaw / F. Baker
Phone #: [illegible] 3033

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

F36 of 137

Building Manager's Questionnaire

Building Name: WH-1 Building Manager: A.W. Upshaw Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

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

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

Source: _____

Building Manager's Questionnaire

Building Name: WH-1 Building Manager: A.W. Upshaw Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

11. Describe air pollution control equipment used to reduce emissions for each source.

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

Source: _____

12. For existing permits are emissions monitored? At what frequency? Where are the records maintained?

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

Source: _____

13. Does the building have domestic water service? Yes No
Is there bottled water? Yes No

14. Does the building discharge to the storm sewer? Yes No
Where?

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

16. Has an asbestos survey been conducted? Yes No
What are the results?

Source: UNKNOWN

F38 of 137

Building Name: WH-1 Building Manager: A.W. Upshaw Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

17. Does the building contain transformers or capacitors? Yes No

Source: _____

18. Has the building been identified as containing PCBs? Yes No

Source: _____

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

Chemical Name	State	Amount (MAX)
* NONE		

Source: _____

* Lubricating oil is used for well pump.

Building Manager's Questionnaire

Building Name: WH-1 Building Manager: A.W. Upshaw Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

Chemical	Amount	Clean-up Measures

Source: _____

21. Where do waste chemicals go?

N/A

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

N/A

23. Where do excess janitorial supplies go?

N/A

Source: _____

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

Chemical	Amount	Chemical	Amount

Source: _____

Building Manager's Questionnaire

Building Name: WH-1 Building Manager: A.W. Upshaw Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

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

Source: _____

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

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

Source: _____

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

Materials	Amount

Source: _____

F41 of 137

9.33-45

Building Manager's Questionnaire

Building Name: WH-1 Building Manager: A.W. Upshaw Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

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

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

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

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

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

Source: _____

F42 of 137

Building Name: WH-1 Building Manager: A.W. Upshaw Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

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

Source: _____

F43 of 137

9.33-47

Building Manager's Questionnaire

Building Name: WH-1 Building Manager: A.W. Upshaw Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

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

Source: _____

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

F44 of 137

Building Manager's Questionnaire

Building Name: WH-1 Building Manager: A.W. Upshaw Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

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

F45 of 137

9.33-49

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Environmental Appraisal of the Mound Plant

9.34 BUILDING WH-2

9.34.1 Scope of Building WH-2 Report

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

The appraisal team performed a walk-through of Building WH-2 on the morning of January 22, 1996. The Environmental Appraisal Checklist (EAC) (Attachment 1—Section 9.34.6.1) was used to record findings. The appraisers were accompanied by the building manager. Other information was supplied by the building manager and recorded on the Building Manager's Questionnaire (BMQ), included as Attachment 2 (Section 9.34.6.2).

9.34.2 Description of Building WH-2

Building WH-2, a wellhouse, is a 374-square-foot structure with masonry exterior walls. Built slab-on-grade, it has a built-up membrane roof and covers a well and its pump. The well helps furnish water to the Mound Facility. It location is shown in Attachment 3 (Section 9.34.6.3). A floor plan of the building is shown in Attachment 4 (Section 9.34.6.4).

The building was constructed in 1948 and has been used for the same purpose since construction. The facility has no utilities other than 480V, three-phase power to run the water well pump and two ~~an~~ electric space heaters. A propane-fueled,* standby, direct-drive engine is hooked to the pump to provide power during electrical power outages. * previously gasoline-fueled. SBD 3/17/05

9.34.3 Summary of Findings

A facility walk-through was conducted and the facility was found to be in good condition. There were two issues of environmental concern identified during the walk-through.

9.34.4 Observations

9.34.4.1 Air Emissions

The propane-fueled, direct-drive engine for standby service was not included in the Mound Air Emissions database of 11-30-95. There was no evidence of fugitive dust at or around Building WH-2.

9.34.4.2 Wastewater Emissions

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

* Subsequently, MCP effluent was re-routed around the canal via a covered pipe to the Mound Overflow Creek. Stephen Davis 2-24-05

9.34.4.2.1 Sanitary Wastewater

The building houses one of the three site pumps that provide the plant with raw water for subsequent treatment and distribution as service, fire system and potable water. There are no wastewater streams associated with the facility and as such the building is not serviced by a sanitary line.

9.34.4.2.2 Storm Wastewater

The facility is not equipped with exterior storm drains, according to the underground utility lines diagram in Attachment 5 (Section 9.34.6.5).

9.34.4.2.3 Chemicals

An aboveground, 100-gallon propane storage tank is located outside the building. The tank provides propane fuel to power the standby engine. A vendor periodically inspects and uses chemicals to treat the wellbore and well screens. Unused chemicals are removed by the vendor. No priority pollutant chemicals listed in the Clean Water Act (CWA) are used in WH-2. There is no record or evidence of a spill. ALSO, Lubricating oil is used for the well pumps as well as ethylene glycol and lubricating oil in the stand by engine. stand by engine previously fueled with gasoline. 83 31

9.34.4.3 Potable and Service Water

The building houses one of the three site pumps that provide the plant with raw water for treatment and subsequent distribution.

** WD Building was demolished in May 2004 as a CERCLA Removal Action.

9.34.4.4 Chemical Storage and Hazardous Materials

No chemicals storage or hazardous materials are stored in the facility, with the exception of pump * oil housed within the pump and the exterior aboveground propane storage tank. When the pump oil is changed, the used oil is placed in a container and handled as waste oil.
* ethylene glycol and lubricating oil is used in the standby engine. Propane fuels standby engine. standby engine previously fueled with gasoline.
There was no evidence of asbestos in the noninsulated facility, and the building does not contain any polychlorinated biphenyls (PCBs).

9.34.4.5 Solid, Hazardous and Radioactive Wastes

No wastes are routinely generated at the facility. Pump oil, * also engine lubricating oil and ethylene glycol SSD. 3/16/05 when changed out during periodic pump servicing, is placed in a container and handled for disposal by Mound Waste Management.

9.34.4.6 Waste Minimization and Pollution Prevention

There is no routine generation of wastes at the facility and no real opportunity for waste minimization or pollution prevention.

9.34.5 Findings and Recommendations

Photographs were taken to document the environmental appraisal. They are included as Attachment 6 (Section 9.34.6.6). The environmental appraisal of Building WH-2 indicates that the following action items, in order of priority, should be planned and scheduled for accomplishment thus assuring that best management and operating practices are in place.

WH-2-1 Determine if the standby propane-driven engine requires an air permit.

WH-2-2 It was noticed during the building's walk-through that a spare pump motor was being stored on the building's concrete floor. There was evidence of pump oil ** leaking out onto the floor. It is recommended that the spare pump motor be stored in a structure capable of containing any pump oil that may leak out.
** This did not result in staining the floor. SSD. 3/17/05

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ENVIRONMENTAL APPRAISAL CHECKLIST

Building Name INH-2 (DEEP WELL #2)

Appraisers:

Name	Discipline
MARCIA VANNET	CHEMIST
MARK GILLIAT	ENGINEER
MYRON SMITH	ENGINEER

Building Manager: ALLAN UPSHAW

Process Manager: FRANK REKER

Date: 1/22/96

ENVIRONMENTAL APPRAISAL CHECKLIST

Table of Contents

Checklist	Page
Clean Water Act	1
Clean Air Act	2
Hazardous Materials	4
Safe Drinking Water Act	7
RCRA Hazardous Waste	8
TSCA and NESHAP Requirements for Asbestos	13
TSCA—PCB	14
Low-level and Transuranic Waste	17
Waste Minimization/Pollution Prevention Activities	22

Building Name: WH-2 Appraisers: TEAM 4 Date: 1/22/96

Clean Water Act (CWA) Screening Checklist

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

* Lubricating oils are used for the well pump and standby engines; ethylene glycol is used in standby engine. BSD. 3/16/95

CWA Checklist

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

F53 of 137

9.34-9

9.34-10

F54 of 137

Environmental Appraisal Checklist

Building Name: Appraisers: Date:

Clean Air Act (CAA) Screening Checklist

Regulatory Guideline	Question	Response	Comments
	Are there any rooms that have air emissions sources that vent to the outside of the building, e.g., fumehoods, equipment? If so, note the rooms.	(Y) N	propane ~~generator~~ engine SBD 3/16/05 w/ exterior vent
OAC 3745-35	Using the air emissions inventory reference for this building, are there any sources in the building that are not documented?	Y (N)	No record of permit
	Is there evidence of fugitive dust emissions inside or outside of the building	Y (N)	

CAA Checklist

Regulatory Guideline	Question	Response	Comments
	Are there existing air permits or applications applicable to the building?	Y (N)	
OAC 3745-31,35	If yes, are the terms and conditions of the permit or the information included on the application (see air emissions database) being followed? Note any differences and update the air emissions database.	N/A Y / N	
OAC 3745-31	Are there any sources that are not included in the air emissions database? If so, note the room, hood number, active or not, POC, and applicable air emission database information on Table B.	(Y) N	propane ~~generator~~ engine SBD 3/16/05 w/ exterior vent
OAC 3745-31-03	Are there sources which are lab equipment of lab fumeheads used exclusively for chemical or physical analyses and bench scale lab equipment? These sources do not require a permit. However, the air emissions database should be updated.	Y (N)	
	Has there been any release of air contaminants from this building?	Y (N)	

Building Name: WH-2 Appraisers: TEAM 4 Date: 1/22/96

CAA Checklist

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

TABLE A									
Process Source	Room Number	Hood Number	In Database	Active	Chemicals Used	Quantity Used	Quantity to Waste Management	Hours/Yr. Operation	Air Emissions
propane ~~generator~~ engine	WH-2		Y / N	Y / N	propane				
			Y / N	Y / N					
			Y / N	Y / N					
			Y / N	Y / N					
			Y / N	Y / N					

SBD 3/16/05

F55 of 137

Source:

9.34-11

9.34-12

F56 of 137

Environmental Appraisal Checklist

Building Name: Appraisers: Date:

Hazardous Materials (HM) Screening Checklist

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

** Ethylene Glycol and lubricating oils used in engine; propane fuels engine. Stand by engine previously fueled with gasoline. SBD 3/16/05

HM Checklist

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

* The well is periodically serviced, the vendor takes all unused chemicals

Building Name: WH-2 Appraisers: Team 4 Date: 7/22/96

HM Checklist

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

9.34-14

F58 of 137

Environmental Appraisal Checklist

Building Name: Appraisers: Date:

HM Checklist

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

Above Ground Storage Tanks Inventory

TABLE B—Above Ground Storage Tanks Inventory

Building	Capacity (Gal.)	Contents	Estimated Volume	In Service	Containment	Visual Stains/ Contamination	If Empty, Flushed
WH-2	~~100 gallon~~	propane	100 gallon	(Y) N	Y / (N)	Y / (N)	Y / (N)
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N

Source: _____

Building Name: WH-2 Appraisers: TEAM 4 Date: 1/22/96

Safe Drinking Water Act (SDWA) Screening Checklist

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

SDWA Checklist

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

TABLE C—Water Fountain Survey

Building	Location	Model #	Comments / Date of Analysis for Lead

Source: _____

F59 of 137

9.34-15

Environmental Appraisal Checklist

Building Name: Appraisers: Date:

RCRA Screening Checklist

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

* Lubricating oils used in engine and for well pump - Ethylene glycol used in engine. Propane fuels engine SBD. 3/16/05

RCRA Checklist

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

Building Name: W4-2 Appraisers: TEAM 4 Date: 1/22/96

RCRA Checklist

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

BLANK

F61 of 137

9.34-17

9.34-18

F62 of 137

Environmental Appraisal Checklist

Building Name: Appraisers: Date:

RCRA Checklist

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

Building Name: WH-2 Appraisers: TEAM 4 Date: 1/22/96

RCRA Checklist

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

F63 of 137

9.34-19

9.34-20

F64 of 137

Environmental Appraisal Checklist

Building Name: Appraisers: Date:

RCRA Checklist

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

General Comments:

Building Name: WU-2 Appraisers: TEAM 4 Date: 1/22/96

Asbestos Screening Checklist

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

Asbestos Checklist

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

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

F65 of 137

9.34-21

9.34-22

F66 of 137

Environmental Appraisal Checklist

Building Name: Appraisers: Date:

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

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

TSCA Checklist

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

Building Name: WH-2 Appraisers: Team 4 Date: 1/22/96

TSCA Checklist

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

F67 of 137

9.34-23

9.34-24

F68 of 137

Environmental Appraisal Checklist

Building Name: Appraisers: Date:

TSCA Checklist

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

GENERAL COMMENTS:

Building Name: WH-2 Appraisers: Team 4 Date: 1/22/96

Low-Level Waste and Transuranic Waste Screening Checklist

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

Low-Level Waste and Transuranic Waste Checklist

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

F69 of 137

9.34-25

9.34-26

F40 of 137

Environmental Appraisal Checklist

Building Name: Appraisers: Date:

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
DOE Order 5820.2A Chapter III, 3.d.	Based on field data, is the characterization of the materials in this area sufficient to assure proper segregation to assure proper segregation, treatment, storage, and disposal?	Y / N	
	Based on field data does the characterization as documented at the time of generation of the waste ensure that the actual physical and chemical characteristics, and major radionuclide content of this material are recorded and known at all stages of the waste management process?	Y / N	BLANK
	Do characterization data include the following:		
	Physical and chemical characteristics of the waste?	Y / N	
	Volume of the waste (including solidification and absorbent material)?	Y / N	
	Weight of the waste (including solidification and absorbent material)?	Y / N	
	Major radionuclides and their concentrations?	Y / N	
	Packaging date, package weight, external volume?	Y / N	
	How were the concentration of radionuclides determined? Direct methods?	_____ _____	
	How were the concentrations of radionuclides determined? Indirect methods?	_____ _____	
DOE Order 5820.2A Chapter III, 3.h	Is the storage configuration in long term storage sufficient to meet the performance standard?	Y / N	
	Are records maintained at the facility enabling this waste to be traced from its origin?	Y / N	

Building Name: XXY-2 Appraisers: TEAM 4 Date: 1/22/96

Low-Level Waste and Transuranic Waste Checklist

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

F 71 of 137

9.34-27

F 72 of 137

Environmental Appraisal Checklist

Building Name: Appraisers: Date:

Low-Level Waste and Transuranic Waste Checklist

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

Building Name: WXH-2 Appraisers: TEAM 4 Date: 1/22/96

Low-Level Waste and Transuranic Waste Checklist

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

GENERAL COMMENTS:

F 73 of 137

9.34-29

Environmental Appraisal Checklist

Building Name: Appraisers: Date:

Waste Minimization/Pollution Prevention Activities Screening Checklist

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

* Lubricating oil used in standby engine and well pump. Ethylene glycol used in engine. Propane fuels engine, gasoline previously used to fuel engine. SDB. 3/16/01

Waste Minimiaztion/Pollution Prevention Activities Checklist

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

Building Name: WXH-2 Appraisers: TEAM 4 Date: 1/22/96

Waste Minimization/Pollution Prevention Activities Checklist

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

F 75 of 137

9.34-31

9.34-32

F76 of 137

Environmental Appraisal Checklist

Building Name: Appraisers: Date:

Waste Minimization/Pollution Prevention Activities Checklist

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

BLANK

Building Name: WH-2 Appraisers: TEAM H Date: 1/22/96

Waste Minimization/Pollution Prevention Activities Checklist

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

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FYY 98/137

9.34-33

F78 of 137

Environmental Appraisal Checklist

Building Name: Appraisers: Date:

Waste Minimization/Pollution Prevention Activities Checklist

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

BLANK

Building Name: WH-2 Appraisers: TEAM 4 Date: 1/22/96

Waste Minimization/Pollution Prevention Activities Checklist

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

F46 of 137

9.34-35

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Building Manager's Questionnaire

Building Name: WH-2 Building Manager: A.W. Upshaw Phone: 865-4894 Date: 12-07-95
Alternate: F. RARER Phone: 865-3438

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

NONE

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

SAFETY GLASSES

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

4. Provide a physical description of the building.

Building WH2 is a 374-ft² building.

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

5. Provide a drawing of the building.

No drawing provided

6. What is the current building use?

Houses pump for plant water supply and a propane ~~generator~~ engine for emergency power backup. 3/17/05

Source: Mound Buildings, 5-9-95

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

Source: Mound Buildings, 5-9-95

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

Process(es) Housed: Water supply pumping and backup generator.

How Wastes Are Generated:

No hazardous wastes are generated in this building.

Contact: A. Upshaw / F. Baker
Phone #: 4894 / 3438

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

Building Manager's Questionnaire

Building Name: WH-2 Building Manager: A.W. Upshaw Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

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

Process Source	Room Number	Hood Number	Active	Chemicals Used	Quantity Used	Quantity to Waste Management	Lbs./Yr. Operation	Air Emissio
PROPANE ENGINE		N/A	Y / N	PROPANE		N/A		
* gasoline previously used to fue/engine. SBD 3/16/95.								
			Y / N					
			Y / N					
			Y / N					
			Y / N					

Source: _____

NOTE: AIR PERMIT DOES NOT EXIST, IN ALL LIKELIH ONE IS NOT REQ'D BASED ON A SUBMISSI FOR GENERATOR #7 WHICH IS PROPANE FIR & WAS DEEMED NOT TO REQUIRE PERMITTING BY OEPA. THIS WILL BE CONFIRMED.

9.34-41

E 93 M. 137

Building Manager's Questionnaire

Building Name: WH-2 Building Manager: A.W. Upshaw Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

11. Describe air pollution control equipment used to reduce emissions for each source. NONE EXIST

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

Source: _____

12. For existing permits are emissions monitored? At what frequency? Where are the records maintained? NOT PERMITTED

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

Source: _____

13. Does the building have domestic water service? Yes (No)
Is there bottled water? Yes (No)

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

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

16. Has an asbestos survey been conducted? Yes No
What are the results?

Source: UNKNOWN TO

9.34-42

F84 of 137

Building Manager's Questionnaire

Building Name: WH-2 Building Manager: A.W. Upshaw Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

17. Does the building contain transformers or capacitors? Yes (No)

Source: _____

18. Has the building been identified as containing PCBs? Yes (No)

Source: _____

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

Chemical Name	State	Amount (MAX)
* NONE		

Source: _____

* Lubricating oils used in stand by engine and deep well. Ethylene glycol used in stand by engine. SBD 3/16/05
Liquid Propane (100 gal above ground tank at south side of bldg.)

F 85 of 137

9.34-43

Building Manager's Questionnaire

Building Name: WH-2 Building Manager: A.W. Upshaw Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

Chemical	Amount	Clean-up Measures

Source: _____

21. Where do waste chemicals go?

N/A

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

N/A

23. Where do excess janitorial supplies go?

N/A

Source: _____

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

Chemical	Amount	Chemical	Amount

Source: _____

Building Name: WH-2 Building Manager: A.W. Upshaw Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

Registration Number	Content	Quantity	Last Inspection Date	Preventive Maintenance Performed	Inside Or Outside
	PROPANE	100 GAL		Y/N	
				Y/N	

Source: _____

26. Is there a sump or pit or underground tank in or around the building? * there is a 280-gallon underground gasoline tank located north of building. SBD 3/16/95
Yes No Unknown
Is it double-walled? What does it contain? How many days per year is it filled?
Is there an emergency overflow tank? Have there been previous overflows?

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

Source: _____

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

Materials	Amount

Source: _____

F87 of 137

9.34-45

Building Manager's Questionnaire

Building Name: WH-2 Building Manager: A.W. Upshaw Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

28. Does the building have abandoned process equipment such as tanks*, piping, containers, etc.? Yes No *the 280-gallon underground gas tank is abandoned. SBD 3/16/05

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

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

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

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

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

Source: _____

9.34-46

Building Manager's Questionnaire

Building Name: WH-2 Building Manager: A.W. Upshaw Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

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

Source: _____

Building Name: WH-2 Building Manager: A.W. Upshaw Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

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

Source: _____

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

Building Manager's Questionnaire

Building Name: WH-2 Building Manager: A.W. Upshaw Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

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

F 91 of 137

9.34-49

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9.35 BUILDING WH-3

9.35.1 Scope of Building WH-3 Report

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

The appraisal team performed a walk-through of Building WH-3 on the morning of January 22, 1996. The Environmental Appraisal Checklist (EAC) (Attachment 1—Section 9.35.6.1) was used to record findings. The appraisers were accompanied by the building manager and the process manager. Other information was supplied by the building manager and recorded on the Building Manager's Questionnaire (BMQ), included as Attachment 2 (Section 9.35.6.2).

9.35.2 Description of Building WH-3

Building WH-3, a wellhouse, is a 374-square-foot structure with masonry exterior walls. It is built slab-on-grade and has a built-up-membrane roof. The building covers the well and houses a pump for providing plant water supply to the Mound Facility. Its location is shown in Attachment 3 (Section 9.35.6.3). A floor plan of the building is in Attachment 4 (Section 9.35.6.4).

1948 SBD 3/16/05

The building was constructed in ~~1962~~ and has been used for the same purpose since construction. The building has no utilities other than 480V, three-phase power to run the water well pump and Two ~~an~~ electric space heaters. There is a propane-fueled*, direct-drive engine to provide standby power during electrical power outages. * previously gasoline-fueled. SBD 3/17/05

SBD 1/16/05

9.35.3 Summary of Findings

During the time period the facility walk-through was conducted, the wellbore was undergoing reconditioning. The well screen was becoming clogged and a contractor was hired to redevelop the well. The facility was found to be in poor condition from a housekeeping standpoint—contractors supplies were not neatly stored. Additionally, at the time of the inspection, the 24-inch diameter wellbore was completely open with no protection for water in the well. The facility was locked to prevent unauthorized access when the contractor was not present.

9.35.4 Observations

9.35.4.1 Air Emissions

The propane-fueled, direct-drive engine for standby use was not included in the Mound Air Emissions database of 11-30-95. There was no evidence of fugitive dust at or around Building WH-3.

9.35.4.2 Wastewater Emissions

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

* Subsequently, MCP effluent was re-routed around the canal via a covered pipe to the Mound Overflow Creek. Stephen Davis 2-24-05

9.35.4.2.1 Sanitary Wastewater

The building houses one of the three site pumps that provide the plant with raw water for subsequent treatment and distribution as service, fire system, and potable water. There are no wastewater streams associated with the facility and as such the building is not serviced by a sanitary line.

9.35.4.2.2 Storm Wastewater

The facility is not equipped with exterior storm drains, according to the diagram of underground utility lines in Attachment 5 (Section 9.35.6.5).

9.35.4.2.3 Chemicals

An aboveground propane storage tank is located outside Building WH-3. The tank provides propane fuel to power the standby engine. A vendor periodically inspects and uses chemicals to treat the wellbore and well screens. Unused chemical are removed by the vendor. No priority pollutant chemicals listed under the Clean Water Act (CWA) are used in WH-3. There is no record or evidence of a spill. ***

** WD Building was demolished in May 2004 as a CERCLA Removal Action.

*** Also Lubricating oils are used in the stand by engine and the well pump, as well as ethylene glycol, which is used in the engine. Standby engine previously fueled with gasoline. SBD. 3/17/05

9.35.4.3 Potable and Service Water

The building houses one of the three site pumps that provide the plant with raw water for treatment and subsequent distribution as potable water.

9.35.4.4 Chemical Storage and Hazardous Materials

No chemicals or hazardous materials are stored in Building WH-3 except for the pump oil* housed within the pump and the exterior aboveground propane storage tank. When the pump oil is changed, the used oil is placed in a container and handled as waste oil. SJD. 3/17/05

* Lubricating oil and ethylene glycol are used in engine. the standby engine previously used gasoline.

There was no evidence of asbestos in the noninsulated facility and it does not contain any polychlorinated biphenyls (PCB's).

9.35.4.5 Solid, Hazardous and Radioactive Wastes

No wastes are routinely generated in the building. Pump oil*, when changed during periodic pump servicing, is placed in a container and handled by Mound Waste Management.

* also engine Lubricating oil and ethylene glycol. SJD 3/17/05

9.35.4.6 Waste Minimization and Pollution Prevention

There is no routine generation of wastes at the facility and no real opportunity for waste minimization or pollution prevention.

9.35.5 Findings and Recommendations

Photographs were taken to document the environmental appraisal. They are included as Attachment 6 (Section 9.35.6.6). The environmental appraisal of Building WH-3 indicates that the following action items, in order of priority, should be planned and scheduled for accomplishment thus assuring that best management and operating practices are in place.

WH3-1 Determine if the standby, propane-driven engine requires an air emmissions permit.

WH3-2 It is recommended that during future well maintenance operations care be taken to keep the wellbore covered to prevent inadvertent contamination of the water. Additionally, because Mound Environmental Restoration has an interest in any operation that may affect groundwater quality, they should be consulted about the types of chemicals being used during well reconditioning.

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ENVIRONMENTAL APPRAISAL CHECKLIST

Building Name NW-3 (DEEP WELL #3)

Appraisers:

Name	Discipline
MARCIA VANNET	CHEMIST
MARK GILLIAT	ENGINEER
MYRON SMITH	ENGINEER

Building Manager: Allen Upshaw

Process Manager: Frank Baker

Date: 11/22/96

ENVIRONMENTAL APPRAISAL CHECKLIST

Table of Contents

Checklist	Page
Clean Water Act	1
Clean Air Act	2
Hazardous Materials	4
Safe Drinking Water Act	7
RCRA Hazardous Waste	8
TSCA and NESHAP Requirements for Asbestos	13
TSCA—PCB	14
Low-level and Transuranic Waste	17
Waste Minimization/Pollution Prevention Activities	22

Building Name: WWH-3 Appraisers: TEAM 4 Date: 1/22/96

Clean Water Act (CWA) Screening Checklist

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

CWA Checklist

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

* Chemicals not routinely used. At time of inspection, a vendor was performing service to the well using some chemicals. The vendor is to remove all chemicals when complete. also, Lubricating oil and ethylene glycol are used in stand by engine.
SBD 3/13/05

F99 of 137

9.35-9

9.35-10

Building Name: Appraisers: Date:

Clean Air Act (CAA) Screening Checklist

Regulatory Guideline	Question	Response	Comments
	Are there any rooms that have air emissions sources that vent to the outside of the building, e.g., fumehoods, equipment? If so, note the rooms.	Y / N	propane ~~generator~~ engine w/ exterior vent BD 3/17/05
OAC 3745-35	Using the air emissions inventory reference for this building, are there any sources in the building that are not documented?	Y / N	No record of permit
	Is there evidence of fugitive dust emissions inside or outside of the building	Y / N	

F 100 of 137

CAA Checklist

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

Building Name: WH-3 Appraisers: TEAM 4 Date: 1/22/96

CAA Checklist

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

TABLE A									
Process Source	Room Number	Hood Number	In Database	Active	Chemicals Used	Quantity Used	Quantity to Waste Management	Hours/Yr. Operation	Air Emissions
WH-3			Y / (N)	(Y) / N	propane *				
			Y / N	Y / N					
			Y / N	Y / N					
			Y / N	Y / N					
			Y / N	Y / N					

* propane standby ~~generator~~ engine. 83D. 3/17/05

Source:

F101 of 137

9.35-11

9.35-12

F102 of 137

Environmental Appraisal Checklist

Building Name: Appraisers: Date:

Hazardous Materials (HM) Screening Checklist

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

** Ethylene glycol and lubricating oils used in engine; propane fuels engine; standby engine previously fueled with gasoline. SBD. 3/12/05

HM Checklist

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

* The well is periodically serviced, the vendor takes all unused chemicals away from the site. [illegible] are not routinely used in

Building Name: WH-3 Appraisers: TEAM 4 Date: 1/22/96

HM Checklist

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

F103 of 137

9.35-13

9.35-14

Building Name: Appraisers: Date:

HM Checklist

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

BSD 3/17/05

Above Ground Storage Tanks Inventory

TABLE B—Above Ground Storage Tanks Inventory

Building	Capacity (Gal.)	Contents	Estimated Volume	In Service	Containment	Visual Stains/ Contamination	If Empty, Flushed
WH-3		propane	100 gallons	(Y) / N	Y / (N)	Y / (N)	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N

F104 of 137

Source: _____

Building Name: VX4-3 Appraisers: TEAM H Date: 1/22/96

Safe Drinking Water Act (SDWA) Screening Checklist

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

SDWA Checklist

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

TABLE C—Water Fountain Survey

Building	Location	Model #	Comments / Date of Analysis for Lead

Source: _____

F105 of 137

9.35-15

9.35-16

F106 of 137

Environmental Appraisal Checklist

Building Name: Appraisers: Date:

RCRA Screening Checklist

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

* Lubricating oils used in stand-by engine and well pump. Ethylene glycol used in engine. PROPANE fuels engine. SBD 3/12/05

RCRA Checklist

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

Building Name: WH-3 Appraisers: TEAM 4 Date: 1/22/96

RCRA Checklist

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

F107 of 137

9.35-17

Building Name: Appraisers: Date:

RCRA Checklist

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

9.35-18

F108 of 137

Building Name: WH-3 Appraisers: TEAM 4 Date: 1/22/96

RCRA Checklist

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

F109 of 137

9.35-19

Building Name: Appraisers: Date:

RCRA Checklist

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

General Comments:

9.35-20

F110 of 137

Building Name: WH-3 Appraisers: TEAM 4 Date: 1/22/96

Asbestos Screening Checklist

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

Asbestos Checklist

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

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

Building Name: Appraisers: Date:

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

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

TSCA Checklist

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

9.35-22

F112 of 137

Building Name: W4-3 Appraisers: TEAM 4 Date: 1/22/96

TSCA Checklist

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

F113 of 137

9.35-23

Building Name: Appraisers: Date:

TSCA Checklist

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

GENERAL COMMENTS:

9.35-24

F114 of 137

Building Name: W4-3 Appraisers: TEAM 4 Date: 1/22/96

Low-Level Waste and Transuranic Waste Screening Checklist

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

Low-Level Waste and Transuranic Waste Checklist

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

F115 of 137

9.35-25

9.35-26

F116 of 137

Environmental Appraisal Checklist

Building Name: Appraisers: Date:

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
DOE Order 5820.2A Chapter III, 3.d.	Based on field data, is the characterization of the materials in this area sufficient to assure proper segregation to assure proper segregation, treatment, storage, and disposal?	Y / N	
	Based on field data does the characterization as documented at the time of generation of the waste ensure that the actual physical and chemical characteristics, and major radionuclide content of this material are recorded and known at all stages of the waste management process?	Y / N	BLANK
	Do characterization data include the following:		
	Physical and chemical characteristics of the waste?	Y / N	
	Volume of the waste (including solidification and absorbent material)?	Y / N	
	Weight of the waste (including solidification and absorbent material)?	Y / N	
	Major radionuclides and their concentrations?	Y / N	
	Packaging date, package weight, external volume?	Y / N	
	How were the concentration of radionuclides determined? Direct methods?	_____ _____	
	How were the concentrations of radionuclides determined? Indirect methods?	_____ _____	
DOE Order 5820.2A Chapter III, 3.h	Is the storage configuration in long term storage sufficient to meet the performance standard?	Y / N	
	Are records maintained at the facility enabling this waste to be traced from its origin?	Y / N	

Building Name: WX4-3 Appraisers: TEAM 4 Date: 1/22/96

Low-Level Waste and Transuranic Waste Checklist

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

F117 of 137

9.35-27

Building Name: Appraisers: Date:

Low-Level Waste and Transuranic Waste Checklist

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

9.35-28

F118 of 137

Building Name: XVH-3 Appraisers: TEAM 4 Date: 1/22/96

Low-Level Waste and Transuranic Waste Checklist

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

GENERAL COMMENTS:

F119 of 137

9.35-29

Building Name: Appraisers: Date:

Waste Minimization/Pollution Prevention Activities Screening Checklist

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

* Lubricating oils used in Stand by engine and well pump. Ethylene glycol used in engine. Propane fuels engine. Gasoline previously used to fuel engine SOD 3/11/05

Waste Minimiaztion/Pollution Prevention Activities Checklist

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

F120 of 137

Building Name: WYH-3 Appraisers: TEAM 4 Date: 1/22/96

Waste Minimization/Pollution Prevention Activities Checklist

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

F121 of 137

9.35-31

Building Name: Appraisers: Date:

Waste Minimization/Pollution Prevention Activities Checklist

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

BLANK

F122 of 137

Building Name: WH-3 Appraisers: TEAM 4 Date: 1/22/96

Waste Minimization/Pollution Prevention Activities Checklist

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

BLANK

Fig 3 of 137

9.35-33

Building Name: Appraisers: Date:

Waste Minimization/Pollution Prevention Activities Checklist

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

Building Name: WH-3 Appraisers: TEAM 4 Date: 1/22/96

Waste Minimization/Pollution Prevention Activities Checklist

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

F125 of 137

9.35-35

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Building Manager's Questionnaire

Building Name: WH-3 Building Manager: A.W. Upshaw Phone: 865-4894 Date: 12-07-95
Alternate: F. BAKER Phone: 865-3438

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

NONE

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

SAFETY GLASSES

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

4. Provide a physical description of the building.

Building WH3 is a ~~128~~ 374-ft² building.

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

5. Provide a drawing of the building.

No drawing provided

6. What is the current building use?

Houses pump for plant water supply and a propane ~~generator~~ engine 83D. 3/17/05 for emergency power backup.

Source: Mound Buildings, 5-9-95

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

NONE

Source: Mound Buildings, 5-9-95

Building Manager's Questionnaire

Building Name: WH-3 Building Manager: A.W. Upshaw Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

Process(es) Housed: Water supply pumping and backup generator.

How Wastes Are Generated:

No hazardous wastes are generated in this building.

Contact: A. Upshaw / F. Kacor
Phone #: 4894 / 3438

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

F128 of 137

Building Manager's Questionnaire

Building Name: WH-3 Building Manager: A.W. Upshaw Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

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

Process Source	Room Number	Hood Number	Active	Chemicals Used	Quantity Used	Quantity to Waste Management	Lbs./Yr. Operation	Air Emissions
PROPANE ENGINE			Y / N	PROPANE		N/A		
*gasoline previously used to fuel engine. 8SD 3/17/05			Y / N					
			Y / N					
			Y / N					
			Y / N					

Source: _____

NOTE! AIR PERMIT DOES NOT EXIST. IN ALL LIKELIHOOD ONE IS NOT REQ'D BASED ON A SUBMISSION FOR GENERATOR # 7 WHICH IS PROPANE FIRED & WAS DEMED NOT TO REQUIRE PERMITTING BY OEPA. THIS WILL BE CONFIRMED.

Building Manager's Questionnaire

Building Name: WH-3 Building Manager: A.W. Upshaw Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

11. Describe air pollution control equipment used to reduce emissions for each source. NONE EXIST

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

Source: _____

12. For existing permits are emissions monitored? At what frequency? Where are the records maintained? NOT PERMITTED

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

Source: _____

13. Does the building have domestic water service? Yes No
Is there bottled water? Yes No

14. Does the building discharge to the storm sewer? Yes No
Where?

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

16. Has an asbestos survey been conducted? Yes No
What are the results?

Source: UNKNOWN

F130 of 137

Building Manager's Questionnaire

Building Name: WH-3 Building Manager: A.W. Upshaw Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

17. Does the building contain transformers or capacitors? Yes No

Source: _____

18. Has the building been identified as containing PCBs? Yes No

Source: _____

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

Chemical Name	State	Amount (MAX)
LIQUID PROPANE	LIQUID	100 GAL
*		

Source: _____

* Lubricating oils used in stand by engine and well pump. Ethylene glycol used in stand by engine. SBD 3/17/05

F131 of 137

9.35-43

Building Name: WH-3 Building Manager: A.W. Upshaw Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

Chemical	Amount	Clean-up Measures

Source: _____

21. Where do waste chemicals go?

N/A

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

N/A

23. Where do excess janitorial supplies go?

N/A

Source: _____

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

Chemical	Amount	Chemical	Amount

Source: _____

Building Manager's Questionnaire

Building Name: WH-3 Building Manager: A.W. Upshaw Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

Registration Number	Content	Quantity	Last Inspection Date	Preventive Maintenance Performed	Inside Or Outside
	PROPANE	100 GAL		Y/N	
				Y/N	

Source: _____

26. Is there a sump ~~or pit~~ or underground tank in or around the building? * there is a 280-gallon underground gasoline tank located north of the building. SBD 3/17/05
Yes No Unknown
Is it double-walled? What does it contain? How many days per year is it filled?
Is there an emergency overflow tank? Have there been previous overflows?

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

Source: _____

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

Materials	Amount

Source: _____

F133 of 137

9.35-45

Building Manager's Questionnaire

Building Name: WH-3 Building Manager: A.W. Upshaw Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

28. Does the building have abandoned process equipment such as tanks*, piping, containers, etc.? Yes **No** *the 280-gallon gasoline tank is abandoned. SBD 3/17/05

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

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

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

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

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

Source: _____

F134 of 137

Building Manager's Questionnaire

Building Name: WH-3 Building Manager: A.W. Upshaw Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

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

Source: _____

F135 of 137

9.35-47

Building Name: WH-3 Building Manager: A.W. Upshaw Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

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

Source: _____

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

Building Manager's Questionnaire

Building Name: WH-3 Building Manager: A.W. Upshaw Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

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

F137 of 137

9.35-49

Appendix G

Radiological Information

Final Status Report
For
Well Houses 1, 2, & 3

Prepared by: **Robert Coblentz** / RM Coblentz **Date:** 7/29/05

Reviewed by: **Constance Kline** / CKline **Date:** 8-9-05

Approved by: **Ronald Daily** / Ronald Daily **Date:** 8-3-05

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1.0 Historical Review

Well Houses 1, 2, & 3 were constructed for the purpose of supplying fresh water for site operations. Well Houses 2 and 3 were constructed in 1948, and that time were designated as "Well Houses 1 and 2". In the 1962/1963 time frame, a third well house was constructed, and was designated as "Well House 1", and the previous two well houses were then re-designated as "Well Houses 2 and 3". Well Houses 1, 2, and 3 were built to supply raw water for Mound site operations, and have been used for the same purpose since construction (Reference 1).

2.0 Survey Objectives

The objective of this Final Status Report (FSR) is to demonstrate the classification of Well Houses 1, 2, and 3 as non-impacted. This was accomplished by measuring the fixed and removable contamination on building surfaces and performing isotopic analysis, where appropriate. The survey data were compared to the release criteria of The Mound 2000 Approach, using methods defined in Reference 2. The specific survey objectives are outlined on the Survey Plan Form (see Enclosure 2).

Table 1 lists the permissible surface contamination guideline values as stated in The Mound 2000 Approach. These limits are the Derived Concentration Guidelines (DCGL's) for building and structure release.

Table 1

Surface Release Criteria

Allowable Total Residual Surface Contamination (dpm/100 cm^2)[1]			
Radionuclides[2]	**Average** [3,4] **($DCGL_w$)**	**Maximum**[5,6] **($DCGL_{EMC}$)**	**Removable**[6]
Group 1: Transuranics, Ra-226, Ra-228, Th-230, Th-228, Pa-231, Ac-227, I-125, I-129	100	300	20
Group 2: Th-natural, Th-232, Sr-90, Ra-223, Ra-224, U-232, I-126, I-131, I-133	1,000	3,000	200
Group 3: U-Natural, U235, U238 and associated decay products, alpha emitters	5,000	15,000	1,000
Group 4: Beta-gamma emitters (nuclides with decay modes other than alpha emission or spontaneous[7] fission) except Sr-90 and others listed above. Includes mixed fission products containing Sr-90.	5,000	15,000	1,000
Tritium	N/A	N/A	10,000

Note: Refer to Work Plan for Environmental Restoration of the DOE Mound Site, The Mound 2000 Approach, Table 1, "Surface Contamination Guidelines", page A-3 for specific information on surface contamination guidelines and additional notes (Reference 5).

The average activity levels shown in Table 1 assume that the residual contamination is uniformly distributed across the survey unit and is the $DCGL_w$ for this survey. The maximum activity shown in Table 1 represents the Elevated Measurement Comparison

($DCGL_{emc}$) for small (<100cm^2) areas of activity that may be observed in the survey unit while scanning. Since no process activities were ever associated with Well Houses 1, 2, and 3, it is assumed that Pu-238 is the potential contaminant of concern and the Group 1 limits are appropriate for alpha measurements. Group 4 limits are used for beta measurements.

2.1 Survey Design

The characterization survey was designed to evaluate the buildings' internal and external surfaces. The buildings were divided into survey units as follows:

Survey Unit 1 – Well House 1 interior surfaces

Survey Unit 2 – Well House 1 exterior surfaces

Survey Unit 3 – Well House 2 interior surfaces

Survey Unit 4 – Well House 2 exterior surfaces

Survey Unit 5 – Well House 3 interior surfaces

Survey Unit 6 – Well House 3 exterior surfaces

Since the variability is expected to be small within the survey unit, the Type I error chosen is $\alpha = 0.05$ and the Type II error is $\beta = 0.01$. The number of data points is determined by calculating the relative shift (Δ/σ) from the DCGL value, the lower bound of the gray region (LBGR), and the standard deviation (σ) of the contaminant in the survey unit (Δ/σ = DCGL-LBGR/σ). For this FSR, the LBGR is set at 50% of the $DCGL_W$. The standard deviation was estimated to be 17dpm/100cm^2 based on survey data from similar building surfaces and the relative shift was calculated as 2.95. The required number of data points (n = 20) was obtained from Table 5.5, Reference 2.

Twenty (20) judgmental data points were selected in each survey unit. Major walkways in the buildings were scanned for alpha contamination.

There are no floor drains or sumps in the buildings, therefore no sediment smears were collected.

