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ER-088/03
August 28, 2003

Mr. Richard B. Provencher, Director
Miamisburg Closure Project
U. S. Department of Energy
500 Capstone Circle
Miamisburg, OH 45342

SUBJECT: Contract No. DE-AC24-03OH20152
Contract Deliverable 039 - PRS Documents
**UGL ACTION MEMO: REMOVAL ACTION OF SOIL AND UNDERGROUND WASTE TRANSFER LINES LEADING TO WD BUILDING, PUBLIC REVIEW DRAFT**

Dear Mr. Provencher:

Danny Punch from your office has approved the release of the following document for public review:

- UGL Action Memo: Removal Action of Soil and Underground Waste Transfer Lines Leading to WD Building, Public Review Draft

USEPA and OEPA comments were incorporated. The public review period is 29 August 2003 through 28 September 2003. Any public comments will be addressed in the final document. If you have any questions regarding the document, please contact Dave Rakel at Extension 4203.

Sincerely,

Monte A. Williams
Deputy Project Manager, Environmental Restoration

MAW/KMA/jdg

Enclosure
cc: David Seely, USEPA, (1) w/attachments
Mary C. Wojciechowski, Tetra Tech EM, Inc., (1) w/attachments
Brian Nickel, OEPA, (4) w/attachments
Ruth Vandegrift, ODH, (1) w/attachments
Paul Lucas, DOE/MCP, (1) w/attachments
Danny Punch, (1) w/attachments
Lisa Rawls, DOE/MCP, w/o attachments
Randy Tormey DOE/OH, (1) w/attachments
Dann Bird, MMCIC, (3) w/attachments
J. D. Bonfiglio, MESH, (1) w/attachments
Monte Williams, CH2M HILL, (1) w/attachments
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John Fulton, CH2M HILL, w/o attachments
Gene Valett, CH2M HILL, w/o attachments
Public Reading Room, (4) w/attachments
DCC, (1) w/attachments

0401

ACTION MEMORANDUM
ENGINEERING EVALUATION/COST ANALYSIS

# UGL ACTION MEMO

## REMOVAL ACTION OF SOIL & UNDERGROUND WASTE TRANSFER LINES LEADING TO WD BUILDING

AUGUST 2003

PUBLIC REVIEW DRAFT

Department of Energy
Miamisburg Closure Project

CH2MHILL

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# ACRONYMS

| | |
|---|---|
| AGL | aboveground waste transfer line |
| AM | Action Memorandum |
| ARARs | Applicable or Relevant and Appropriate Requirements |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CFR | Code of Federal Regulations |
| COC | contaminant of concern |
| D&D | decontamination and decommissioning |
| DOE | Department of Energy |
| DOT | Department of Transportation |
| EE/CA | Engineering Evaluation/Cost Analysis |
| ER | Environmental Restoration |
| FFA | Federal Facilities Agreement |
| HASP/JSHA | Health and Safety Plan/Job Safety and Health Analysis |
| MCP | Miamisburg Closure Project |
| MEMP | Mound Environmental Management Project |
| NCP | National Oil and Hazardous Substances Pollution Contingency Plan |
| NPDES | National Pollutant Discharge Elimination System |
| NPL | National Priorities List |
| OAC | Ohio Administrative Code |
| OEPA | Ohio Environmental Protection Agency |
| OSC | On-Scene Coordinator |
| OSHA | Occupational Safety and Health Administration |
| PRS | Potential Release Site |
| RA | Removal Action |
| RBGV | Risk-Based Guideline Value |
| ROD | Record of Decision |
| RCRA | Resource Conservation and Recovery Act |
| SARA | Superfund Amendments and Reauthorization Act |
| UGL | underground waste transfer line |
| USEPA | United States Environmental Protection Agency |
| VOC | volatile organic compound |
| VSAP | Verification Sampling and Analysis Plan |

## 1.0 PURPOSE

The U.S. Department of Energy (DOE) is the designated lead agency under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and removal actions at the Miamisburg Closure Project (MCP) (previously called the Mound Environmental Management Project or MEMP) are implemented as non-Superfund, federal-lead actions. DOE acts as the On-Scene Coordinator (OSC). Non-Superfund, federal-lead removal actions are not subject to United States Environmental Protection Agency (USEPA) limitations on the OSC ($50,000 authority) and are not subject to National Oil and Hazardous Substances Pollution Contingency Plan (NCP) limitations on removal actions (i.e., $2,000,000 in cost and 12 months in duration).

This Action Memorandum (AM) Engineering Evaluation/Cost Analysis (EE/CA) has been generated to document the general site conditions that would justify application of a Removal Action (RA) consistent with CERCLA, to propose the RA described herein, and to allow public input.