Loose surface contamination was measured by smearing an area of 100cm^2 at each data point. Smears were counted for gross alpha/beta activity. Removable tritium contamination was measured on interior surfaces by liquid scintillation counting of coin smears.

Replicate surveys were performed in accordance with Reference 3.

The instruments selected for building interior surfaces was the Ludlum 2350-1 data logger with a 43-68 hand-held gas flow proportional (GFP) detector for alpha/beta fixed point measurements and a 43-37 GFP large area floor probe for alpha scan measurements. Building exterior surface measurements were performed with the Ludlum 2360 with a 43-89 alpha/beta scintillation detector. Laboratory instruments used were appropriate for the analysis requested. Instrument calibration and source check data are documented in accordance with Mound procedures.

2.2 Survey Data

The gross alpha and beta fixed point measurements from each survey unit were collected and compared directly to the $DCGL_w$. All direct measurements were found to be < $DCGL_w$, with the exception of data point SU6-14, which was shown to be < $DCGL_{EMC}$. This point was located on the west exterior wall of Well House 3, having similar characteristics to rusty-colored surfaces found elsewhere on site. The initial alpha direct measurement was 152 dpm/100cm^2. Additional direct measurements were performed in the square meter surrounding the data point. One of the additional measurements was also > $DCGL_w$, although the square meter average was < $DCGL_{EMC}$. Additional direct measurements were performed to determine the bounds of the elevated readings. These additional measurements were all < $DCGL_w$. Details of the data can be found in Enclosure 1.

All other measurements were below the $DCGL_w$.

A graphical representation of the average and maximum total activity for each survey unit is shown in Attachment 1.

The following table shows the results of the maximum and average total (fixed and removable) alpha and beta activity for each area.

Total Activity Results

Area	Alpha (dpm/100cm^2)			Beta (dpm/100cm^2)		
	Max	Average	±	Max	Average	±
Survey Unit 1	30	13.8	4.24	399	180	48.3
Survey Unit 2	88	30.8	12.0	632	103.8	74.0
Survey Unit 3	26	13.6	3.3	599	316	54.8
Survey Unit 4	72	31.6	9.4	272	138.4	27.9
Survey Unit 5	30	5.4	3.4	494	199.6	65.5
Survey Unit 6	152	45.2	15.6	228	115.2	27.0

The results of the removable alpha and beta surface activity are shown below. All results were significantly less than the $DCGL_w$.

Removable Alpha & Beta Activity Results

Area	Alpha (dpm/100cm^2)			Beta (dpm/100cm^2)		
	Max	Average	±	Max	Average	±
Survey Unit 1	1.4	.07	.14	4.69	1.14	.77
Survey Unit 2	1.59	.08	.155	8.06	1.90	1.01
Survey Unit 3	3.3	.42	.35	3.92	.85	.42
Survey Unit 4	3.39	.25	.36	6.35	.124	.94
Survey Unit 5	3.53	.22	.31	9.33	1.91	.85
Survey Unit 6	.74	.04	.07	5.55	1.62	.83

The maximum removable tritium activity was 114.31 dpm/100cm2 (RSDS# 05-TF-0129). The average removable tritium was 1.62 dpm/100cm^2 (± 1.82).

The major walkways of the floors were scanned for alpha activity. No activity was detected (RSDS# 05-TF-0129, 0130, & 0131).

2.3 Sediment and Water Sample Data

There are no sumps or drains in Well Houses 1, 2, and 3, therefore no sediment or water samples were collected.

2.4 Quality Control

Quality control measurements were taken to ensure the quality of the data. Sixteen data points were selected from the sample group of 130 data points (ten additional measurements were performed at the discretion of the RCT), including the highest and lowest normal measurements. Replicate measurements were taken at these locations using different instruments of the same type, and performed in the same manner as the original survey. The acceptance criterion for fixed-point measurements is that the variance in the measurements of the original sample population is within a factor of two of the variance in the replicate samples (at 95% confidence level). The variance test does not pass; therefore, the data were evaluated per MD 80046, Operation 402. No discrepancies were found in the data collection or documentation. The data were determined to be usable, in that all of the readings were below the $DCGL_W$. The results of the replicate surveys are shown in the following table:

Replicate Fixed Point QC

	alpha (dpm/100cm2)			beta (dpm/100cm2)		
Location #	**initial**	**2s**	**replicate**	**initial**	**2s**	**replicate**
SU1-04QC	30	10.95	15	190	27.57	567
SU1-05QC	4	4.00	4	171	26.15	0
SU1-09QC	4	4.00	8	181	26.91	0
SU1-20QC	30	10.95	4	228	30.20	144
SU2-08QC	8	5.66	16	0	0.00	0
SU2-11QC	88	18.76	32	36	12.00	0
SU3-04QC	8	5.66	15	599	48.95	423
SU3-05QC	8	5.66	4	523	45.74	0
SU3-09QC	23	9.59	15	380	38.99	0
SU3-15QC	26	10.20	0	152	24.66	0
SU4-02QC	72	16.97	0	52	14.42	96
SU5-03QC	4	4.00	12	257	32.06	237
SU5-12QC	26	10.20	4	57	15.10	0
SU5-16QC	4	4.00	4	295	34.35	0
SU5-18QC	30	10.95	4	67	16.37	0
SU6-03QC	8	5.66	24	100	20.00	0
Variance (S2) =	608.89583	[redacted]	80.99583333	29936.5	[redacted]	30135.563
Ratio	[redacted]		7.517619219	[redacted]		0.9933955
Agreement	[redacted]		NO	[redacted]		YES

Replicate analyses were not performed on smears or sediment samples. Quality control procedures, blanks, and spikes are a part of the laboratory quality control program at Mound. Since a relatively small number of samples were taken for this survey, additional replicate analysis was not required for this survey.

Field instrumentation was source checked each day prior to use and again at the completion of survey activities for that day. A known source was placed in a source holder to ensure a reproducible geometry is achieved. Acceptance criteria is ± 20% of the initial source response following calibration. Results were documented in accordance with Mound Radiological Control procedures. Laboratory instrumentation was source checked and documented in accordance with Mound Laboratory procedures.

2.5 Conclusion

The objective of the survey plan was to determine whether or not the residual radioactivity of the surfaces of building materials associated with Well Houses 1, 2, and 3 satisfy the site release criteria established by The Mound 2000 Approach. This was accomplished by comparing the survey data to the release criteria in accordance with the MARSSIM (Reference 2). The scanning survey found no elevated measurement areas above the $DCGL_W$.

All of the DQO's for this survey plan have been met and no further surveys are required. Well Houses 1, 2, and 3 meet the surface release criteria established by The Mound 2000 Approach.

The following table shows the maximum fixed and removable activity on the inside and outside building surfaces.

Well Houses 1, 2, and 3 Max Survey Results

TYPE	RSDS	LOCATION	SURVEY RESULTS (dpm/100 cm^2)	SURFACE CONTAMINATION GUIDELINES (dpm/100 cm^2) (Note 1)
Highest Alpha Smearable Activity	05-TF-0131	Interior Wall	3.53	20
Highest Alpha Fixed Activity	05-TF-0119	Exterior Wall	152	300*
Highest Beta Smearable Activity	05-TF-0131	Interior Wall	9.33	1,000
Highest Beta Fixed Activity	05-TF-0116	Roof	632	5,000
Highest Tritium Smearable Activity	05-TF-0129	Interior Vent	114	10,000
Note 1: The Mound 2000 Approach (DCGLw)				

*300 dpm/100cm^2 $DCGL_{EMC}$; Square meter average is <100 dpm/100cm^2.

3.0 Attachments and Enclosures

Attachment 1 – Well Houses 1, 2, and 3 Average and Maximum Total Alpha and Beta Activity Graphs (2 pages)

Attachment 2 – Summary of Attached Radiological Survey Data Sheets

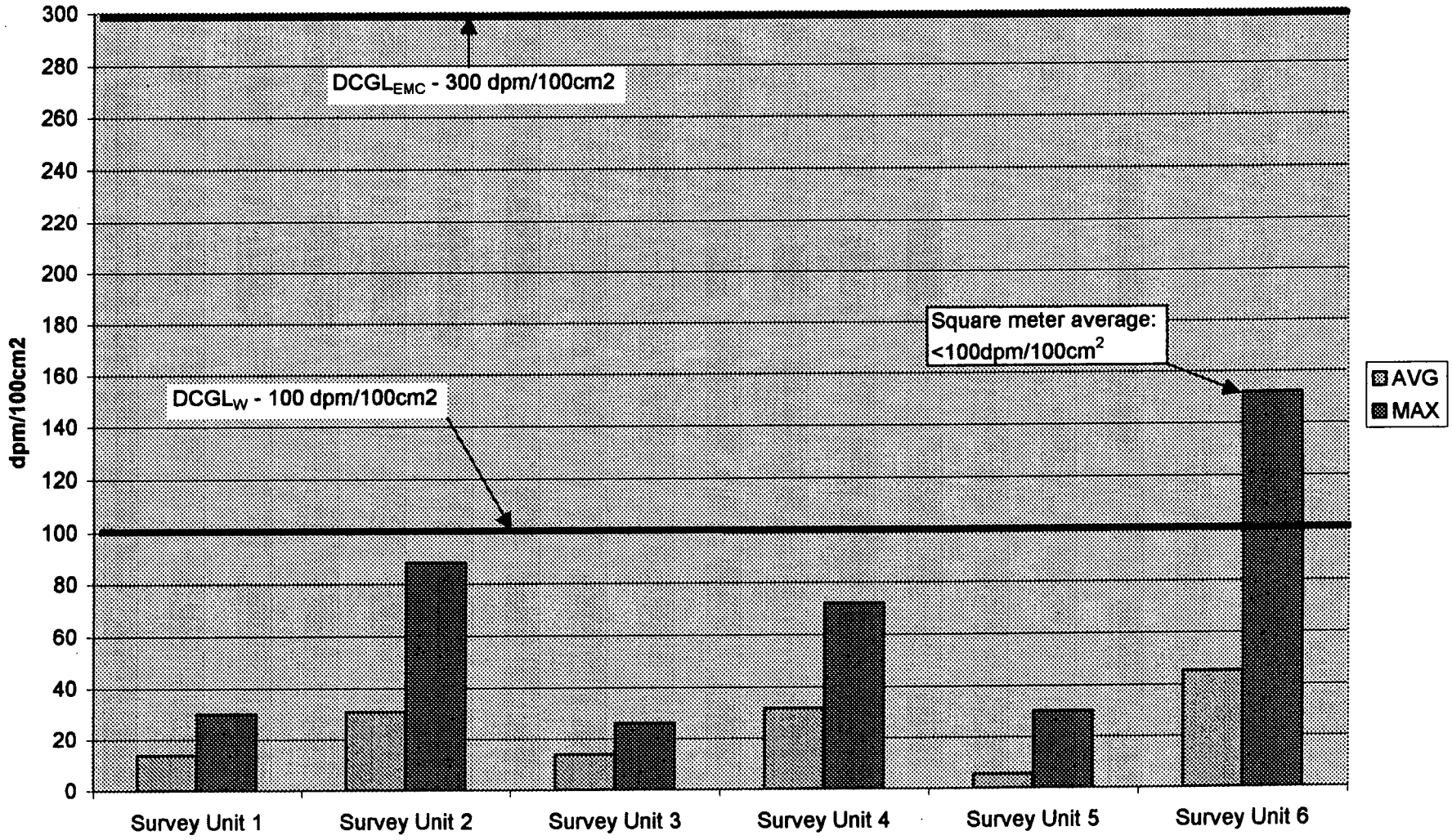
Enclosure 1 – Survey Data Analysis Worksheets

Enclosure 2 – Survey Plan Form (SPF) #WH-01

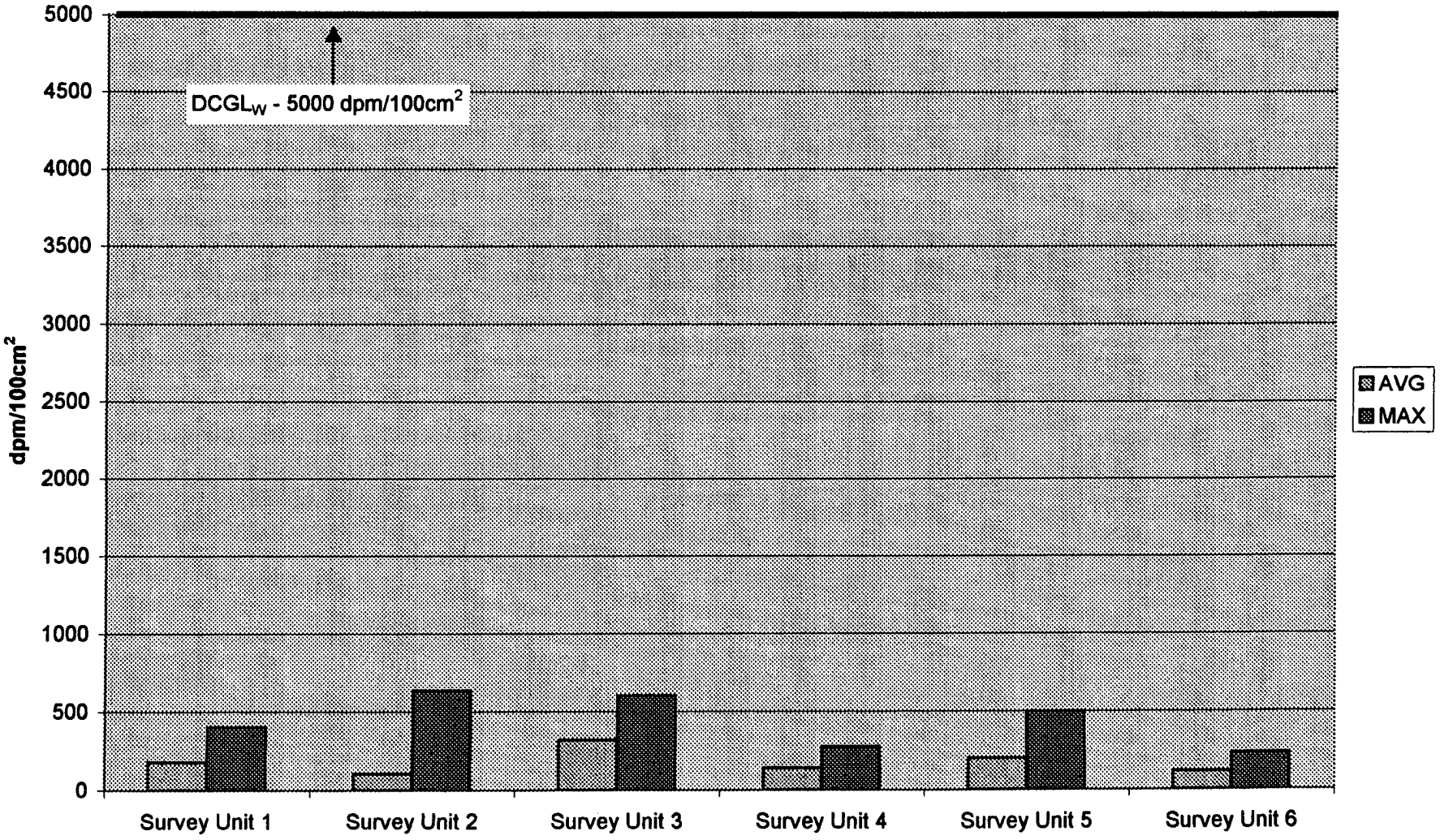
4.0 References

1. Mound Site Historical Documentation
2. NUREG 1575, Rev 1, Aug 2000, *Multi-Agency Radiation Survey and Site Investigation Manual*, (MARSSIM)
3. MARSSIM Implementing Procedures, Field Quality Control for Building Contamination Surveys, MD-80046, Op. 402

Attachment 1
Well Houses 1, 2, and 3 Average & Maximum Direct Alpha



Attachment 1
Well Houses 1, 2, and 3 Average and Maximum Direct Beta Activity



Attachment 2

Well Houses 1, 2, and 3 Final Status Report
Summary of Attached Radiological Survey Data Sheets

RSDS #	Survey Unit	Description
05-TF-0116	2	Well House 1 – Ext. walls
05-TF-0118	4	Well House 2 – Ext. walls
05-TF-0119	6	Well House 3 – Ext. walls
05-TF-0129	1	Well House 1 – Int. walls
05-TF-0130	3	Well House 2 – Int. walls
05-TF-0131	5	Well House 3 – Int. walls
05-TF-0170	1, 3, 5 QC	QC
05-TF-0193	2, 4, 6 QC	QC

Well Houses 1, 2, and 3 Survey Data Analysis Worksheets
Enclosure 1

All measurements dpm/100cm2

		Smearable			Fixed	
Location	**RSDS#**	α	β	H^3	α	β
SU1-01	05-TF-0129	0	0	0	26	266
SU1-02	05-TF-0129	0	0	0	23	399
SU1-03	05-TF-0129	0	0.48	0	11	162
SU1-04	05-TF-0129	0	0	0	30	190
SU1-05	05-TF-0129	0	2.09	0	4	171
SU1-06	05-TF-0129	0	0	0	4	26
SU1-07	05-TF-0129	0	0.1	0	11	0
SU1-08	05-TF-0129	0	0	0	0	95
SU1-09	05-TF-0129	0	0	0	4	181
SU1-10	05-TF-0129	0	0	0	15	342
SU1-11	05-TF-0129	0	4.12	0	11	219
SU1-12	05-TF-0129	0	0	0	8	209
SU1-13	05-TF-0129	0	0.3	0	4	333
SU1-14	05-TF-0129	0	3.74	0	15	171
SU1-15	05-TF-0129	0	0	0	26	38
SU1-16	05-TF-0129	0	4.69	0	4	10
SU1-17	05-TF-0129	0	0	0	23	200
SU1-18	05-TF-0129	0	4.3	**114.31**	19	238
SU1-19	05-TF-0129	0	2.92	0	8	114
SU1-20	05-TF-0129	1.4	0	0	30	228
SU2-01	05-TF-0116	0	0.96	0	64	8
SU2-02	05-TF-0116	0	4.3	0.94	24	0
SU2-03	05-TF-0116	0	0	0	24	60
SU2-04	05-TF-0116	0	1.15	0	0	0
SU2-05	05-TF-0116	0	3.2	0	88	24
SU2-06	05-TF-0116	0	0	0	8	0
SU2-07	05-TF-0116	0	0	0	0	0
SU2-08	05-TF-0116	0	2.69	0	8	0
SU2-09	05-TF-0116	0	0	0.94	24	0
SU2-10	05-TF-0116	0	0.97	1.27	64	36
SU2-11	05-TF-0116	0	4.12	0	88	36
SU2-12	05-TF-0116	0	0	0	24	104
SU2-13	05-TF-0116	0	0	0	24	20
SU2-14	05-TF-0116	0	0.01	0	24	28
SU2-15	05-TF-0116	0	1.37	0	40	164
SU2-16	05-TF-0116	0	0	6.73	32	0
SU2-17	05-TF-0116	0	4.75	0	0	**632**
SU2-18	05-TF-0116	0	8.06	0	48	300
SU2-19	05-TF-0116	1.59	5.17	0	32	360
SU2-20	05-TF-0116	0	1.15	2.9	0	304
SU3-01	05-TF-0130	1.74	0	0	15	494
SU3-02	05-TF-0130	0	2.75	0	15	428
SU3-03	05-TF-0130	1.77	0	0	11	399
SU3-04	05-TF-0130	0	0	1.66	8	599
SU3-05	05-TF-0130	0	0	0	8	523
SU3-06	05-TF-0130	0	2.13	1.19	23	257
SU3-07	05-TF-0130	0	0.31	0	0	238
SU3-08	05-TF-0130	0	0.16	0	15	323

Well Houses 1, 2, and 3 Survey Data Analysis Worksheets
Enclosure 1

All measurements dpm/100cm2

		Smearable			Fixed	
Location	**RSDS#**	α	β	H^3	α	β
SU3-09	05-TF-0130	0	0.26	0	23	380
SU3-10	05-TF-0130	3.3	0.16	0	11	466
SU3-11	05-TF-0130	0	3.92	0	0	133
SU3-12	05-TF-0130	1.68	0.47	0	0	342
SU3-13	05-TF-0130	0	0.29	0	15	238
SU3-14	05-TF-0130	0	1.58	0	15	361
SU3-15	05-TF-0130	0	1.42	0	26	152
SU3-16	05-TF-0130	0	0.2	0	15	399
SU3-17	05-TF-0130	0	2.3	0	0	314
SU3-18	05-TF-0130	0	0.42	0.71	23	513
SU3-19	05-TF-0130	0	1.98	0	19	238
SU3-20	05-TF-0130	0	0	0	19	266
SU3-21	05-TF-0130	0	0	0	15	48
SU3-22	05-TF-0130	0	0	0.23	23	257
SU3-23	05-TF-0130	1.93	1.41	0	0	152
SU3-24	05-TF-0130	0	1.56	0	19	162
SU3-25	05-TF-0130	0	0	0	23	219
SU4-01	05-TF-0118	0	0	0	24	48
SU4-02	05-TF-0118	0	0	0	72	52
SU4-03	05-TF-0118	0	2.92	0	40	52
SU4-04	05-TF-0118	3.39	0	0	56	168
SU4-05	05-TF-0118	1.68	6.35	0	16	116
SU4-06	05-TF-0118	0	0	0	32	152
SU4-07	05-TF-0118	0	5	0	48	108
SU4-08	05-TF-0118	0	6.07	0	24	108
SU4-09	05-TF-0118	0	0	0	16	88
SU4-10	05-TF-0118	0	0	0	64	116
SU4-11	05-TF-0118	0	0.22	0	56	84
SU4-12	05-TF-0118	0	1.24	0	16	240
SU4-13	05-TF-0118	0	0	0	0	144
SU4-14	05-TF-0118	0	2.5	0	40	272
SU4-15	05-TF-0118	0	0	0	48	192
SU4-16	05-TF-0118	0	0	0	24	216
SU4-17	05-TF-0118	0	0	0	0	108
SU4-18	05-TF-0118	0	0	0	16	156
SU4-19	05-TF-0118	0	0.48	0	0	132
SU4-20	05-TF-0118	0	0	0	40	216
SU5-01	05-TF-0131	0	0.96	0	0	399
SU5-02	05-TF-0131	0	3.04	0	23	266
SU5-03	05-TF-0131	0	1.7	0	4	257
SU5-04	05-TF-0131	0	3.6	0	4	494
SU5-05	05-TF-0131	0	2.09	1.88	0	67
SU5-06	05-TF-0131	0	1.11	0	8	29
SU5-07	05-TF-0131	0	6.22	0	0	0
SU5-08	05-TF-0131	0	0.43	0.54	0	228
SU5-09	05-TF-0131	0	0.5	0	8	95

Well Houses 1, 2, and 3 Survey Data Analysis Worksheets
Enclosure 1

All measurements dpm/100cm2

		Smearable			Fixed	
Location	**RSDS#**	α	β	H^3	α	β
SU5-10	05-TF-0131	0	0	2.33	0	266
SU5-11	05-TF-0131	0	**9.33**	0	0	228
SU5-12	05-TF-0131	**3.53**	0.91	0	26	57
SU5-13	05-TF-0131	0	3.15	0	8	190
SU5-14	05-TF-0131	2.02	2.22	6.17	0	76
SU5-15	05-TF-0131	0	1.37	0	0	0
SU5-16	05-TF-0131	0	0.63	0	4	295
SU5-17	05-TF-0131	0	0.96	0	0	295
SU5-18	05-TF-0131	0	1.79	0	30	67
SU5-19	05-TF-0131	0	1.7	0	0	494
SU5-20	05-TF-0131	0	0	0	0	494
SU5-21	05-TF-0131	0	4.32	0	0	0
SU5-22	05-TF-0131	0	0	0	0	0
SU5-23	05-TF-0131	0	1.32	0	11	418
SU5-24	05-TF-0131	0	0.43	0	8	219
SU5-25	05-TF-0131	0	0	0	0	57
SU6-01	05-TF-0119	0	2.23	0.76	48	80
SU6-02	05-TF-0119	0	3.04	0.74	16	100
SU6-03	05-TF-0119	0	0	4.81	8	100
SU6-04	05-TF-0119	0	0	0.75	24	112
SU6-05	05-TF-0119	0	0.97	1.63	32	8
SU6-06	05-TF-0119	0	0	0	64	180
SU6-07	05-TF-0119	0	5	0	64	148
SU6-08	05-TF-0119	0	0.43	0	64	0
SU6-09	05-TF-0119	0	0	2.56	72	116
SU6-10	05-TF-0119	0	0	0	32	76
SU6-11	05-TF-0119	0	0.22	0	56	180
SU6-12	05-TF-0119	0	2.49	0.74	24	124
SU6-13	05-TF-0119	0.74	2.99	1.03	88	96
SU6-14	05-TF-0119	0	2.5	7.39	**152**	228
SU6-15	05-TF-0119	0	0	39.16	8	120
SU6-16	05-TF-0119	0	0	4.39	72	176
SU6-17	05-TF-0119	0	4.75	0	16	164
SU6-18	05-TF-0119	0	5.55	0	24	176
SU6-19	05-TF-0119	0	0	0	40	112
SU6-20	05-TF-0119	0	2.38	4.8	0	8

	Avg	0.190538	1.439	1.619692	22.33077	181.7846154
	SD	0.651591	1.92559	10.60238	24.3611	146.4671291
SU's	Max	3.53	9.33	114.31	152	632
	#	130	130	130	130	130
Confidence:	+/-	0.112008	0.331009	1.822548	4.187673	25.17769342

Well Houses 1, 2, and 3 Survey Data Analysis Worksheets
Enclosure 1

	Smearable			Fixed	
		Survey Unit 1			
	α	β	H^3	α	β
Number	20	20	20	20	20
Avg	0.07	1.137	5.7155	13.8	179.6
SD	0.313049517	1.75945	25.56049305	9.687756788	110.211
Max	1.4	4.69	114.31	30	399
+/-	0.1372	0.7711129	11.20238	4.245846614	48.3023
		Survey Unit 2			
Number	20	20	20	20	20
Avg	0.0795	1.895	0.639	30.8	103.8
SD	0.355534808	2.3142522	1.604542565	27.37959286	168.847
Max	1.59	8.06	6.73	88	632
+/-	0.15582	1.0142657	0.703221785	11.99963564	74.0006
		Survey Unit 3			
Number	25	25	25	25	25
Avg	0.4168	0.8528	0.1516	13.64	316.04
SD	0.895701401	1.0833071	0.416039662	8.410707461	139.799
Max	3.3	3.92	1.66	26	599
+/-	0.351114949	0.4246564	0.163087547	3.296997325	54.801
		Survey Unit 4			
Number	20	20	20	20	20
Avg	0.2535	1.239	0	31.6	138.4
SD	0.828100394	2.1528168	0	21.47801814	63.6226
Max	3.39	6.35	0	72	272
+/-	0.362931	0.9435135	0	9.413156482	27.8838
		Survey Unit 5			
Number	25	25	25	25	25
Avg	0.222	1.9112	0.4368	5.36	199.64
SD	0.798675988	2.160504	1.331570877	8.688498144	167.131
Max	3.53	9.33	6.17	30	494
+/-	0.313080987	0.8469176	0.521975784	3.405891272	65.5154
		Survey Unit 6			
Number	20	20	20	20	20
Avg	0.037	1.6275	3.438	45.2	115.2
SD	0.16546903	1.8894886	8.674450445	35.61430818	61.5395
Max	0.74	5.55	39.16	152	228
+/-	0.07252	0.8281049	3.801745529	15.60865876	26.9709

Well Houses 1, 2, and 3 Survey Data Analysis Worksheets
Enclosure 1

All measurements dpm/100cm2

Graph Data Alpha

	Survey Unit 1	Survey Unit 2	Survey Unit 3	Survey Unit 4	Survey Unit 5	Survey Unit 6
AVG	13.8	30.8	13.64	31.60	5.36	45.20
MAX	30	88	26	72	30	152

Graph Data Beta

	Survey Unit 1	Survey Unit 2	Survey Unit 3	Survey Unit 4	Survey Unit 5	Survey Unit 6
AVG	179.60	103.80	316.04	138.40	199.64	115.20
MAX	399	632	599	272	494	228

Instrument Data

	Inst	SN	CDD	RSDS	α Bkg (cpm)	β Bkg (cpm)
1	2350/43-68	5854/5861	7/20/2005	05-TF-0129	1	101
2	2360/43-89	5691/5811	8/4/2005	05-TF-0116	5	121
3	2350/43-68	5854/5861	7/20/2005	05-TF-0130	1	84
4	2360/43-89	5691/5811	8/4/2005	05-TF-0118	5	121
5	2350/43-68	5854/5861	7/20/2005	05-TF-0131	3	117
6	2360/43-89	5691/5811	8/4/2005	05-TF-0119	5	121
QC	2350/43-68	5855/5864	6/9/2005	05-TF-0170	1	203
QC	2360/43-89	5692/5719	1/5/2006	05-TF-0193	1	168

Replicate Fixed Point QC

		alpha (dpm/100cm2)			beta (dpm/100cm2)		
	Location #	initial	2s	replicate	initial	2s	replicate
1	SU1-04QC	30	10.95	15	190	27.57	567
2	SU1-05QC	4	4.00	4	171	26.15	0
3	SU1-09QC	4	4.00	8	181	26.91	0
4	SU1-20QC	30	10.95	4	228	30.20	144
5	SU2-08QC	8	5.66	16	0	0.00	0
6	SU2-11QC	88	18.76	32	36	12.00	0
7	SU3-04QC	8	5.66	15	599	48.95	423
8	SU3-05QC	8	5.66	4	523	45.74	0
9	SU3-09QC	23	9.59	15	380	38.99	0
10	SU3-15QC	26	10.20	0	152	24.66	0
11	SU4-02QC	72	16.97	0	52	14.42	96
12	SU5-03QC	4	4.00	12	257	32.06	237
13	SU5-12QC	26	10.20	4	57	15.10	0
14	SU5-16QC	4	4.00	4	295	34.35	0
15	SU5-18QC	30	10.95	4	67	16.37	0
16	SU6-03QC	8	5.66	24	100	20.00	0
	Variance (S2) =	608.89583		80.99583333	29936.5		30135.563
	Ratio			7.517619219			0.9933955
	Agreement			NO			YES

Well Houses 1, 2, and 3 Survey Data Analysis Worksheets
Enclosure 1

All measurements dpm/100cm2

	QC Measurements Location	RSDS#	α	β
1	SU1-04QC	05-TF-0170	15	567
2	SU1-05QC	05-TF-0170	4	0
3	SU1-09QC	05-TF-0170	8	0
4	SU1-20QC	05-TF-0170	4	144
5	SU2-08QC	05-TF-0193	16	0
6	SU2-11QC	05-TF-0193	32	0
7	SU3-04QC	05-TF-0170	15	423
8	SU3-05QC	05-TF-0170	4	0
9	SU3-09QC	05-TF-0170	15	0
10	SU3-15QC	05-TF-0170	0	0
11	SU4-02QC	05-TF-0193	0	96
12	SU5-03QC	05-TF-0170	12	237
13	SU5-12QC	05-TF-0170	4	0
14	SU5-16QC	05-TF-0170	4	0
15	SU5-18QC	05-TF-0170	4	0
16	SU6-03QC	05-TF-0193	24	0

ENCLOSURE 1
Well Houses 1, 2, and 3 Survey Data Analysis Worksheets
Data Point SU06-14 One Square Meter Averaging

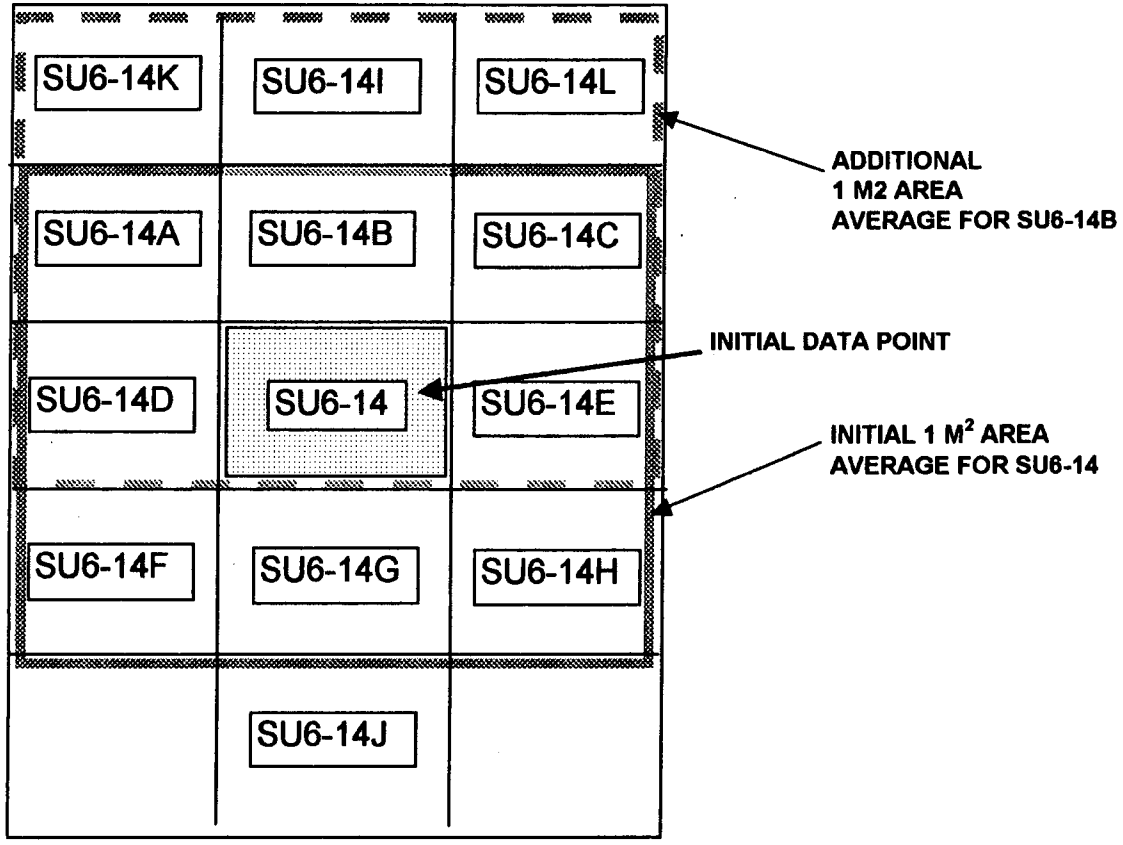
SU6-14 Averaging

All measurements dpm/100cm2

Location	RSDS#	α	β
		Fixed	
SU6-14	05-TF-0119	152	228
SU6-14A	05-TF-0119	0	72
SU6-14B	05-TF-0119	136	92
SU6-14C	05-TF-0119	48	100
SU6-14D	05-TF-0119	96	32
SU6-14E	05-TF-0119	16	0
SU6-14F	05-TF-0119	72	144
SU6-14G	05-TF-0119	88	206
SU6-14H	05-TF-0119	80	8
SU6-14I	05-TF-0119	96	76
SU6-14J	05-TF-0119	40	160
SU6-14K	05-TF-0119	56	256
SU6-14L	05-TF-0119	56	244

Average for Data Point #14	76
Average for Data Point #14B	73

Rusty spot on West Exterior Wall of Well House #3



Enclosure 2

SURVEY PLAN FORM

SP NUMBER	WH-01	**DATE OF REQUEST**	March 2, 2005
TYPE OF SP	☐ FSS ☒ CHARACTERIZATION ☐ REFERENCE ☐ OTHER:		
AREA/LOCATION	Well Houses 1, 2, & 3		
PURPOSE	The purpose of this SP is to characterize Well Houses 1, 2, & 3 to support decisions on final disposition.		
SURVEY UNIT # 1	WH 1 Interior Surfaces	**SURVEY UNIT # 4**	WH 2 Exterior Surfaces
SURVEY UNIT # 2	WH 1 Exterior Surfaces	**SURVEY UNIT # 5**	WH 3 Interior Surfaces
SURVEY UNIT # 3	WH 2 Interior Surfaces	**SURVEY UNIT # 6**	WH 3 Exterior Surfaces

SAMPLE TYPE

☐ **SURFACE SOIL SAMPLE:**

☒ **SEDIMENT SAMPLE:** See specific sediment sampling instructions on page 3.

☐ **OTHER:**

SURVEY TYPE

SURFACE SCAN	☐ BETA ☐ GAMMA ☒ ALPHA	**INST. TYPE**	L-2350	**SCAN RATE & DETECTOR DISTANCE FROM SURFACE**	Scan surface at a rate of 1" per second at a distance of not more than ¼" from surface
		PROBE TYPE	43-37 Floor Probe or 43-68 Hand Probe		
STATIC MEASURE-MENT	☒ BETA ☐ GAMMA ☒ ALPHA	**INST. TYPE**	L-2350	**COUNT TIME & DETECTOR DISTANCE FROM SURFACE**	Perform 2 minute alpha count and 1 minute beta count at specified locations not more than ¼" from surface
		PROBE TYPE	43-68 Hand Probe		
STATIC MEASURE-MENT	☐ BETA ☐ GAMMA ☐ ALPHA	**INST. TYPE**		**COUNT TIME & DETECTOR DISTANCE FROM SURFACE**	
		PROBE TYPE			
DOSE RATE MEASURE-MENT	☐ BETA ☐ GAMMA ☐ ALPHA	**INST. TYPE**		**DETECTOR DISTANCE FROM SURFACE**	
		PROBE TYPE			
OTHER SURVEY TYPES OR COMMENTS	All surveys shall be performed and documented in accordance with Mound Radiological Control procedures. Static measurements on exterior surfaces may be performed using a L 2360 with 43-93 alpha/beta probe in accordance with MD 80036, Op 30031 Rad Con shall document all discrepancies from the above sampling and surveying instructions on the Radiological Survey Data Sheet (RSDS). Ensure the surfaces of interest in the survey unit are dry and free of loose debris or other material that may obscure alpha measurement.				

SP NUMBER	WH-01	DATE OF REQUEST	March 2, 2005

SPECIFIC SAMPLING / SURVEY INSTRUCTIONS

Safety Considerations

1. Obtain assistance from the responsible building custodian for access to upper walls, ceilings, roof, etc. Exercise extreme caution when performing surveys from ladders or scaffolds. Follow appropriate site safety procedures when accessing areas requiring fall protection measures.
2. Ensure ventilation units are de-energized prior to attempting to collect a sample. Obtain approval and assistance from the responsible building custodian to dismantle any equipment for sample collection.

Floor Scan Measurements using a Ludlum 2350 with 43-37 alpha probe

1. Set the Ludlum 2350-1 datalogger to alarm at 75dpm/100cm^2 in the ratemeter mode.
2. Perform a floor scan of major walkways throughout each building.
3. Perform a 30 second integrated count at every location where an alarm is obtained. In addition, obtain a 30 second integrated count at any point where an audible or visual indication of elevated activity is observed at twice the background rate.
4. Record the location of the area scanned on the RSDS map and document the results of any integrated counts.

Sediment Samples

1. Collect approximately 250ml of debris from any accessible area where debris has accumulated. If insufficient material is available, then collect smear samples.
2. Document collected sample information and description of material on Attachment 1.
3. Label sample container with sample number, date and time of collection, and location in accordance with Mound procedures.
4. Perform a static alpha and beta measurement at each sediment sample location. Obtain a representative smear of each sample location.
5. Show sample location and static measurement results on the RSDS map.
6. Submit sediment samples to laboratory for gamma spectroscopy analysis. Submit smears for gross alpha and beta analysis.
7. Additional intrusive samples may be collected in areas of elevated activity as determined by the MARSSIM Engineer.

Static Measurements Using L 2350 with 43-68 alpha/beta probe (or equivalent)

1. Perform an alpha and beta count on at least twenty (20) data points in each survey unit. Data points are selected by the surveyor and should be broadly representative of the entire survey unit.
2. Record location, material type, and results on RSDS map in accordance with Mound Rad Con procedures.
3. Document gross activity for each location (No "<" values). Record instrument background at survey location.

Loose Surface Contamination

1. Obtain a smear of 100cm^2 at each survey point identified above.
2. Count each smear for alpha, beta, and H^3.
3. Record location and results on RSDS map in accordance with Mound Rad Con procedures.

Additional Surveys

1. Perform scan and smear contamination surveys of Pump internals

Specific Survey and Sampling Instructions (continued)

Quality Control

1. QC measurements will be performed by re-surveying 16 data points using a different instrument of the same type as the original measurement. Data points selected for resurvey should be representative of the entire data set and include the highest and lowest normal readings.
2. Sediment samples or smears with measured activity above the MDA may be resubmitted for replicate analysis. Ensure alpha and beta smear results are obtained before performing H^3 analysis.
3. Record location, material, and results on RSDS in accordance with Mound Rad Con procedures.