## 2.0 SITE CONDITIONS AND BACKGROUND

### 2.1 Site Description

This section describes the physical site location, site characteristics, release of contaminants into the environment, and the site's National Priorities List (NPL) status.

#### 2.1.1 Physical Location

The MCP Site is located on the southern border of the City of Miamisburg in Montgomery County, Ohio, approximately 10 miles south-southwest of Dayton and 45 miles north of Cincinnati.

This RA is proposed for the removal of the underground waste transfer lines (UGLs) and above ground lines (AGLs) that previously transferred waste to WD Building from H, R, SW, DS, and T Buildings.

The UGLs include the Potential Release Sites (PRSs) identified in Table 1. The locations of the UGLs are shown on Figure 1, and photographs (taken in 2000) of the areas where the lines are located are provided in Appendix A.

The AGLs include two overhead lines suspended from stanchions and two ground level lines; all of which are shown on Figure 1 and listed in Table 3.

This RA also addresses required removal of soil and non-superstructure concrete that may be associated with RAs for WD and HH Building, Old SD facility, Buildings 23 and 125, and soil PRSs 123, 124, and 415.

#### 2.1.2 Site Characteristics

The UGLs were used to connect sumps and process lines from within T, R, SW, DS, and H Buildings to the WD process treatment facility for treatment of generated radiologically contaminated liquid and sediment waste.

HH and WD Buildings contained alpha and beta wastewater treatment processes, and their superstructures and foundations will be demolished per their respective AM (References 1 and 2). Buildings 23 and 125 will be demolished per their AM (Reference 3). There are

no PRSs associated with any of the four building soils or AGLs, but they are listed in Table 3 for completeness. This AM addresses any soil/concrete required to be removed and subsequent sampling within and adjacent to the building footprints.

In 1999, the vitrified clay pipe waste transfer lines (PRSs 427 and 428, and portions of PRSs 429 and 438) from north of WD Building to the top of the adjacent hill were capped and filled with concrete. This includes six manholes (HW-2, HW-4, HW-6, HW-8, HW-12, and HW-16) associated with the lines.

### 2.1.3 Associated PRSs

A total of 27 PRSs are included in this AM. There are 21 PRSs (Table 1) where removal is expected prior to verification/confirmation. There are six PRSs (Table 2) where removal was previously performed (mostly related to Old SD facility) but verification/confirmation is required and will be performed under this AM.

**Table 1 – PRSs with RA & Sampling**

| PRS | Description |
|---|---|
| 123 | Area 5, radioactive waste line break |
| 124 | Building 48 hillside |
| 415 | Soil contamination – Radiological SCR 307 |
| 423 | Hot waste line, segment 1A |
| 424 | Hot waste line, segment 1B |
| 425 | Hot waste line, segment 2 |
| 426 | Hot waste line, segment 5 |
| 427 | Hot waste line, segment 6 |
| 428 | Hot waste line, segment 7 |
| 429 | Hot waste line, segment 9 |
| 430 | Hot waste line, segment 9b |
| 431 | Hot waste line, segment 10 |
| 432 | Hot waste line, segment 11 |
| 433 | Hot waste line, segment 12 |
| 434 | Hot waste line, segment 13A |
| 435 | Hot waste line, segment 13B |
| 436 | Hot waste line, segment 14 |
| 437 | Hot waste line, segment 3 |
| 438 | Hot waste line, segment 4 |
| 439 | Hot waste line, segment 4A |
| 440 | Hot waste line, segment 8 |
| | **Note:** This AM includes removal of other waste lines that may be identified during the course of the UGL RAs. |

**Table 2 – PRSs with Sampling Only (Removal Previously Performed)**

| PRS | Description/Comment |
|---|---|
| 155 | Old sanitary disposal (SD) plant (aka Old Sanitary Wastewater treatment Plant) / Removed 1997 |
| 156 | Old SD Plant Tank (Tank 205) / Removed 1997 |
| 157 | Old SD Plant Tank (Tank 206) / Removed 1997 |
| 158 | Old SD Plant Tank (Tank 207) / Removed 1997 |
| 159 | Area 4A, Sewage Sludge Drying Pits / Removed 1997 |
| 413* | Soil Contamination – Creosote / Removed 1996 |

*removal of soil occurred previously but verification sampling was incomplete

**Table 3 – Non-PRS RA & Sampling**

| Bldg. | Description |
|---|---|
| WD | soil only, verification |
| HH | soil & concrete slab, confirmation |
| 23 | soil only, confirmation |
| 125 | soil only, confirmation |
| SW-WD AGLs | Ground level lines (abandoned) (see Figure 1) |
| R-SW to 23 area AGLs | Overhead line suspended from stanchion to be removed with Bldgs 23/125 demolition activities. |

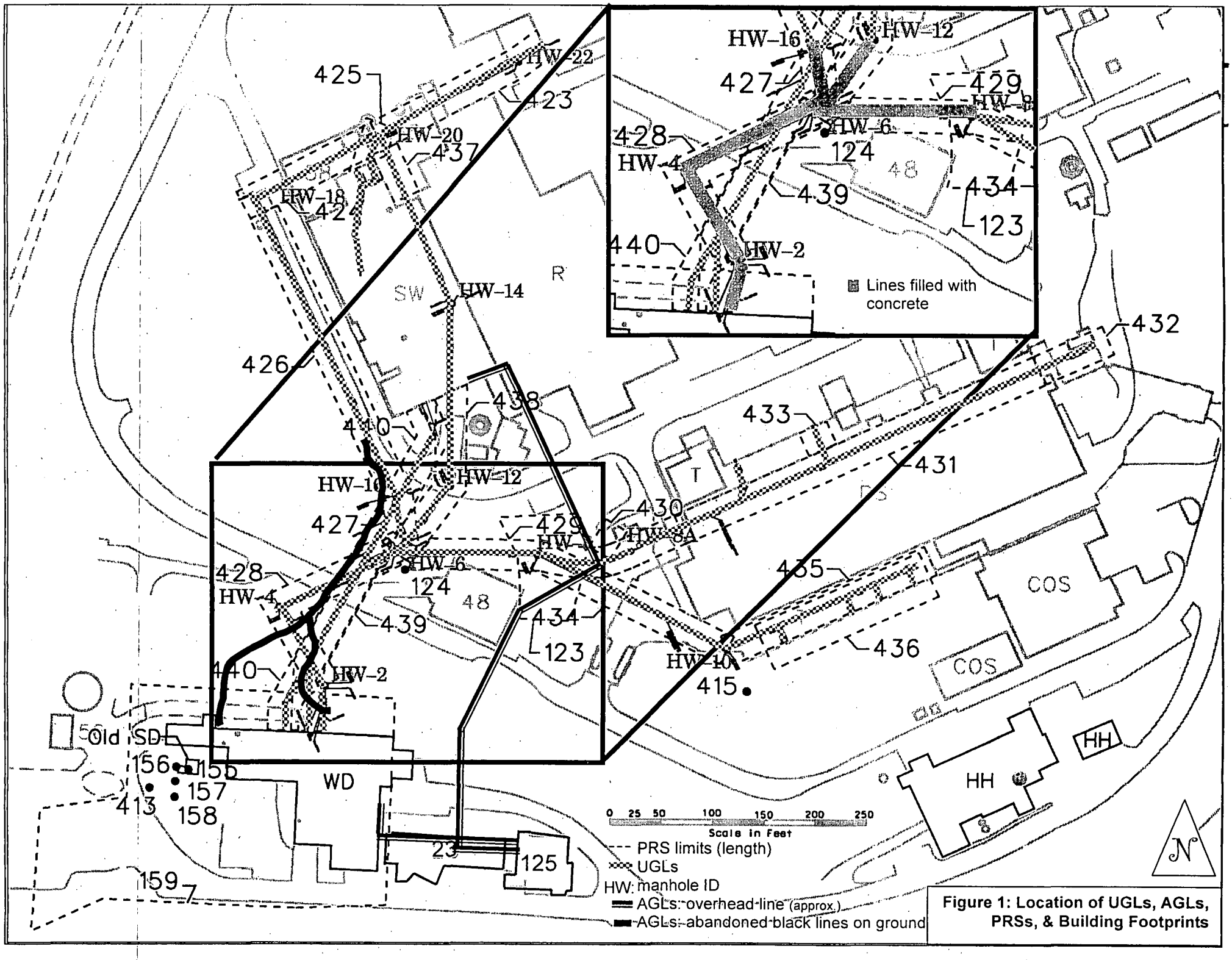



**Figure 1: Location of UGLs, AGLs, PRSs, & Building Footprints**

The Core Team (consisting of representatives of DOE/MCP, USEPA, and Ohio Environmental Protection Agency [OEPA]) recommended these PRSs be addressed as RAs or be associated with nearby RAs. These recommendations are included in Appendix B.

### 2.1.4 Release or Threatened Release into the Environment

The potential release of radionuclides and/or hazardous chemicals prompted this RA.

### 2.1.5 National Priorities List Status

The USEPA placed the Mound Plant on the NPL by publication in the Federal Register on November 21, 1989.