APPROVAL SIGNATURES			
MARSSIM Engineer	Robert Coblentz	DATE	March 2, 2005
Technical Reviewer	Stephen E. Lehrer	DATE	3/3/05
Rad Con Manager	A. Stephen Collas	DATE	3/3/05
SP CLOSE-OUT SIGNATURES			
MARSSIM Engineer	Robert Coblentz	DATE	7-29-05
Technical Reviewer	8-9-05	DATE	8-3-05
Rad Con Manager	Ronald R Parks	DATE	8-9-05
COMMENTS			

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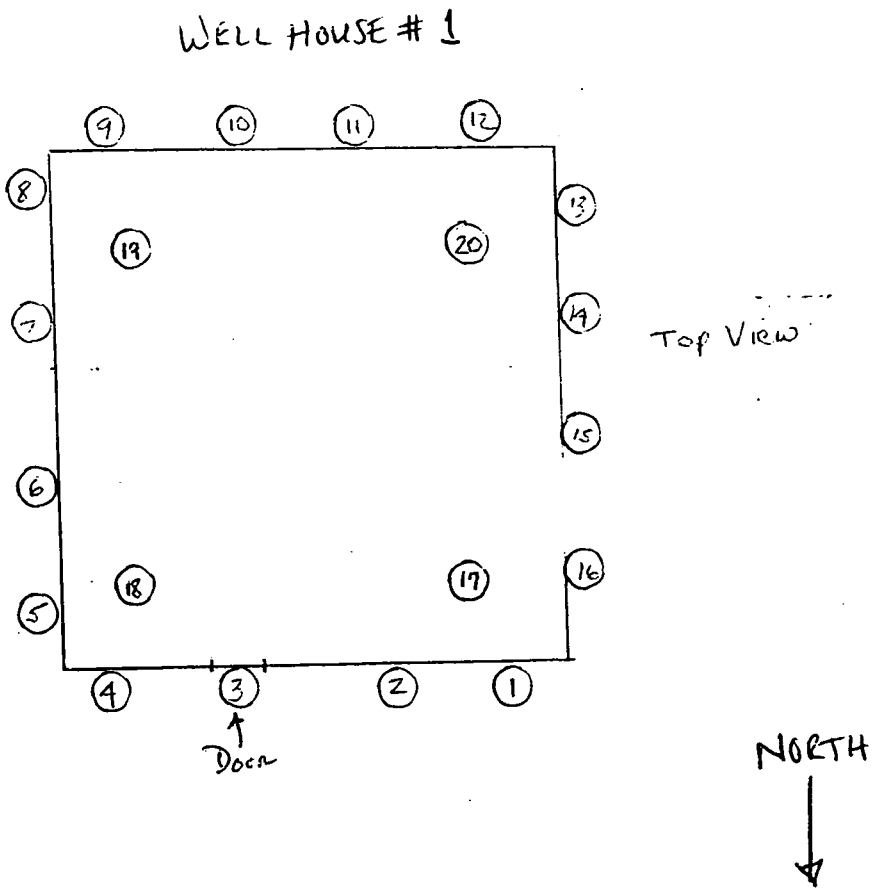
RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) Well House #1	SURVEY NO. 05-TF-0116
PURPOSE: Pre-Demo Survey: Exterior Walls and roof. S.U. #2	RWP NO. N/A
	DATE: 3-17-05
	TIME: 1400

MAP / DRAWING



LEGEND:

- # = mrem/hr (γ) whole body
- #E = mrem/hr (β+η+γ) extremity on contact
- K = factor of 1000
- — · — · — · · = radiological boundary
- # - mrem/hr neutron
- # - air sample number
- # - swipe number
- #/α or /β - direct contamination measurement in dpm/100cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
Lud2360/4389	5691/5811	8/4/05
	A	
	N	

[redacted]	HP# 72UU/7836	Date: 3/22/05
Counted by: (Signature) See	HP#	Date:
Counted by: (Printed Name) Attached		
Revie[redacted]	HP# 7707	Date: 3-29-05
Revie[redacted]		

ML-9620 (2-98)

Survey No. 05-TF-0116

RADIOLOGICAL SURVEY DATA SHEET

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1	See Attached			North wall
2				↓
3				door
4				North wall
5				East wall
6				↓
7				
8				↓
9				South wall
10				↓
11				vent
12				South wall
13				West wall rest
14				West Wall
15				↓
16				↓
17				roof
18				↓
19				↓
20				↓
		NFE		

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

COMMENTS: NFE = No Further Entries

All smears field checked with 2360 prior to submitting to count lab.

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

ML-9620A (4-98)

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: SMEAR014
Batch Ended: 3/21/05 16:01

Crosstalk correction performed.

Recalibration Date: 11/03/05
Serial Number: 26966-1

Batch ID: 05-TF-0116 L. GEFFNER (20) AG

Detector ID	Sample ID	Alpha Activity DPM	Alpha Activity σ	Alpha Activity flags	Beta Activity DPM	Beta Activity σ	Beta Activity flags
A1	1	0.00	2.19		0.96	2.23	
A2	2	0.00	2.26		4.30	2.83	
A3	3	0.00	2.16		0.00	1.27	
A4	4	0.00	2.05		1.15	2.16	
B1	5	0.00	2.01		3.20	2.77	
B2	6	0.00	2.07		0.00	2.08	
B3	7	0.00	1.92		0.00	1.32	
B4	8	0.00	1.93		2.69	2.56	
C1	9	0.00	2.32		0.00	1.46	
C2	10	0.00	2.20		0.97	2.72	
C3	11	0.00	2.15		4.12	3.23	
C4	12	0.00	2.05		0.00	1.35	
D1	13	0.00	2.19		0.00	1.53	
D2	14	0.00	2.20		0.01	1.80	
D3	15	0.00	1.96		1.37	2.48	
D4	16	0.00	2.15		0.00	1.44	
A1	17	0.00	2.24		4.75	3.13	
A2	18	0.00	2.30		8.06	3.58	
A3	19	1.59	2.26		5.17	3.02	
A4	20	0.00	2.05		1.15	2.16	

JC JC

G25 of 64

3/22/05 ~~Page 1 of 1~~
Page 3 of 6

22 Mar 2005 01:45 ALPHA/BETA - 1.09
Protocol #: 4 PW H3 #405828 User : 2138

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

	LL	UL	LCR	2S%	BKG
Region A:	0.5	- 18.6	0	0.0	8.01
Region B:	2.0	- 18.6	0	0.0	7.64
Region C:	40.0	- 2000	0	0.0	11.30

Quench Indicator: tSIE/AEC
Ext Std Terminator: Count
05-TF-0116 L. OEFFNER (20) AG
Luminescence Correction On
Coincidence Time(ns): 18
Delay Before Burst(ns): Normal
Protocol Data Filename: c:\data\PROT4.DAT
Count Data Filename: c:\data\SDATA4.DAT
Spectrum Data Drive & Path: c:\data

S#	TIME	CPMA	CPMB	LUM	FLAG	tSIE	DPM1	2Sigma	CPMC
-1	10.00	8.01	7.64	1	B	610.88		0.00	11.30
0	2.00	673.89	630.06	0		604.86	1288.21	120.75	0.00
1	2.00	0.00	0.00	0		590.01	0.00	0.00	0.00
2	2.00	0.49	0.36	12		597.34	0.94	8.65	0.00
3	2.00	0.00	0.00	0		577.13	0.00	0.00	0.00
4	2.00	0.00	0.00	0		572.78	0.00	0.00	0.00
5	2.00	0.00	0.00	0		594.68	0.00	0.00	0.20
6	2.00	0.00	0.00	0		595.58	0.00	0.00	0.00
7	2.00	0.00	0.00	0		603.15	0.00	0.00	0.00
8	2.00	0.00	0.00	0		580.75	0.00	0.00	0.70
9	2.00	0.49	0.35	0		589.81	0.94	8.70	0.00
10	2.00	0.66	0.53	0		589.33	1.27	8.78	0.00
11	2.00	0.00	0.00	0		606.99	0.00	0.00	0.00
12	2.00	0.00	0.00	0		591.52	0.00	0.00	0.00
13	2.00	0.00	0.11	0		594.21	0.00	0.00	0.00
14	2.00	0.00	0.00	0		590.51	0.00	0.00	0.00
15	2.00	0.00	0.00	0		597.17	0.00	0.00	0.00
16	2.00	3.49	3.60	0		593.63	6.73	9.89	0.00
17	2.00	0.00	0.00	0		552.17	0.00	0.00	0.00
18	2.00	0.00	0.00	0		472.48	0.00	0.00	0.20
19	2.00	0.00	0.00	0		514.23	0.00	0.00	2.81
20	2.00	1.49	1.36	0		583.13	2.90	9.18	0.00

J.C

TAS

Wellhouse #1 Pre-demo Survey Unit #2 (exterior walls and roof)

RSDS#: 05-TF-0116 RCT: MO RCT: JMC

43-89 ALPHA BKG:	5	Factor	8	PROBE AREA:	100	cm2	Surface Eff:	1	ALPHA
43-89 BETA BKG:	121	Factor	4	PROBE AREA:	100	cm2	Surface Eff:	1	BETA

LOCATION	2360#	RCT ID	PROBE	RAD TYPE	ITEM #	DATE	TIME	CNTS	CT TIME (sec)	dpm/100cm2
6 ft.	5831	7836	5804	ALPHA	1	3/17/05	8:00	26	120	64
3 ft.	5831	7836	5804	ALPHA	2	3/17/05	8:00	16	120	24
2 ft.	5831	7836	5804	ALPHA	3	3/17/05	8:00	16	120	24
3 ft.	5831	7836	5804	ALPHA	4	3/17/05	8:00	8	120	0
6 ft.	5831	7836	5804	ALPHA	5	3/17/05	8:00	32	120	88
1 ft.	5831	7836	5804	ALPHA	6	3/17/05	8:00	12	120	8
4 ft.	5831	7836	5804	ALPHA	7	3/17/05	8:00	8	120	0
2 ft.	5831	7836	5804	ALPHA	8	3/17/05	8:00	12	120	8
1 ft.	5831	7836	5804	ALPHA	9	3/17/05	8:00	16	120	24
5 ft.	5831	7836	5804	ALPHA	10	3/17/05	8:00	26	120	64
4 ft.	5831	7836	5804	ALPHA	11	3/17/05	8:00	32	120	88
6 ft.	5831	7836	5804	ALPHA	12	3/17/05	8:00	16	120	24
3 ft.	5831	7836	5804	ALPHA	13	3/17/05	8:00	16	120	24
2 ft.	5831	7836	5804	ALPHA	14	3/17/05	8:00	16	120	24
5 ft.	5831	7836	5804	ALPHA	15	3/17/05	8:00	20	120	40
4 ft.	5831	7836	5804	ALPHA	16	3/17/05	8:00	18	120	32
Roof	5831	7836	5804	ALPHA	17	3/21/05	8:00	8	120	0
Roof	5831	7836	5804	ALPHA	18	3/21/05	8:00	22	120	48
Roof	5831	7836	5804	ALPHA	19	3/21/05	8:00	18	120	32
Roof	5831	7836	5804	ALPHA	20	3/21/05	8:00	4	120	0
6 ft.	5831	7836	5804	BETA	1	3/17/05	8:00	246	120	8
3 ft.	5831	7836	5804	BETA	2	3/17/05	8:00	210	120	0
2 ft.	5831	7836	5804	BETA	3	3/17/05	8:00	272	120	60
3 ft.	5831	7836	5804	BETA	4	3/17/05	8:00	202	120	0
6 ft.	5831	7836	5804	BETA	5	3/17/05	8:00	254	120	24
1 ft.	5831	7836	5804	BETA	6	3/17/05	8:00	218	120	0
4 ft.	5831	7836	5804	BETA	7	3/17/05	8:00	206	120	0
2 ft.	5831	7836	5804	BETA	8	3/17/05	8:00	228	120	0
1 ft.	5831	7836	5804	BETA	9	3/17/05	8:00	240	120	0

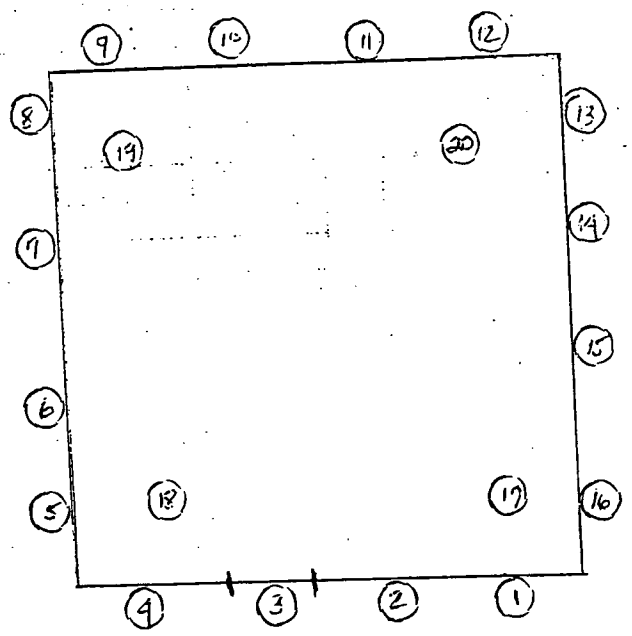
05-TF-0116

LOCATION	2360#	RCT ID	PROBE	RAD TYPE	ITEM #	DATE	TIME	CNTS	CT TIME (sec)	dpm/100cm2
5 ft.	5831	7836	5804	BETA	10	3/17/05	8:00	260	120	36
4 ft.	5831	7836	5804	BETA	11	3/17/05	8:00	260	120	36
6 ft.	5831	7836	5804	BETA	12	3/17/05	8:00	294	120	104
3 ft.	5831	7836	5804	BETA	13	3/17/05	8:00	252	120	20
2 ft.	5831	7836	5804	BETA	14	3/17/05	8:00	256	120	28
5 ft.	5831	7836	5804	BETA	15	3/17/05	8:00	324	120	164
4 ft.	5831	7836	5804	BETA	16	3/17/05	8:00	238	120	0
Roof	5831	7836	5804	BETA	17	3/21/05	8:00	558	120	632
Roof	5831	7836	5804	BETA	18	3/21/05	8:00	392	120	300
Roof	5831	7836	5804	BETA	19	3/21/05	8:00	422	120	360
Roof	5831	7836	5804	BETA	20	3/21/05	8:00	394	120	304

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG/AREA/ROOM) Well House #2	SURVEY NO. 05-TF-0118
PURPOSE: Pre-Demo Survey: Exterior Walls and roof. S.U. #4	RWP NO. N/A
	DATE: 3-17-05
	TIME: 1400

MAP / DRAWING



Roadway

Top View

NORTH

LEGEND: # = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
— · — · · = radiological boundary

△# = mrem/hr neutron

(#) = swipe number

□# = air sample number

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

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
Lud 2360/4389	5691/5811	8/04/05
	A	
	N	

[redacted]	HP# 836/7284	Date: 3/22/05
Counted by: (Signature) See Attached	HP#	Date:
Counted by: (Print Name)		
Reviewed [redacted]	HP# 7707	Date: 3-29-05
Reviewed/ [redacted]		

Survey No. 05-TF-0118

RADIOLOGICAL SURVEY DATA SHEET

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1	See Attached			North wall
2				↓
3				door
4				North wall
5				East wall
6				↓
7				
8				↓
9				South wall
10				vent
11				South wall
12				↓
13				West wall
14				↓
15				
16				↓
17				roof
18				↓
19				
20	↓	↓	↓	↓
		NFE		

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

COMMENTS: NFE = No Further Entries

All smears field checked with 2360 prior to submitting to count lab.

NOTES:
1. See MD-60036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If needed, mark N/A.

ML-9620A (4-98)

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: SMEAR015
Batch Ended: 3/21/05 16:11

Crosstalk correction performed.

Recalibration Date: 11/03/05
Serial Number: 26966-1

Batch ID: 05-TF-0118 L. OEPFNER (20) AG

Detector ID	Sample ID	Alpha Activity DPM	Alpha Activity σ	Alpha Activity flags	Beta Activity DPM	Beta Activity σ	Beta Activity flags
A1	1	0.00	2.17		0.00	1.83	
A2	2	0.00	2.20		0.00	1.31	
A3	3	0.00	2.22		2.92	2.47	
A4	4	3.39	2.85		0.00	1.29	
B1	5	1.68	2.07		6.35	3.39	
B2	6	0.00	2.07		0.00	2.08	
B3	7	0.00	2.01		5.00	3.28	
B4	8	0.00	1.97		6.07	3.23	
C1	9	0.00	2.36		0.00	2.38	
C2	10	0.00	2.18		0.00	2.37	
C3	11	0.00	2.11		0.22	2.31	
C4	12	0.00	2.09		1.24	2.57	
D1	13	0.00	2.19		0.00	1.53	
D2	14	0.00	2.27		2.50	2.52	
D3	15	0.00	1.94		0.00	1.48	
D4	16	0.00	2.15		0.00	1.44	
A1	17	0.00	2.17		0.00	1.83	
A2	18	0.00	2.20		0.00	1.30	
A3	19	0.00	2.18		0.48	1.76	
A4	20	0.00	2.03		0.00	1.29	

JC JC

G31 of 64

JC 3/22/05 ~~Page 1 of 1~~ Page 3 of 6

AVE

22 Mar 2005 02:56 ALPHA/BETA - 1.09 User : 2138
Protocol #: 5 PW H3 405828

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

	LL	UL	LCR	2S%	BKG
Region A:	0.5	- 18.6	0	0.0	8.81
Region B:	2.0	- 18.6	0	0.0	8.49
Region C:	40.0	- 2000	0	0.0	10.60

Quench Indicator: tSIE/AEC
~~Ext Std~~ Terminator: Count
05-TF-0118 L. DEFFNER (20) AG
~~Luminescence~~ Correction On
Coincidence Time(ns): 18
Delay Before Burst(ns): Normal
Protocol Data Filename: c:\data\PROT.DAT
Count Data Filename: c:\data\SDATA5.DAT
Spectrum Data Drive & Path: c:\data

S#	TIME	CPMA	CPMB	LUM	FLAG	tSIE	DPM1	2Sigma	CPMC
-1	10.00	8.81	8.49	1	B	612.16		0.00	10.60
0	2.00	630.86	593.21	0		600.48	1210.39	114.82	5.90
1	2.00	0.00	0.00	0		593.68	0.00	0.00	0.00
2	2.00	0.00	0.00	0		579.80	0.00	0.00	1.90
3	2.00	0.00	0.00	0		435.00	0.00	0.00	0.00
4	2.00	0.00	0.00	0		579.72	0.00	0.00	0.00
5	2.00	0.00	0.00	0		552.44	0.00	0.00	0.00
6	2.00	0.00	0.00	0		570.60	0.00	0.00	0.00
7	2.00	0.00	0.00	0		585.85	0.00	0.00	0.00
8	2.00	0.00	0.00	0		576.83	0.00	0.00	0.00
9	2.00	0.00	0.00	0		583.16	0.00	0.00	0.00
10	2.00	0.00	0.00	0		417.20	0.00	0.00	0.00
11	2.00	0.00	0.00	0		604.56	0.00	0.00	0.00
12	2.00	0.00	0.00	0		599.02	0.00	0.00	0.00
13	2.00	0.00	0.00	0		543.27	0.00	0.00	1.90
14	2.00	0.00	0.00	0		547.55	0.00	0.00	1.40
15	2.00	0.00	0.00	0		600.91	0.00	0.00	0.00
16	2.00	0.00	0.00	0		592.77	0.00	0.00	0.00
17	2.00	0.00	0.00	7		376.82	0.00	0.00	0.00
18	2.00	0.00	0.00	0		353.78	0.00	0.00	0.00
19	2.00	0.00	0.00	0		450.83	0.00	0.00	2.40
20	2.00	0.00	0.00	13		336.89	0.00	0.00	1.90

JC.

TAB

Wellhouse #2 Pre-demo Survey Unit #4 (exterior walls and roof)

RSDS#: 05-TF-0118 RCT: [illegible] RCT: [illegible]

43-89 ALPHA BKG:	5	Factor	8	PROBE AREA:	100	cm2	Surface Eff:	1	ALPHA
43-89 BETA BKG:	121	Factor	4	PROBE AREA:	100	cm2	Surface Eff:	1	BETA

LOCATION	2360#	RCT ID	PROBE	RAD TYPE	ITEM #	DATE	TIME	CNTS	CT TIME (sec)	dpm/100cm2
6 ft.	5831	7836	5804	ALPHA	1	3/17/05	8:00	16	120	24
2 ft.	5831	7836	5804	ALPHA	2	3/17/05	8:00	28	120	72
4 ft.	5831	7836	5804	ALPHA	3	3/17/05	8:00	20	120	40
5 ft.	5831	7836	5804	ALPHA	4	3/17/05	8:00	24	120	56
1 ft.	5831	7836	5804	ALPHA	5	3/17/05	8:00	14	120	16
7 ft.	5831	7836	5804	ALPHA	6	3/17/05	8:00	18	120	32
4 ft.	5831	7836	5804	ALPHA	7	3/17/05	8:00	22	120	48
3 ft.	5831	7836	5804	ALPHA	8	3/17/05	8:00	16	120	24
2 ft.	5831	7836	5804	ALPHA	9	3/17/05	8:00	14	120	16
6 ft.	5831	7836	5804	ALPHA	10	3/17/05	8:00	26	120	64
1 ft.	5831	7836	5804	ALPHA	11	3/17/05	8:00	24	120	56
4 ft.	5831	7836	5804	ALPHA	12	3/17/05	8:00	14	120	16
1 ft.	5831	7836	5804	ALPHA	13	3/17/05	8:00	6	120	0
6 ft.	5831	7836	5804	ALPHA	14	3/17/05	8:00	20	120	40
4 ft.	5831	7836	5804	ALPHA	15	3/17/05	8:00	22	120	48
3 ft.	5831	7836	5804	ALPHA	16	3/17/05	8:00	16	120	24
Roof	5831	7836	5804	ALPHA	17	3/21/05	8:00	6	120	0
Roof	5831	7836	5804	ALPHA	18	3/21/05	8:00	14	120	16
Roof	5831	7836	5804	ALPHA	19	3/21/05	8:00	20	120	0
Roof	5831	7836	5804	ALPHA	20	3/21/05	8:00	20	120	40
6 ft.	5831	7836	5804	BETA	1	3/17/05	8:00	266	120	48
2 ft.	5831	7836	5804	BETA	2	3/17/05	8:00	268	120	52
4 ft.	5831	7836	5804	BETA	3	3/17/05	8:00	268	120	52
5 ft.	5831	7836	5804	BETA	4	3/17/05	8:00	326	120	168
1 ft.	5831	7836	5804	BETA	5	3/17/05	8:00	300	120	116
7 ft.	5831	7836	5804	BETA	6	3/17/05	8:00	318	120	152
4 ft.	5831	7836	5804	BETA	7	3/17/05	8:00	296	120	108
3 ft.	5831	7836	5804	BETA	8	3/17/05	8:00	296	120	108
2 ft.	5831	7836	5804	BETA	9	3/17/05	8:00	286	120	88

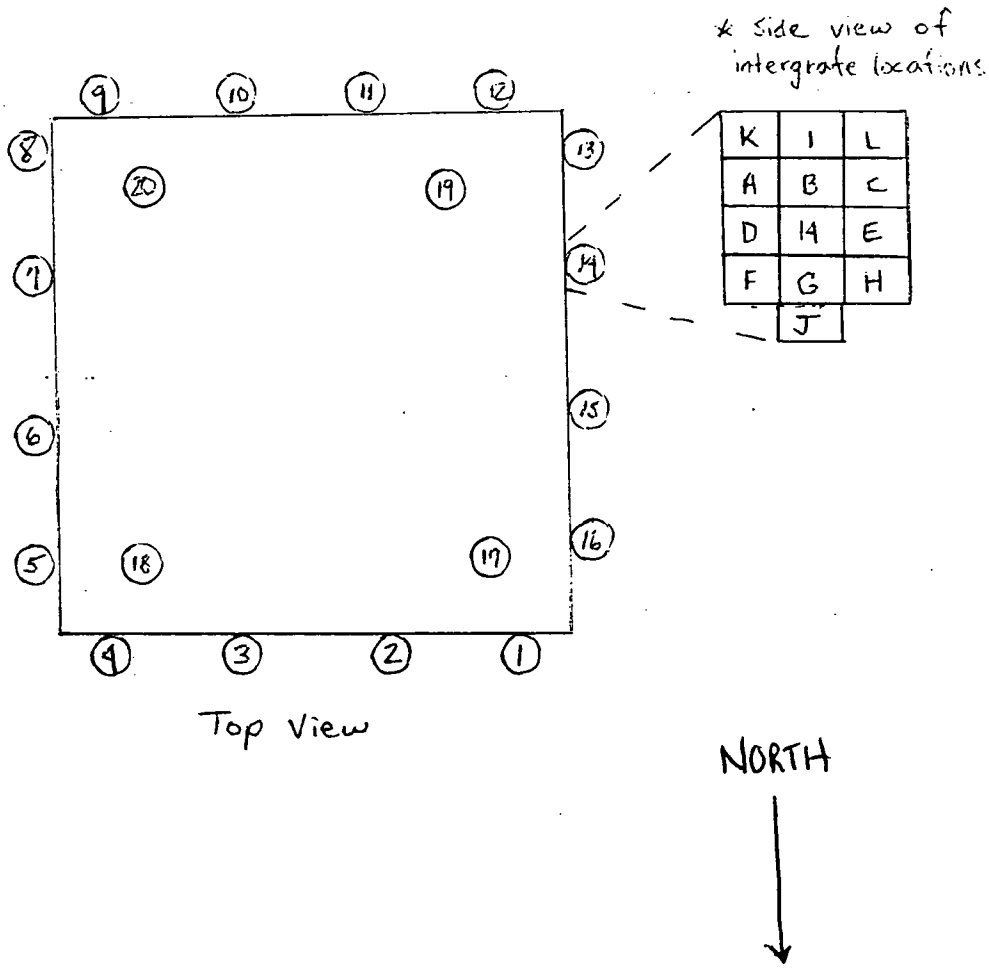
05-TF-0118

LOCATION	2360#	RCT ID	PROBE	RAD TYPE	ITEM #	DATE	TIME	CNTS	CT TIME (sec)	dpm/100cm2
6 ft.	5831	7836	5804	BETA	10	3/17/05	8:00	300	120	116
1 ft.	5831	7836	5804	BETA	11	3/17/05	8:00	284	120	84
4 ft.	5831	7836	5804	BETA	12	3/17/05	8:00	362	120	240
1 ft.	5831	7836	5804	BETA	13	3/17/05	8:00	314	120	144
6 ft.	5831	7836	5804	BETA	14	3/17/05	8:00	378	120	272
4 ft.	5831	7836	5804	BETA	15	3/17/05	8:00	338	120	192
3 ft.	5831	7836	5804	BETA	16	3/17/05	8:00	350	120	216
Roof	5831	7836	5804	BETA	17	3/21/05	8:00	296	120	108
Roof	5831	7836	5804	BETA	18	3/21/05	8:00	320	120	156
Roof	5831	7836	5804	BETA	19	3/21/05	8:00	308	120	132
Roof	5831	7836	5804	BETA	20	3/21/05	8:00	350	120	216

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) Well House #3	SURVEY NO. 05-TF-0119
PURPOSE: Pre-Demo Survey: Exterior Walls and roof. S.U. #6	RWP NO. N/A
	DATE. 3.17.05
	TIME: 1400

MAP / DRAWING



LEGEND:

- # = mrem/hr (γ) whole body
- #E = mrem/hr (β+η+γ) extremity on contact
- K = factor of 1000
- —·—·—·· = radiological boundary
- △# - mrem/hr neutron
- □# - air sample number
- (#) - swipe number
- (#/α) or /β - direct contamination measurement in dpm/100cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
Lud 2360/4389	5691/5811	8/4/05
	A	
	N	

[redacted]	HP# 7836/7244	Date: 3/22/05
Counted by: (Signature) See	HP#	Date:
Counted by: (Printed Name) Attached		
Review [redacted]	HP# 7707	Date: 3-29-05
Reviewed/Approved by: (Print Na [redacted]		

ML-9620 (2-98)

Survey No. 05-TF-0119

RADIOLOGICAL SURVEY DATA SHEET

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1	See Attached			North wall
2				
3				
4				
5				East Wall
6				
7				
8				
9				South wall
10				
11				
12				
13				West wall
14				
15				
16				
17				Roof
18				
19				
20				
		NFE		

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

COMMENTS: NFE = No Further Entries

All smears field checked with 2360 prior to submitting to count lab.

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

ML-9620A (4-98)

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: SMEAR013
Batch Ended: 3/21/05 15:53

Crosstalk correction performed.

Recalibration Date: 11/03/05
Serial Number: 26966-1

Batch ID: 05-TF-0119 L OEFFNER (20) AG

Detector ID	Sample ID	Alpha Activity DPM	Alpha Activity σ	Alpha Activity flags	Beta Activity DPM	Beta Activity σ	Beta Activity flags
A1	1	0.00	2.21		2.23	2.56	
A2	2	0.00	2.24		3.04	2.54	
A3	3	0.00	2.16		0.00	1.27	
A4	4	0.00	2.03		0.00	1.29	
B1	5	0.00	1.97		0.97	2.28	
B2	6	0.00	2.02		0.00	1.26	
B3	7	0.00	2.01		5.00	3.28	
B4	8	0.00	1.90		0.43	2.00	
C1	9	0.00	2.32		0.00	1.46	
C2	10	0.00	2.16		0.00	1.96	
C3	11	0.00	2.11		0.22	2.31	
C4	12	0.00	2.10		2.49	2.86	
D1	13	0.74	2.23		2.99	3.23	
D2	14	0.00	2.27		2.50	2.52	
D3	15	0.00	1.95		0.00	2.04	
D4	16	0.00	2.15		0.00	1.44	
A1	17	0.00	2.24		4.75	3.13	
A2	18	0.00	2.27		5.55	3.10	
A3	19	0.00	2.16		0.00	1.27	
A4	20	0.00	2.07		2.38	2.49	

JC JC

G37 of 64

JC 3/22/05 ~~Page 1 of 1~~

Page 3 of 6

AEL

21 Mar 2005 18:05 ALPHA/BETA - 1.09 ~~Page #1~~
Protocol #: 3 PW H3 #403728 User : 5801

Time: 2.00
Data Mode: DPM Nuclide: SMGL02 Quench Set: SMGL02
Background Subtract: 1st Vial

	LL	UL	LCR	2S%	BKG
Region A:	0.5	18.6	0	0.0	8.09
Region B:	2.0	18.6	0	0.0	8.19
Region C:	40.0	2000	0	0.0	10.10

Quench Indicator: tSIE/AEC
Ext Std Terminator: Count
05-TF-0119 OFFNER [20] GWD
Luminescence Correction On
Coincidence Time(ns): 18
Delay Before Burst(ns): Normal
Protocol Data Filename: c:\data\prot1.dat
Count Data Filename: c:\data\SDATA3.DAT
Spectrum Data Drive & Path: c:\data

S#	TIME	CPMA	CPMB	LUM	FLAG	tSIE	DPM1	2Sigma	CPMC
-1	10.00	8.09	8.18	5	B	627.55		0.00	10.10
0	2.00	591.75	563.62	0		624.52	1075.21	90.19	5.52
1	2.00	0.41	0.00	16		600.67	0.76	9.14	0.00
2	2.00	0.41	0.31	6		637.64	0.74	8.10	0.90
3	2.00	2.65	1.28	9		622.78	4.81	9.06	0.09
4	2.00	0.41	0.00	6		615.85	0.75	8.25	0.00
5	2.00	0.91	0.10	6		644.64	1.63	8.25	0.90
6	2.00	0.00	0.00	15		548.79	0.00	0.00	1.90
7	2.00	0.00	0.00	14		636.49	0.00	0.00	1.40
8	2.00	0.00	0.00	18		587.25	0.00	0.00	0.00
9	2.00	1.41	0.35	11		625.09	2.56	8.58	1.40
10	2.00	0.00	0.00	8		631.09	0.00	0.00	0.00
11	2.00	0.00	0.00	0		645.71	0.00	0.00	0.00
12	2.00	0.41	0.00	12		628.72	0.74	8.16	3.90
13	2.00	0.57	0.47	6		618.09	1.03	8.30	0.00
14	2.00	4.03	1.95	4		612.46	7.39	9.64	0.00
15	2.00	21.41	12.73	2		616.57	39.16	14.63	0.00
16	2.00	2.41	2.00	5		621.87	4.39	8.98	0.00
17	2.00	0.00	0.00	35		429.64	0.00	0.00	6.40
18	2.00	0.00	0.00	55		385.84	0.00	0.00	3.90
19	2.00	0.00	0.00	26		500.86	0.00	0.00	0.00
20	2.00	1.91	2.51	27		365.83	4.80	14.92	0.40

gc.

Wellhouse #3 Pre-demo Survey Unit #6 (exterior walls and roof)

RSDS#: 05-TF-0119 RCT: NAO RCT: JMC

43-89 ALPHA BKG:	5	Factor	8	PROBE AREA:	100	cm2	Surface Eff:	1	ALPHA
43-89 BETA BKG:	121	Factor	4	PROBE AREA:	100	cm2	Surface Eff:	1	BETA

LOCATION	2360#	RCT ID	PROBE	RAD TYPE	ITEM #	DATE	TIME	CNTS	CT TIME (sec)	dpm/100cm2
1 ft.	5831	7836	5804	ALPHA	1	3/17/05	8:00	22	120	48
6 ft.	5831	7836	5804	ALPHA	2	3/17/05	8:00	14	120	16
4 ft.	5831	7836	5804	ALPHA	3	3/17/05	8:00	12	120	8
5 ft.	5831	7836	5804	ALPHA	4	3/17/05	8:00	16	120	24
4 ft.	5831	7836	5804	ALPHA	5	3/17/05	8:00	18	120	32
6 ft.	5831	7836	5804	ALPHA	6	3/17/05	8:00	26	120	64
3 ft.	5831	7836	5804	ALPHA	7	3/17/05	8:00	26	120	64
1 ft.	5831	7836	5804	ALPHA	8	3/17/05	8:00	26	120	64
5 ft.	5831	7836	5804	ALPHA	9	3/17/05	8:00	28	120	72
4 ft.	5831	7836	5804	ALPHA	10	3/17/05	8:00	18	120	32
2 ft.	5831	7836	5804	ALPHA	11	3/17/05	8:00	24	120	56
6 ft.	5831	7836	5804	ALPHA	12	3/17/05	8:00	16	120	24
2 ft.	5831	7836	5804	ALPHA	13	3/17/05	8:00	32	120	88
5 ft.	**5831**	**7836**	**5804**	**ALPHA**	**14**	**3/17/05**	**8:00**	**48**	120	**152**
3 ft.	5831	7836	5804	ALPHA	15	3/17/05	8:00	12	120	8
6 ft.	5831	7836	5804	ALPHA	16	3/17/05	8:00	28	120	72
Roof	5831	7836	5804	ALPHA	17	3/21/05	8:00	14	120	16
Roof	5831	7836	5804	ALPHA	18	3/21/05	8:00	16	120	24
Roof	5831	7836	5804	ALPHA	19	3/21/05	8:00	20	120	40
Roof	5831	7836	5804	ALPHA	20	3/21/05	8:00	10	120	0
14-A	5831	7836	5804	ALPHA	14-A	3/17/05	14:00	9	120	~~4~~ 0 RMC 3/29/05
14-B	**5831**	**7836**	**5804**	**ALPHA**	**14-B**	**3/17/05**	**14:00**	**44**	120	**136**
14-C	5831	7836	5804	ALPHA	14-C	3/17/05	14:00	22	120	48
14-D	5831	7836	5804	ALPHA	14-D	3/17/05	14:00	34	120	96
14-E	5831	7836	5804	ALPHA	14-E	3/17/05	14:00	14	120	16
14-F	5831	7836	5804	ALPHA	14-F	3/17/05	14:00	28	120	72
14-G	5831	7836	5804	ALPHA	14-G	3/17/05	14:00	32	120	88
14-H	5831	7836	5804	ALPHA	14-H	3/17/05	14:00	30	120	80
14-I	5831	7836	5804	ALPHA	14-I	3/17/05	14:00	34	120	96
14-J	5831	7836	5804	ALPHA	14-J	3/17/05	14:00	20	120	40

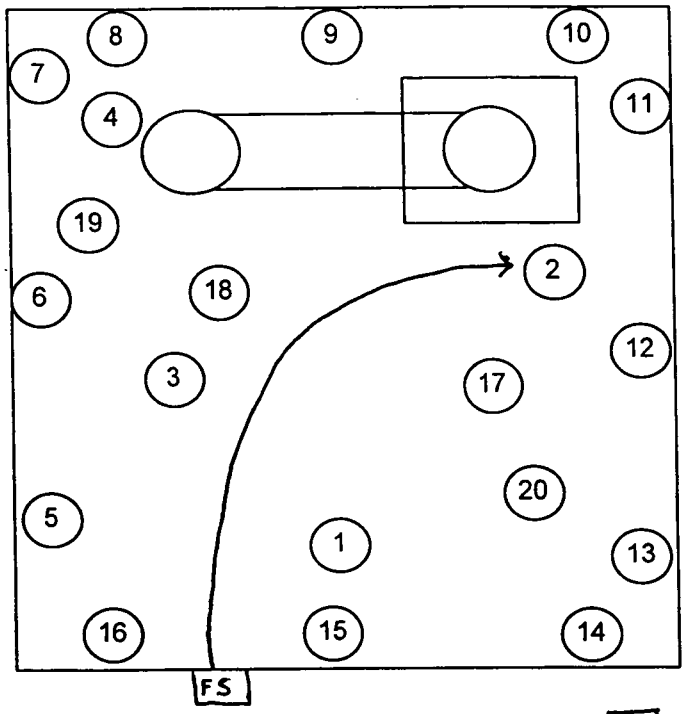
05-TF-0119

LOCATION	2360#	RCT ID	PROBE	RAD TYPE	ITEM #	DATE	TIME	CNTS	CT TIME (sec)	dpm/100cm2
14-K	5831	7244	5804	ALPHA	14-K	3/21/05	14:00	24	120	56
14-L	5831	7244	5804	ALPHA	14-L	3/21/05	14:00	24	120	56
1 ft.	5831	7836	5804	BETA	1	3/17/05	8:00	282	120	80
6 ft.	5831	7836	5804	BETA	2	3/17/05	8:00	292	120	100
4 ft.	5831	7836	5804	BETA	3	3/17/05	8:00	292	120	100
5 ft.	5831	7836	5804	BETA	4	3/17/05	8:00	298	120	112
4 ft.	5831	7836	5804	BETA	5	3/17/05	8:00	246	120	8
6 ft.	5831	7836	5804	BETA	6	3/17/05	8:00	332	120	180
3 ft.	5831	7836	5804	BETA	7	3/17/05	8:00	316	120	148
1 ft.	5831	7836	5804	BETA	8	3/17/05	8:00	224	120	0
5 ft.	5831	7836	5804	BETA	9	3/17/05	8:00	300	120	116
4 ft.	5831	7836	5804	BETA	10	3/17/05	8:00	280	120	76
2 ft.	5831	7836	5804	BETA	11	3/17/05	8:00	332	120	180
6 ft.	5831	7836	5804	BETA	12	3/17/05	8:00	304	120	124
2 ft.	5831	7836	5804	BETA	13	3/17/05	8:00	290	120	96
5 ft.	5831	7836	5804	BETA	14	3/17/05	8:00	356	120	228
3 ft.	5831	7836	5804	BETA	15	3/17/05	8:00	302	120	120
6 ft.	5831	7836	5804	BETA	16	3/17/05	8:00	330	120	176
Roof	5831	7836	5804	BETA	17	3/21/05	8:00	324	120	164
Roof	5831	7836	5804	BETA	18	3/21/05	8:00	330	120	176
Roof	5831	7836	5804	BETA	19	3/21/05	8:00	298	120	112
Roof	5831	7836	5804	BETA	20	3/21/05	8:00	246	120	8
14-A	5831	7836	5804	BETA	14-A	3/17/05	14:00	278	120	72
14-B	5831	7836	5804	BETA	14-B	3/17/05	14:00	288	120	92
14-C	5831	7836	5804	BETA	14-C	3/17/05	14:00	292	120	100
14-D	5831	7836	5804	BETA	14-D	3/17/05	14:00	258	120	32
14-E	5831	7836	5804	BETA	14-E	3/17/05	14:00	234	120	0
14-F	5831	7836	5804	BETA	14-F	3/17/05	14:00	314	120	144
14-G	5831	7836	5804	BETA	14-G	3/17/05	14:00	345	120	206
14-H	5831	7836	5804	BETA	14-H	3/17/05	14:00	246	120	8
14-I	5831	7836	5804	BETA	14-I	3/17/05	14:00	280	120	76
14-J	5831	7836	5804	BETA	14-J	3/17/05	14:00	322	120	160
14-K	5831	7244	5804	BETA	14-K	3/21/05	14:00	370	120	256
14-L	5831	7244	5804	BETA	14-L	3/21/05	14:00	364	120	244
Location #14-A through #14-J are 1 squared meter surrounding item #14										
Location #14-B also required 1 squared meter readings (see map for locations)										

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM)	SURVEY NO.
Well House #1	05-TF-129
PURPOSE:	RWP NO.
Pre-Demo Survey: S.U. #1(interior surfaces)	N/A
	DATE: 3/22/05
	TIME: 8:00

MAP / DRAWING



Top View
Well House #1

FS indicates floor scan path. No alarms or elevated activity, therefore no intergrates performed.

LEGEND:
- # = mrem/hr (γ) whole body
- #E = mrem/hr (β+η+γ) extremity on contact
- K = factor of 1000
- —·—·—·· = radiological boundary

- # - mrem/hr neutron
- # - swipe number
- # - air sample number
- #/α or /β - direct contamination measurement in dpm/100cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
Lud 2350	5854/5861	7/20/05
Lud 2360/4389	5755/5723	1/31/06
	NA	

[redacted]	HP# 7176 1244/1836	Date 4/12/05
Counted by: (Signature) See attached	HP#	Date
Counted by: (Printed Name)		
Reviewed/A[redacted]	HP# 7707	Date 4/19/05
Reviewed/Approved by: (Print Nam[redacted]		

Survey No. 05-TF-0129

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1	See Attached			Floor
2				
3				
4				
5				E. wall - 6 ft.
6				4 ft.
7				5 ft.
8				S. wall - 2 ft.
9				6 ft.
10				2 ft.
11				W. wall - 4 ft.
12				1 ft.
13				7 ft.
14				N. wall - 2 ft.
15				door - 4 ft.
16				N. wall - 3 ft.
17				ceiling
18				vent
19				ceiling
20				light
		NFE		

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

COMMENTS: E. ⇒ East; S. ⇒ South; W. ⇒ West; N. ⇒ North; ft. ⇒ feet; NFE ⇒ No Further Entries
All smears field checked with 2360 prior to submitting to count lab.

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

ML-9620A (4-98)

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: SMEAR032
Batch Ended: 3/22/05 15:47

Crosstalk correction performed.

Recalibration Date: 11/03/05
Serial Number: 26966-1

Batch ID: 05-TF-0129 OEFFNER (20) 03/22/05 TAS

Detector ID	Sample ID	Alpha Activity DPM	Alpha Activity σ	Alpha Activity flags	Beta Activity DPM	Beta Activity σ	Beta Activity flags
A1	1	0.00	2.16		0.00	1.33	
A2	2	0.00	2.20		0.00	1.30	
A3	3	0.00	2.18		0.48	1.76	
A4	4	0.00	2.03		0.00	1.29	
B1	5	0.00	1.99		2.09	2.54	
B2	6	0.00	2.05		0.00	1.72	
B3	7	0.00	1.95		0.10	2.17	
B4	8	0.00	1.89		0.00	1.65	
C1	9	0.00	2.32		0.00	1.46	
C2	10	0.00	2.18		0.00	2.37	
C3	11	0.00	2.15		4.12	3.23	
C4	12	0.00	2.06		0.00	1.85	
D1	13	0.00	2.21		0.30	2.52	
D2	14	0.00	2.30		3.74	2.81	
D3	15	0.00	1.94		0.00	1.48	
D4	16	0.00	2.18		4.69	3.35	
A1	17	0.00	2.16		0.00	1.33	
A2	18	0.00	2.26		4.30	2.83	
A3	19	0.00	2.22		2.92	2.47	
A4	20	1.40	2.04		0.00	1.78	

gc gc

gc 3/23/05 ~~Page 1 of 1~~

Page ___ of ___

TAS

3 of 5

G43 of 64

22 Mar 2005 21:45 TRI-CARB - 1.09 ~~Page #1~~
Protocol #: 1 PW H3 #407906 User : 5379

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

	LL	UL	LCR	2S%	BKG
Region A:	0.5	- 18.6	0	0.0	14.54
Region B:	2.0	- 18.6	0	0.0	13.04
Region C:	40.0	- 2000	0	0.0	11.11

Quench Indicator: tSIE/AEC
Ext Std Terminator: Count
05-TF-0129 (20) OEFFNER 03/22/05 TAS
~~Coincidence~~ Time(ns): 18
Delay Before Burst(ns): Normal
Protocol Data Filename: C:\DATA\PROT1.DAT
Count Data Filename: C:\DATA\SDATA1.DAT
Spectrum Data Drive & Path: C:\DATA

S#	TIME	CPMA	CPMB	LUM	FLAG	tSIE	DPM1	2SIGMA	CPMC
-1	10.00	14.54	13.04	5	B	599.25		0.000	11.11
0	2.00	502.91	457.30	0		588.89	922.26	76.157	0.39
1	2.00	0.00	0.00	6		554.36	0.00	0.000	0.89
2	2.00	0.00	0.00	5		556.83	0.00	0.000	0.89
3	2.00	0.00	0.00	6		546.66	0.00	0.000	0.00
4	2.00	0.00	0.00	6		508.62	0.00	0.000	0.00
5	2.00	0.00	0.00	0		589.31	0.00	0.000	0.00
6	2.00	0.00	0.00	5		608.78	0.00	0.000	0.00
7	2.00	0.00	0.00	0		610.94	0.00	0.000	0.00
8	2.00	0.00	0.00	0		621.15	0.00	0.000	0.89
9	2.00	0.00	0.00	7		611.72	0.00	0.000	0.00
10	2.00	0.00	0.00	6		590.55	0.00	0.000	0.00
11	2.00	0.00	0.00	5		618.56	0.00	0.000	0.00
12	2.00	0.00	0.00	6		620.18	0.00	0.000	0.00
13	2.00	0.00	0.00	4		634.34	0.00	0.000	0.00
14	2.00	0.00	0.00	0		611.40	0.00	0.000	0.00
15	2.00	0.00	0.00	6		592.70	0.00	0.000	0.00
16	2.00	0.00	0.00	0		596.13	0.00	0.000	0.00
17	2.00	0.00	0.00	5		594.72	0.00	0.000	0.00
18	2.00	60.84	38.00	1		558.05	114.31	24.251	0.89
19	2.00	0.00	0.00	7		596.65	0.00	0.000	0.00
20	2.00	0.00	0.00	9		566.02	0.00	0.000	0.00

J.C

TAS

Pre-Demo Survey: S. U. #1 Well House 1 (Interior Surfaces)

RSDS# 05-tf-0129 RCT: JW RCT: MO

Alpha	43-68 BKG:	1	EFF:	0.21	PROBE AREA:	126	cm^2	Surface Eff:	0.5	Detector # :	1
Beta	43-68 BKG:	101	EFF:	0.167	PROBE AREA:	126	cm^2	Surface Eff:	0.5	Detector # :	2
Alpha Scan	43-37 BKG:	0	EFF:	0.22	PROBE AREA:	584	cm^2	Surface Eff:	0.5	Detector # :	3
Beta Scan	43-37 BKG:	0	EFF:	0.22	PROBE AREA:	584	cm^2	Surface Eff:	0.5	Detector # :	4

TYPE	LOCATION	2350#	RCT ID	PROBE	DET #		DATE	TIME	CNTS	CT TIME	dpm/100cm2
ALPHA	WH 1-1	5854	7176	5861	1	1	4/12/05	11:14	9	120	26
ALPHA	WH 1-2	5854	7176	5861	1	2	4/12/05	11:17	8	120	23
ALPHA	WH 1-3	5854	7176	5861	1	3	4/12/05	11:23	5	120	11
ALPHA	WH 1-4	5854	7176	5861	1	4	4/12/05	11:27	10	120	30
ALPHA	WH 1-5	5854	7176	5861	1	5	4/12/05	11:31	3	120	4
ALPHA	WH 1-6	5854	7176	5861	1	6	4/12/05	11:34	3	120	4
ALPHA	WH 1-7	5854	7176	5861	1	7	4/12/05	11:38	5	120	11
ALPHA	WH 1-8	5854	7176	5861	1	8	4/12/05	11:42	0	120	0
ALPHA	WH 1-9	5854	7176	5861	1	9	4/12/05	11:46	3	120	4
ALPHA	WH 1-10	5854	7176	5861	1	10	4/12/05	11:50	6	120	15
ALPHA	WH 1-11	5854	7176	5861	1	11	4/12/05	11:54	5	120	11
ALPHA	WH 1-12	5854	7176	5861	1	12	4/12/05	11:57	4	120	8
ALPHA	WH 1-13	5854	7176	5861	1	13	4/12/05	12:01	3	120	4
ALPHA	WH 1-14	5854	7176	5861	1	14	4/12/05	12:06	6	120	15
ALPHA	WH 1-15	5854	7176	5861	1	15	4/12/05	12:09	9	120	26
ALPHA	WH 1-16	5854	7176	5861	1	16	4/12/05	12:13	3	120	4
ALPHA	WH 1-17	5854	7176	5861	1	17	4/12/05	12:19	8	120	23
ALPHA	WH 1-18	5854	7176	5861	1	18	4/12/05	12:23	7	120	19
ALPHA	WH 1-19	5854	7176	5861	1	19	4/12/05	12:27	4	120	8
ALPHA	WH 1-20	5854	7176	5861	1	20	4/12/05	12:31	10	120	30
BETA	WH 1-1	5854	7176	5861	2	1	4/12/05	11:15	129	60	266
BETA	WH 1-2	5854	7176	5861	2	2	4/12/05	11:19	143	60	399
BETA	WH 1-3	5854	7176	5861	2	3	4/12/05	11:24	118	60	162
BETA	WH 1-4	5854	7176	5861	2	4	4/12/05	11:28	121	60	190
BETA	WH 1-5	5854	7176	5861	2	5	4/12/05	11:32	119	60	171
BETA	WH 1-6	5854	7176	5861	2	6	4/12/05	11:36	104	60	29
BETA	WH 1-7	5854	7176	5861	2	7	4/12/05	11:39	97	60	0
BETA	WH 1-8	5854	7176	5861	2	8	4/12/05	11:44	111	60	95
BETA	WH 1-9	5854	7176	5861	2	9	4/12/05	11:47	120	60	181
BETA	WH 1-10	5854	7176	5861	2	10	4/12/05	11:51	137	60	342
BETA	WH 1-11	5854	7176	5861	2	11	4/12/05	11:55	124	60	219
BETA	WH 1-12	5854	7176	5861	2	12	4/12/05	11:58	123	60	209
BETA	WH 1-13	5854	7176	5861	2	13	4/12/05	12:02	136	60	333
BETA	WH 1-14	5854	7176	5861	2	14	4/12/05	12:07	119	60	171
BETA	WH 1-15	5854	7176	5861	2	15	4/12/05	12:11	105	60	38
BETA	WH 1-16	5854	7176	5861	2	16	4/12/05	12:14	102	60	10
BETA	WH 1-17	5854	7176	5861	2	17	4/12/05	12:20	122	60	200
BETA	WH 1-18	5854	7176	5861	2	18	4/12/05	12:24	126	60	238
BETA	WH 1-19	5854	7176	5861	2	19	4/12/05	12:29	113	60	114
BETA	WH 1-20	5854	7176	5861	2	20	4/12/05	12:32	125	60	228

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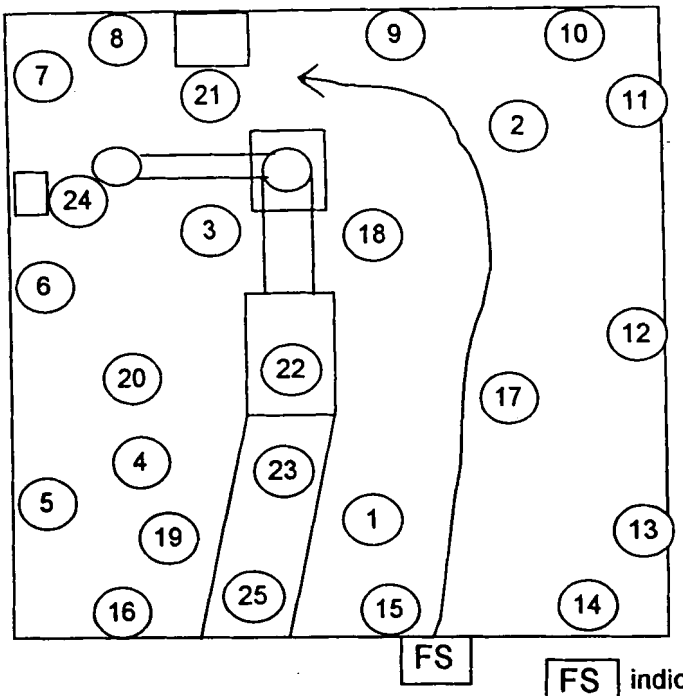
RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) Well House #2	SURVEY NO. 05-TF-130
PURPOSE: Pre-Demo Survey: S.U. #3(interior surfaces)	RWP NO. N/A
	DATE: 3/22/2005
	TIME: 10:00

MAP / DRAWING



Top View
Well House #2

FS indicates floor scan path no alarms or elevated activity during floor scans, therefore no intergrates performed.

LEGEND:
- # = mrem/hr (γ) whole body
- #E = mrem/hr (β+η+γ) extremity on contact
- K = factor of 1000
- —·—·—·· = radiological boundary

- # - mrem/hr neutron
- # - swipe number
- # - air sample number
- #/α or /β - direct contamination measurement in dpm/100cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
Lud 2350	5854/5861	7/20/2005
Lud 2360/4389	5755/5723	1/31/2006
	NA	

[redacted]		Date 4/13/2005
Completed by: (Printed [redacted]		
Counted by: (Signature) See attached	HP#	Date
Counted by: (Printed Name)		
Reviewed [redacted]	HP# 7707	Date 4-21-05
Reviewed/Approved by: (Print Name) [redacted]		

Survey No. 05-TF-0130

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1	See Attached			floor
2				
3				
4				
5				E. wall - 2ft.
6				6ft.
7				1ft.
8				S. wall - 6ft.
9				1ft.
10				5ft.
11				W. wall - 3ft.
12				1ft.
13				5ft.
14				N. wall - 6ft.
15				door - 4ft.
16				N. wall - 3ft.
17				ceiling
18				
19				light
20				ceiling
21				flowmeter
22				motor
23				duct
24				heater
25				inside duct
		NFE		

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

COMMENTS: E. ⇒ East ; S. ⇒ South ; W. ⇒ West ; N. ⇒ North ; ft. ⇒ feet ; NFE ⇒ No Further Entries/All smears field checked with 2360 prior to submitting to count lab.

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

ML-9620A (4-98)

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: SMEAR018
Batch Ended: 3/22/05 16:01
Cal. Due Date: 11/17/05
Serial Number: 26966-3

Batch ID: 05-TF-0130 OEFFNER (25) 03/22/05 TAS

Detector ID	Sample ID	Alpha Activity			Beta Activity		
		DPM	σ	flags	DPM	σ	flags
A1	1	1.74	2.19		0.00	1.33	
A2	2	0.00	2.05		2.75	2.33	
A3	3	1.77	2.27		0.00	1.27	
A4	4	0.00	2.10		0.00	1.22	
B1	5	0.00	1.88		0.00	1.21	
B2	6	0.00	1.92		2.13	2.24	
B3	7	0.00	2.20		0.31	1.88	
B4	8	0.00	1.99		0.16	1.70	
C1	9	0.00	2.06		0.26	1.74	
C2	10	3.30	2.70		0.16	1.59	
C3	11	0.00	2.11		3.92	2.73	
C4	12	1.68	1.96		0.47	1.59	
D1	13	0.00	2.06		0.29	1.77	
D2	14	0.00	2.18		1.58	2.06	
D3	15	0.00	2.11		1.42	2.15	
D4	16	0.00	2.05		0.20	1.66	
A1	17	0.00	2.23		2.30	2.62	
A2	18	0.00	2.02		0.42	1.65	
A3	19	0.00	2.30		1.98	2.18	
A4	20	0.00	2.10		0.00	1.22	
B1	21	0.00	1.88		0.00	1.21	
B2	22	0.00	1.85		0.00	1.13	
B3	23	1.93	2.22		1.41	2.30	
B4	24	0.00	2.01		1.56	2.08	
C1	25	0.00	2.05		0.00	1.23	

JC JC

3/23/05

TAS

23 Mar 2005 01:29 ALPHA/BETA - 1.09
Protocol #: 2 PW H3 #405835 User : 5379

Time: 2.00
Data Mode: DPM Nuclide: SMGL02 Quench Set: SMGL02
Background Subtract: 1st Vial

	LL	UL	LCR	2SZ	BKG
Region A:	0.5 -	18.6	0	0.0	10.10
Region B:	2.0 -	18.6	0	0.0	9.25
Region C:	40.0 -	2000	0	0.0	11.10

Quench Indicator: tSIE/AEC
Ext Std Terminator: Count
05-TF-0130 OEFFNER (35) 03/22/05 TAS
Luminescence Correction On
Coincidence Time(ns): 18
Delay Before Burst(ns): Normal
Spectrum Data Drive & Path: C:\DATA

S#	TIME	CPMA	CPMB	LUM	FLAG	tSIE	DPM1	2Sigma	CPMC
-1	10.00	10.10	9.25	18	B	611.46		0.00	11.10
0	2.00	571.54	538.01	1		603.29	1051.94	100.52	7.40
1	2.00	0.00	0.00	0		614.15	0.00	0.00	0.00
2	2.00	0.00	0.00	7		604.70	0.00	0.00	0.00
3	2.00	0.00	0.00	0		606.67	0.00	0.00	0.00
4	2.00	0.90	1.47	5		602.86	1.66	9.54	1.40
5	2.00	0.00	0.00	7		633.44	0.00	0.00	0.00
6	2.00	0.66	1.18	0		631.46	1.19	9.23	0.00
7	2.00	0.00	0.00	0		597.91	0.00	0.00	0.00
8	2.00	0.00	0.00	0		565.95	0.00	0.00	0.00
9	2.00	0.00	0.00	0		609.70	0.00	0.00	0.00
10	2.00	0.00	0.00	0		611.07	0.00	0.00	0.00
11	2.00	0.00	0.00	9		607.25	0.00	0.00	0.00
12	2.00	0.00	0.00	7		590.04	0.00	0.00	0.00
13	2.00	0.00	0.00	6		605.00	0.00	0.00	1.40
14	2.00	0.00	0.00	6		608.65	0.00	0.00	0.00
15	2.00	0.00	0.00	0		629.06	0.00	0.00	0.00
16	2.00	0.00	0.00	0		569.42	0.00	0.00	0.40
17	2.00	0.00	0.00	0		599.67	0.00	0.00	0.00
18	2.00	0.40	0.90	5		644.29	0.71	9.04	0.31
19	2.00	0.00	0.00	0		579.66	0.00	0.00	0.00
20	2.00	0.00	0.00	0		628.94	0.00	0.00	0.00
21	2.00	0.00	0.00	11		495.52	0.00	0.00	0.00
22	2.00	0.12	0.00	5		532.37	0.23	9.85	1.90
23	2.00	0.00	0.00	5		545.76	0.00	0.00	0.00
24	2.00	0.00	0.00	0		554.88	0.00	0.00	0.00
25	2.00	0.00	0.00	7		586.64	0.00	0.00	0.00

JC

TAS

Well House #2 Pre-Demo Survey (interior surfaces)

RSDS# 05-TF-0130 *RCT:* DW *RCT:* JMC

Alpha	43-68 BKG:	1	EFF:	0.21	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # : 1
Beta	43-68 BKG:	84	EFF:	0.167	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # : 2
Alpha Scan	43-37 BKG:	0	EFF:	22.6	PROBE AREA:	584	cm^2	Surface Eff:		0.5	Detector # : 3
Beta Scan	43-37 BKG:	0	EFF:	0.17	PROBE AREA:	584	cm^2	Surface Eff:		0.5	Detector # : 4
TYPE	LOCATION	2350#	RCT ID	PROBE	DET #		DATE	TIME	CNTS	CT TIME	dpm/100cm2
ALPHA	WH 2 1	5854	7244	5861	1	1	4/13/05	12:33	6	120	15
ALPHA	WH 2 2	5854	7244	5861	1	2	4/13/05	12:36	6	120	15
ALPHA	WH 2 3	5854	7244	5861	1	3	4/13/05	12:40	5	120	11
ALPHA	WH 2 4	5854	7244	5861	1	4	4/13/05	12:45	4	120	8
ALPHA	WH 2 5	5854	7244	5861	1	5	4/13/05	12:49	4	120	8
ALPHA	WH 2 6	5854	7244	5861	1	6	4/13/05	12:52	8	120	23
ALPHA	WH 2 7	5854	7244	5861	1	7	4/13/05	12:56	2	120	0
ALPHA	WH 2 8	5854	7244	5861	1	8	4/13/05	13:00	6	120	15
ALPHA	WH 2 9	5854	7244	5861	1	9	4/13/05	13:04	8	120	23
ALPHA	WH 2 10	5854	7244	5861	1	10	4/13/05	13:09	5	120	11
ALPHA	WH 2 11	5854	7244	5861	1	11	4/13/05	13:12	2	120	0
ALPHA	WH 2 12	5854	7244	5861	1	12	4/13/05	13:18	2	120	0
ALPHA	WH 2 13	5854	7244	5861	1	13	4/13/05	13:22	6	120	15
ALPHA	WH 2 14	5854	7244	5861	1	14	4/13/05	13:25	6	120	15
ALPHA	WH 2 15	5854	7244	5861	1	15	4/13/05	13:29	9	120	26
ALPHA	WH 2 16	5854	7244	5861	1	16	4/13/05	13:33	6	120	15
ALPHA	WH 2 17	5854	7244	5861	1	17	4/13/05	13:37	2	120	0
ALPHA	WH 2 18	5854	7244	5861	1	18	4/13/05	13:41	8	120	23
ALPHA	WH 2 19	5854	7244	5861	1	19	4/13/05	13:49	7	120	19
ALPHA	WH 2 20	5854	7244	5861	1	20	4/13/05	13:54	7	120	19
ALPHA	WH 2 21	5854	7244	5861	1	21	4/13/05	13:59	6	120	15
ALPHA	WH 2 22	5854	7244	5861	1	22	4/13/05	14:03	8	120	23
ALPHA	WH 2 23	5854	7244	5861	1	23	4/13/05	14:06	2	120	0
ALPHA	WH 2 24	5854	7244	5861	1	24	4/13/05	14:11	7	120	19
ALPHA	WH 2 25	5854	7244	5861	1	25	4/13/05	14:15	8	120	23
BETA	WH 2 1	5854	7244	5861	2	26	4/13/05	12:34	136	60	494
BETA	WH 2 2	5854	7244	5861	2	27	4/13/05	12:37	129	60	428
BETA	WH 2 3	5854	7244	5861	2	28	4/13/05	12:41	126	60	399
BETA	WH 2 4	5854	7244	5861	2	29	4/13/05	12:46	147	60	599
BETA	WH 2 5	5854	7244	5861	2	30	4/13/05	12:50	139	60	523
BETA	WH 2 6	5854	7244	5861	2	31	4/13/05	12:54	111	60	257
BETA	WH 2 7	5854	7244	5861	2	32	4/13/05	12:57	109	60	238
BETA	WH 2 8	5854	7244	5861	2	33	4/13/05	13:01	118	60	323
BETA	WH 2 9	5854	7244	5861	2	34	4/13/05	13:05	124	60	380
BETA	WH 2 10	5854	7244	5861	2	35	4/13/05	13:10	133	60	466
BETA	WH 2 11	5854	7244	5861	2	36	4/13/05	13:13	98	60	133
BETA	WH 2 12	5854	7244	5861	2	37	4/13/05	13:19	120	60	342
BETA	WH 2 13	5854	7244	5861	2	38	4/13/05	13:23	109	60	238
BETA	WH 2 14	5854	7244	5861	2	39	4/13/05	13:27	122	60	361
BETA	WH 2 15	5854	7244	5861	2	40	4/13/05	13:30	100	60	152
BETA	WH 2 16	5854	7244	5861	2	41	4/13/05	13:34	126	60	399

Well House #2 Pre-Demo Survey (interior surfaces)

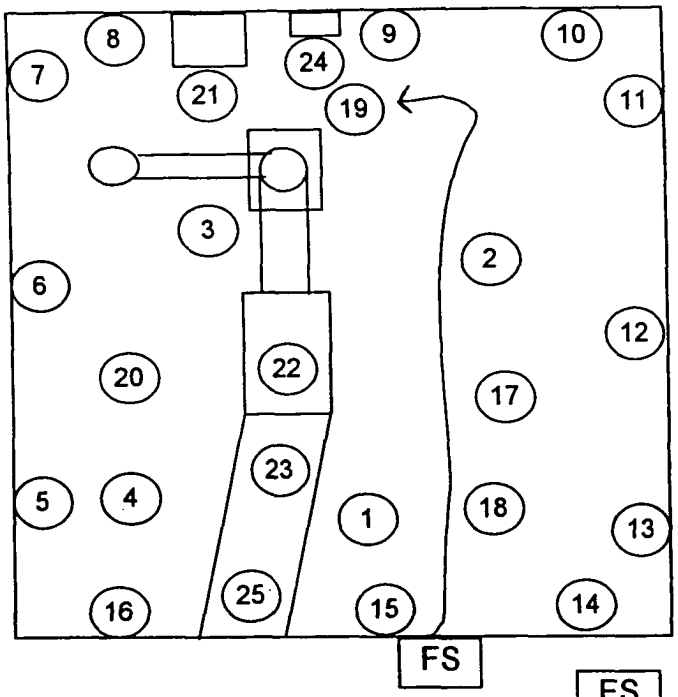
RSDS# 05-TF-0130 *RCT:* _____ *RCT:* _____

Alpha	43-68 BKG:	1	EFF:	0.21	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # : 1
Beta	43-68 BKG:	84	EFF:	0.167	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # : 2
Alpha Scan	43-37 BKG:	0	EFF:	22.6	PROBE AREA:	584	cm^2	Surface Eff:		0.5	Detector # : 3
Beta Scan	43-37 BKG:	0	EFF:	0.17	PROBE AREA:	584	cm^2	Surface Eff:		0.5	Detector # : 4
TYPE	LOCATION	2350#	RCT ID	PROBE	DET #		DATE	TIME	CNTS	CT TIME	dpm/100cm2
BETA	WH 2 17	5854	7244	5861	2	42	4/13/05	13:38	117	60	314
BETA	WH 2 18	5854	7244	5861	2	43	4/13/05	13:42	138	60	513
BETA	WH 2 19	5854	7244	5861	2	44	4/13/05	13:50	109	60	238
BETA	WH 2 20	5854	7244	5861	2	45	4/13/05	13:55	112	60	266
BETA	WH 2 21	5854	7244	5861	2	46	4/13/05	14:00	89	60	48
BETA	WH 2 22	5854	7244	5861	2	47	4/13/05	14:04	111	60	257
BETA	WH 2 23	5854	7244	5861	2	48	4/13/05	14:07	100	60	152
BETA	WH 2 24	5854	7244	5861	2	49	4/13/05	14:12	101	60	162
BETA	WH 2 25	5854	7244	5861	2	50	4/13/05	14:16	107	60	219

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) Well House #3	SURVEY NO. 05-TF-131
PURPOSE: Pre-Demo Survey: S.U. #5(interior surfaces)	RWP NO. N/A
	DATE: 3/22/2005
	TIME: 11:00

MAP / DRAWING



Top View
Well House #3

FS indicates floor scan path
No alarms or elevated activity, during floor scan, therefore no intergrates performed.

LEGEND:
- # = mrem/hr (γ) whole body
- #E = mrem/hr (β+η+γ) extremity on contact
- K = factor of 1000
- —·—·—·· = radiological boundary

- # - mrem/hr neutron
- # - swipe number
- # - air sample number
- #/α or /β - direct contamination measurement in dpm/100cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
Lud 2350	5854/5861	7/20/2005
Lud 2360/4389	5755/5723	1/31/2006
	NA	

[redacted]	HP# 7836/7176	Date 4/14/2005
Completed by: (Printed) [redacted]		
Counted by: (Signature) See attached	HP#	Date
Counted by: (Printed Name)		
[redacted]	HP# 7707	Date 4-19-05
Reviewed/Approved by: (Print Name) [redacted]		

Survey No. 05-TF-0131

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1	See Attached			floor
2				
3				
4				
5				E. wall - 5 ft.
6				1 ft.
7				5 ft.
8				S. wall - 4 ft.
9				3 ft.
10				6 ft.
11				W. wall - 2 ft.
12				5 ft.
13				3 ft.
14				N. wall - 1 ft.
15				door - 2 ft.
16				N. wall - 6 ft.
17				ceiling
18				lights
19				ceiling
20				
21				flowmeter
22				motor
23				duct
24				heater
25				inside duct
		NFE		

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

COMMENTS: E. ⇒ East ; S. ⇒ South ; W. ⇒ West ; N. ⇒ North ; ft. ⇒ feet ; NFE ⇒ No Further Entries
All smears field checked with 2360 prior to submitting to count lab.

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

ML-9620A (4-98)

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: SMEAR033
Batch Ended: 3/22/05 15:54

Crosstalk correction performed.

Recalibration Date: 11/03/05
Serial Number: 26966-1

Batch ID: 05-TF-0131 OFFNER (25) 03/22/05 TAS

Detector ID	Sample ID	Alpha Activity DPM	Alpha Activity σ	Alpha Activity flags	Beta Activity DPM	Beta Activity σ	Beta Activity flags
A1	1	0.00	2.19		0.96	2.23	
A2	2	0.00	2.24		3.04	2.54	
A3	3	0.00	2.20		1.70	2.15	
A4	4	0.00	2.08		3.60	2.77	
B1	5	0.00	1.99		2.09	2.54	
B2	6	0.00	2.09		1.11	2.39	
B3	7	0.00	2.02		6.22	3.51	
B4	8	0.00	1.90		0.43	2.00	
C1	9	0.00	2.37		0.50	2.73	
C2	10	0.00	2.15		0.00	1.45	
C3	11	0.00	2.20		9.33	4.16	
C4	12	3.53	2.91		0.91	2.57	
D1	13	0.00	2.23		3.15	3.23	
D2	14	2.02	2.27		2.22	2.52	
D3	15	0.00	1.96		1.37	2.48	
D4	16	0.00	2.16		0.63	2.39	
A1	17	0.00	2.19		0.96	2.23	
A2	18	0.00	2.23		1.79	2.20	
A3	19	0.00	2.20		1.70	2.15	
A4	20	0.00	2.04		0.00	1.78	
B1	21	0.00	2.03		4.32	2.99	
B2	22	0.00	2.07		0.00	2.08	
B3	23	0.00	1.96		1.32	2.50	
B4	24	0.00	1.90		0.43	2.00	
C1	25	0.00	2.32		0.00	1.46	

JC JC

G55 of 64

3 of 6

JC ~~Page 1 of 1~~
3/23/05
Page ___ of ___

TAS

22 Mar 2005 19:14 TRI-CARB - 1.09 ~~Page #1~~
Protocol #: 2 PW H3 #407906 User : 5379

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

	LL	UL	LCR	2S%	BKG
Region A:	0.5 -	18.6	0	0.0	10.20
Region B:	2.0 -	18.6	0	0.0	9.08
Region C:	40.0 -	2000	0	0.0	10.30

Quench Indicator: tSIE/AEC
Ext Std Terminator: Count
05-TF-0131 OEFFNER (25) 03/22/05 TAS
Luminescence Correction On
Coincidence Time(ns): 18
Delay Before Burst(ns): Normal
Protocol Data Filename: C:\DATA\PROT2.dat
Count Data Filename: C:\DATA\SDATA2.DAT
Spectrum Data Drive & Path: C:\DATA

S#	TIME	CPMA	CPMB	LUM	FLAG	tSIE	DPM1	2SIGMA	CPMC
-1	10.00	10.20	9.08	7	B	587.62		0.000	10.30
0	2.00	599.93	549.65	0		577.82	1109.71	86.717	4.20
1	2.00	0.00	0.00	17		607.79	0.00	0.000	0.00
2	2.00	0.00	0.11	14		506.00	0.00	0.000	0.00
3	2.00	0.00	0.00	7		593.10	0.00	0.000	0.00
4	2.00	0.00	0.00	23		577.00	0.00	0.000	0.00
5	2.00	1.02	0.74	4		581.28	1.88	9.545	0.70
6	2.00	0.00	0.00	6		578.84	0.00	0.000	0.00
7	2.00	0.00	0.00	5		631.54	0.00	0.000	0.00
8	2.00	0.30	1.13	5		610.99	0.54	9.072	0.70
9	2.00	0.00	0.00	7		610.62	0.00	0.000	0.20
10	2.00	1.29	0.92	4		608.63	2.33	9.440	0.20
11	2.00	0.00	0.00	6		611.97	0.00	0.000	0.00
12	2.00	0.00	0.42	5		626.75	0.00	0.000	0.00
13	2.00	0.00	0.00	6		635.74	0.00	0.000	0.00
14	2.00	3.44	2.73	4		617.40	6.17	10.092	0.00
15	2.00	0.00	0.00	0		565.59	0.00	0.000	0.70
16	2.00	0.00	0.76	5		599.08	0.00	0.000	0.00
17	2.00	0.00	0.00	5		616.27	0.00	0.000	0.00
18	2.00	0.00	0.00	13		532.42	0.00	0.000	0.70
19	2.00	0.00	0.00	9		626.24	0.00	0.000	2.76
20	2.00	0.00	0.00	5		611.72	0.00	0.000	0.00
21	2.00	0.00	0.00	6		559.11	0.00	0.000	0.70
22	2.00	0.00	0.00	8		536.64	0.00	0.000	0.70
23	2.00	0.00	0.00	9		505.97	0.00	0.000	1.70
24	2.00	0.00	0.00	8		547.57	0.00	0.000	0.00
25	2.00	0.00	0.00	17		514.94	0.00	0.000	0.00

J.C

Pre-Demo survey:S.U.#5 Well House #3 (interior surfaces)

RSDS# 05-TF-0131 RCT: W RCT: MO

Alpha	43-68 BKG:	3	EFF:	0.21	PROBE AREA:	126	cm^2	Surface Eff:	0.5	Detector # :	1
Beta	43-68 BKG:	117	EFF:	0.167	PROBE AREA:	126	cm^2	Surface Eff:	0.5	Detector # :	2
Alpha Scan	43-37 BKG:	5	EFF:	0.226	PROBE AREA:	584	cm^2	Surface Eff:	0.5	Detector # :	3
Beta Scan	43-37 BKG:	0	EFF:	0.22	PROBE AREA:	584	cm^2	Surface Eff:	0.5	Detector # :	4

TYPE	LOCATION	2350#	RCT ID	PROBE	DET #		DATE	TIME	CNTS	CT TIME	dpm/100cm2
ALPHA	WH-3 01	5854	7176	5861	1	1	4/18/05	11:53	6	120	0
ALPHA	WH-3 02	5854	7176	5861	1	2	4/18/05	11:56	12	120	23
ALPHA	WH-3 03	5854	7176	5861	1	3	4/18/05	12:02	7	120	4
ALPHA	WH-3 04	5854	7176	5861	1	4	4/18/05	12:06	7	120	4
ALPHA	WH-3 05	5854	7176	5861	1	5	4/18/05	12:10	4	120	0
ALPHA	WH-3 06	5854	7176	5861	1	6	4/18/05	12:13	8	120	8
ALPHA	WH-3 07	5854	7176	5861	1	7	4/18/05	12:17	5	120	0
ALPHA	WH-3 08	5854	7176	5861	1	8	4/18/05	12:20	3	120	0
ALPHA	WH-3 09	5854	7176	5861	1	9	4/18/05	12:24	8	120	8
ALPHA	WH-3 10	5854	7176	5861	1	10	4/18/05	12:29	2	120	0
ALPHA	WH-3 11	5854	7176	5861	1	11	4/18/05	12:33	5	120	0
ALPHA	WH-3 12	5854	7176	5861	1	12	4/18/05	12:37	13	120	26
ALPHA	WH-3 13	5854	7176	5861	1	13	4/18/05	12:41	8	120	8
ALPHA	WH-3 14	5854	7176	5861	1	14	4/18/05	12:45	4	120	0
ALPHA	WH-3 15	5854	7176	5861	1	15	4/18/05	12:49	4	120	0
ALPHA	WH-3 16	5854	7176	5861	1	16	4/18/05	12:55	7	120	4
ALPHA	WH-3 17	5854	7176	5861	1	17	4/18/05	13:00	6	120	0
ALPHA	WH-3 18	5854	7176	5861	1	18	4/18/05	13:04	14	120	30
ALPHA	WH-3 19	5854	7176	5861	1	19	4/18/05	13:09	5	120	0
ALPHA	WH-3 20	5854	7176	5861	1	20	4/18/05	13:14	3	120	0
ALPHA	WH-3 21	5854	7176	5861	1	21	4/18/05	13:19	2	120	0
ALPHA	WH-3 22	5854	7176	5861	1	22	4/18/05	13:22	6	120	0
ALPHA	WH-3 23	5854	7176	5861	1	23	4/18/05	13:26	9	120	11
ALPHA	WH-3 24	5854	7176	5861	1	24	4/18/05	13:29	8	120	8
ALPHA	WH-3 25	5854	7176	5861	1	25	4/18/05	13:33	6	120	0
BETA	WH-3 01	5854	7176	5861	2	1	4/18/05	11:54	159	60	399
BETA	WH-3 02	5854	7176	5861	2	2	4/18/05	11:57	145	60	266
BETA	WH-3 03	5854	7176	5861	2	3	4/18/05	12:03	144	60	257
BETA	WH-3 04	5854	7176	5861	2	4	4/18/05	12:07	169	60	494
BETA	WH-3 05	5854	7176	5861	2	5	4/18/05	12:11	124	60	67
BETA	WH-3 06	5854	7176	5861	2	6	4/18/05	12:14	120	60	29
BETA	WH-3 07	5854	7176	5861	2	7	4/18/05	12:18	102	60	0
BETA	WH-3 08	5854	7176	5861	2	8	4/18/05	12:21	141	60	228
BETA	WH-3 09	5854	7176	5861	2	9	4/18/05	12:25	127	60	95
BETA	WH-3 10	5854	7176	5861	2	10	4/18/05	12:30	145	60	266
BETA	WH-3 11	5854	7176	5861	2	11	4/18/05	12:34	141	60	228
BETA	WH-3 12	5854	7176	5861	2	12	4/18/05	12:38	123	60	57
BETA	WH-3 13	5854	7176	5861	2	13	4/18/05	12:42	137	60	190
BETA	WH-3 14	5854	7176	5861	2	14	4/18/05	12:46	125	60	76
BETA	WH-3 15	5854	7176	5861	2	15	4/18/05	12:50	112	60	0
BETA	WH-3 16	5854	7176	5861	2	16	4/18/05	12:56	148	60	295

Pre-Demo survey:S.U.#5 Well House #3 (interior surfaces)

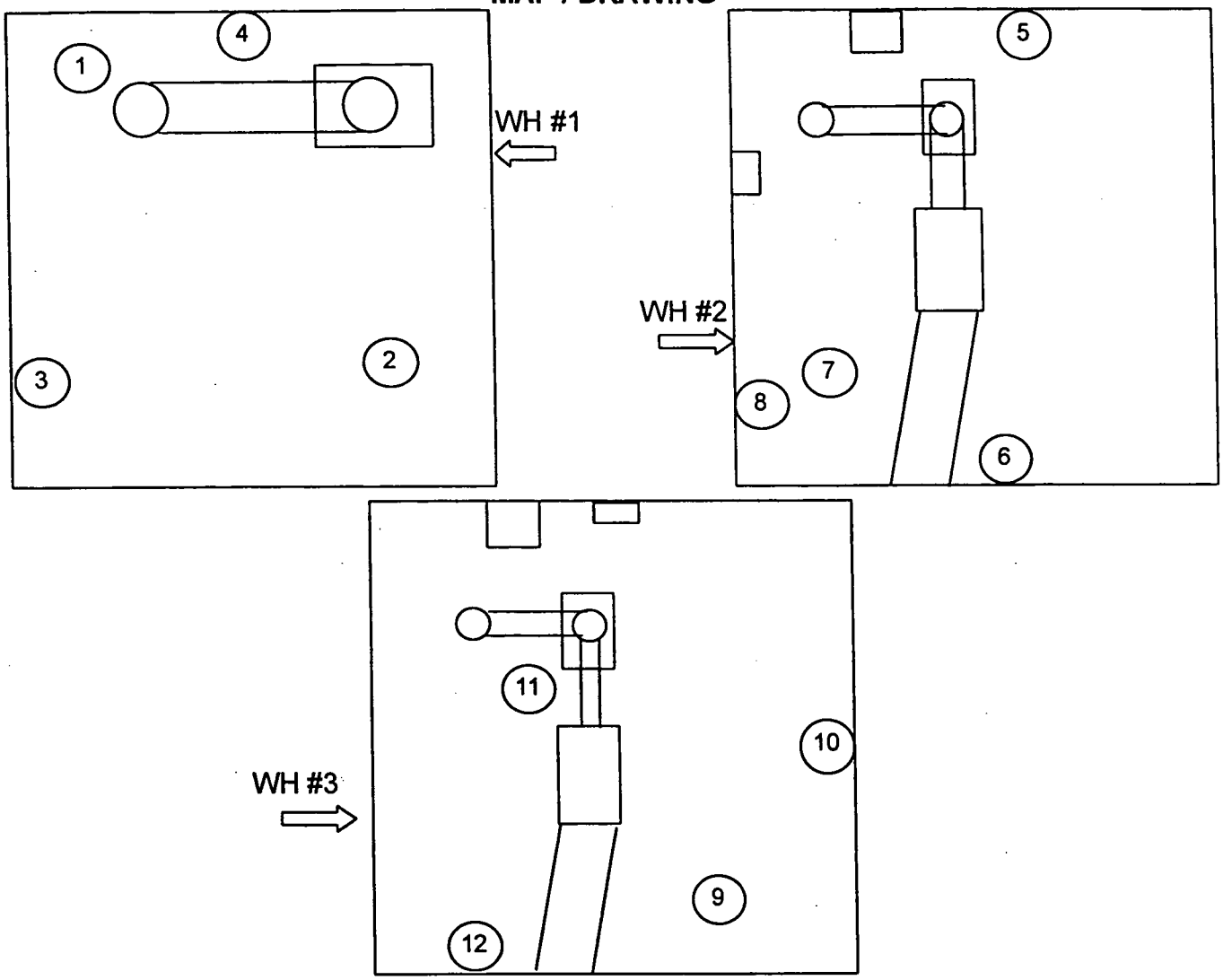
RSDS# 05-TF-0131 *RCT:* JV *RCT:* MO

Alpha	43-68 BKG:	3	EFF:	0.21	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # : 1
Beta	43-68 BKG:	117	EFF:	0.167	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # : 2
Alpha Scan	43-37 BKG:	5	EFF:	0.226	PROBE AREA:	584	cm^2	Surface Eff:		0.5	Detector # : 3
Beta Scan	43-37 BKG:	0	EFF:	0.22	PROBE AREA:	584	cm^2	Surface Eff:		0.5	Detector # : 4
TYPE	LOCATION	2350#	RCT ID	PROBE	DET #		DATE	TIME	CNTS	CT TIME	dpm/100cm2
BETA	WH-3 17	5854	7176	5861	2	17	4/18/05	13:02	148	60	295
BETA	WH-3 18	5854	7176	5861	2	18	4/18/05	13:05	124	60	67
BETA	WH-3 19	5854	7176	5861	2	19	4/18/05	13:11	169	60	494
BETA	WH-3 20	5854	7176	5861	2	20	4/18/05	13:15	169	60	494
BETA	WH-3 21	5854	7176	5861	2	21	4/18/05	13:20	110	60	0
BETA	WH-3 22	5854	7176	5861	2	22	4/18/05	13:23	117	60	0
BETA	WH-3 23	5854	7176	5861	2	23	4/18/05	13:27	161	60	418
BETA	WH-3 24	5854	7176	5861	2	24	4/18/05	13:31	140	60	219
BETA	WH-3 25	5854	7176	5861	2	25	4/18/05	13:34	123	60	57

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) Well houses #1,2,3	SURVEY NO. 05-TF-0170
PURPOSE: Pre-Demo survey:QC's SU-1,3,5 Well house 1-3(interior surfaces)	RWP NO. N/A
	DATE: 4/19/05
	TIME: 14:00

MAP / DRAWING



LEGEND:

- # = mrem/hr (γ) whole body
- #E = mrem/hr (β+η+γ) extremity on contact
- K = factor of 1000
- —·—·—·· = radiological boundary
- # - mrem/hr neutron
- # - swipe number
- # - air sample number
- #/α or /β - direct contamination measurement in dpm/100cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
Lud 2350/4368	5855/5864	6/9/05
	NA	

[redacted]	HP# 7836 7176	Date 4/19/05
[redacted]		
Counted by: (Signature) See attached	HP#	Date
Counted by: (Printed Name)		
Reviewe [redacted]	HP# 7707	Date 4-21-05
Reviewed/Approved by: (Print Name) [redacted]		

RADIOLOGICAL SURVEY DATA SHEET (cont.)