## 2.2 Other Actions to Date

The Mound Plant initiated a CERCLA program in 1989, now guided by the agreement among the DOE, OEPA, and USEPA. A Federal Facilities Agreement (FFA) under CERCLA Section 120 was executed between DOE and USEPA Region V on October 12, 1990 (Reference 4). It was revised on July 15, 1993 (EPA Administrative Docket No. OH 890-008984) to include OEPA as a signatory (Reference 5). The general purposes of the FFA are to:

- ensure that the environmental impacts associated with past and present activities at the site are thoroughly investigated and appropriate remedial actions taken as necessary to protect the public health, welfare, and the environment,
- establish a procedural framework and schedule for developing, implementing, maintaining, and monitoring appropriate response actions at the site in accordance with CERCLA, Superfund Amendments and Reauthorization Act (SARA), the NCP, Superfund guidance and policy, and Resource Conservation and Recovery Act (RCRA) guidance and policy, and
- facilitate cooperation, exchange of information, and participation of the parties in such actions.

### 2.2.1 Previous Removal Actions

**UGLs:** No previous RAs have been performed at the UGLs included in this AM.

**Old SD facility:** Until recently, environmental restoration projects at the site were conducted as decontamination and decommissioning (D&D) (generally buildings) projects or CERCLA projects (generally soils and groundwater). Old SD facility (structure, tanks, and sludge pits) were removed as a D&D project in 1997. Verification of Old SD facility and related PRSs was not performed and is therefore included in this UGL AM. There are five PRSs associated with Old SD facility as listed in Table 2.

**PRS 413:** As part of an SD tank removal project, stained soil (presumed to be creosote) was found and sampled in December 1996 with several chemical compounds found above acceptable levels. Approximately 23 $yd^3$ of stained soil was removed and two samples were collected at the base with results being below guideline values and not sufficient to cause

a threat to leach to groundwater at unacceptable levels. Additional assessment was originally recommended by the Core Team in 1997, but in 2000 was changed to a response action to be addressed in association with the WD Building efforts as a more cost-effective approach.

#### 2.2.2 Current Actions

Current actions pertinent to the waste transfer lines and soil removal include work planning, and review of characterization data. Work planning consists of the up-front work required to execute waste line and soil disposition activities in accordance with Environmental Safety & Health requirements, DOE orders, and best management practices.

### 2.3 State and Local Authorities' Roles

#### 2.3.1 State and Local Action to Date

In 1990, as a result of the Mound Plant placement onto the NPL, DOE and USEPA entered into an FFA that specified the manner in which the CERCLA-based environmental restoration (ER) was to be implemented. In 1993, the FFA was amended to include OEPA as a signatory (Reference 5). DOE remains the lead agency.

#### 2.3.2 Potential for Continued State and Local Response

Eventual release of the MCP Site for industrial/commercial use is planned. Periodic environmental monitoring of the area may be required until a final Record of Decision (ROD) is implemented for the entire MCP Site. This monitoring would require coordination with local, state, and federal authorities. Current plant-wide environmental monitoring programs will continue until such time as remediation is completed. OEPA will continue its oversight role until all terms of the FFA have been completed.

## 3.0 THREAT TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT

### 3.1 Threats to Public Health or Welfare

The potential release of radionuclides and/or hazardous chemicals may create a potential threat to the public health or welfare.

### 3.2 Threats to the Environment

The potential release of radionuclides and/or hazardous chemicals may create a potential threat to the environment.

### 3.3 Removal Site Evaluation

The Removal Site Evaluation (RSE) requirements, as outlined under USEPA's NCP regulations in the Code of Federal Regulations (CFR) 40 CFR 300.415 (Reference 6), are presented throughout this AM/EE/CA. The source and nature of the potential release are described in the PRS Data Packages for the PRSs listed in Table 1. On the basis of this information, the Core Team recommended RAs for these PRSs. The NCP identifies eight factors that must be considered in determining the appropriateness of a RA [40 CFR 300.415(b)(2)]. These criteria are presented and evaluated in Table 4.

## Table 4 – Evaluation of Removal Action Appropriateness Criteria

| Criteria | Evaluation |
|---|---|
| "...potential exposure to nearby human populations, animals, or the food chain..." | There is potential exposure to nearby human populations, animals, or the food chain from radionuclides and/or hazardous chemicals if present institutional controls were relaxed. |
| "Actual or potential contamination of drinking water supplies..." | There is potential contamination of onsite drinking water supplies by radionuclides and/or hazardous chemicals. The contaminants could migrate to the groundwater that is the source for the site drinking water. |
| "Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release;" | Not applicable. |
| "High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;" | If the integrity of the lines was breached causing leakage of material, there is the potential to encounter high levels of hazardous substances, pollutants, or contaminants in soil below the underground lines. |
| "Weather conditions that may cause hazardous substances to migrate or be released;" | This site is exposed to weather conditions. Rain might cause the associated hazardous substances to migrate through soil migration or surface runoff. |
| "Threat of fire or explosion;" | Not applicable. |
| "The availability of other appropriate federal or state response mechanisms to respond to the release;" and | There are no other state or federal mechanisms required to respond. The FFA established a combined state and federal mechanism to respond under CERCLA. DOE is the designated lead agency at the MCP under CERCLA. |
| "Other situations or factors that may pose threats to public health or welfare or the environment." | Not applicable. |

## 4.0 ENDANGERMENT DETERMINATION

As the location is currently configured and access controlled, actual or threatened releases of pollutants and contaminants from this site do not pose an endangerment to public health or welfare or to the environment. However, to eliminate the possibility of endangerment, as the site transfers from DOE ownership and control, DOE has determined that removal of the contaminants is appropriate.

## 5.0 PROPOSED ACTION AND ESTIMATED COSTS

### 5.1 Proposed Action

The proposed action is the removal of the UGLs and associated soil, soil associated with WD and HH Buildings, HH Building concrete slab, and nearby soil PRSs as listed in Table 1. Verification/confirmation will be performed on all PRSs listed in Tables 1 and 2, as well

as within the footprints of Buildings WD, HH, 23, and 125. Since the proposed action is within the site boundaries, it is not expected to have a disproportionate impact on low income or minority populations.

### 5.1.1 Proposed Action Description

The proposed action is expected to result in multiple fieldwork efforts. Components of the proposed action include the following where applicable:

**Project Planning**

The major component of the proposed action is removal of the UGLs and removal of various soil areas.

Due to the complexity of the work, multiple work plans may be generated. Appropriate environmental controls will be considered, identified, included in the work plan documents, and applied through the work planning effort. Work plan documents will be made available to USEPA and OEPA for review and approval.

**Public Notification**

A notice of the availability of this AM for 30-day public review will be published in a local newspaper.

**Establish Work Zones**

This activity includes where applicable, establishing work zones, establishing air monitoring (personnel and at work zone perimeters), installing temporary facilities and utilities, performing construction hazard abatement, performing general housekeeping, and establishing dust control measures prior to removal and excavation activities.

**Removal of UGLs and Soil**

This activity includes, as appropriate, required lockout/tagout of utilities in the vicinity of work areas and excavation and removal of UGLs, HH slab (sumps, piping, etc will be removed during building demo), and contaminated soil. For reference, underground utilities in the vicinity of the WD-23-125 Building complex are shown on Figure 2 (Appendix C). The UGLs and AGLs included in this AM are identified. All of the other utilities will be dispositioned via the AMs for those buildings (listed in Figure 2).

**Verification/Confirmation**

This step includes sampling and analysis of soil to confirm that cleanup objectives are met. A Core Team-approved Verification Sampling and Analysis Plan (VSAP), as referenced in the approved work plan, will further define the verification sampling and analysis process.

Due to the number of PRSs and analytes, specific analytes will need to be specified for specific areas (PRSs) within the specific Verification Sampling and Analysis Plans (VSAPs). These VSAPs will be submitted in one document to the Core Team for review and approval. Each area will be considered separately and each PRS will retain COCs

identified in Table 5. COCs in Table 5 are based on contaminants identified in the individual PRS Packages. The VSAP will include isolated hot spot criteria (background plus three times the $10^{-5}$ Risk-Based Guideline Value [RBGV]). If hot spot exceedances occur, additional cleanup will occur. Exceptions to use of the hot spot criteria would require review and approval by the Core Team.

If information is realized before or during the course of a removal action that could change the COCs verified, the information will be brought to the attention of the Core Team for evaluation.

Where multiple contaminants are present, the data will need to be reviewed to determine if cumulative risk is acceptable.

Potential leaching to groundwater may be assessed if COCs include volatile organic compounds (VOCs), and/or results contain detections of VOCs.

**Site Restoration**

Equipment, materials, waste containers, and barricades will be removed. Excavations resulting from removal of UGLs and contaminated soil will be backfilled and compacted to original contours and elevation unless otherwise specified. The areas will be seeded, if appropriate.

**Documentation of Completion**

Completion and documentation of all activities required by this AM will be presented in a single OSC Report.