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

N/A

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

N/A

COMMENTS: Bold print on page #3 indicates previous high intergrates from Survey Units #1,3,5.

NOTES:

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

ML-9620A (4-98)

Pre-Demo survey: QC's of S.U. #1,3,5: Wellhouses 1,2,3(interior surfaces)

RSDS# 05-TF-0170 *RCT:* MO *RCT:* JL

Alpha	43-68 BKG:	1	EFF:	0.206	PROBE AREA:	126	cm^2	Surface Eff:	0.5	Detector # :	1
Beta	43-68 BKG:	203	EFF:	0.154	PROBE AREA:	126	cm^2	Surface Eff:	0.5	Detector # :	2
Alpha Scan	43-37 BKG:	0	EFF:	0.22	PROBE AREA:	584	cm^2	Surface Eff:	0.5	Detector # :	3
Beta Scan	43-37 BKG:	0	EFF:	0.22	PROBE AREA:	584	cm^2	Surface Eff:	0.5	Detector # :	4

TYPE	LOCATION	2350#	RCT ID	PROBE	DET #	MAP LOCATION #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
ALPHA	**SU-1 QC- 04**	**5855**	**7836**	**5864**	**1**	**1**	**4/19/05**	**12:22**	**6**	**120**	**15**
ALPHA	**SU-1 QC- 20**	**5855**	**7836**	**5864**	**1**	**2**	**4/19/05**	**12:27**	**3**	**120**	**4**
ALPHA	SU-1 QC- 05	5855	7836	5864	1	3	4/19/05	12:31	3	120	4
ALPHA	SU-1 QC- 09	5855	7836	5864	1	4	4/19/05	12:37	4	120	8
ALPHA	**SU-3 QC- 09**	**5855**	**7836**	**5864**	**1**	**5**	**4/19/05**	**12:46**	**6**	**120**	**15**
ALPHA	**SU-3 QC- 15**	**5855**	**7836**	**5864**	**1**	**6**	**4/19/05**	**12:50**	**2**	**120**	**0**
ALPHA	SU-3 QC- 04	5855	7836	5864	1	7	4/19/05	12:58	6	120	15
ALPHA	SU-3 QC- 05	5855	7836	5864	1	8	4/19/05	13:01	3	120	4
ALPHA	**SU-5 QC- 18**	**5855**	**7836**	**5864**	**1**	**9**	**4/19/05**	**13:12**	**3**	**120**	**4**
ALPHA	**SU-5 QC- 12**	**5855**	**7836**	**5864**	**1**	**10**	**4/19/05**	**13:16**	**3**	**120**	**4**
ALPHA	SU-5 QC- 03	5855	7836	5864	1	11	4/19/05	13:20	5	120	12
ALPHA	SU-5 QC- 16	5855	7836	5864	1	12	4/19/05	13:24	3	120	4
BETA	SU-1 QC- 04	5855	7836	5864	2	1	4/19/05	12:23	258	60	567
BETA	SU-1 QC- 20	5855	7836	5864	2	2	4/19/05	12:28	217	60	144
BETA	SU-1 QC- 05	5855	7836	5864	2	3	4/19/05	12:32	120	60	0
BETA	SU-1 QC- 09	5855	7836	5864	2	4	4/19/05	12:38	133	60	0
BETA	SU-3 QC- 09	5855	7836	5864	2	5	4/19/05	12:47	163	60	0
BETA	SU-3 QC- 15	5855	7836	5864	2	6	4/19/05	12:51	127	60	0
BETA	SU-3 QC- 04	5855	7836	5864	2	7	4/19/05	12:59	244	60	423
BETA	SU-3 QC- 05	5855	7836	5864	2	8	4/19/05	13:02	163	60	0
BETA	SU-5 QC- 18	5855	7836	5864	2	9	4/19/05	13:13	182	60	0
BETA	SU-5 QC- 12	5855	7836	5864	2	10	4/19/05	13:17	163	60	0
BETA	SU-5 QC- 03	5855	7836	5864	2	11	4/19/05	13:21	226	60	237
BETA	SU-5 QC- 16	5855	7836	5864	2	12	4/19/05	13:25	162	60	0

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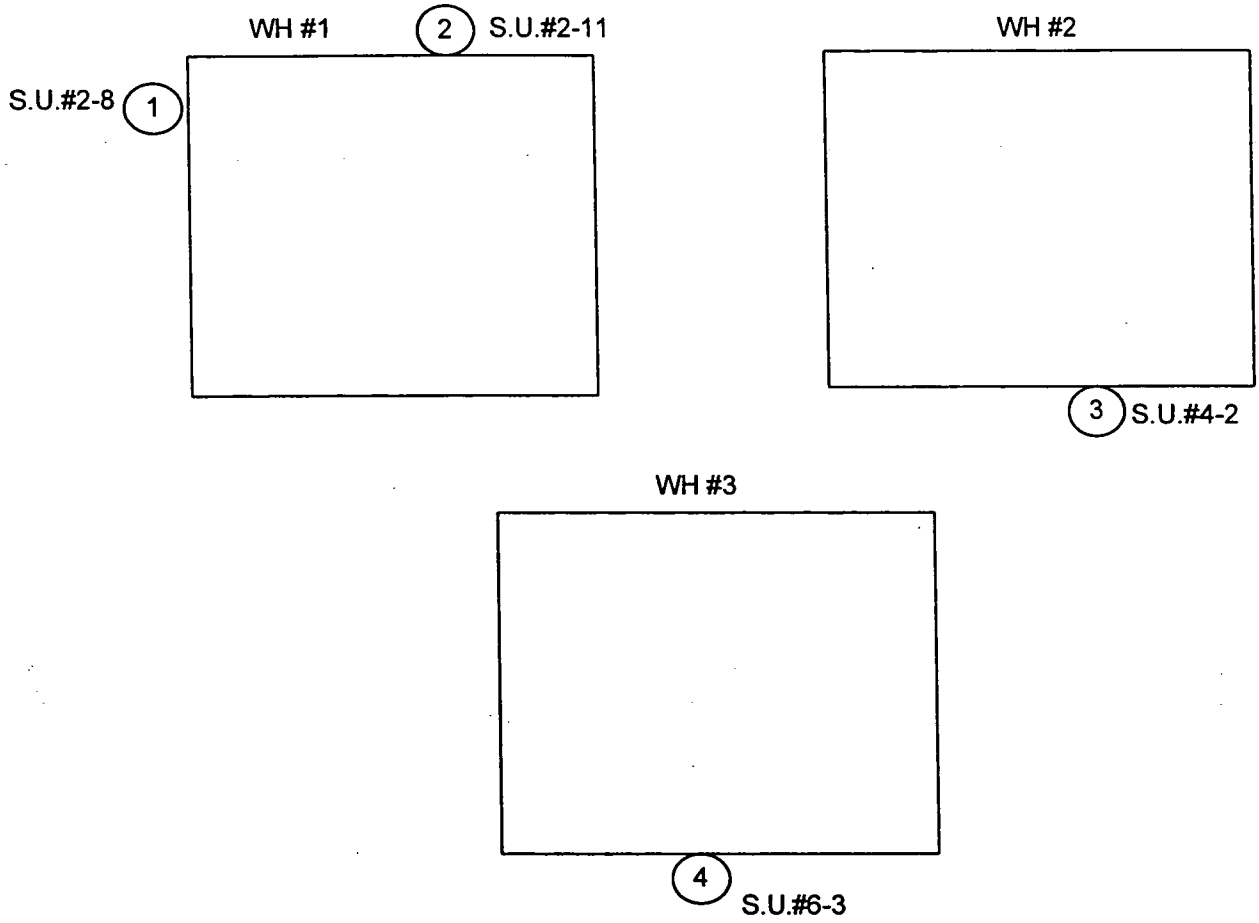
RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) Well houses # 1,2,3	SURVEY NO. 05-TF-0193
PURPOSE: Pre-Demo survey:QC's Well houses (exterior surfaces)	RWP NO. N/A
	DATE: 5/4/05
	TIME: 14:00

MAP / DRAWING



LEGEND:

- # = mrem/hr (γ) whole body
- #E = mrem/hr (β+η+γ) extremity on contact
- K = factor of 1000
- — · — · — · · = radiological boundary
- # - mrem/hr neutron
- # - swipe number
- # - air sample number
- #/α or /β - direct contamination measurement in dpm/100cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
Lud 2360/4389	5692/5719	1/5/06
	NA	

[redacted]	HP# 7836 7176	Date 5/4/05
Completed by: (Printed [redacted]		
Counted by: (Signature) See attached	HP#	Date
Counted by: (Printed Name)		
Revie[redacted]	HP# 7707	Date 5-9-05
Reviewed/Approved by: (Print[redacted]		

G63 of 64

Survey No.
05-TF-193

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Ludlum 2360 Integrated Measurement Results							
		Alpha			Beta		
		BKGD	1	cpm	BKGD	168	cpm
		DL	1.4	Net cpm	DL	30	Net cpm
No.	Item/Location Description	Gross (cpm)	CF	Results (dpm/100cm2 or Sample)	Gross (cpm)	CF	Results (dpm/100cm2 or Sample)
1	Exterior wall S.U.#2-8	3	8	16	148	4	0
2	Exterior wall S.U.#2-11	5	8	32	161	4	0
3	Exterior wall S.U.#4-2	1	8	0	192	4	96 ~~0~~ 5/4 165
4	Exterior wall S.U.#6-3	4	8	24	133	4	0
5							
6							
7							
8							
9							
10							
11	N	A					
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ML-9620C

Appendix H

Radon Information

Radon level is not applicable for open air demolitions.

Appendix I

Asbestos Information

From: Christopher Ahlquist
To: Davis, Steve
Date: 2/28/05 9:37:48 AM
Subject: WH-1/2/3

Don -

For Buildings WH-1/2/3 asbestos and lead paint concerns, the following is provided for your use:

Asbestos

A previous asbestos survey report for Buildings WH-1/2/3 was located and reviewed; this report was a summary of a survey conducted by PEI Associates in 1989. Mr. Chris Ahlquist, an Industrial Hygienist with CH2M Hill Mound, performed a walk-through survey of the accessible areas of the buildings during January of 2005 in order to identify any existing or potential asbestos hazards and collect additional samples of suspect materials for verification of asbestos content. Mr. Ahlquist is an Ohio Department of Health Certified Asbestos Hazard Evaluation Specialist as required by State regulations for individuals assessing asbestos-containing materials. Concerning Buildings WH-1/2/3, no materials were found through sampling and analysis to be asbestos-containing. Although not sampled, the asphalt roofing located on WH 2 and WH 3 is assumed to contain asbestos.

The asphalt roofing material is a Nonfriable Category I material in accordance with NESHAP and may remain in place during demolition.

Lead

No previous lead surveys or sampling data were found for Buildings WH-1/2/3. Mr. Chris Ahlquist, an Industrial Hygienist with CH2M Hill Mound, performed a walk-through survey of the accessible areas of the referenced buildings during January of 2005 in order to identify any existing or potential lead paint hazards. Although some small selected areas of the buildings had damaged, peeling paint, no areas were seen which would present a hazard to the work activities which were occurring or which were planned prior to demolition. Untested paint should be assumed to contain lead until such time that testing proves otherwise.

Since the building is scheduled for imminent demolition, painted surfaces will be tested for lead content as planned work indicates the need for such testing in order to avoid worker exposure to lead. This restriction will be incorporated into work plans for which disturbance of paint is a possibility.

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

Let me know if I can be of further assistance,

Chris Ahlquist

Date: February 7, 2005

From: Christopher Ahlquist
BOSS Project Team Safety & Health

To: Steve Davis
BOSS Project Team Engineering

Re: Buildings WH-1/2/3: Asbestos-Containing Materials

On January 27, 2005, Mr. Christopher Ahlquist, an Industrial Hygienist with CH2M Hill Mound, Inc. (CH2M), completed a survey of Buildings WH-1/2/3 at the Mound site in Miamisburg, Ohio for purpose of identifying asbestos-containing materials contained therein. Mr. Ahlquist is an Ohio Department of Health Certified Asbestos Hazard Evaluation Specialist as required by Ohio Department of Health regulations. During the course of the survey, Mr. Ahlquist reviewed previous survey reports and sampling data of materials found within Buildings WH-1/2/3 as necessary in order to determine the asbestos content of said materials. A room-by-room inspection of all accessible spaces was then conducted in order to verify the previous data and prepare an inventory of the location and approximate quantities of identified asbestos-containing materials. No regulated materials were found to contain greater than one percent (>1%) asbestos content which defines a material as asbestos-containing by EPA and OSHA regulations. No asphalt roofing materials were sampled during the course of this or previous referenced surveys, and all such materials should be assumed to contain asbestos until analysis indicates otherwise.

Sample Method

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

Analysis of Samples

The reviewed samples were submitted to PEI Associates, Inc. of Cincinnati, Ohio and the samples collected by CH2M Hill were submitted to DataChem Laboratories of Cincinnati, Ohio and analyzed for asbestos content by PLM and dispersion staining (Method Reference: 40 CFR Part 763, Volume 47, No. 103, May 27, 1982 pg. 23376).

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

Both PEI Associates and DataChem were/are accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). NVLAP is the agency sponsored by the National Institute of Standards and Technology providing EPA accreditation of laboratories analyzing bulk samples for asbestos content.

Conclusions

None of the samples analyzed were found to contain any asbestos content. As a result, no regulated asbestos-containing materials exist within Buildings WH-1/2/3. The asphalt built-up roofing on Buildings WH-2/3 is assumed to be a Nonfriable Category I material (in accordance with EPA definition) that may remain in place during normal demolition by heavy-duty equipment means. This material, so removed, may be disposed of as regular demolition debris.

Please call with any questions or concerns.

Respectfully,

Christopher Ahlquist
Industrial Hygienist

Appendix J

Lead Information

From: Christopher Ahlquist
To: Davis, Steve
Date: 2/28/05 9:37:48 AM
Subject: WH-1/2/3

Don -

For Buildings WH-1/2/3 asbestos and lead paint concerns, the following is provided for your use:

Asbestos

A previous asbestos survey report for Buildings WH-1/2/3 was located and reviewed; this report was a summary of a survey conducted by PEI Associates in 1989. Mr. Chris Ahlquist, an Industrial Hygienist with CH2M Hill Mound, performed a walk-through survey of the accessible areas of the buildings during January of 2005 in order to identify any existing or potential asbestos hazards and collect additional samples of suspect materials for verification of asbestos content. Mr. Ahlquist is an Ohio Department of Health Certified Asbestos Hazard Evaluation Specialist as required by State regulations for individuals assessing asbestos-containing materials. Concerning Buildings WH-1/2/3, no materials were found through sampling and analysis to be asbestos-containing. Although not sampled, the asphalt roofing located on WH 2 and WH 3 is assumed to contain asbestos.

The asphalt roofing material is a Nonfriable Category I material in accordance with NESHAP and may remain in place during demolition.

Lead

No previous lead surveys or sampling data were found for Buildings WH-1/2/3. Mr. Chris Ahlquist, an Industrial Hygienist with CH2M Hill Mound, performed a walk-through survey of the accessible areas of the referenced buildings during January of 2005 in order to identify any existing or potential lead paint hazards. Although some small selected areas of the buildings had damaged, peeling paint, no areas were seen which would present a hazard to the work activities which were occurring or which were planned prior to demolition. Untested paint should be assumed to contain lead until such time that testing proves otherwise.

Since the building is scheduled for imminent demolition, painted surfaces will be tested for lead content as planned work indicates the need for such testing in order to avoid worker exposure to lead. This restriction will be incorporated into work plans for which disturbance of paint is a possibility.

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

Let me know if I can be of further assistance,

Chris Ahlquist

Appendix K

Chemical Information

Lists of chemicals known to have been in Wellhouses 1, 2, and 3 are provided.

Chemicals and Products Used or Stored in Building WH-1

Pump Oil (For Well Pump)

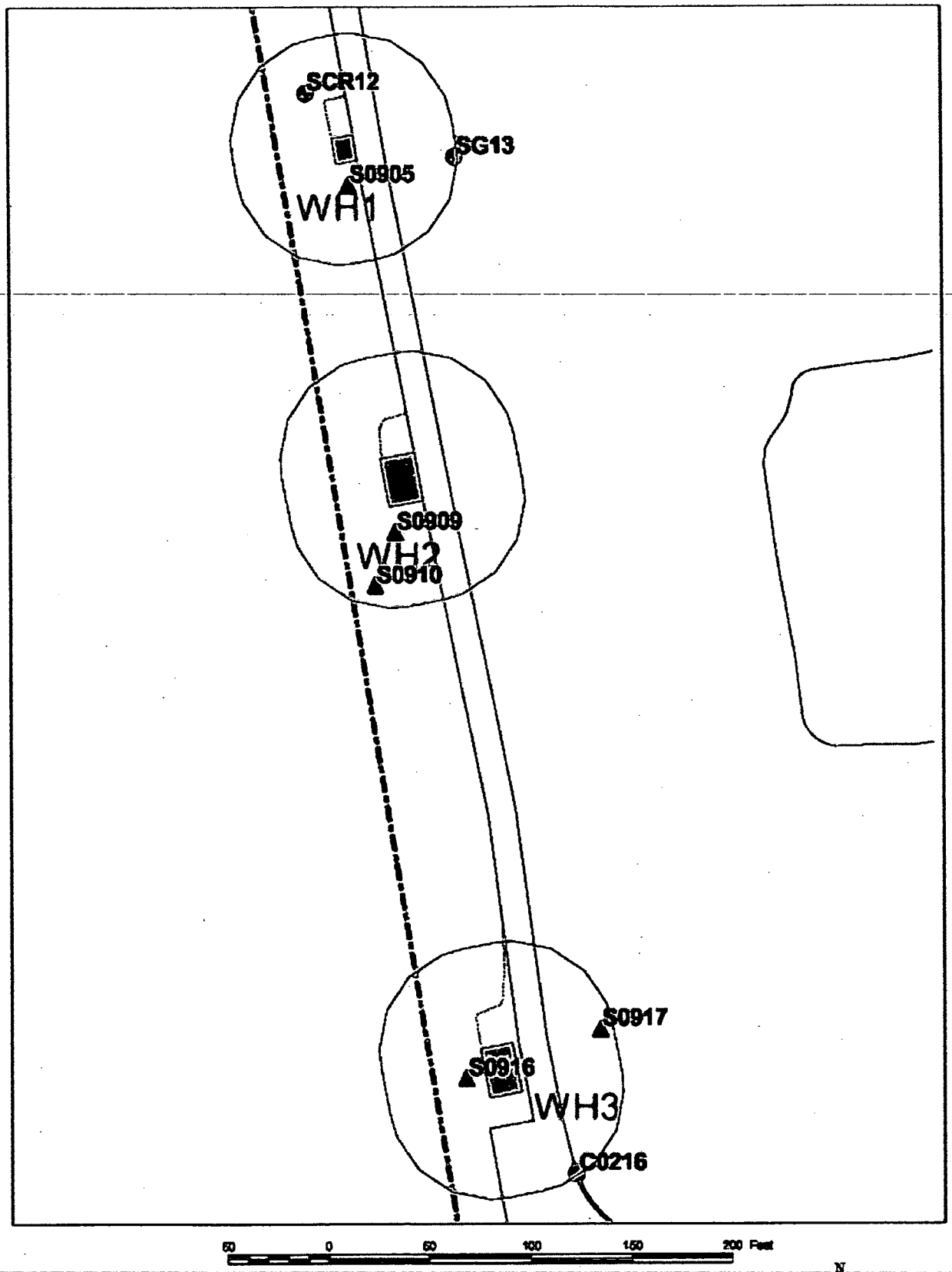
Chemicals and Products Used or Stored in Buildings WH-2 and WH-3
(Common to both buildings)

Battery Acid
Ethylene Glycol
Gasoline
Lubricating Oil (For Engine)
Propane
Pump Oil (For Well Pump)

Appendix L

Soil Sampling, Vicinity

Historic Sample within 50 feet of Well Houses 1,2&3



Sample Detect

Soil Surface Sample

Soil Borehole Sample

L1 of 13

11/10/04

Buldings WH-1, WH-2, WH-3 Detects

Location_ name	Sample_id	Collection_ date	Value_name	Measured_ value	Value_ units	Detection_ limit	Chem_ class	Start_ depth	End_ depth	Lab	Data	Project_ code	Media	Comments
S0910	6390	19840801	Cesium-137	1.500	PCI/G	0.500	RAD	0.00	0.00			RSS	Soil	1122233
SCR12	90112072	19901120	Plutonium-238	27.000	PCI/G		RAD	7.50	9.00			SCRDATA	Soil	12
S0917	4048	19831001	Plutonium-238	2.320	PCI/G	0.010	RAD	0.00	0.00			RSS	Soil	2
S0909	4045	19831001	Plutonium-238	1.850	PCI/G	0.010	RAD	0.00	0.00			RSS	Soil	2
C0216	2665	19830901	Plutonium-238	0.720	PCI/G	0.010	RAD	20.00	20.00			RSS	Soil	2
S0916	6394	19840801	Plutonium-238	0.690	PCI/G	0.010	RAD	0.00	0.00			RSS	Soil	2
C0216	2664	19830901	Plutonium-238	0.490	PCI/G	0.010	RAD	5.00	5.00			RSS	Soil	2
C0216	2663	19830901	Plutonium-238	0.240	PCI/G	0.010	RAD	2.50	2.50			RSS	Soil	2
S0910	6390	19840801	Plutonium-238	0.220	PCI/G	0.010	RAD	0.00	0.00			RSS	Soil	2
S0905	6393	19840801	Plutonium-238	0.170	PCI/G	0.010	RAD	0.00	0.00			RSS	Soil	2
S0910	6390	19840801	Radium-226	1.400	PCI/G		RAD	0.00	0.00			RSS	Soil	11
S0910	6390	19840801	Thorium-228	0.800	PCI/G		RAD	0.00	0.00			RSS	Soil	11
S0905	6393	19840801	Thorium-232	2.460	PCI/G	2.000	RAD	0.00	0.00			RSS	Soil	1222344

L 3 of 13

(Blank)	No criteria checked
0	Value is less than criteria checked in file "Final RBGVs Constr Worker-Site Employee_Rev8.xls"
1	Value is greater than 10-6 Risk-Based Guideline Value
2	Value is greater than the OU9 Soil Background Value
3	Value is greater than the Screening Value (10-6 RBGV + background or as agreed)
4	Value is greater than the Cleanup Objective (10-5 RBGV + background or as agreed)
5	Value is greater than the MCL
6	Value is greater than the Guide Value based on the Hazard Index = 1
7	Value is greater than the Hot Spot Criteria (3x10-5 + background or as agreed)
8	Value is greater than the Guide Value based on the Hazard Index = 1 + background
9	Value is greater than the Guide Value based on the Hazard Index = .1 + background
*	Duplicate analysis not within control limits.

Duplicate entries in the Comment column indicate values for RAD daughters and long lived decay.

Comparison values for results with comments are provided on the "Comparison for Soil Analytical Results" table at the end of this appendix.

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Buldings WH-1, WH-2, WH-3 Non-Detects

Location_ name	Sample_id	Collection_ date	Value_name	Measured _value	Value_ units	Detection_ limit	Chem_ class	Start_ depth	End_ depth	Lab	Data	Project_code	Media
S0910	6390	19840801	Americium-241	0.500	PCI/G	0.50	RAD	0.00	0.00	U		RSS	Soil
S0910	6390	19840801	Cobalt-60	0.500	PCI/G	0.50	RAD	0.00	0.00	U		RSS	Soil
SCR12	9011214	19901120	Plutonium-238	9.000	PCI/G		RAD	0.00	1.00	U		SCRDATA	Soil
SCR12	90112074	19901120	Plutonium-238	5.000	PCI/G		RAD	12.50	12.50	U		SCRDATA	Soil
SCR12	90112078	19901120	Plutonium-238	5.000	PCI/G		RAD	22.50	22.50	U		SCRDATA	Soil
SCR12	9011215	19901120	Plutonium-238	4.000	PCI/G		RAD	2.50	4.00	U		SCRDATA	Soil
SCR12	90112110	19901120	Plutonium-238	4.000	PCI/G		RAD	17.50	17.50	U		SCRDATA	Soil
SCR12	9011217	19901120	Plutonium-238	4.000	PCI/G		RAD	7.50	9.00	U		SCRDATA	Soil
SCR12	9011219	19901120	Plutonium-238	4.000	PCI/G		RAD	15.00	16.00	U		SCRDATA	Soil
SCR12	90112075	19901120	Plutonium-238	3.000	PCI/G		RAD	15.00	16.00	U		SCRDATA	Soil
SCR12	90112073	19901120	Plutonium-238	3.000	PCI/G		RAD	10.00	11.00	U		SCRDATA	Soil
SCR12	90112081	19901120	Plutonium-238	3.000	PCI/G		RAD	30.00	30.00	U		SCRDATA	Soil
SCR12	90112113	19901120	Plutonium-238	1.000	PCI/G		RAD	25.00	26.00	U		SCRDATA	Soil
SCR12	90112077	19901120	Plutonium-238	0.000	PCI/G		RAD	20.00	21.00	U		SCRDATA	Soil
SCR12	90112076	19901120	Plutonium-238	0.000	PCI/G		RAD	17.50	17.50	U		SCRDATA	Soil
SCR12	90112069	19901120	Plutonium-238	0.000	PCI/G		RAD	0.00	2.50	U		SCRDATA	Soil
SCR12	90112071	19901120	Plutonium-238	0.000	PCI/G		RAD	5.00	6.50	U		SCRDATA	Soil
SCR12	90112070	19901120	Plutonium-238	0.000	PCI/G		RAD	4.00	5.00	U		SCRDATA	Soil
SCR12	90112080	19901120	Plutonium-238	0.000	PCI/G		RAD	27.50	27.50	U		SCRDATA	Soil
SCR12	90112079	19901120	Plutonium-238	0.000	PCI/G		RAD	25.00	25.00	U		SCRDATA	Soil
SCR12	90112112	19901120	Plutonium-238	0.000	PCI/G		RAD	22.50	23.50	U		SCRDATA	Soil
SCR12	90112111	19901120	Plutonium-238	0.000	PCI/G		RAD	20.00	21.00	U		SCRDATA	Soil
SCR12	90112083	19901120	Plutonium-238	0.000	PCI/G		RAD	35.00	35.00	U		SCRDATA	Soil
SCR12	90112082	19901120	Plutonium-238	0.000	PCI/G		RAD	32.50	32.50	U		SCRDATA	Soil
SCR12	9011216	19901120	Plutonium-238	0.000	PCI/G		RAD	5.00	6.50	U		SCRDATA	Soil
SCR12	9011218	19901120	Plutonium-238	0.000	PCI/G		RAD	10.00	11.00	U		SCRDATA	Soil
S0917	4048	19831001	Thorium-232	2.000	PCI/G	2.00	RAD	0.00	0.00	U		RSS	Soil
S0916	6394	19840801	Thorium-232	2.000	PCI/G	2.00	RAD	0.00	0.00	U		RSS	Soil
S0910	6390	19840801	Thorium-232	2.000	PCI/G	2.00	RAD	0.00	0.00	U		RSS	Soil
S0909	4045	19831001	Thorium-232	2.000	PCI/G	2.00	RAD	0.00	0.00	U		RSS	Soil
C0216	2663	19830901	Thorium-232	2.000	PCI/G	2.00	RAD	2.50	2.50	U		RSS	Soil
C0216	2665	19830901	Thorium-232	2.000	PCI/G	2.00	RAD	20.00	20.00	U		RSS	Soil
C0216	2664	19830901	Thorium-232	2.000	PCI/G	2.00	RAD	5.00	5.00	U		RSS	Soil

15 of 13

Location_ name	Sample_id	Collection_ date	Value_name	Measured _value	Value_ units	Detection_ limit	Chem_ class	Start_ depth	End_ depth	Lab	Data	Project_code	Media
SCR12	90112074	19901120	Thorium-232	1.000	PCI/G		RAD	12.50	12.50	U		SCRDATA	Soil
SCR12	9011214	19901120	Thorium-232	1.000	PCI/G		RAD	0.00	1.00	U		SCRDATA	Soil
SCR12	9011215	19901120	Thorium-232	0.700	PCI/G		RAD	2.50	4.00	U		SCRDATA	Soil
SCR12	90112110	19901120	Thorium-232	0.700	PCI/G		RAD	17.50	17.50	U		SCRDATA	Soil
SCR12	9011219	19901120	Thorium-232	0.700	PCI/G		RAD	15.00	16.00	U		SCRDATA	Soil
SCR12	90112075	19901120	Thorium-232	0.600	PCI/G		RAD	15.00	16.00	U		SCRDATA	Soil
SCR12	90112111	19901120	Thorium-232	0.600	PCI/G		RAD	20.00	21.00	U		SCRDATA	Soil
SCR12	90112077	19901120	Thorium-232	0.500	PCI/G		RAD	20.00	21.00	U		SCRDATA	Soil
SCR12	90112076	19901120	Thorium-232	0.500	PCI/G		RAD	17.50	17.50	U		SCRDATA	Soil
SCR12	9011216	19901120	Thorium-232	0.500	PCI/G		RAD	5.00	6.50	U		SCRDATA	Soil
SCR12	9011217	19901120	Thorium-232	0.500	PCI/G		RAD	7.50	9.00	U		SCRDATA	Soil
SCR12	90112072	19901120	Thorium-232	0.400	PCI/G		RAD	7.50	9.00	U		SCRDATA	Soil
SCR12	90112071	19901120	Thorium-232	0.400	PCI/G		RAD	5.00	6.50	U		SCRDATA	Soil
SCR12	90112080	19901120	Thorium-232	0.400	PCI/G		RAD	27.50	27.50	U		SCRDATA	Soil
SCR12	90112113	19901120	Thorium-232	0.400	PCI/G		RAD	25.00	26.00	U		SCRDATA	Soil
SCR12	90112112	19901120	Thorium-232	0.400	PCI/G		RAD	22.50	23.50	U		SCRDATA	Soil
SCR12	9011218	19901120	Thorium-232	0.400	PCI/G		RAD	10.00	11.00	U		SCRDATA	Soil
SCR12	90112069	19901120	Thorium-232	0.300	PCI/G		RAD	0.00	2.50	U		SCRDATA	Soil
SCR12	90112070	19901120	Thorium-232	0.300	PCI/G		RAD	4.00	5.00	U		SCRDATA	Soil
SCR12	90112078	19901120	Thorium-232	0.300	PCI/G		RAD	22.50	22.50	U		SCRDATA	Soil
SCR12	90112083	19901120	Thorium-232	0.300	PCI/G		RAD	35.00	35.00	U		SCRDATA	Soil
SCR12	90112073	19901120	Thorium-232	0.200	PCI/G		RAD	10.00	11.00	U		SCRDATA	Soil
SCR12	90112081	19901120	Thorium-232	0.200	PCI/G		RAD	30.00	30.00	U		SCRDATA	Soil
SCR12	90112082	19901120	Thorium-232	0.200	PCI/G		RAD	32.50	32.50	U		SCRDATA	Soil
SCR12	90112079	19901120	Thorium-232	0.100	PCI/G		RAD	25.00	25.00	U		SCRDATA	Soil
S0910	6390	19840801	Uranium-238	2.000	PCI/G		RAD	0.00	0.00	U		RSS	Soil

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

16 of 13

LABORATORY DATA QUALIFIERS (LABQUAL)

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

ORGANICS

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

INORGANICS

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

DATA QUALIFIER CODES (DATAQUAL)

ORGANICS AND INORGANICS

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

SUB-QUALIFIER CODES

ORGANICS

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

INORGANICS

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

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

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

Comparison for Soil Analytical Results

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

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

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

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

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

Appendix M

Occurrence Reports

A search of the occurrence reporting system revealed no occurrence reports for Buildings WH-1, WH-2, and WH-3.

Appendix N

PRS Information

Recommendation pages are not generated for PRSs that require Further Assessment (FA) or that are unbinned.

MOUND PLANT
PRS 13
FORMER TREATMENT SITE - TRASH INCINERATOR

RECOMMENDATION:

Potential Release Site (PRS) 13 was identified as a trash incinerator in the old burn area which is part of Operable Unit 1. This area has been addressed under the Remedial Investigation/Feasibility Study (RI/FS) process for Operable Unit 1. Operable Unit 1 will proceed with the CERCLA process as per the regulatory approved Operable Unit 1, Record of Decision (ROD).

The selected remedy for controlling contamination from the soils and groundwater at Release Block I, Operable Unit 1, is the Collection, Treatment, and Disposal of groundwater. Additionally, the Innovative Treatment Remediation Demonstration Program will be independently evaluating remedial technologies which could augment the technologies presently selected.

Because the area containing this PRS has been addressed by the OU1 ROD, NO FURTHER ASSESSMENT is recommended for PRS 13 beyond the remediation being implemented as described in the OU1 ROD.

CONCURRENCE:

DOE/MEMP: Arthur W. Kleinrath, Remedial Project Manager — 12/18/96 (date)

USEPA: Timothy J. Fischer, Remedial Project Manager — 12/18/96 (date)

OEPA: Brian K. Nickel, Project Manager — 12/18/96 (date)

SUMMARY OF COMMENTS AND RESPONSES:

Comment period from 2/27/97 to 4/3/97

☒ No comments were received during the comment period.

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

N1 of 4

MIAMISBURG CLOSURE PROJECT
PRS 282

RECOMMENDATION:

Potential Release Site (PRS 282) is identified as the site's historic soil spoils area. It became a PRS based on historic soil excavation activities that may have included common site contaminants, namely plutonium-238 and thorium-232. Even though existing sample results indicated that radionuclide contamination was not present, Further Assessment was warranted based on the large area involved versus the number of historic sample results. Additionally FA was performed to investigate a report of disposal of gasoline contaminated soil at PRS 282. Further Assessment was performed and confirmed the absence of radionuclide contamination in excess of cleanup objectives (10^{-5} Risk-Based Guideline Values plus background). It also confirmed that BTEX/VOCs were at acceptable levels (when compared to available hazard index of one values) and do not have the potential to leach unacceptable concentrations to groundwater.

Therefore, the Core Team recommends a **No Further Assessment** for PRS 282.

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

CONCURRENCE:

DOE/MCP: _____ 01/02/03
Robert S. Rothman, Remedial Project Manager (date)

USEPA: _____ 12/30/02
Timothy J. Fischer, Remedial Project Manager (date)

OEPA: _____ 12/30/02
Brian K. Nickel, Project Manager (date)

SUMMARY OF COMMENTS AND RESPONSES:

Comment period from _____ to _____

MIAMISBURG CLOSURE PROJECT
PRS 414

RECOMMENDATION:

Potential Release Site (PRS) 414 is located on the south western portion of the site. PRS 414 was identified as a potential release site as a result of localized low level concentrations of VOCs in groundwater. The Core Team binned PRS 414 further assessment in May, 1998. Groundwater sampling activities occurred from 1998 through 2004. Sampling occurred during both active groundwater remediation (the pump and treat system operated continuously from Jan 1997 through May 2003) and during the OU-1 rebound test (initiated May 2003 involving shut down of the pump and treat system). Upon review of historical sampling data and rebound test data for OU1 and adjacent areas, the Core Team has concluded that PRS 414 represents the southern extent of the low level volatile organic compound (VOC) groundwater plume extending out from Operable Unit 1 (OU-1).

Therefore, the Core Team recommends that PRS 414 not be treated as a separate, independent Potential Release Site, but a manifestation of the OU-1 groundwater plume. Any continued monitoring or remediation will be addressed as part of the remedy for OU-1.

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

CONCURRENCE:

DOE/MCP: Paul Lucas 12/2/04
Paul Lucas, Remedial Project Manager (date)

USEPA: Timothy J. Fischer 12/1/04
Timothy J. Fischer, Remedial Project Manager (date)

OEPA: Brian K. Nickel 12/2/04
Brian K. Nickel, Project Manager (date)

N3 of 4

MOUND PLANT
PRS 419
DRAINAGE OUTFLOW REROUTE

RECOMMENDATION:

Potential Release Site (PRS) 419 is the Mound Plant Drainage Outflow Reroute. It was constructed as part of the Miami-Erie Canal Remediation Project during the period from June to November 1996[1]. The reroute extends for a length of approximately 4500 feet proceeding south from its entrance near the concrete sealed "Twin 60s" before exiting the Mound Plant property and emptying into the Great Miami River. It conveys the Plant site's non-process and storm water off-site. Since its construction, the Mound Plant Drainage Outflow Reroute has been monitored for contamination at Outfall 002 under two programs. Monitoring for radiological parameters is required under DOE Order 5400.1 and the DOE Regulatory Guide. Monitoring for non-radiological parameters is required by the Plant site's NPDES permit. Monitoring of the Outfall 003 will continue as required by the Authorization to Discharge. Monitoring of Outfall 002 will continue as required by the NPDES permit for non radiological parameters. To address potential radiological releases, including those undergoing investigation and clean up under CERCLA, Outfall 002 will be also monitored daily for gross alpha and tritium, bi-weekly from flow-proportional 24 hour composite samples for Pu-238, Pu-239/240, U-233/234, U-238, Th-228, Th-230, and Th-232.

Therefore NO FURTHER ASSESSMENT is recommended for PRS 419.

CONCURRENCE:

DOE/MEMP: Arthur W. Kleinrath, Remedial Project Manager — 11/17/99 (date)

USEPA: Timothy J. Fischer, Remedial Project Manager — 11/17/99 (date)

OEPA: Brian K. Nickel, Project Manager — 11/17/99 (date)

SUMMARY OF COMMENTS AND RESPONSES:

Comment period from 1/19/2000 to 2/19/2000

☐ No comments were received during the comment period.

☒ Comment responses can be found ~~on page~~ at beginning A of this package.

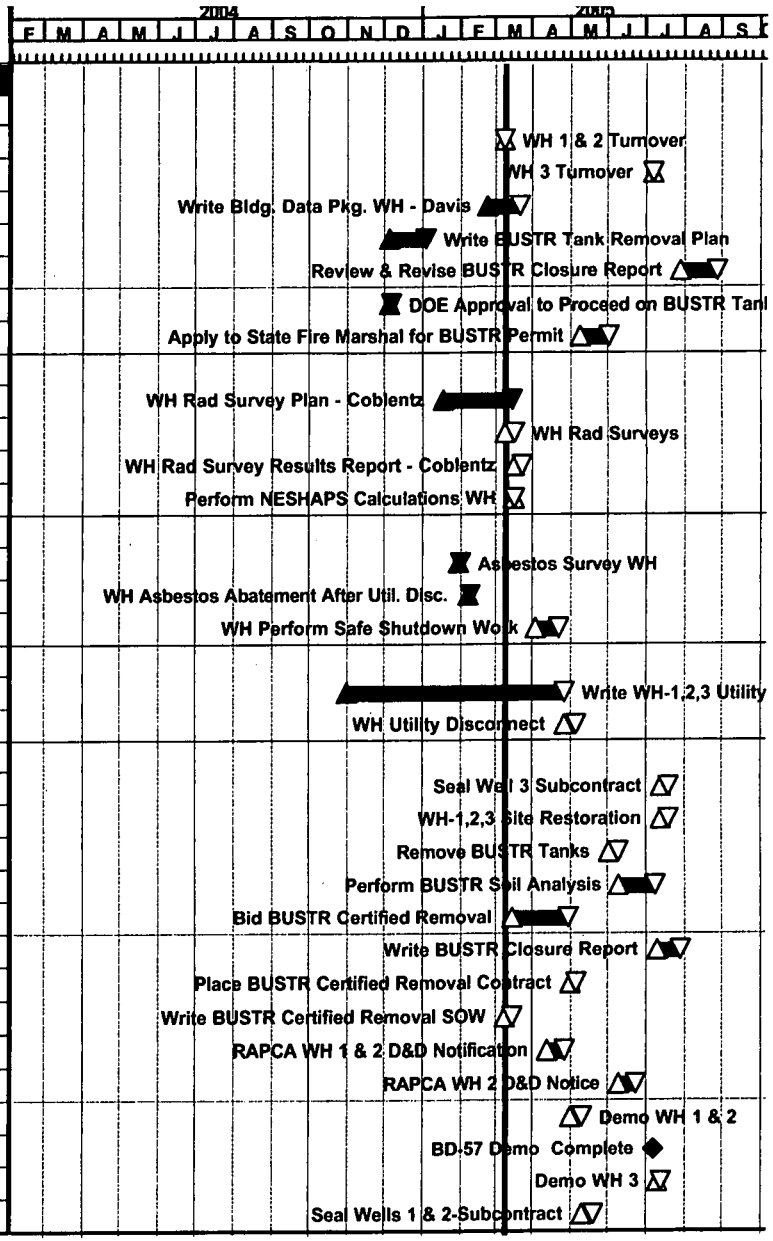
N4 of 4

Appendix O

Work Plan

Some drawings listed on the flysheet for Appendix C of the Work Package are structural drawings and therefore are not included in the Work Package in this appendix (Appendix O). However, the structural drawings are included in field and record copies of the Work Package and are available upon request.