**Table 5 – Soil Cleanup Objectives** (pCi/g unless otherwise specified)

| **Contaminant** (per PRS Package) | **Bkgd.** | **Screening Level**[2] | **Cleanup Objective**[3] | **PRSs** |
|---|---|---|---|---|
| Actinium-227 +D | 0.11 | 4.5 | 4.6 | 423-428, 440 |
| Americium-241 | ND | 63 | 63 | 423-428, 440 |
| Beryllium (mg/kg) | 1.3 | 7 | 8.3 | 437-439 |
| Bismuth-207 | ND | 1.6 | 1.6 | 440 |
| Cesium-137 +D | 0.42 | 3.4 | 3.8 | 123, 423-436, 440 |
| Cobalt-60 | NC | 0.7 | 0.7 | 123, 423-436 |
| Lead-210 +D | 1.2 | 6.2 | 7.4 | 440 |
| Plutonium-238 | 0.13 | 61 | 55[1] | 123, 124, 415, 423-440 |
| Plutonium-239/240 | 0.18 | 61 | 61.2 | 440 |
| Protactinium-231 +D | 0.11 | 3.9 | 4.1 | 440 |
| Radium-226 +D | 2.0 | 0.9 | 2.9 | 423-428, 440 |
| Strontium-90 +D | 0.72 | 94 | 94.72 | 440 |

| **Contaminant** (per PRS Package) | **Bkgd.** | **Screening Level**[(2)] | **Cleanup Objective**[(3)] | **PRSs** |
|---|---|---|---|---|
| Thorium-228 +D | 1.5 | 1.1 | 2.6 | 429-433, 440 |
| Thorium-230 +D | 1.9 | 0.9 | 2.8 | 124, 423-428, 440 |
| Thorium-232 +D | 1.4 | 0.7 | 2.1 | 123, 124, 415, 423-440 |
| Tritium | 1.6 | 235,000 | see note (4) | 437-440 |
| Uranium-233 +D | NE | 4.8 | 4.8 | 440 |
| Uranium-234 | 1.1 | 105 | 106.1 | 440 |
| Uranium-238 +D | 1.2 | 1 | 2.2 | 440 |
| Ethylbenzene (mg/kg) | NE | 0.48[(5)] | 0.48[(5)] | 413 |
| Benzo(a)anthracene (mg/kg) | NE | 4.10 | 41 | 413 |
| Benzo(b)fluoranthene (mg/kg) | NE | 4.10 | 41 | 413 |
| Benzo(a)pyrene (mg/kg) | NE | 0.41 | 4.1 | 413 |
| Indeno(1,2,3-c,d)pyrene (mg/kg) | NE | 4.10 | 41 | 413 |
| Dibenz(a,h)anthracene (mg/kg) | NE | 0.41 | 4.1 | 413 |

Radionuclides labeled with a "+D" indicate that pertinent daughters are included within the risk calculation.
ND – non detect NC – not calculated
NE – not evaluated as part of the OU9 Background Soils Investigation
(1) Value of 55 pCi/g was based on Core Team decision.
(2) more stringent of $10^{-6}$ RBGV + background or HI=1 value
(3) more stringent of $10^{-5}$ RBGV + background or HI=1 value
(4) The $10^{-6}$ RBGV is 235,000 pCi/g. This value represents the cleanup objective for tritium in soil. A conservative model was developed to account for the potential for tritium in soil to "leach" to groundwater at unacceptable levels. The model used is described in draft information shared with Ohio EPA, i.e. Draft Soil Screening Level for Tritium Migration to Groundwater at the Mound Facility, facsimile dated 3 December 2002 (Darnell to Nickel). The resulting value of 75 pCi/g is comparable to a screening level that represents the activity of tritium in soil that, if transported via groundwater to the Buried Valley Aquifer (BVA), could pose unacceptable risk (exceed the MCL). If the 95% upper confidence limit (UCL) of the measurements of tritium in soil is less than the screening level of 75 pCi/g, removal is not required. If the 95% UCL is greater than 75 pCi/g, further evaluation is required.
(5) based on HI = 1

#### *5.1.1.1 Rationale, Technical Feasibility, and Effectiveness*

The RA chosen is necessary for the removal of known contamination and to ensure that migration of the contamination does not occur.

Verification/confirmation sampling will be employed to confirm the effectiveness of the RA. Verification/confirmation sampling results will be documented in the OSC Report.

#### *5.1.1.2 Monitoring*

Health and safety monitoring will be performed throughout the RAs according to standard MCP procedures.

#### *5.1.1.3 Uncertainties*

The major uncertainties are the concentration levels of the contaminants and the extent of contamination (lateral and depth). The minor uncertainties include location of utilities that may exist in the areas of excavation.

#### *5.1.1.4 Institutional Controls*

DOE will remain in control of the locations addressed by this RA until transfer of ownership of the parcels they are in. Enforceable deed restrictions will be in place at the time of transfer in order to ensure future protection of human health and the environment.

#### *5.1.1.5 Post-Removal Site Control*

Initially, post-removal site control will be provided by DOE/ MCP. The property is to be sold to Miamisburg Mound Community Improvement Corporation (MMCIC). The institutional and site controls needed at the time of the site transfer in order to ensure future protection of human health and the environment will be included in the ROD.

#### *5.1.1.6 Cross-Media Relationships and Potential Adverse Impacts*

The potential cross-media impact associated with a RA is the potential for unintended release of contaminated materials into the atmosphere or surface/groundwater. Careful monitoring and control will be implemented during the RAs.

No potential adverse impacts of the RA have been identified.

### 5.1.2 Contribution to Future Remedial Actions

To facilitate Further Assessments and Removal Actions in or near the site of this RA, the exact dimensions of the excavation and the levels of contamination identified and removed will be documented. The OSC Report will document the RA with photographs, drawings, and other information collected during the fieldwork.

The information obtained, as a result of these removals, will be used in determining the availability of the site for final disposition and will be subject to review in the subsequent residual risk evaluation.

### 5.1.3 Description of Alternative Technologies

Alternative technologies frequently evaluated for CERCLA remediation include institutional controls, containment, collection, treatment, and disposal. Based on the prevailing conditions, the following alternatives (in addition to the proposed alternative) were developed.

1. No Action
2. Institutional Controls

The performance capabilities of each alternative with respect to the specific criteria is discussed below.

#### *5.1.3.1 No Action*

The "No Action" option was eliminated from further consideration. The Core Team determined that a RA is warranted for the waste transfer lines and soils.

#### *5.1.3.2 Institutional Controls*

Existing Plant institutional controls effectively minimize the potential for contact of the subject contamination with the general public. However, after ownership is transferred, these same institutional controls will be difficult to monitor and enforce. Thus, institutional controls were eliminated from further consideration. A RA is warranted.

### 5.1.4 EE/CA

This document serves as the Action Memorandum and EE/CA.

### 5.1.5 Applicable or Relevant and Appropriate Requirements (ARARs)

Site ARARs for the ER Program have been identified and CERCLA regulations require that RAs comply with ARARs.

The following have been identified as applicable, or relevant and appropriate to this RA:

#### *5.1.5.1 Air Quality*

- 40 CFR Part 61 Subpart H: National Emissions Standards for Emissions of Radionuclides other than Radon from Department of Energy Facilities.
- Ohio Administrative Code (OAC) 3745-15-07(A): Air Pollution Nuisances Prohibited.
- OAC 3745-17-02 (A, B, C): Particulate Ambient Air Quality Standards
- OAC 3745-17-05: Particulate Non-Degradation Policy
- OAC 3745-17-08: (A1), (A2), (B), (D): Emission Restrictions for Fugitive Dust

#### *5.1.5.2 To Be Considered*

- EPA/230/02-89/042: Methods for Evaluating the Attainment of Cleanup Standards.
- DOE Order 5400.5: Radiation Protection of the Public and the Environment

#### *5.1.5.3 Worker Safety*

- 29 CFR Part 1910: Occupational Safety and Health Act (OSHA) - General Industry Standards
- 29 CFR Part 1926: OSHA - Safety and Health Standards
- 29 CFR Part 1904: OSHA - Record keeping, Reporting, and Related Regulations

*5.1.5.4 Stormwater Runoff*

- National Pollutant Discharge Elimination System (NPDES) Permit No. 1IO00005*HD, June 1998

5.1.6 Other Standards and Requirements

- 49 CFR 172, 173: Department of Transportation (DOT) hazardous material transportation and employee training requirements.

Other standards or requirements related to the actual implementation of the RA may be identified subsequently during the design phase and will be incorporated into the Work Plans for these RAs.

5.1.7 Project Schedule

The schedule established for planning and implementing the fieldwork is illustrated in Table 6. The schedule illustration indicates fieldwork campaigns for this Action Memorandum. The actual number, duration, and timing of these campaigns may differ from Table 6.