Activity ID	Activity Description	Orig Dur	Rem Dur	Cal ID	%	Early Start	Early Finish	WBS
Well Houses								
Regulatory								
BDOWH1115	WH 1 & 2 Turnover	1	1	1	0	09MAR05*	09MAR05	4.1.7.10.21
BDOWH1125	WH 3 Turnover	1	1	1	0	07JUL05	07JUL05	4.1.7.10.21
BDOWH1145	Write Bldg. Data Pkg. WH - Davis	8	7	1	15	23FEB05A	21MAR05	4.1.7.10.21
BDOWH1345	Write BUSTR Tank Removal Plan	12	0	1	100	06DEC04A	03JAN05A	4.1.7.10.13
BDOWH1385	Review & Revise BUSTR Closure Report	30	30	2	0	29JUL05	27AUG05	4.1.7.10.21
BDOWH1395	DOE Approval to Proceed on BUSTR Tanks	1	0	1	100	06DEC04A	06DEC04A	4.1.7.10.13
BDOWH1405	Apply to State Fire Marshal for BUSTR Permit	14	14	1	0	09MAY05	01JUN05	4.1.7.10.21
Radiological								
BDOWH1410	WH Rad Survey Plan - Coblentz	8	0	1	100	18JAN05A	15MAR05A	4.1.7.10.21
BDOWH1420	WH Rad Surveys	4	4	1	0	10MAR05	16MAR05	4.1.7.10.21
BDOWH1430	WH Rad Survey Results Report - Coblentz	4	4	1	0	17MAR05	23MAR05	4.1.7.10.21
BDOWH1470	Perform NESHAPS Calculations WH	1	1	1	0	17MAR05	17MAR05	4.1.7.10.21
Safe Shutdown								
BDOWH1495	Asbestos Survey WH	2	0	1	100	31JAN05A	01FEB05A	4.1.7.10.13
BDOWH1570	WH Asbestos Abatement After Util. Disc.	12	0	3	100	08FEB05A	09FEB05A	4.1.7.10.13
BDOWH1620	WH Perform Safe Shutdown Work	12	12	1	0	04APR05	21APR05	4.1.7.10.21
Utilities								
BDOWH1655	Write WH-1,2,3 Utility Disconnect Package	8	28	1	70	01NOV04A	26APR05	4.1.7.10.21
BDOWH1670	WH Utility Disconnect	6	6	1	0	27APR05	05MAY05	4.1.7.10.21
Demolition								
BDOWH1005	Seal Well 3 Subcontract	3	3	1	0	14JUL05	19JUL05	4.1.7.10.21
BDOWH1098	WH-1,2,3 Site Restoration	4	4	1	0	14JUL05	20JUL05	4.1.7.10.21
BDOWH1108	Remove BUSTR Tanks	4	4	1	0	02JUN05	08JUN05	4.1.7.10.21
BDOWH1118	Perform BUSTR Soil Analysis	30	30	2	0	09JUN05	08JUL05	4.1.7.10.21
BDOWH1355	Bid BUSTR Certified Removal	45	45	2	0	16MAR05	29APR05	4.1.7.10.21
BDOWH1365	Write BUSTR Closure Report	12	12	1	0	11JUL05	28JUL05	4.1.7.10.21
BDOWH1375	Place BUSTR Certified Removal Contract	4	4	1	0	02MAY05	05MAY05	4.1.7.10.21
BDOWH1415	Write BUSTR Certified Removal SOW	4	4	1	0	09MAR05	15MAR05	4.1.7.10.21
BDOWH1945	RAPCA WH 1 & 2 D&D Notification	10	10	3	0	13APR05	26APR05	4.1.7.10.21
BDOWH1955	RAPCA WH 2 D&D Notice	10	10	3	0	09JUN05	22JUN05	4.1.7.10.21
BDOWH1960	Demo WH 1 & 2	6	6	1	0	02MAY05	10MAY05	4.1.7.10.21
BDOWH1965	BD-57 Demo Complete	0	0	1	0		06JUL05	4.1.7.10.21
BDOWH1970	Demo WH 3	3	3	1	0	11JUL05	13JUL05	4.1.7.10.21
BDOWH1995	Seal Wells 1 & 2-Subcontract	6	6	1	0	11MAY05	19MAY05	4.1.7.10.21



Start Date	01JAN05	Early Bar
Finish Date	25MAR06	Progress Bar
Data Date	09MAR05	Critical Activity
Run Date	21MAR05 07:07	

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ERST

Sheet 58 of 62

CH2MHILL

Integrated Status Field Schedule

BOSS Only

Date	Revision	Checked	Approved

04 of 42

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Standard

WORK PLAN

In accordance with Mound 2000

Demolition of Buildings WH-1, WH-2, WH-3

March 2005

Includes

PRSs:	N/A
Buildings:	WH-1, WH-2, WH-3
Parcels:	8
Other:	N/A

Revisions to the Final (if any) are inserted behind this cover

Table of Contents

	Pages
Work Plan	4-24
Appendix A PHA & JSHA	
Appendix B Pre-Job Briefing and Job Status Log	
Appendix C Drawings/Sketches	
Appendix D Miscellaneous (USQ, RWP, etc.)	
Appendix E Post-Job Conference/Lessons Learned	

Work Plan Policy - Attachment 1

The following table captures all of the work planning/execution requirements of Mound 2000[1] and identifies where in the work plan each is addressed.

Mound 2000 excerpt	Pg	Where addressed
Develop implementation procedures for resolving the site problem	4-11	PP-1059A[2], Appendix A, Work Pkg/PHA
...procedures to implement the response action *described in the action memo...*	4-11	PP-1059A, Appendix A, Work Pkg/PHA. An introduction/ background paragraph shall be included in the work plan (somewhere) to bridge the Action Memo to the tasks being specified in the work plan.
QA/QC	4-11	Work to be performed per QAPP, PP-1060A[3]
Verification procedures	4-11	Per VSAP (attached to or referenced in Work Plan)
Schedule	4-11	Include appropriate excerpt from ER/Integration Schedule
H&S	4-11	PHA & JSHA
...final work plan presents rationale and [technical] approach for implementing the response action and provides detailed guidance for [implementation]...	4-11	PP-1059A, Appendix A, Work Pkg/PHA
...work plan implementation until the response objectives have been reached.	4-11	PP-1059A, Appendix A, Work Pkg/PHA
...field activities typically described:	5-4	PP-1059A, Appendix A, Work Pkg/PHA, Section 7
Excavation/demolition	5-4	PP-1059A, Appendix A, Work Pkg/PHA, Section 7
Transportation of waste Waste characterization Waste reduction Waste treatment	5-4	standard text on waste management
Media sampling Field screening/analysis	5-5	**Verification sampling** will be via the VSAP. **All other sampling** (including sampling to guide the dig, characterize the soil for waste mgmt purposes, base confirmation prior to verification, post-remedial action, etc.) required to support the project will be conducted via the Work Plan. **RadCon** sampling will include (per the RWP) air, soil (walkovers and soil samples), collected runoff and discharge, and removable contamination (swipes) monitoring per MD-80036[4] and MD-80043[5].
Geology/hydro investigations	5-5	If needed for characterization
Site survey/topo map	5-5	PP-1059A, page 19 of 43, "Use of Graphics"
Site restoration	5-5	In accordance with the Storm water Pollution Prevention Plan (SWP3)[6], to include a graphic (with runoff directional arrows) and a backfill/seeding plan
Task mgmt & QC	5-5	PP-1059A, Appendix A, Work Pkg/PHA
Verification sampling	5-5	Per VSAP (attached to or referenced in Work Plan)
HASP considerations	5-5	PHA & JSHA
...work plans for...response actions...*approved* by the Core Team	5-5	Written concurrence (either email or letter) will be obtained prior to commencement of work and will be available in the field as documentation.

REFERENCES

1: Work Plan for Environmental Restoration of the DOE Mound Site, The Mound 2000 Approach, February 1999, Final, revision 0
2: PP-1059A, Issue 11, Integrated Work Control Program
3: PP-1060A, Issue 5, Quality Assurance Program Plan
4: MD-80036, Issue 36, Radiological Operations Procedures
5: MD-80043, Issue 14, Radiological Work Requirements
6: Miamisburg Environmental Management Project, Storm Water Pollution Prevention Plan, OPA980099, Issue 0, December 1, 1998

WORK PACKAGE / PRELIMINARY HAZARD ANALYSIS

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

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

1. WORK PACKAGE TITLE: **Demolition of WH-1, WH-2, WH-3**

2. WORK PACKAGE NUMBER: **BOSS-40596 – 00** **Requestor: Mark J. Schmidt**

3. WORK PACKAGE SCOPE:

The purpose of this project is the demolition and disposal of WH-1, WH-2, WH-3 (well houses) that house the deep wells and the removal of obsolete utility poles in the vicinity of the well houses. Heavy-duty equipment will be used to demolish the building superstructures (including slabs), remove and dispose of the debris, provide site restoration, grading, and erosion mitigation with seeding and mulching. For WH-1, WH-2, and WH-3, an outside contractor will seal (grout) the deep wells prior to the site restoration and grading in accordance with *State of Ohio Technical Guidance for Sealing Unused Wells*, by the State Coordinating Committee on Groundwater, 1996.

There are two, 280-gallon, historical underground gasoline tanks north of WH-2 and WH-3 (no historical underground tank is near WH-1). The removal of these two underground tanks **is not** included in this work package scope. However, prior to the demolition of WH-2 and WH-3, these tanks and associated soils will be removed by a BUSTR certified contractor in accordance with State of Ohio Fire Marshall regulations. These tanks must be removed prior to the demolition of WH-2 and WH-3 due to their proximity (within 3 feet) to their foundations.

Since no radiological work was performed in these buildings/structures and from past radiological data, no areas within the buildings are known to be contaminated; thus this is a non-radiological demolition project and no RWP is required.

All Safe Shutdown, Utility Isolation, and Asbestos Abatement activities will have been completed before initiation of this project.

4. WORK LOCATION: **Buildings WH-1, WH-2, WH-3**

5. WORK PACKAGE PHASES:

1. Site Information
2. Site Preparation & Mobilization
3. Building Demolition and Sequence of Work
4. Site Remediation & Demobilization

LIST OF APPENDIXES:

A – PHA/JSHA

B – Pre-Job Briefing/Job Status Log

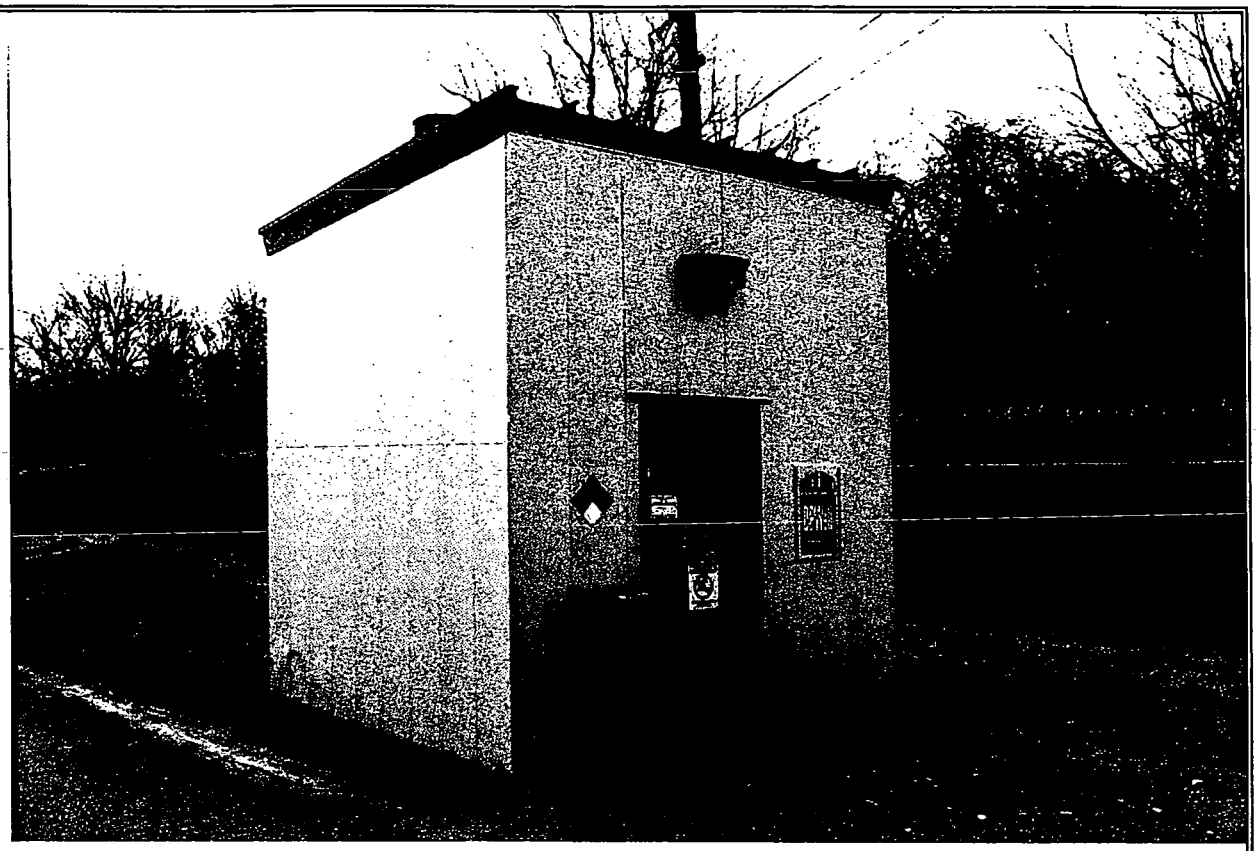
C – Drawings/Sketches/Photographs

D – Miscellaneous (RWP, USQ, etc.)

E – Post-Job Conference/Lessons Learned

6. SPECIAL MATERIALS AND EQUIPMENT:

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



WH-1 (Well House)

WH-2 (Typical for WH-3 also)

7.0 DETAILED WORK STEPS:

7.1 SITE INFORMATION:

WH-1, WH-2, WH-3 Deep Well Buildings Construction:
WH-2 and WH-3 (originally WH-1 and WH-2) were two of the original buildings constructed at Mound in 1948. WH-1 (originally WH-3) was built at a later date (1962) than the original well houses. WH-1, WH-2 and WH-3 each house a production deep well that supplies Mound's water system. WH-2 and WH-3 are both, single story, ~375 square foot buildings (22 feet long by 17 feet wide x 12 feet high). (Ref: drawing 352000-02002). WH-1 is a single story, ~128 square foot building (10'8" wide by 12 feet long x 12 feet high). (Ref: drawing 4-4125).

Structurally, WH-2 and WH-3 have remained as constructed. Three of the four walls are 8" thick concrete. The wall with the entrance door is 12" thick concrete. The floor slab is 8" thick concrete reinforced with #4 rebar on 12" centers each way. The ceiling is 5" thick reinforced concrete with a built up roof membrane. There is a removable 4'x4' cover in roof that allows for the removal of the deep wells. The reinforced concrete footers are 4 feet deep. There is a center 12" x 18" concrete beam that runs east and west that is reinforced with 2 each # 8 rebar. There are two 8" x 14" concrete beams running north and south around the ceiling opening that are reinforced with 2 each #6 rebar. WH-1 is an Armco Steelox Zincgrip Type LS-1 metal building. Drawing 4-4125 indicates that WH-1 has an 8" thick floor slab and has 12" wide footers that extend 3' minimum below grade.

Per original available well logs, the outer 38" diameter steel well casing is ¼" thick and the inner 26" diameter steel well casing is also ¼" thick. In 1995, a contractor installed an inner, 20" diameter steel well casing inside the original 26" diameter well casing for deep wells #2 and #3. The annulus space between the 26" and 20" pipe has been filled in with grout. A 20" inner casing was not installed in deep well #1.

Site drawing, 352000-04017 indicates that two 280-gallon underground gasoline tanks are just to the north of WH-2 and WH-3 (one tank, each building). These tanks and associated soils will be removed by a BUSTR certified contractor in accordance with State of Ohio Fire Marshall regulations.

7.2 NATIONAL HISTORIC PRESERVATION ACT (NHPA)

WH-1, WH-2, and WH-3 are not listed as historic structures with the Ohio Historic Preservation Office (OHPO). No mitigative documentation package is required.

IMPORTANT: However, if any items or artifacts are discovered as this project progresses, the Cultural Resource Representative will be notified at extension 4080. Work will be temporarily suspended until which time the items or artifacts have been recovered.

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

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

7.3 SITE PREPARATION & MOBILIZATION

7.3.1 Site Access Control

Access to the work zone boundary will be controlled using fencing and/or with barricade tape as directed by the Project Foreman. Proper signage will be placed at all access points to the work zone.

The work zone is not to be entered by anyone not directly involved with the demolition unless they have contacted the Project Construction Manager or Project Foreman in advance.

7.3.2 Sediment/Storm Water Control

7.3.2.1 Cover field grates with covers/sheeting for silt protection sewer gratings (See maps Appendix C) and install sediment/storm water control silt fences around designated construction area. as needed. Protect

Sanitary Sewer and utility access manholes with steel plates, as needed. Reference OPA980099, Storm Water Pollution Prevention Plan (latest issue). Coordinate and evaluate effectiveness of controls periodically throughout demolition activities with Environmental Compliance PoC.

7.3.2.2 Ensure spill kit is in area and available and adequate to prevent any liquid contaminants from entering storm drains or drainage ditch. Employees shall report any observed spills or releases to a Site Supervisor by dialing 608-8293 or 608-8294 or via NEXTEL phone at Site Sup1 or Site Sup2 or AASecurity.

7.3.3 Clear Area and Mark/Protect Utility Equipment and Monitoring Wells

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

7.3.3.2 Mark (with visible stakes), construct barriers to protect structures/utility equipment, or remove as needed:

NOTE: The Vista Maps may be incomplete. Walk down the area inside the demolition zone to verify that all of the following structures are adequately protected from damage. In particular, make sure all of the monitoring wells around well houses are protected from damage by heavy-duty equipment. A number of these wells support the ongoing OU-1 groundwater-monitoring program.

- Fire line Post Indicating Valve (PIV)
- Domestic Water Post Indicating Valve (PIV)
- Monitoring wells (See Vista Maps in Appendix C)
- Light and power poles
- Site boundary fence (west of well houses)
- Manhole and Storm sewers

7.3.4 Temporary Utilities

The only temporary utility that may be required is water. If domestic water is utilized, ensure backflow prevention is present. Coordinate with site Safety and Health and Environmental Compliance PoCs. Water will be used to control dust emissions. Coordinate with Utilities Group/Utilities Package for services needed.

7.3.5 Temporary Facilities

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

7.3.6 Temporary Communications

Temporary communications are required (cell phone, radios) as equipment for hearing plant announcements and emergency notifications have been removed prior to demolition.

7.3.7 Staging Areas

The project site is of sufficient size to be used as a staging area for materials needed / generated.

7.3.8 Erosion/Dust Control Measures

Control measures will be instituted to mitigate effects of excess storm water run-on/ run-off and the effects of erosion. The site Storm Water Pollution Prevention Plan, OPA980099 (latest issue) is written to comply with the site National Pollutant Discharge System (NPDES) Permit {OAC 3435-33}. The requirements of OPA 980014 Section 2.11, Fugitive Dust Control will be followed in this work package.

7.3.8.1 Installation of Silt Fence

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

7.3.8.2 Installation of Fugitive Emissions Controls

The goal of fugitive emission controls is no visible dust/emissions. Best available technology (BAT) determination for the demolition of Buildings WH-1, 2, and 3 is reasonably available control measures (RACM). RACM will be employed to maintain fugitive particulate emissions as low as reasonably achievable. Possible mitigating controls are listed in Table 1. Mitigating controls that may be employed include, but are not limited to:

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

The intent will be to add enough water to control fugitive emissions without over-saturating the area and creating undesirable run-off. Periodic inspections will be made by the Job Superintendant or designee to assure fugitive emissions controls are achieving the desired effect and meeting acceptable standards. Should it be determined that best available technology (BAT) requires alternate dust suppression methods, other dust control methods will be utilized. See Table 1 below for possible fugitive dust control methods.

Table 1 Airborne Contaminant Protection Methods

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

Table 1 Airborne Contaminant Protection Methods (continued)

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

7.3.9 Permits

The following permits may be applicable to perform this work:

- Penetration Permits
- Hot Work or Burning Permit
- Excavation Permits
- Lock Out Tag Out Permits
- Radiological Work Permits (RWP)
- Certification of equipment
- Sling Inspection

7.3.10 Chemicals/Hazardous Materials

If found, sources of chemicals of concern and Asbestos Containing Material will be removed from the buildings prior to demolition. If present, regulated Asbestos Containing Material will be abated in Buildings WH-1, 2, and 3 prior to the start of demolition by a licensed asbestos abatement subcontractor or asbestos worker trained Mound personnel.

Material, equipment, and debris (except hazardous material) associated with this project will be evaluated for feasibility to be free-released. When surveys are below release limits, and debris can be protected from being contaminated during demolition, the debris will be free-released. Any debris found with levels above free-release limits will be treated as low-level radioactive waste unless radiological surveys determine waste exceeds 100 nCi/g. Any waste determined to exceed TRU levels will be segregated and packaged accordingly.

Although not anticipated, mixed wastes may be encountered during the structure demolition activities. Any hazardous waste material (i.e. Asbestos Containing Material, lead and mercury) encountered during demolition will be abated (as practical) and disposed of according to CH2M Hill Waste Management requirements.

Silica/nuisance dust and lead paint may be encountered during demolition. Engineering/administrative controls (such as water misting) will be used to mitigate the potential hazard to workers and the environment. No torch cutting of painted surfaces will be permitted unless MCP Safety and Health has tested affected paints and found them free of lead. MCP Safety and Health may conduct air monitoring as necessary to maintain applicable annual exposure assessments and compliance with occupational exposure standards.

7.3.11 NESHAPS

The offsite estimated effective dose equivalent (EDE) for the demolition of the Buildings WH-1, 2, 3 is less than the 0.1 mrem/year threshold. Therefore USEPA approval is not required for this project. This work plan will contain methods/requirements to mitigate any potential dose that would exceed the threshold level.

7.3.12 Material Disposition

Based on a review of the work to be performed, the Waste Generator and Waste Coordinator determine types (sanitary, hazardous, LLW, LLMW, TRU) and estimated amounts of waste prior to generation. An evaluation of the physical, radiological and chemical properties is made to determine a disposal path for each type of waste. The proposed disposal facility, waste profile, and knowledge of the waste generating process will determine the characterization methodology required for each waste type.

Process knowledge will generally be sufficient to characterize sanitary and hazardous waste for disposal. Sampling and analysis for radiological characterization of radioactive waste will be determined based on process knowledge of the source of the waste. Analytical methods employed include surface contamination measurements, air concentration measurements, alpha spectroscopy, and gamma spectroscopy. All characterization determinations are documented and peer reviewed prior to waste shipment. Material Safety Data Sheets (MSDS) are used to supplement process knowledge of chemical properties of the waste. Where process knowledge is not sufficient to provide a RCRA determination, analysis of waste will be accomplished through the Toxicity Characteristic Leaching Procedure (TCLP) performed by an offsite laboratory.

Procedures controlling waste characterization are contained in Mound Technical Manuals MD-10167, *Radioactive Waste Procedures,* Operations 420: *Waste Stream Characterization* and 428: *Waste Radionuclide Identification and Quantification,* and MD-70523, *Management of Hazardous Waste, Trash, and Recyclable Materials,* Operation 001: *Waste Verification Sampling and Analysis.* Additional direction is contained in these manuals in operations specific to the waste type and container being used.

7.4 PRELIMINARY ACTIVITIES AND VERIFICATIONS

IMPORTANT

7.4.1 Verify all Safe Shutdown Activities for Building WH-1 completed per work package BOSS-40594.

Verified by _____ date: _____
Bill Wahler or designee/email

Verify all Safe Shutdown Activities for Building WH-2 completed per work package BOSS-40594.

Verified by _____ date: _____
Bill Wahler or designee/email

Verify all Safe Shutdown Activities for Building WH-3 completed per work package BOSS-40594.

Verified by _____ date: _____
Bill Wahler or designee/email

7.4.3 Verify all Mechanical and Electrical Utility Isolation Activities for Building WH-1 have been completed per work package FTS-40597.

Verified by _____ date: _____
Allen Upshaw or designee/email

Verify all Mechanical and Electrical Utility Isolation Activities for Building WH-2 have been completed per work package FTS-40597.

Verified by _____ date: _____
Allen Upshaw or designee/email

Verify all Mechanical and Electrical Utility Isolation Activities for Building WH-3 have been completed per work package FTS-40597.

Verified by _____ date: _____
Allen Upshaw or designee/email

7.4.4 Contact Robert Coblentz (608-8206) to ascertain if any area in Buildings WH-1, 2,3 constitutes a Rad hazard. If any area constitutes a Rad hazard, coordinate with Rad Controls for RWP/PPE/work controls and revise Demolition Work Package to address Rad hazard. If there is not any Rad hazard, continue with this work package.

HOLD POINT: Radiological Final Status Survey Report complete verification:

Verified by_____ date _____
Rad PoC or email

7.4.5 The *Pre-Job Briefing Record* must be completed and signed.

Verified by _____ date: _____
Mike Stromberg or designee/email

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

Verified by _____ date: _____
Mike Stromberg or designee/email

7.4.7 Notify Gary Weidenbach, Bldg. Mgr., (608-8207) of demolition schedule, potential traffic pattern delays, and building access/egress coordination.

Verified by _____ date: _____
Mike Stromberg or designee/email

IMPORTANT NOTE: When WH-1, 2, & 3 are being collapsed, access to roadway east of the buildings (as conditions warrant) may be restricted. Complete *Road Closure Form* (See Appendix D) prior to closing road.

7.4 BUILDING DEMOLITION SEQUENCE OF WORK

CAUTION HAZARD: Vehicle traffic hazard. Control traffic flow as necessary. Project Engineering will coordinate the posting of notice on GroupWise/Mound News, several days in advance and during ongoing demolition work, that traffic routes around the demolition area may be interrupted or diverted. Notify the following organizations/personnel that traffic patterns may be disrupted: Jeff Lentz 865-4047 or 608-8293, and the Building Manager, Gary Weidenbach, 608-8207.

CAUTION CONTAMINATES SPILL HAZARD: Ensure spill kit is available to prevent any liquid contaminant from entering storm drains, drainage ditch, or deep wells. Employees shall report any observed spills or releases to a Site Supervisor by dialing 608-8293 or 608-8294 or via NEXTEL phone at Site Sup1 or Site Sup2 or AASecurity.

WARNING HAZARD: Dust Control – Utilize misting & fogging during demolition & road wetting during waste hauling. The goal is no visible dust emissions. Periodically evaluate control methods to determine their effectiveness.

CAUTION HAZARD: If any part of heavy-duty equipment has the potential to come with 10 feet of the power and light poles along the west ends of WH-1,2,3, follow OHSA 29 CFR 1910.333(c)(3)(iii)(A)(2), installing insulating barriers, if feed can not be shutdown and LOTO'd. (See attached Lessons Learned)

CAUTION HAZARD: Struck by flying debris. Establish construction boundary. Wear hardhat, safety glasses, safety shoes, (Level D PPE) and reflective vest inside construction area.

CAUTION HAZARD: Struck by moving equipment.

- Maintain the following distances from operating equipment:
- Shear – 75 feet
- Hoe Ram – 50 feet
- Other heavy duty equipment – 30 feet

- Bobcat – 15 feet

WARNING NOISE HAZARD: Wear hearing protection while running heavy-duty equipment. Follow the requirements of MD-10286 D9.

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

CAUTION HAZARD: A Hot Work Permit will be required if a torch is used for cutting. Coordinate with site Safety and Health for PPE/work controls before torch cutting due to possible toxic/hazardous fumes (i.e., lead paint/galvanized/stainless steel). Obtain and follow Hot Work permit per MD-10286 O2

Notification of Demolition and Renovation form must be filed with the Regional Air Pollution Control Agency (RAPCA) at least **10 business days before planned demolition of Buildings WH-1, 2, 3.**

HOLD POINT: RAPCA Notification verification, WH-1,2,3

Environmental Compliance PoC_____ Date to Proceed with Demo_____

HOLD POINT: Regulatory requirements met, WH-1,2,3.

Verified by: _____ Date and Time_____
Robert Ransbottom or designee

NOTE: If WH-2 and WH-3 underground gasoline tanks have not already been removed, complete this step prior to demolition of WH-2 and WH-3.

NOTE: If soil staining or unusual fumes/odors are noted during tank excavations, contact IH (Chris Ahlquist 608-8203) or Safety (Doug Hanson or 608-8008) and Environmental Compliance (Ron Paulick 865-4080 or 608-8227).

NOTE: The hold point below is only applicable for WH-2 and WH-3

HOLD POINT: Prior to removal of the underground gasoline tanks, verify the isolation (air gap) of the ¾" gasoline tank vent pipes attached to WH-2 and WH-3 structures at ground level. **WARNING: DO NOT TORCH CUT OR USE SPARK-PRODUCING EQUIPMENT TO CUT GASOLINE VENT PIPE.**

Verified by: _____ Date and Time: _____
Allen Upshaw or designee/email

HOLD POINT: Prior to demolishing WH-2 and WH-3, verify underground gasoline tanks removed and remediation completed.
Verified by: _____ Date and Time:_____
Mark Gilliat or designee

HOLD POINT: 'COLD & DARK' Review Team Walk-down Completed &Project Manager Authorizes Work to Start, WH-1:

Project Manager: _____ Date and Time: _____

HOLD POINT: 'COLD & DARK' Review Team Walk-down Completed &Project Manager Authorizes Work to Start, WH-2:

Project Manager: _____ Date and Time: _____

HOLD POINT: 'COLD & DARK' Review Team Walk-down Completed &Project Manager Authorizes Work to Start, WH-3:

Project Manager: _____ Date and Time: _____

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

To stop unsafe work.
To stop unauthorized work, i.e., work outside the scope of this workpackage.

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

NOTE: Demolition preparation is defined in 29CFR1926.850. Workers not familiar with construction standards must meet with Project Supervision and/or Project Health and Safety personnel.

NOTE: Based on radiological screening results, Buildings WH-1, 2, and 3 are not radiological contaminated and will be disposed as non-Rad waste, unless debris pile surveys indicate otherwise.

NOTE: Waste debris created during demolition will be staged as much as possible within the footprint of each building. After appropriate surveys, it will then be loaded directly into the appropriate packaging or haulers. All waste will be packaged and disposed per CH2M Hill Waste Management requirements.

NOTE: Wind direction must be taken into account when pre-placing personnel operated and/or portable water misting equipment. Place personnel and misting equipment upwind to allow easy water application.

NOTE: WH-1, WH-2, WH-3 can be demolished in any order as they become available and as soon as safe shutdown, utility isolations, and "Cold and Dark" walkthroughs have been completed and signed off.

NOTE: Notify Mark Gilliat, 865-4407, and Allen Upshaw, 865-4894, prior to starting demolition of the WH-1, WH-2, and WH-3 buildings so that he can coordinate the scheduling of sealing the deep wells with an outside contractor.

7.5.1 Structural Demolition

NOTE: Two of the three deep wells will most likely become available for demolition prior to the

shutdown of the third well. Well house structures WH-1, WH-2, WH-3, and floor slabs can be demolished (Section 7.5) and site remediated (Section 7.6) in any order, individually, or all at once as soon as the well houses become available.

7.5.1.1 Surface sample location (S0905) (OH83 Grid system Easting: 1463942.8, Northing: 596748.99) shows Thorium 232 results above Cleanup Objective. Perform a walkover survey. If elevated levels are detected, mark the area and erect a barrier to prevent the area from being disturbed during demolition activities.

7.5.1.2 Using crane, pull deep well pumps from well house thru existing opening in roofs of well houses. Install plate or equivalent and adequately seal over well so that no building debris and/or dust suppression water will fall into the well during building demolitions. Seals will have to be substantial (capable of surviving building demo) and water tight.

HOLD POINT: WH-1 well pipe/casing Adequately Sealed Prior To Building Demo To Prevent Building Debris and Dust Suppression Water From Entering Deep Well.

Verified by:_____ Date and Time_____
Allen Upshaw or designee

HOLD POINT: WH-2 well pipe/casing Adequately Sealed Prior To Building Demo To Prevent Building Debris and Dust Suppression Water From Entering Deep Well.

Verified by:_____ Date and Time_____
Allen Upshaw or designee

HOLD POINT: WH-3 well pipe/casing Adequately Sealed Prior To Building Demo To Prevent Building Debris and Dust Suppression Water From Entering Deep Well.

Verified by:_____ Date and Time_____
Allen Upshaw or designee

7.5.1.4 Using heavy-duty equipment, demolish the above ground WH-1, WH-2, WH-3 structures as they become available.

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

HOLD POINT: Contact Allen Upshaw 865-4894 or Nextel 673-2874 to verify all conductors on the utility poles are disconnected / air gapped/ removed.

Verified by:_____ Date and Time_____
Allen Upshaw or designee

7.5.1.6 Obtain "Excavation / Soil Disturbance" and remove any obsolete utility poles (Reference *Power Poles/Power-Light Poles* Vista Map in Appendix C for designated utility poles). Using heavy duty equipment, remove the designated poles. **Note:** Cameras on top of utility pole adjacent to WH-3 are to be salvaged and returned to Property Management (Gary Weidenbach, 608-8207).

7.5.2 Slab and Foundation Demolition

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

CAUTION HAZARD: If any part of heavy-duty equipment has the potential to come with 10 feet of the power and light poles along the west ends of WH-1,2,3, follow OHSA 29 CFR 1910.333(c)(3)(iii)(A)(2), installing insulating barriers, if feed can not be shutdown and LOTO'd. (See attached Lessons Learned)

WARNING HAZARD: Dust Control – Utilize misting & fogging during demolition & road wetting during waste hauling. The Goal is no visible dust emissions.

WARNING NOISE HAZARD: Wear hearing protection while running heavy-duty equipment. Follow the requirements of MD-10286 D9.

CAUTION HAZARD: Struck by flying debris. Establish construction boundary. Wear hardhat, safety glasses, safety shoes, and high visibility clothing (i.e.; highway reflective vests; fluorescent shirts) inside construction area.

CAUTION HAZARD: A Hot Work Permit will be required if a torch is used for cutting. Coordinate with site Safety and Health for PPE/work controls before torch cutting due to possible toxic/hazardous fumes (i.e., lead paint/galvanized/stainless steel).

CAUTION HAZARD: Struck by moving equipment.

- Maintain the following distances from operating equipment:
- Shear – 75 feet
- Hoe Ram – 50 feet
- Other heavy duty equipment – 30 feet
- Bobcat – 15 feet

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

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

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

NOTE: If soil staining or unusual fumes/odors are noted during slab/foundation excavations, contact IH (Chris Ahlquist 608-8203) or Safety (Doug Hanson or 608-8008) and Environmental Compliance (Ron Paulick 865-4080 or 608-8227).

NOTE: During the concrete demolition, use heavy equipment to assist radiological control personnel to perform radiological screening of ground contact concrete surfaces. Based on radiological screening results, transport to designated disposal area as directed by Waste Management PoC.

IMPORTANT: Exercise caution when demolishing and removing slab and foundation/footers to not damage underground utilities. Be alert to and reference Underground Utilities Vista Maps in Appendix C and referenced drawings for the following utility system lines running near the foundations/slabs of Buildings WH-1, WH-2, and WH-3. **Excavation permit required for these activities.** Reference the Electrical and Mechanical Utilities Isolation Activities work packages for the post demolition status of these lines.

- The abandoned 8" water discharge pipe and the remainder of the underground water distribution piping (air-gapped/capped during safe shutdown activities). (see Vista map, Appendix C)
- Do not disturb the underground storm sewer that runs on the western side of the well houses. (see Vista

map, Appendix C)

NOTE: A state certified contractor is to seal deep wells per Ohio EPA regulations. Notify Mark Gilliat, 865-4407 with the date when the contractor is to seal the wells.

7.5.2.1 As necessary, prior to demolition of the slab, sawcut concrete slab around each well so the seal on the top of each well/well casing is not damaged during the slab removals for WH-1, 2, and 3.

7.5.2.2 Using heavy equipment, for Buildings WH-1, WH-2, and WH-3, break apart the concrete slabs and building foundation walls/footers to 3 feet below grade, torch cut the rebar if required (Hot Work Permit is required) to support demolition and downsizing. Debris will be removed and surveyed/scanned by Rad. Control technicians. The materials will be sized and placed into appropriate hauling containers or trucks.

7.5.2.3 Remove the abandoned 8" water discharge pipe from deep wells, to three feet below the base of the slab and to three feet beyond the well houses perimeter. Abandon in place the remainder of the underground water distribution piping. (see Vista map, Appendix C).

7.5.2.4. Contact/coordinate with Mark Gilliat, 865-4407, the sealing of the deep wells. **A state certified contractor is to seal deep wells per Ohio EPA regulations.** Support contractor, as necessary, for the removal (or cutting-off) of the well casings and sealing of the deep wells.

NOTE: Per original available well logs, the outer 38" diameter steel well casing is ¼" thick and the inner 26" diameter steel well casing is also ¼" thick. In 1995, a contractor installed an inner 20" diameter steel well casing inside the original 26" diameter well casing for deep well #2 and #3. The annulus space between the 26" and 20" pipe has been filled in with grout. A 20" inner casing was not installed in deep well #1.

NOTE: As each deep well sealing is completed, grading, seeding and mulching can start.

HOLD POINT FOR WH-1: Deep Well #1 Properly Sealed per Ohio EPA regulations.

Verified by:_____ Date and Time_____
Mark Gilliat or designee

HOLD POINT FOR WH-2: Deep Well #2 Properly Sealed per Ohio EPA regulations.

Verified by:_____ Date and Time_____
Mark Gilliat or designee

HOLD POINT FOR WH-3: Deep Well #3 Properly Sealed per Ohio EPA regulations.

Verified by:_____ Date and Time_____
Mark Gilliat or designee

7.6 Site Remediation & demobilization

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

CAUTION FALLING HAZARD: Utilize fall protection, barricades, or man-lifts

CAUTION HAZARD: Struck by moving equipment.

- Maintain the following distances from operating equipment:

- Shear – 75 feet
- Hoe Ram – 50 feet
- Other heavy duty equipment – 30 feet
- Bobcat – 15 feet

7.6.1 Grading, Seeding, & Mulching

7.6.1.1 Erect any additional erosion control/protection fencing or other materials as needed in compliance with Environmental Compliance group PoC (Ron Paulick, 865-4080 or 608-8227) instructions. Remove debris/rubble/rock as necessary to provide smooth continuous grade and restore the area by grading and filling with appropriate amount of gravel/soil to grade to drain.

7.6.1.2 Apply appropriate amounts of grass seed and matting, in graded and soil backfilled areas, to maintain erosion control/protection in accordance with Environmental Compliance PoC instructions.

7.6.1.3 Remove any temporary protection/structures used to protect Buildings WH-1, WH-2, WH-3 utility equipment/stanchions, PIVs, sanitary/storm sewer grates/manholes, and utility access manholes.

7.6.1.4 Remove silt protection covers from field grates and any remaining sediment/storm water control fences, straw bales and sand bags, unless it is beneficial to keep silt/sediment control devices in-place for further demolition/remediation work.

7.6.1.5 Remove sediment and debris that has collected at the storm sewer gratings and along roadways and curbing.

7.6.2 Demobilize Construction Equipment

CAUTION FALLING HAZARD: Utilize fall protection, barricades, or man-lifts

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

8.COMMENTS:

EMERGENCY PREPAREDNESS

- Site Notification Procedures

Use **911** (**AA911** for Nextel phone) for all emergency services onsite. This is the first response for any emergency. If using a cell phone, dial **8-911**. This number will ring into the 911 system. Any injury, no matter how minor, shall be reported immediately to the Medical Department for evaluation and treatment. The injured employee shall report any injury to the supervisor in charge or designee.

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

- Evacuation Route/Assembly Areas

Assembly area for WH-1, 2,3 is the roadway on the east side of the buildings outside the safe shutdown boundary. (see Site Map in Appendix C).

- Take Shelter Area

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

The take shelter area is in COS, Room 120 and common hallways on 1st floor. (See Site Map in Appendix C)

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

9. REVIEW SIGNATURES:

Written by: _____ Date: 9/15/04 Phone: 608-8284

Superintendent: _____ Date: 9/27/04 Phone:

Foreman: _____ Date: 9/22/04 Phone:

Project Eng. Mgr: _____ Date: 9/15/04 Phone: 608-8201

Industrial Safety & Hygiene: _____ Date: 9/16/04 Phone: 608-8203

Rad. Controls: _____ Date: 9/16/04 Phone: 673-4518

ES&C: _____ Date: 9/21/04 Phone: 608-8227

Waste Mgmt: _____ Date: 09/15/04 Phone: 673-8384

Bldg. Mgmt: _____ Date: 09/27/04 Phone: 608-8207

Classification: : N/A Date: / / Phone:

Other: _____ Date: 9/21/04 Phone:

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

10. USQ SCREEN / DETERMINATION REQUIRED? XYES NO

Brief Explanation_ Shutdown of WH-1, WH-2, WH-3 may affect the T-BD fire protection TSRs

USQ Trained Person: _____ Date: 9/27/04 Phone: 608-8284

11. AUTHORIZATION SIGNATURE:

Project Manager: _____ Date: 9/27/04 Phone: 608-8007

12. WORK PACKAGE CLOSURE:

Job Supervisor: _____ Date: / / Phone:

Project Manager: _____ Date: / / Phone:

RETURN PHA TO IS&H AT JOB COMPLETION.

APPROVAL CONTINUATION SHEET

Reviews:

Name	Signature	Date	Department

Reference Drawings	Rev.	Reference Procedures	Rev.

WORK PLAN REVISION SHEET

. WORK PACKAGE TITLE: Demolition of Buildings WH-1, WH-2, WH-3

. WORK PACKAGE NUMBER: BOSS-40596 - 00.

[Note: Mark this section in color]

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

:evision Description: (attach page revisions to form)

:eviewed by:	Name	Signature	Date
'roject Engineering:			
'roject Superintendent/Foreman:			
:adiological Operations:			
ndustrial Safety & Hygiene:			
Vaste Management:			
:nvironmental Safeguards & :ompliance:			
:uilding Manager:			
)ther:			

ıpproved by:

:H2M Hill Project Manager

Name Signature

Date

:ev. 0
9/16/04

REVISION LOG

1. WORK PACKAGE TITLE: Demolition of Buildings WH-1, WH-2, WH-3

2. WORK PACKAGE NUMBER. BOSS-40596 - 00.

Revision	Reason	By	Dat

Appendix A

Preliminary Hazards Analysis (PHA)

Job Safety & Health Analysis (JSHA)

APPENDIX A

Preliminary Hazard Analysis (PHA)For Work Package Activities

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

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Access/Blockage:			
Blockage of exits or means of egress	No	N/A	
Blockages/obstructions (Identify)	Yes	3	Coordinate road blockages around Buildings WH-1, WH-2, WH-3 with points of contact listed in work package and road closure form (see Appendix D)
Confined space entry **(permit)**	No	N/A	
Emergency alarms or evacuation plans required	Yes	All	Cell phones will be used as the main line of communicating alarms to personnel.
Obstruction of fire protection equipment (pull boxes, hydrants, fire department connections, control panels, fire extinguishers, etc.)	Yes	All	Fire hydrant will be protected, but still available for emergency use.
Traffic control/flagman	Yes	All	Provide sufficient flagmen and signage to ensure safe traffic control
Flammable/Explosive:			
Burning, welding, hot-work (Fire Watch) **(permit)**	Yes	2 & 3	Obtain & follow Hot Work Permit per MD-10286 operation O2, Hot Work Permit Procedures. Paint may contain lead, do not torch cut painted surfaces without verification by IH or Safety PoC.
Chemical compatibility of corrosives/flammables	No	N/A	
Explosive/flammable atmosphere	No	N/A	
Explosives	No	N/A	
Fire protection system/equipment outage	No	N/A	
Fire Hazards Analysis/Fire Engineer Approval	No	N/A	
Flammable liquids/gases	Yes	2 & 3	Acetylene & oxygen – Utilize proper tank restraints. Follow Mound Procedure MD-10286, H1. Use non-sparking or non-flame equipment to cut gasoline pipe.
Powder-actuated tools **(permit)**	No	N/A	
Special Fire Protection Equipment Required	No	N/A	
Chemicals:			
Chemical process safety	No	N/A	
Compressed gas cylinders	Yes	2 & 3	Follow Mound Procedure MD-10286, operation H1, Use of Compressed Gas Cylinders, Manifolds, and Regulators, when handling oxygen and acetylene gas cylinders.
Emergency eyewash/shower available	No	N/A	
Elevated/Aerial Work:			
Crane operations, overhead or mobile	No	N/A	
Critical lifts (heavy or high value loads)	No	N/A	
Elevated work/fall protection	Yes	All	Follow Mound Procedure MD-10286, operation M8, Fall Protection / Elevated Work Surface.
Forklifts, aerial lifts or material handling equipment	Yes	All	Follow Mound Procedure MD-10286, operation M8, Fall Protection / Elevated Work Surface.
Hoisting and rigging	Yes	3	Follow MD-10508, Mound Hoisting, Rigging, and Forklift program when removing deep wells.
Overhead utilities (Identify)	Yes	All	LOTO overhead utilities per MD-10444, Lockout / Tag Out Procedure. If LOTO not feasible, follow MD-10395 electrical safety manual to work within 10 feet any overhead energized.

APPENDIX A

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

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

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
***Lockout/tagout, outages, disconnects* (permit)**			
• Electrical	Yes	All	Electrical isolation of the facility is accomplished during Utilities Isolation Activities. LOTO overhead utilities per MD-10444, Lockout / Tag Out Procedure as needed. If LOTO not feasible, follow MD-10395 electrical safety manual to work within 10 feet any overhead energized lines
• Mechanical (steam, hydraulic, pneumatic, gravity)	No	N/A	
• Interlocks	No	N/A	
• Chemical	No	N/A	
• Radiological	No	N/A	
Outages of the plant public announcement (PA) system or the emergency notification system	Yes	All	Plant PA system out of service. Use cell phones and air horns for emergency notifications.
Building Systems Alarms - Ensure systems are not functional by contacting: Fire Department Security Facilities Services.	No	N/A	
Alarm Disable/Disconnect	No	N/A	
Structure Related:			
Modification to Fire Wall/Door	No	N/A	
Penetrations into walls, floors, etc. **(permit)**	No	N/A	
Plastic sheeting or wood framing/enclosures	No	N/A	
Structural Modification	Yes	All	Building Structural Engineering Survey per OSHA 29 CFR 1926.850 (see Appendix D). Demolish buildings per work package.
Work impacting adjacent normally occupied areas	No	N/A	
Temporary Requirements:			
Temporary heating facilities	No	N/A	
Temporary/portable buildings or structures	No	N/A	
Temporary service hook-ups (Identify)	Yes	All	Water hydrant for misting, including backflow prevention, if required or fog cannon & self contained water tanks
Public utilities (Identify)	No	N/A	
Lighting/illumination/adequacy	No	N/A	
Miscellaneous:			
Machine guards	No	N/A	
Off-shift work	Yes	All	As determined by Project Manager
Repetitive work	No	N/A	
Other (Specify)	None	N/A	
Work in attics, ceilings, chases, or crawlspaces	No	N/A	
Work Requiring Scaffolding **(inspection required)**	No	N/A	
Electrical:			
Electrical hazards	Yes	All	Electrical isolation of the facility is accomplished during Utilities Isolation Activities. LOTO overhead utilities per MD-10444, Lockout / Tag Out Procedure as needed. If LOTO not feasible, follow MD-10395 electrical safety manual to work within 10 feet any overhead energized lines.

APPENDIX A

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

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

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Grounding of electrical equipment	No	N/A	
Soils/Excavation:			
Underground utilities (Identify)	Yes	3 & 4	Utilize Excavation/Soil Disturbance Permit, MD-10286, O5 before slab demolition
Trenching/Shoring **(permit)**	No	N/A	
Hazards due to condition of facility or terrain (Identify)	No	N/A	
Any soil disturbance	Yes	3 & 4	(Note: Check for URMAs, historical underground gasoline tanks around WH-2 and WH-3) Obtain & follow Excavation/Soil Disturbance Permit, MD_10286, O5 before slab demolition and utility pole removal. The ER Project will conduct remediation of any soil contamination.

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

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Asbestos/Fibers:			
Asbestos	No	N/A	
Removal of ceiling tiles*	No	N/A	
Insulation/man-made mineral fibers (☐ MSDS available)*	No	N/A	
Hazardous Materials:			
Beryllium	No	N/A	
Cadmium	No	N/A	
Chlorofluorcarbon (CFC)	No	N/A	
Coal, tar or asphalt products	Yes	3	Dispose of roofing material, containing tar and asphalt products, as construction debris.
Lead	Yes	All	Exposure to airborne lead during torch cutting. Contact Industrial Hygiene to verify absence of lead in paint or remove paint prior to torch cutting
Mercury	No	N/A	
Polychlorinated biphenyls (PCBs)	No	N/A	
Carcinogens (☐ MSDS available)*	No	N/A	
Chemical/Corrosives:			
Chemicals/solvents (☐ MSDS available)*	No	N/A	
Corrosives/acids/caustics (☐ MSDS available)*	No	N/A	

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

APPENDIX A

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

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

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Ventilation/Air:			
Abrasive blast (☐ MSDS available)*	No	N/A	
Coating/painting (☐ MSDS available)*	No	N/A	
Dusty operations	Yes	3 & 4	Utilize dust control measures as appropriate from Table 1 (OPA980014).
Foam in Place Operations	No	N/A	
Spraying/generation of mists*	Yes	3 & 4	Demolition dust control water misting during demolition and road wetting during waste hauling. Control misting water run-off in accordance with OPA 980099, Storm Water Pollution Prevention Plan (latest issue).
Ventilation or Air Monitoring requirements	Yes	3 & 4	Air monitoring for potential silica during demolition activities wil be performed as needed for annual site assessment.
Miscellaneous:			
High Pressure systems	No	N/A	
Lasers	No	N/A	
Noise in excess of 85 dBA	Yes	3	Hearing protection required during noise hazard activities. Follow requirements of MD-10286, D9.
Blood-borne pathogens*	No	N/A	
Temperature extremes (heat or cold stress)	Yes	All	Discuss in daily pre-job briefings & monitor per MD-10286 Operations D13/D16
Welding, brazing, or thermal cutting operations **(permit)**	Yes	2, 3,& 4	Hot Work Permit Required. Paint may contain lead, do not torch cut painted surfaces without verification by IH.
Hazardous Waste Operations (HAZWOPER)*	No	N/A	
Other (specify)	None	N/A	

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

APPENDIX A

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

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

Item		Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Location:	Controlled Areas (Specify)			
•	Radiologically Fixed Contaminated Areas (FCAs)	No	N/A	
•	One Radiological Contamination Area (CA)	No	N/A	
•	One Radiological Materials Management Area (RMMA)	No	N/A	
	Other (Specify)	None	N/A	
Activities:	Digging/Soil Removal (permit)	Yes	3 & 4	Survey concrete (soil contact side) following slab removal. Excavation permit required for slab/foundation removal and site remediation activities
	• URMA	No	N/A	
	Welding, burning, grinding, hammering, chipping, or scraping of contaminated materials	No	N/A	
	Decontamination	No	N/A	
	- Site Remediation	No	N/A	
	Waste Disposal	No	N/A	
	Other (Specify) – Radiological Survey, Evaluation & Posted	No	N/A	
Sources:	X-Ray equipment, sealed, or unsealed sources	No	N/A	
Controls:	Radiological Work Permit	No	N/A	
	ALARA Plan	No	N/A	
	Other	None	N/A	

APPENDIX A

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

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

		Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Conditions:	Fugitive Dust **(refer to Table 1 below)**	Yes	All	OPA 980014 Section 2.11. Use water misting during demolition & road wetting during waste hauling.
	Storm Water Runoff	Yes	All	Install sediment/storm water protective "slip cover" around storm drain grating & silt fencing. Referenc OPA 980099, Install sand bags/silt fences as needed.
	Erosion Control	Yes	All	Grading, seeding, and mulching
	NESHAPS Calculation	Yes	All	Emission Levels determined to be below requirement. No US EPA approval required for these buildings.
	National Historic Preservation	No	N/A	Buildings WH-1,WH-2, WH-3 are not listed as a historic structure with the Ohio Historic Preservation Office (OHPO). No mitigative documentation package is required.
	• Artifacts found	Yes	All	If any items or artifacts are discovered as this project progresses, the Cultural Resource Representative will be notified @ extension 4080. Work will be temporarily suspended until which time the items or artifacts have been recovered.
	Safe Drinking Water Act	No	N/A	All Utilities were isolated with Utility Isolation Work Package
	• Potable water	Yes	All	The potable water system will be used for dust suppression, otherwise the buildings were disconnected from the potable water system during Utilities Isolation Work Package.
	• Backflow preventers for misting	Yes	All	Install backflow prevention for water misting source as directed by Environmental Compliance PoC
	Emergency Spill Response Materials (Confirm process lines are drained)	Yes	All	Ensure spill kits are available. Employees shall report any observed spills or releases to a Site Supervisor by dialing 608-8293 or 608-8294 or via NEXTEL phone at Site Sup1 or Site Sup2 or AASecurity.
	Locate Monitoring Wells	Yes	All	Barriers constructed around monitoring wells within project site boundary
Notifications:	RAPCA Notification for Asbestos	No	N/A	
	RAPCA Notification for Demolition	Yes	3	Required 10 business days before beginning demolition activity
	Emergency Spill Response Notification	Yes	All	Employees shall report any observed spills or releases to a Site Supervisor by dialing 608-8293 or 608-8294 or via NEXTEL phone at Site Sup1 or Site Sup2 or AASecurity.
	Other	None		

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

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

	Quantity Expected Cu. Ft.	Work Package Phase	Radiological Characterization	Packaging Requirements	Mode of Disposal
Types:					
Sanitary Landfill Waste: • Concrete • Steel & Copper Piping • Metal Roofing • PVC • Electrical Wiring • Fiberglass Insulation • Wood	7000	3	No elevated radioactivity levels	Trucks, rolloffs	Trucks to sanitary landfill.
Hazardous Waste: • RCRA Hazardous Waste • Asbestos • Other	None				
Mixed Waste	None				
Low Level Radiological Waste: • Building Debris • Below grade	None				
Transuranic (TRU) Waste	None				
NOTE: 1. Sealed pressure vessels will need to be at <1.5 atmosphere if present. 2. Any items not previously evaluated are to be set aside for evaluation by Waste Management prior to disposal.					
Other:					
Material sent off-site Fill out MD-200180 Attachment 1 (see below)	None				
Material sent to concrete crusher Fill out MD-200180 Attachments 1 & 2 (see below)	None				

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

EMERGENCY PREPAREDNESS

- Site Notification Procedures
  Use **911** for all emergency services onsite. This is the first response for any emergency. If using a cell phone, dial **AAA911** (NEXTEL). Any injury, no matter how minor, shall be reported immediately to the Medical Department for evaluation and treatment. The injured employee shall report any injury to the supervisor in charge or designee.

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

- Evacuation Route/Assembly Areas
  Assembly area for WH-1,2,3 is the roadway on the east side of the buildings outside the safe shutdown boundary. (see Site Map in Appendix C).

- Take Shelter Area
  Be aware of threatening weather and take shelter when life-threatening storms are imminent.
  The take shelter area is in COS Building, Room 120 and common hallways on 1st floor. (see Site Map in Appendix C).

APPLICABLE LESSONS LEARNED – See Appendix E

JOB SAFETY & HEALTH ANALYSIS

JSHA MASTER DOCUMENT CONTROL NO:
BOSS – # 40596

SIGNATURES

ORIGINATOR: 9/15/04
REVIEW/REV:
REVIEW/REV: 9-16-04
REVIEW/REV:
APPROVED: 9/27/04

DATE: 04/26/04	_X_ NEW ___ REV	BUILDING: WH-1,2,3	JOB: Demolish Building WH-1,2,3
DEPARTMENT/COMPANY: BOSS Project/CH2M Hill Mound, Inc.			SECTION: N/A

OCCUPATIONS: : Heavy Duty Operators, Demolition Tech's, Demolition Crafts, & Electricians.
Supported by Project Personnel e.g.. Supervision, Engineering, Building/Facility Manager, RAD Control, Ind. Hygiene, and Safety

REQUIRED PERSONAL PROTECTIVE EQUIPMENT:
Hard Hat, Safety Glasses with side shields, safety shoes, safety vest

MSDS(s)/CHEMICALS ASSOCIATED WITH THE JOB:

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

JOB SAFETY AND HEALTH ANALYSIS FORM
(CONTINUATION SHEET)

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

034 of 72

JOB SAFETY AND HEALTH ANALYSIS FORM
(CONTINUATION SHEET)

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

Appendix B

Pre-Job Briefings/Job Status Log

PRE-JOB BRIEFING RECORD

MSR/PROCEDURE (if applicable):	JOB SUPERVISOR:

A. Time, Date and Location of PJB: _____

B. Applicable Procedure Number: _____

C. Job Description: _____

D. Personnel Attending:

HP#	SIGNATURE	HP#	SIGNATURE

BRIEFING CHECK OFF LIST

JOB SUPERVISOR:

Check When Completed*

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

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

PRE-JOB BRIEFING RECORD (Page 2)

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

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

_____

Job Supervisor/Foreman Date

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

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

PRE-JOB UPDATE RECORD

MSR/PROCEDURE (if applicable):	JOB SUPERVISOR:

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

HP#	SIGNATURE	HP#	SIGNATURE

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

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

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

Job Supervisor/Foreman _____ Date _____

NOTE: Completed pre-job update sheet must be retained with the work package or maintained in your record file.
CAUTION: Working on or Near Live, Active Lines/Utilities
Consider Alternative Means of Protection (Blocking, Shielding, etc.)And Alternative Manual Methods for Removal

JOB STATUS LOG

1. WORK PACKAGE TITLE: Demolition of Buildings WH-1, WH-2, WH-3

2. WORK PACKAGE NUMBER: BOSS-40596 - 00

DATE	TIME	WORK PKG. SECTION	% Complete	BY	STATUS

Appendix C

Drawings/Sketches/Photographs

Drawings

- Well House #2 and #3 (originally Well House #1 and #2) Structural Drawing, 352000-02002
- Well House #2 and #3 Site Location, Underground Water Mains, and Location of Original Underground Gasoline Drawing, 352000-04017
- Well House #1 (originally Well House #3), Drawing 4-4125 (1962)

Vista Maps

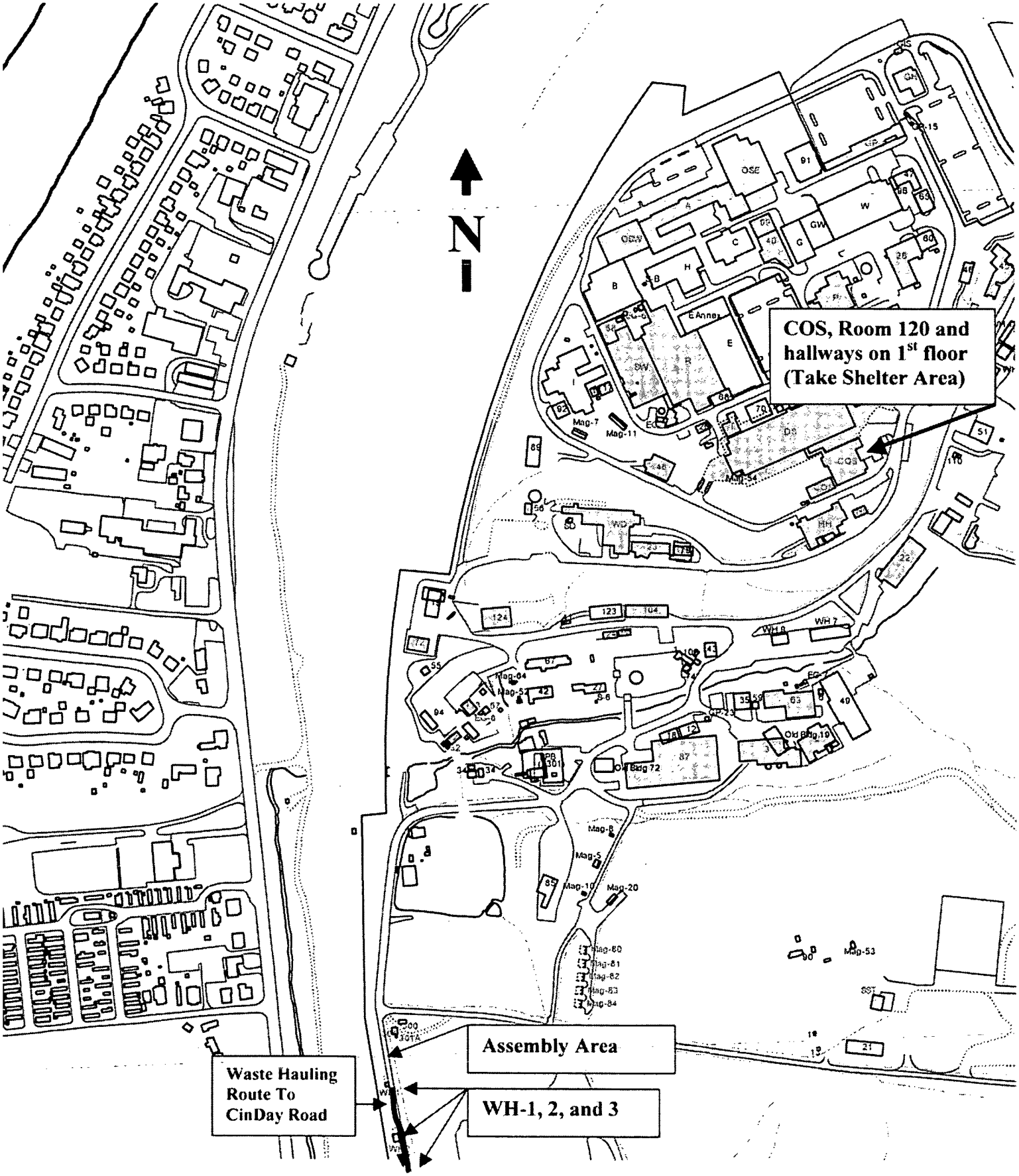
Site Map

WH-1, WH-2, WH-3

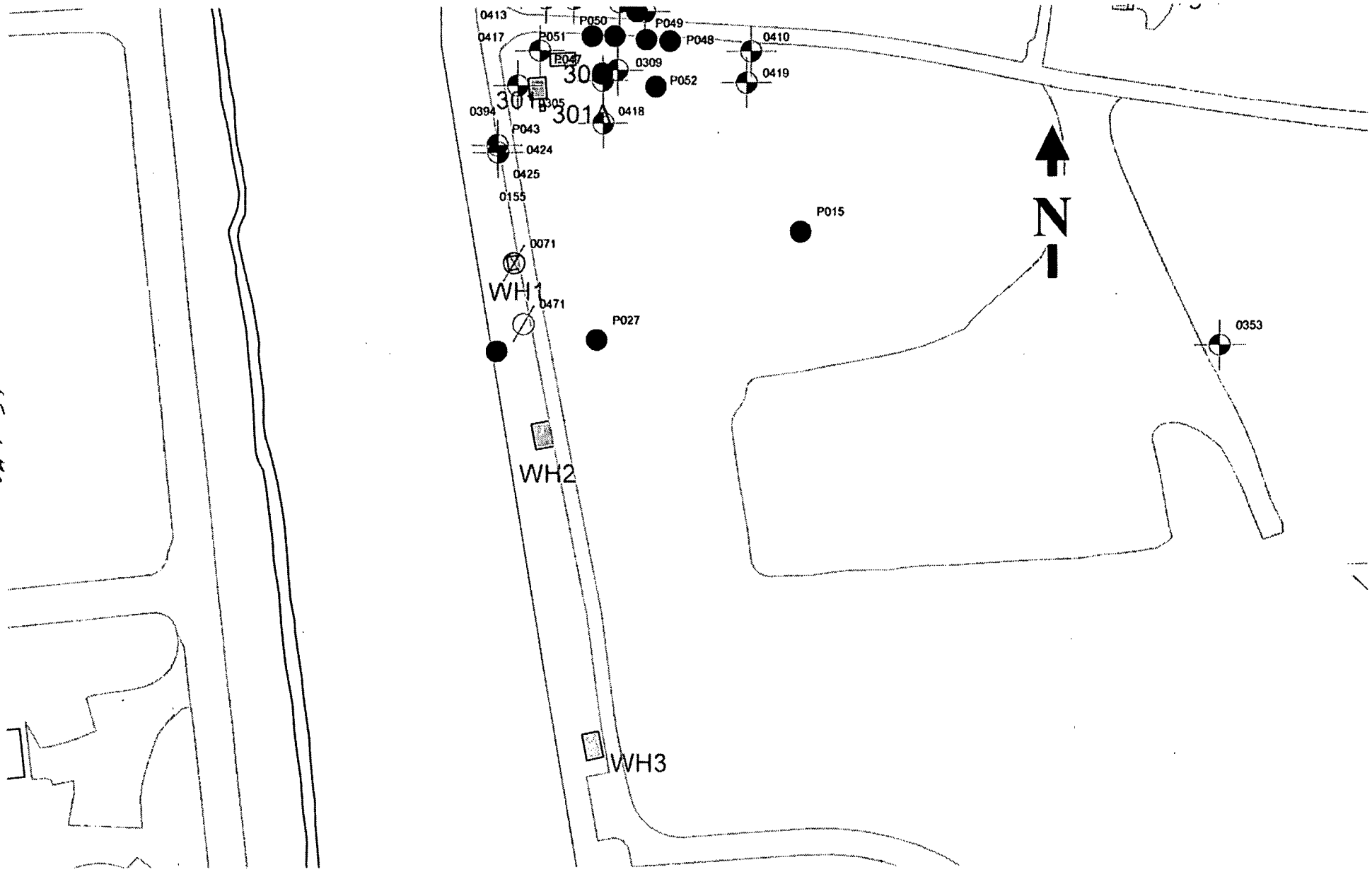
- Above Ground Stanchions
- Monitoring Wells
- Underground Utilities (wide view)
- Underground Utilities (close view)
- Underground Supply, Domestic, and Fire Water
- Underground Sanitary and Storm Sewer
- Underground Electrical, Communications, Signal and Grounding Systems
- Gas Line and Fuel Oil Lines
- Steam and Condensate, Chilled Water, Cooling Water, and Compressed Air

- **Soil Sample Locations**
- **URMAs**
- **Contour Lines**
- **Power Poles/Power-Light Poles**
- **Tanks**
- **Aerial Photos**

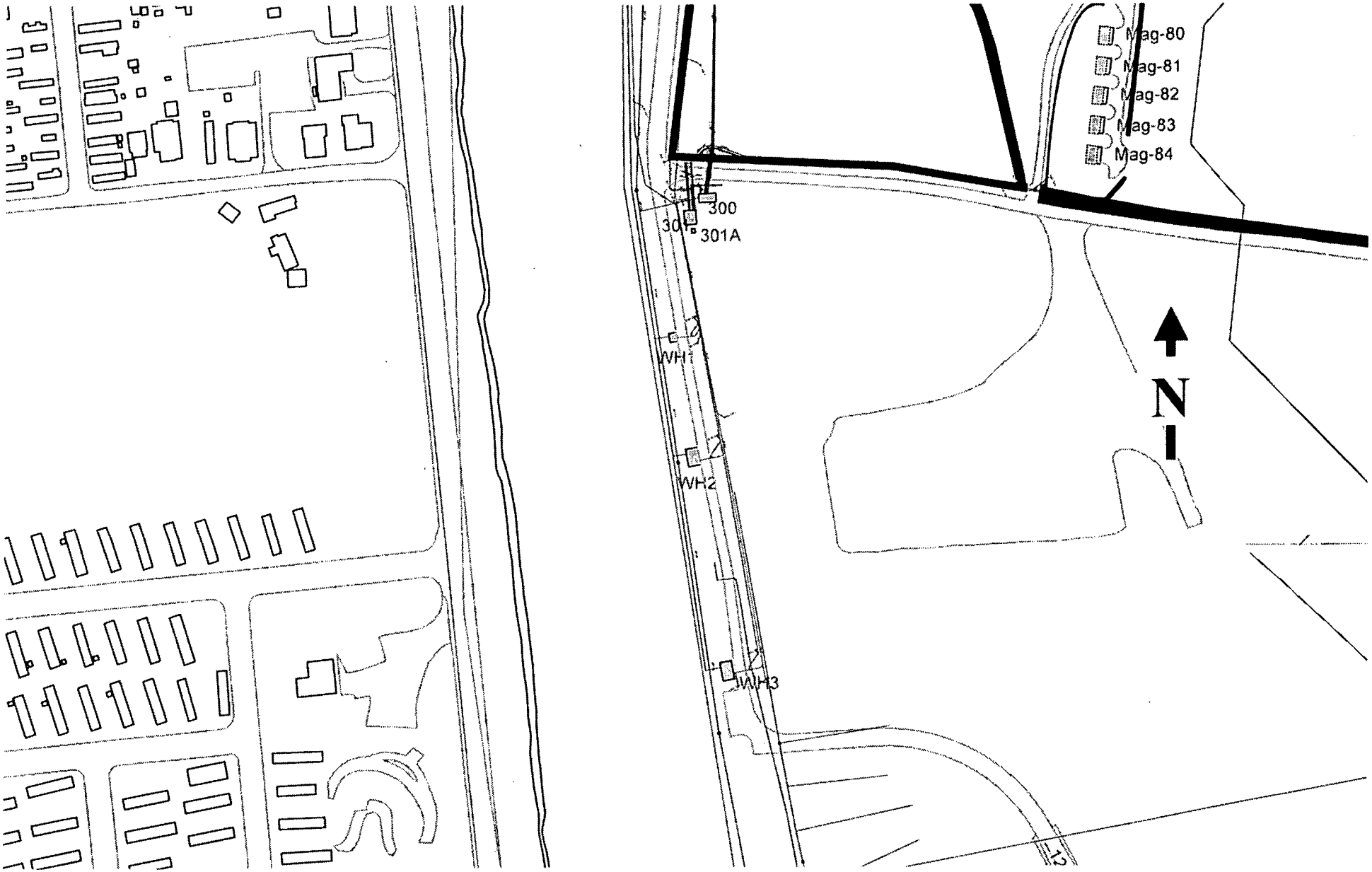
- **Site Map**


N
COS, Room 120 and hallways on 1st floor (Take Shelter Area)
Assembly Area
Waste Hauling Route To CinDay Road
WH-1, 2, and 3

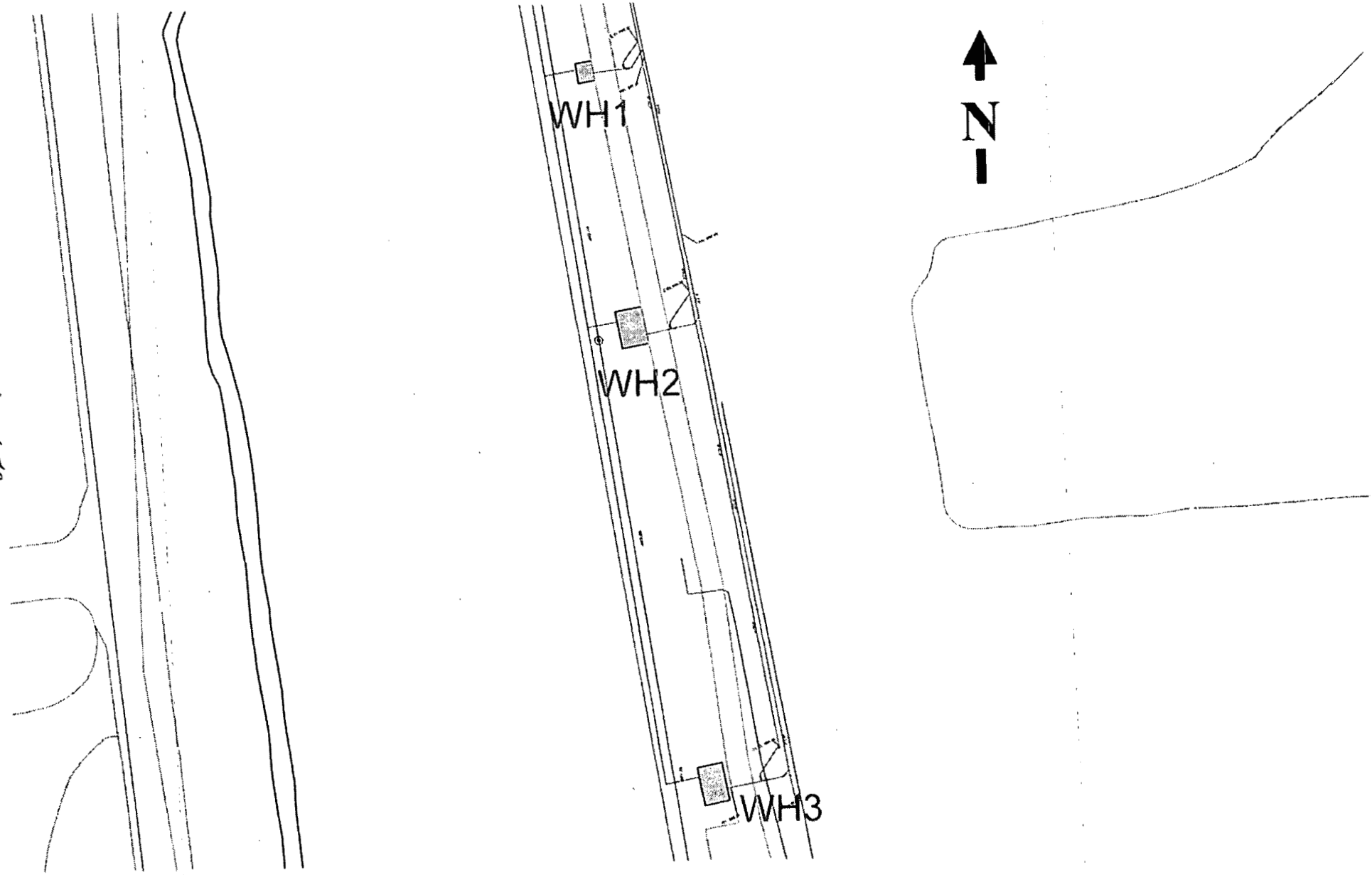
Aboveground Lines (Stanchions)



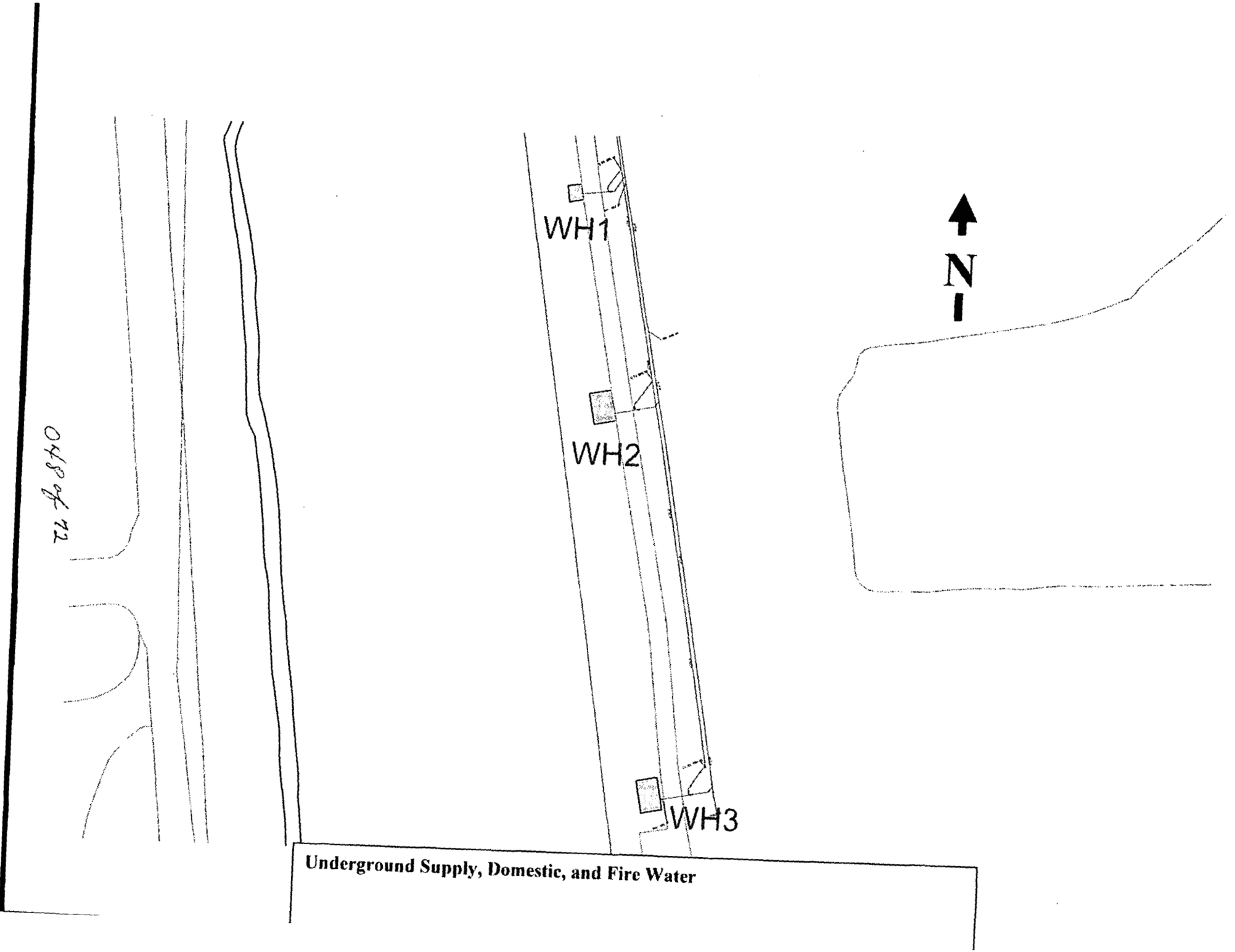
Monitoring Wells



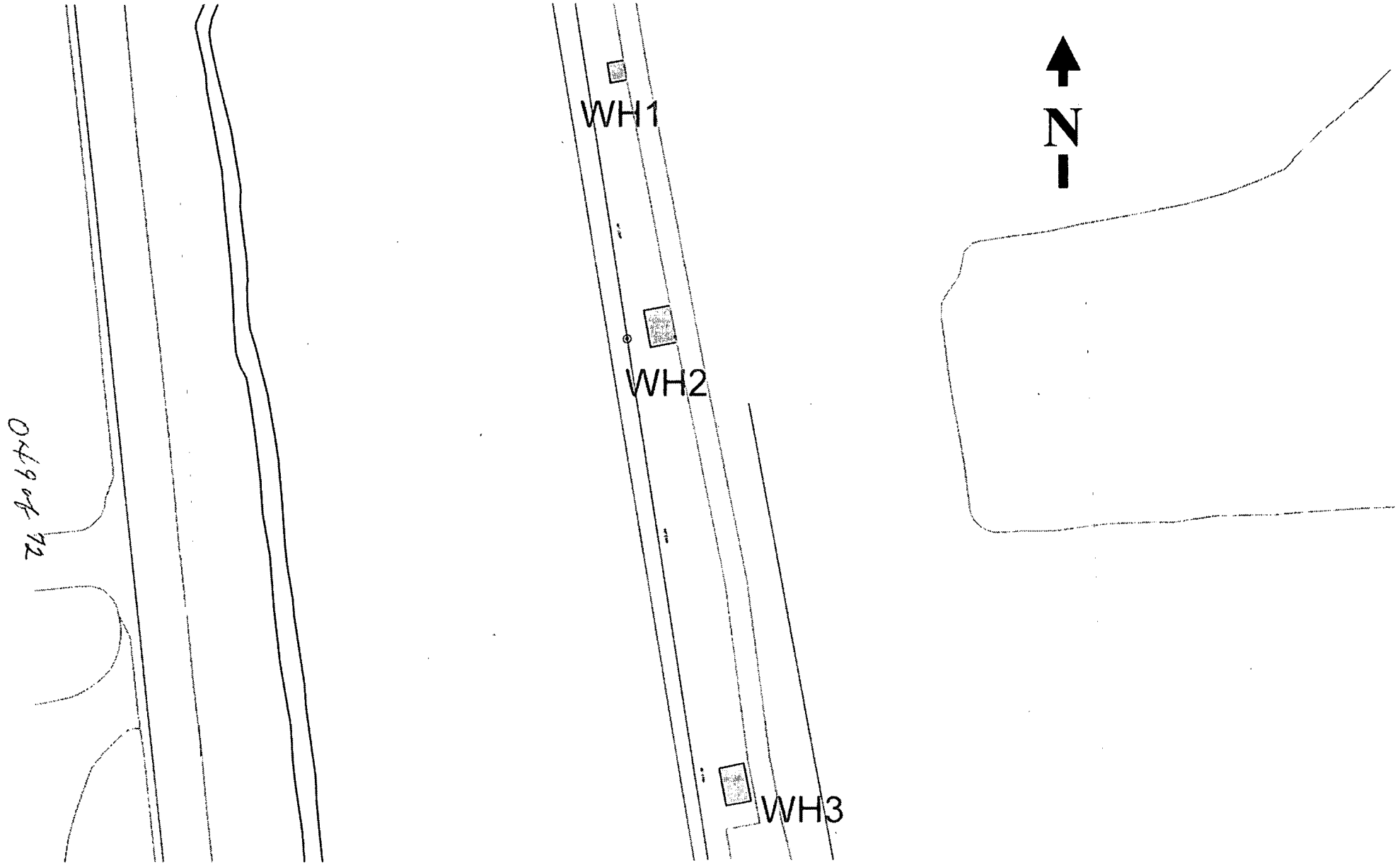
0 46 of 72



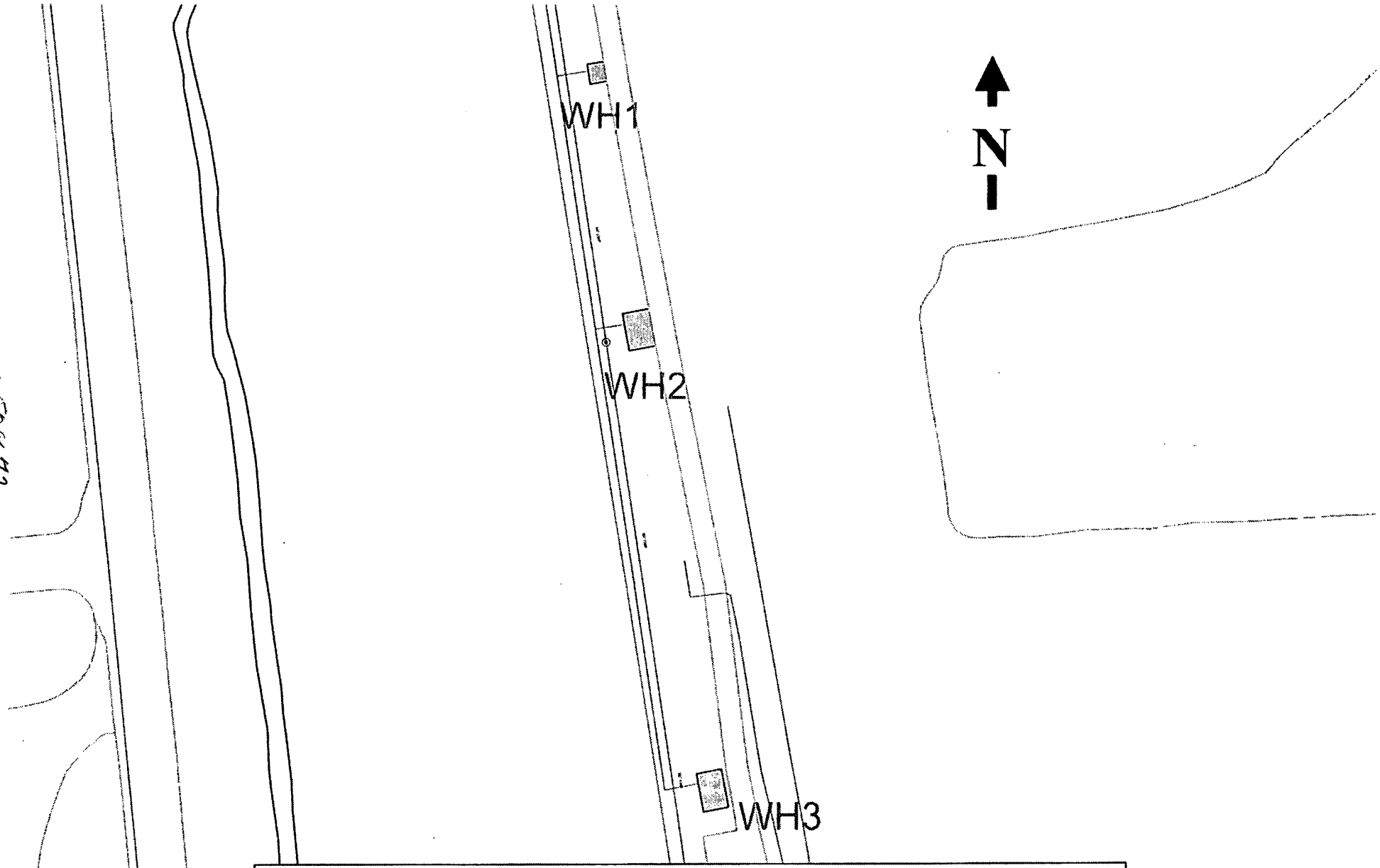
Underground Utilities (Close View)



Underground Supply, Domestic, and Fire Water

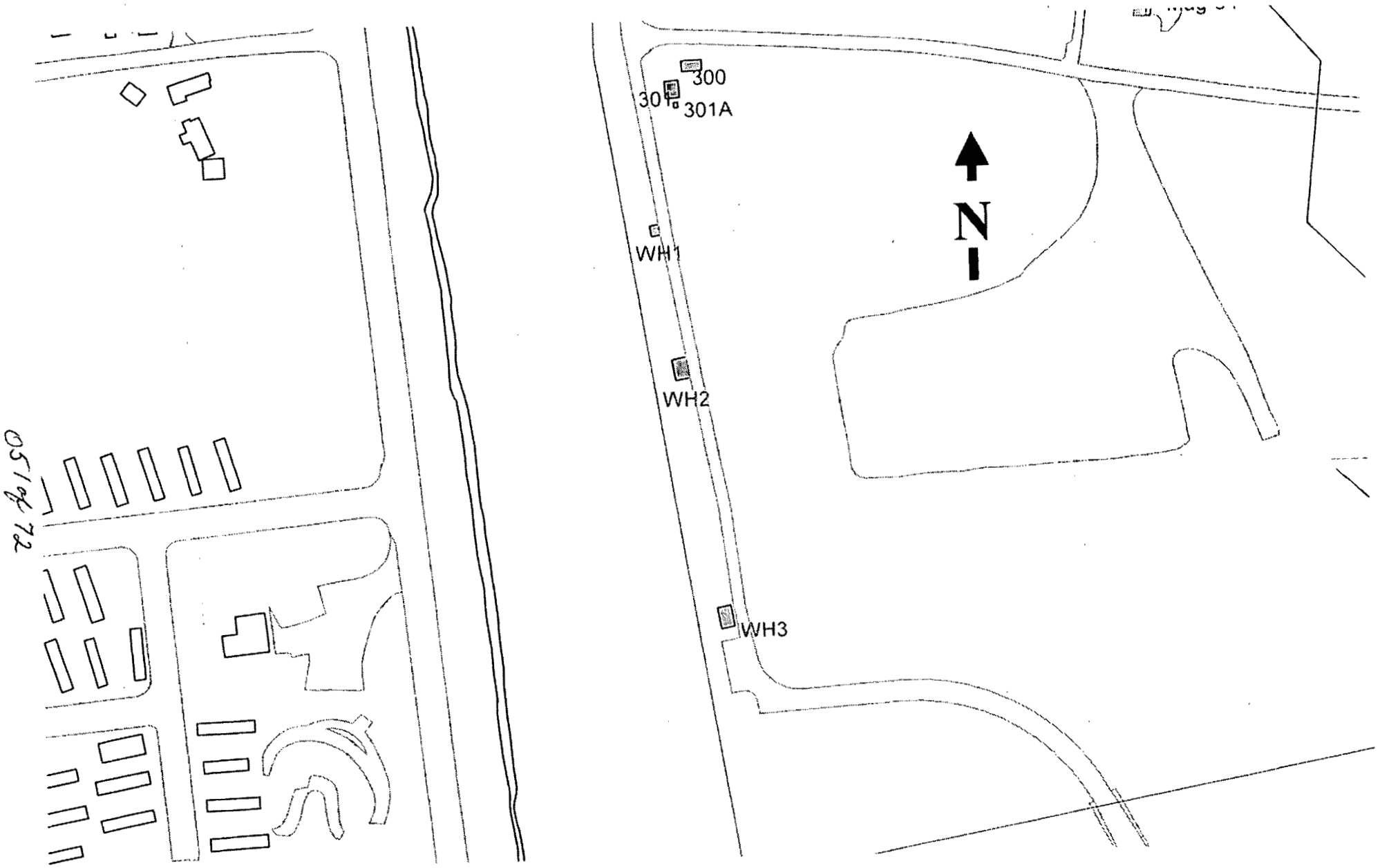


Underground Sanitary and Storm Sewer Systems

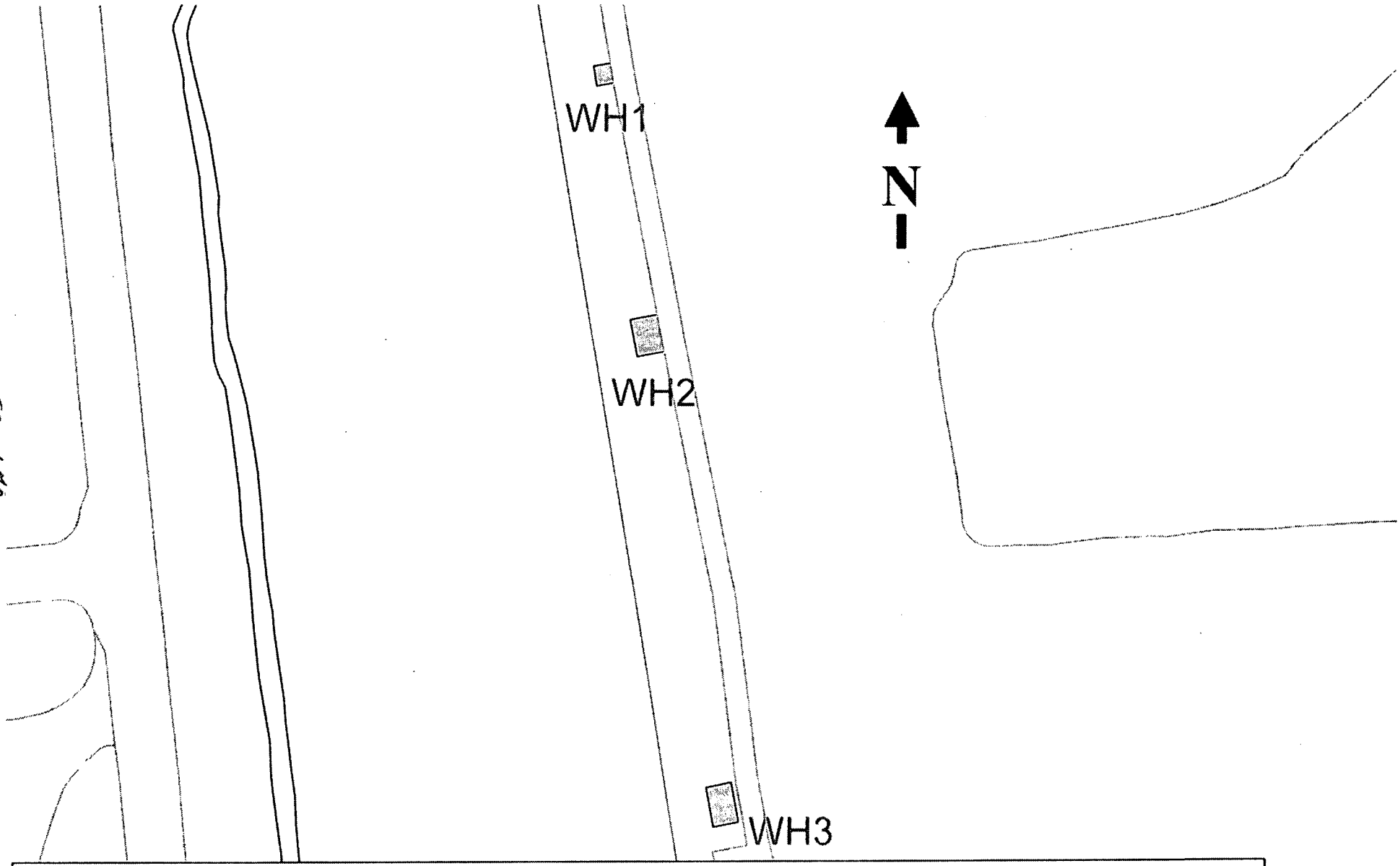


Underground Electrical, Communications, Signal and Grounding Systems

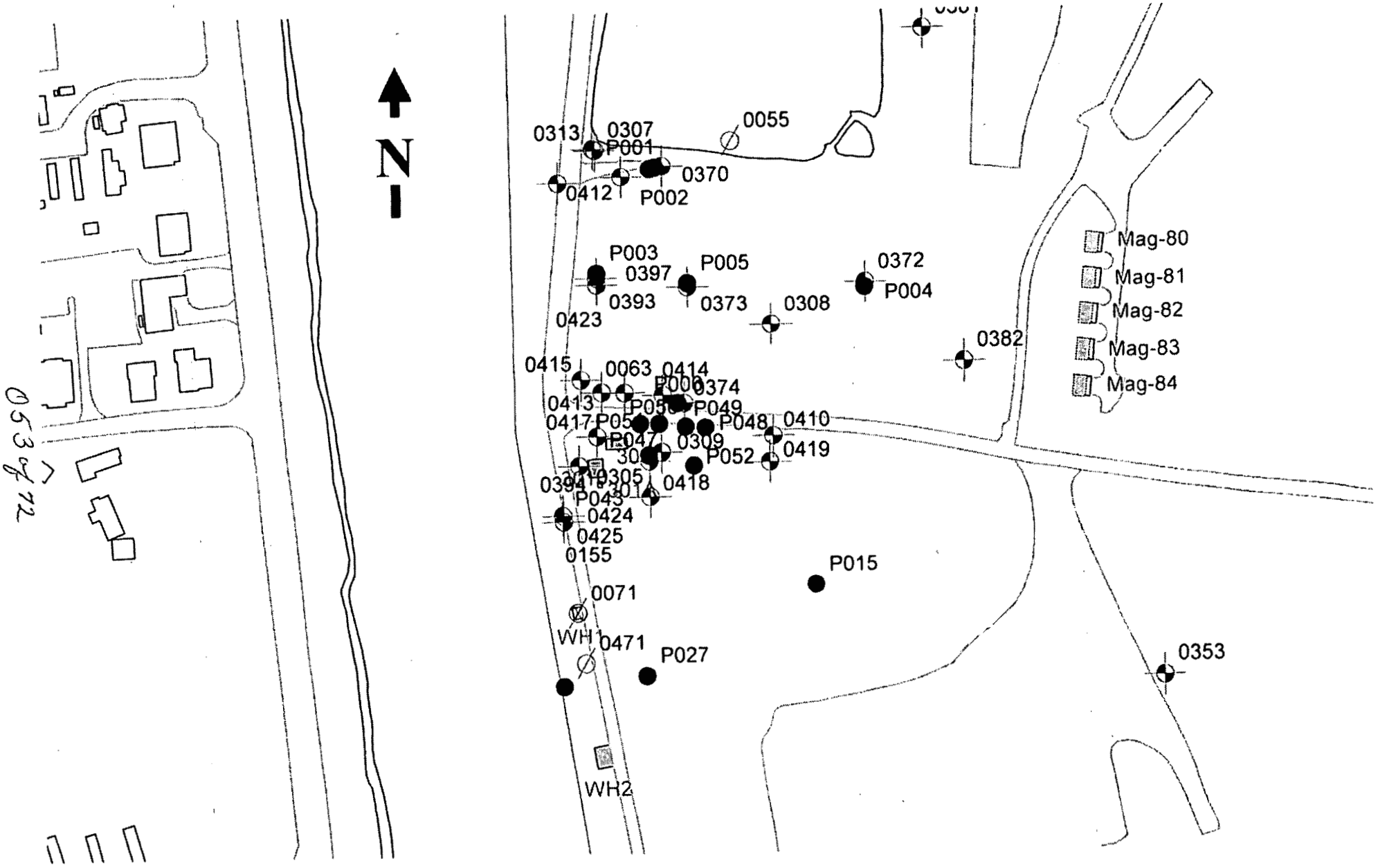
050 of 72



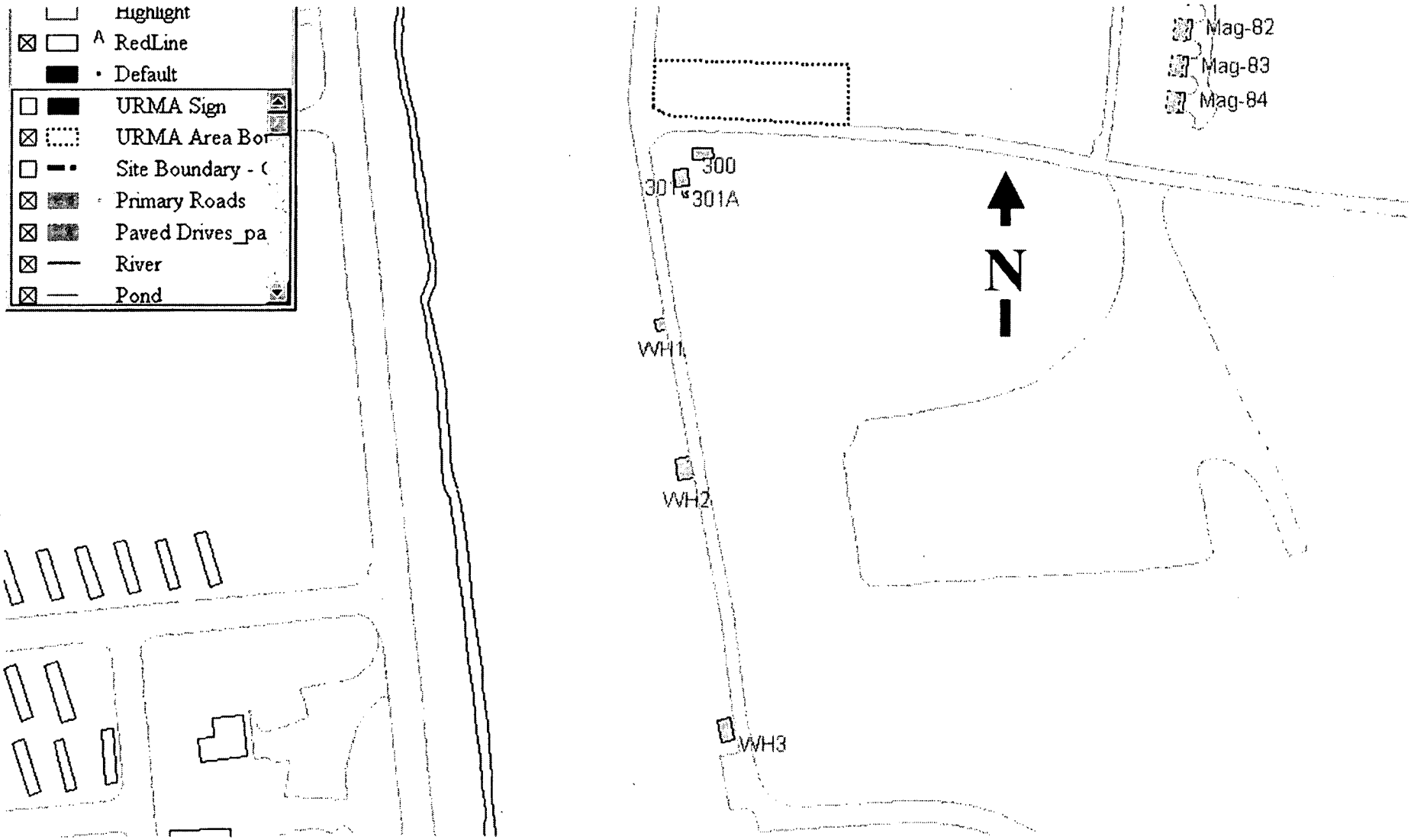
Gas and Fuel Oil Lines (None in Area)



Underground Steam & Condensate, Chilled Water, Cooling Water, Fuel Oil, and Compressed Air (None in Area)

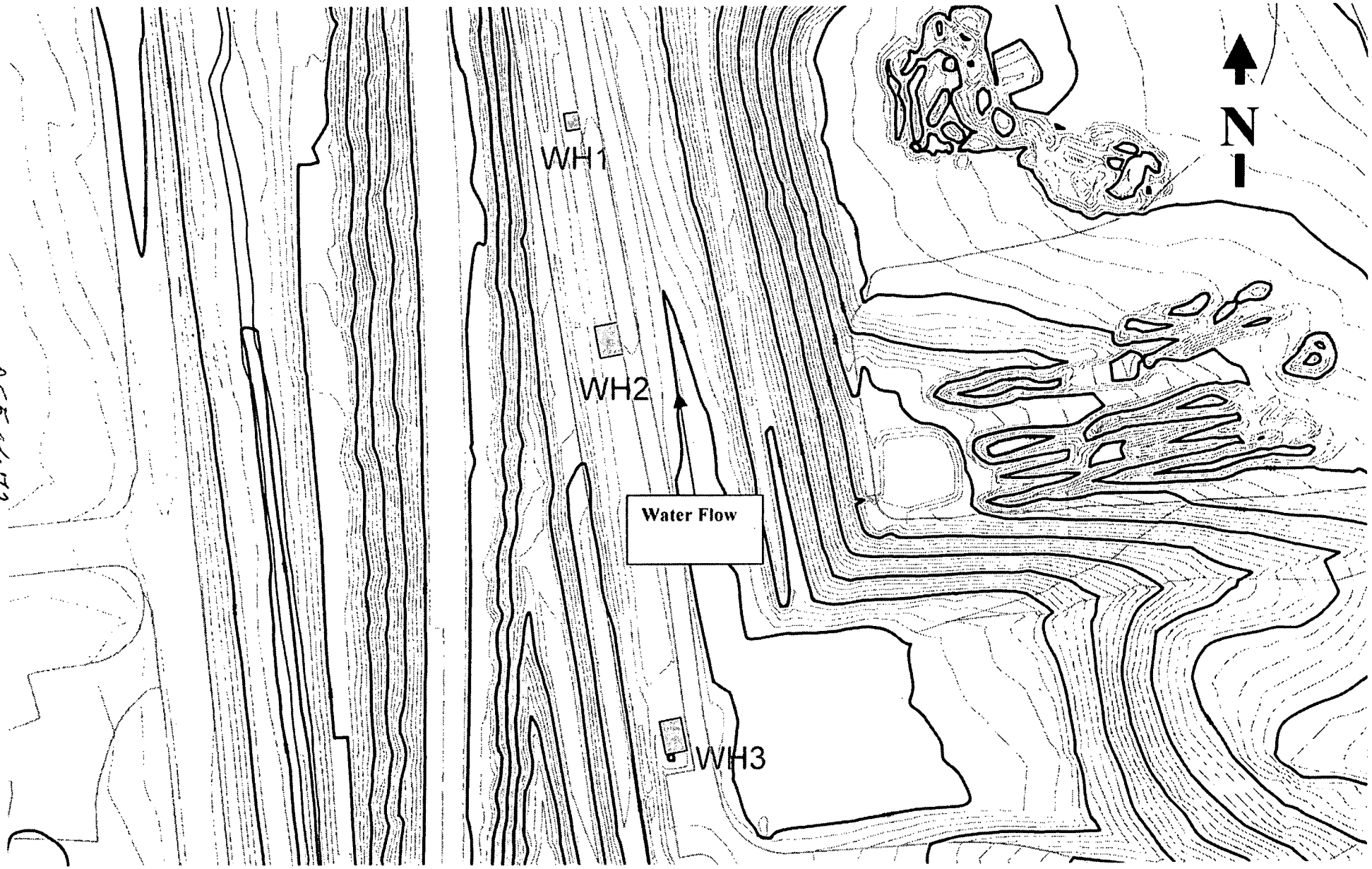


Soil Sample Locations



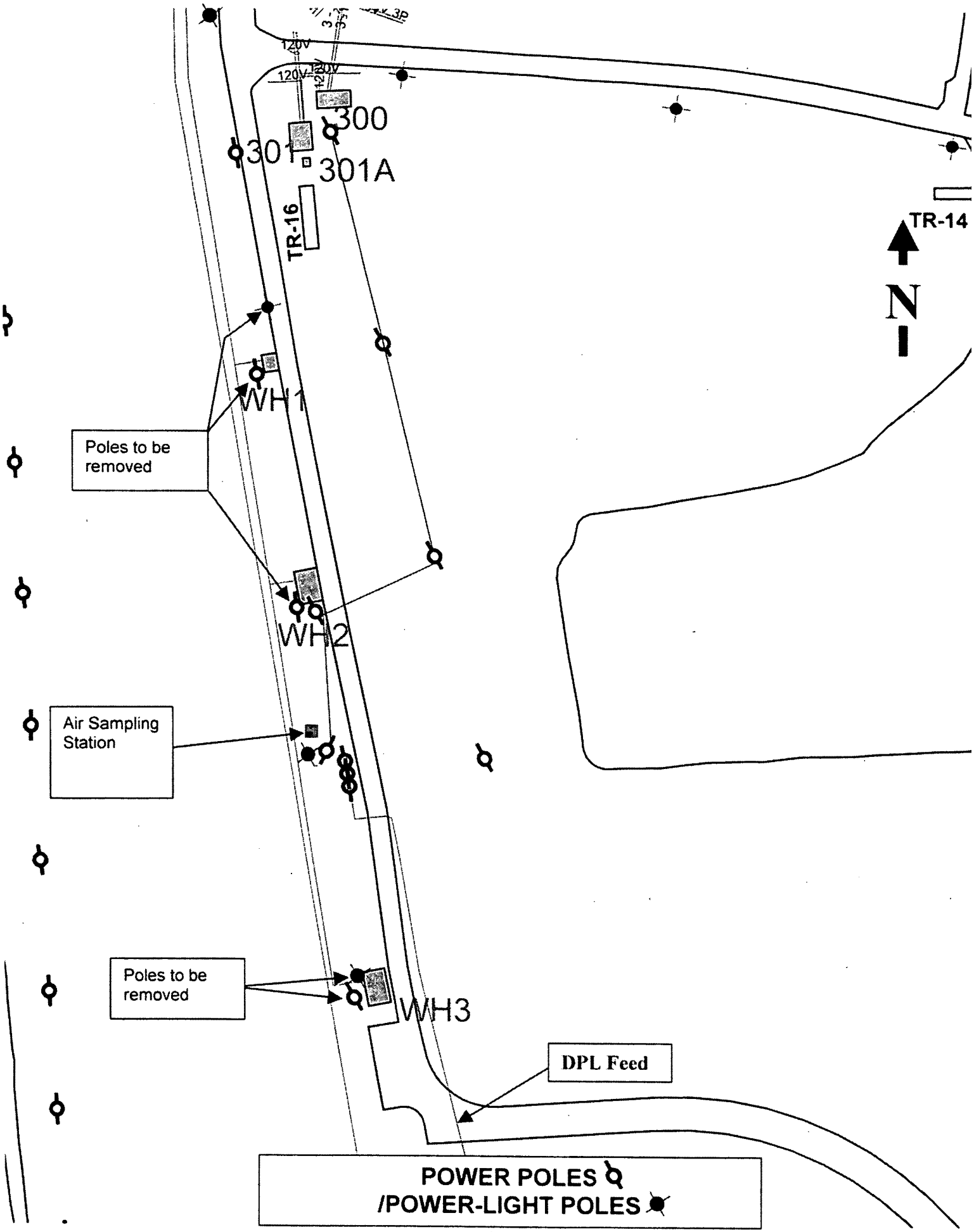
URMAs

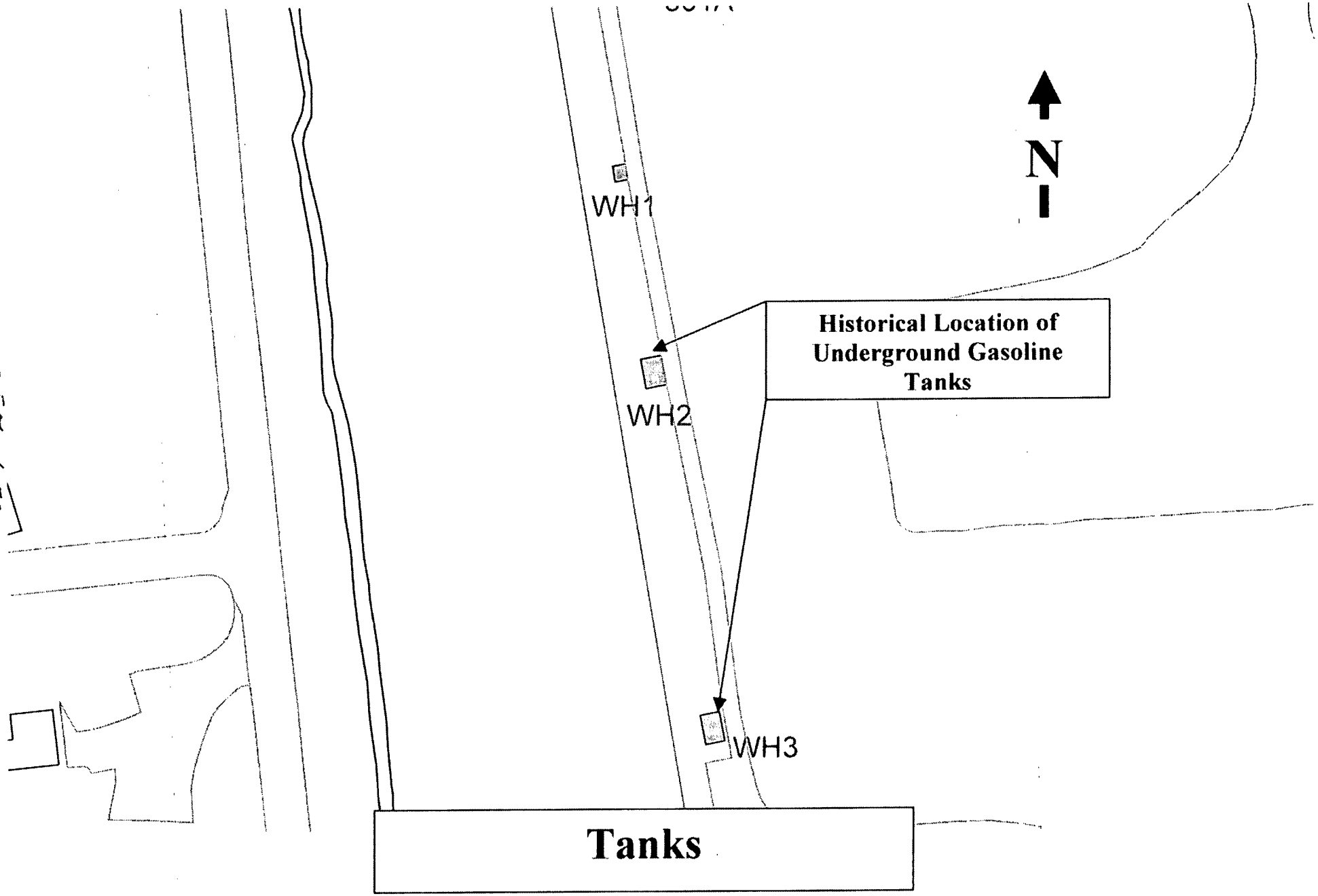
05 of 72



Contour Lines

055 of 72


120V
120V
120V
300
301
301A
TR-16
TR-14
N
WH1
Poles to be removed
WH2
Air Sampling Station
Poles to be removed
WH3
DPL Feed
POWER POLES
/POWER-LIGHT POLES


N
WH1
WH2
WH3
Historical Location of Underground Gasoline Tanks
Tanks

Aerial Photo

Q58 of 72

Appendix D

Miscellaneous

- No USQ required for this Work Package
- No RWP required for this Work Package
- Solid Waste Debris/Rolloff Release form.
- PRSs in Proximity to Buildings WH-1, 2, and 3
- Work Package Material List
- Structural Engineering Survey Letter per 29 CFR 1926.850
- Road Closure Form

059 of 72

Attachment 1, (Example) Solid Waste Debris/Roll-off Release – ML9901 (10/02)

SOLID WATE ROLL-OFF RELEASE

ROLL-OFF NUMBER: _____ **WASTE GENERATED:** _____

BUILDING/AREA	Buildings with no Rad History		**Buildings/Rooms with Rad History**	
	ANNUAL SURVEY (DATE/NO.)	**ROLL-OFF/ DEBRIS PILE SURVEY (DATE/NO.)**	**ITEM/AREA PRE-DEMOLITION/TRANSITION SURVEY or MARSSIM METHODOLOGY\ (DATE/NO.)**	**COMMENTS**

060 of 72

The demolition/solid waste being disposed of from the Mound Location identified above meets the standards established by the Mound Guidance for Disposal of Solid Waste in agreement with the Ohio Environmental Protection Agency and the Department of Health Bureau of Radiological Protection. The Mound Guidance for Disposal of Solid Waste establishes standards for the survey of demolition debris and solid waste. The radiological surveys of the demolition debris/solid waste comprising this shipment were conducted in accordance with approved procedures and the use of best available technology as described in the Mound Guidance for Disposal of Solid Waste.

_____ Date_____

Waste Operations Manager or Designated Representative

ML-9901 (10/02).

Attachment 2 – FREE RELEASE SURVEY FOR WASTE DISPOSED OF IN ROLL-OFFS TO LOCAL LANDFILL

I. **BUILDINGS WITH NO RAD HISTORY** (MARSSIM NON-IMPACTED AREAS)	II **BUILDINGS/ROOMS WITH RAD HISTORY** (MARSSIM CAT,. 1, 2, & 3)	
ANNUAL SURVEY	PRE-DEMOLITION/TRANSITION SURVEY OR	
AND	MARRSIM methodology for unrestricted release of building structure. Equipment/furniture left in the building for D&D or that is part of a clean-out will have a representative survey of horizontal surfaces. OR	NOTES: Structural materials or specific item identified as contaminated above the limits in MD-80043, OP 400 may be decontaminated and resurveyed to determine if it meets release survey criteria
ROLL-OFF/DEBRIS PILE SURVEY	Item Specific free release requires a survey/ evaluation in accordance with MD-80043, OP 400 or OP 500, as appropriate.	

PRSs in Proximity to Buildings WH-1, 2, and 3

PRS	CERCLA or Bldg. Related	Binning Status	Comments
13	CERCLA	NFA	**Trash Incinerator In The Old Burn Area Which Is Part Of Operable Unit 1.**
282	CERCLA	NFA	**Spoils Disposal Area.**
414	CERCLA	Retired	**South Area Groundwater and Soil Evaluation.**
419	CERCLA	NFA	**Drainage Outflow Reroute.**

WORK PACKAGE MATERIAL LIST

Work Package # **Demolition of Buildings WH-1, 2, and 3** Page ___ of ____

Work Package Description **BOSS-40596-00**

Item #	Qty.	Units	Material Description	Used For	Suggested Supplier
1		ea	Check spill kits	Spills	

(937) 259-5000 tel • LJB Inc. • (937) 259-5100 fax • ljbinc.com
3100 Research Blvd • P.O. Box 20246 • Dayton, OH 45420-0246

September 27, 2004

Mr. Gary Weidenbach
CH2M Hill Mound
Miamisburg, Ohio

Re: Structural review of work package for the demolition of buildings 24, PH, WH-1, WH-2, WH-3

Dear Gary:

We have reviewed the demolition work plan for the referenced structures and have found them to be acceptable in reference to the OSHA requirements.

Please feel free to contact me at (937) 259-5039 if you need any additional information.

Sincerely,

LJB Inc.

Kevin E. Wilcox

Kevin E. Wilcox, P.E., C.S.P.
Principal

STATE OF OHIO
KEVIN E. WILCOX
E-61059
REGISTERED PROFESSIONAL ENGINEER

cc: File

W:\CH2M Hill\22269\sup\l22269d - building 24.doc

Road Closure/Blockage Checklist
(COMPLETE PRIOR TO CLOSING ROAD)

	Yes	N/A
1. Determine location and length of time for road closure.		
2. Notify Security for possible site access changes as needed and for emergency access.		
3. Inspect re-route traffic pattern for overhead obstacles, pavement condition and narrow passageway.		
4. Determine one-way or two-way traffic pattern, assign flag personnel, utilize cones, barricades and appropriate signage.		
5. Assure clear distance from permanent structures (sidewalks, fences, building, stanchions, etc.).		
6. Issue plant notification (include subcontractors, MMCIC, etc.) and include location, length of closure, alternate route, identify clearances, blind spots and remind site supervision to discuss in daily briefings.		
7. List and notify Buildings/Projects Impacted:		
8. Notify MMCIC.		

Project Safety POC Review _____ Date _____

Project Manager Approval _____ Date _____

Appendix E

LESSONS LEARNED/ POST-JOB CONFERENCE

EVENTS

1. EXCAVATOR BOOM CONTACTS OVERHEAD 13.8 KILOVOLT POWER LINE

On April 22, 2002, at the Rocky Flats Environmental Technology Site, the boom of an excavator contacted an overhead 13.8 kilovolt high-voltage power line, causing a visible electrical arc and tripping a substation circuit breaker. The excavator was being used to dismantle a building using mechanical shears attached to the boom for breaking up concrete. The line was checked for damage and it was returned to service a short time later. There were no injuries to the operator or equipment damage. (ORPS Report RFO--KHLL-NONPUOPS3-2002-0002)

The equipment operator was moving the excavator to position it out of the work area by extending the boom to assist in turning (see Figure 1). During one of these maneuvers, the boom contacted the power line, which was approximately 23 feet above the ground. A spotter was not used because the excavator was not expected to operate near the overhead lines.

Figure 1. Excavator with boom positioned on the ground

A similar incident was reported in Operating Experience Summary 2000-09, in which a mobile television crew was injured when their transmission antenna contacted an overhead power line. The television crew was extending the antenna mast from their truck to transmit a live broadcast when the mast contacted an overhead power line and caused a small electrical fire and explosion inside their van. A camera operator outside the truck and an operator inside the truck were taken by helicopter to a hospital for treatment of burns.

The Occupational Safety and Health Administration regulation 29 CFR 1910.333(c)(3)(iii)(A), *Vehicular and Mechanical Equipment*, states that any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead lines shall be operated so that a clearance of 10 feet is maintained.

This event demonstrates the importance of exercising extreme caution when operating excavators, cranes, front-end loaders, forklifts, and other vehicles in the vicinity of power lines. Pre-job briefings, facility procedures, and training programs should emphasize the dangers associated with these types of operations. Many events have occurred because equipment operators were not aware of potential hazards around and above them. The use of a spotter in this circumstance might have prevented this occurrence.

KEYWORDS: *Electric line, excavator, overhead line, electrical safety*

ISM CORE FUNCTIONS: *Develop and Implement Hazard Controls, Perform Work within Controls*

2. INADEQUATE EQUIPMENT GROUNDING RESULTS IN ELECTRICAL SHOCK

On January 29, 2002 at the Savannah River Site, a cafeteria services worker received a shock to his right hand while attempting to turn off an electric kitchen stove. The worker had seen electrical sparks underneath the 208-volt stove and decided to turn the stove control to the "off" position. Investigators later determined that the stove housing was inadequately grounded to prevent a shock. The worker did not require medical attention, but the shock to his right hand resulted in a near-miss occurrence. (ORPS Report SR--WSRC-FSSDGEN-2002-0001; final report filed March 25, 2002)

A critique of the event revealed that the stove was a replacement unit that had been installed in 2000, without upgrading the existing wiring and without verifying that the grounding was adequate after installation was complete. The electrical junction box for the replacement stove was located at the bottom of the unit and the power supply wires, inside a flexible conduit, rested against the sheet metal of the junction box.

The direct cause was a defective or failed part because the insulation on one of the power supply conductors touching the junction box had melted, causing an electrical short. Because of this short and the inadequate grounding of the stove, the worker received a shock. Daily use of the stove had generated high levels of heat for prolonged periods of time. Some of this heat apparently transferred to the junction box through conduction and melted the insulation.

The contributing cause was the electrician's failure to verify that the stove had been properly grounded after he installed it.

The root cause of this event was an inadequate or defective design. Maintenance personnel assumed that installation of the new stove was a direct replacement of the old one. The electrician failed to consider that the existing wiring would need to be upgraded, and used the same flexible conduit and wiring that was used for the old stove.

The following corrective actions have been implemented or are underway:

- Submit a lessons-learned document to the division lessons learned coordinator for review and sitewide distribution on the necessity of conducting a design review before replacing installed industrial-class electrical equipment.
- Ensure that all industrial-class equipment in the facility is properly grounded and that circuit breaker protection is adequately rated.
- Ensure that the new stove is grounded correctly and that it has effective circuit breaker protection.

Transporting Portable Fuel Tanks

(L03-012)

Lessons Learned Statement:

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

Discussion:

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

Analysis:

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

Recommended Actions:

1. Operators must take the required time to adjust lifting forks to the proper width required by the item being lifted. The practice of moving the portable tanks with only one fork set into the lifting slots should be discontinued. Further, setting of the forks into both lifting slots must be verified prior to beginning the lift.

2. Spill kits should be located at the job site where portable fuel tanks are being used.

3. Work plans should provide special precautions when using or transporting portable fuel tanks near bodies of water.

POST JOB CONFERENCE

1. WORK PACKAGE TITLE: Demolition of Buildings WH-1,WH-2, WH-3
2. WORK PACKAGE NUMBER. BOSS-40596 - 00.

What went well?

What could be improved?

Other Comments:

Items Requiring Further Action:

POST-JOB CONFERENCE ATTENDEES

NAME	HP	NAME	HP

LESSONS LEARNED INPUT FORM

Title: (This is a brief descriptive title)

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

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

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

Recommended Actions: (Identify specific corrective actions)

Submitted by: _____ Date: _____

OPTIONAL

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