**Table 6 –Schedule**

| **Underground Lines** | **Start** | **Finish** |
|---|---|---|
| Planning | Q2-2003 | Q1-2004 |
| Field Work (PRS 423-440) | Q1-2004 | Q4-2004 |
| *Field Work (PRS 431/432/433) | Q2-2005 | Q3-2005 |
| Verification/OSC (PRS 423-440) | Q4-2004 | Q2-2005 |
| Verification/OSC (PRS 431/432/433) | Q3-2005 | Q4-2005 |
| *Dependent upon DS Building removal | | |
| **PRSs 123, 124, 413, 415, & Bldgs. HH, WD, 23, & 125** | **Start** | **Finish** |
| Planning | Q2-2004 | Q3-2004 |
| Field Work | Q3-2004 | Q1-2005 |
| Verification/OSC | Q1-2005 | Q3-2005 |

## 5.2 Estimated Costs

The cost estimate to perform the RAs is shown in Table 7. Costs include the construction activities, all engineering and construction management, and site restoration.

**Table 7 –Cost Estimate**

| Underground Lines | Cost |
|---|---|
| Planning | 60,000 |
| Field Work | 270,000 |
| Verification/OSC | 130,000 |
| **PRSs 123, 124, 413, 415, & Bldgs. HH, WD, 23, & 125** | **Cost** |
| Planning | 153,000 |
| Field Work | 962,000 |
| Verification/OSC | 60,000 |
| **TOTAL** | **$1,635,000** |

## 6.0 EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

There is the potential for the contaminants to migrate if action is delayed or not taken.

## 7.0 OUTSTANDING POLICY ISSUES

There are currently no outstanding policy issues affecting performance of this RA

## 8.0 ENFORCEMENT

The Core Team consisting of DOE, USEPA, and OEPA has agreed on the need to perform the removal. The work described in this document does not create a waiver of any rights under the FFA, nor is it intended to create a waiver of any rights under the FFA. The DOE is the sole party responsible for implementing this cleanup. Therefore, DOE is undertaking the role of lead agency, per CERCLA and the NCP, for the performance of this RA. The funding for this RA will be through DOE budget authorization and no Superfund monies will be required.

## 9.0 REFERENCES


Reference 1. Action Memo EE/CA Building WD Removal Action, Final, Revision 1, August 2002

Reference 2. Action Memo EE/CA Building HH Removal Action, Final, August 2002

Reference 3. Action Memo EE/CA Buildings 23 and 125 Removal Action, Draft Proposed Final, June 2003

Reference 4. Federal Facilities Agreement under CERCLA Section 120, USEPA, October 12, 1990

Reference 5. USEPA 1993. Federal Facilities Agreement under CERCLA Section 120, USEPA, July 15, 1993

Reference 6. Code of Federal Regulations, 40CFR 300.415(b)(2)

## 10.0 RECOMMENDATION

This decision document represents the selected Removal Actions for the waste transfer lines and other soils, developed in accordance with CERCLA as amended by SARA, and not inconsistent with the NCP. This decision is based on the administrative record for the site.

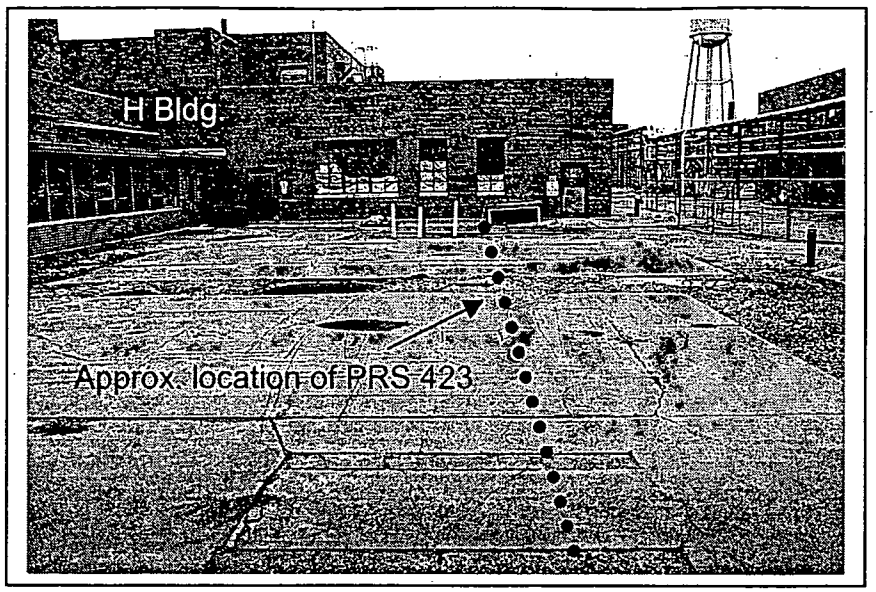
Conditions at the site meet the NCP Section 300.415 (b)(2) criteria for a removal and we recommend initiation of the Removal Action.

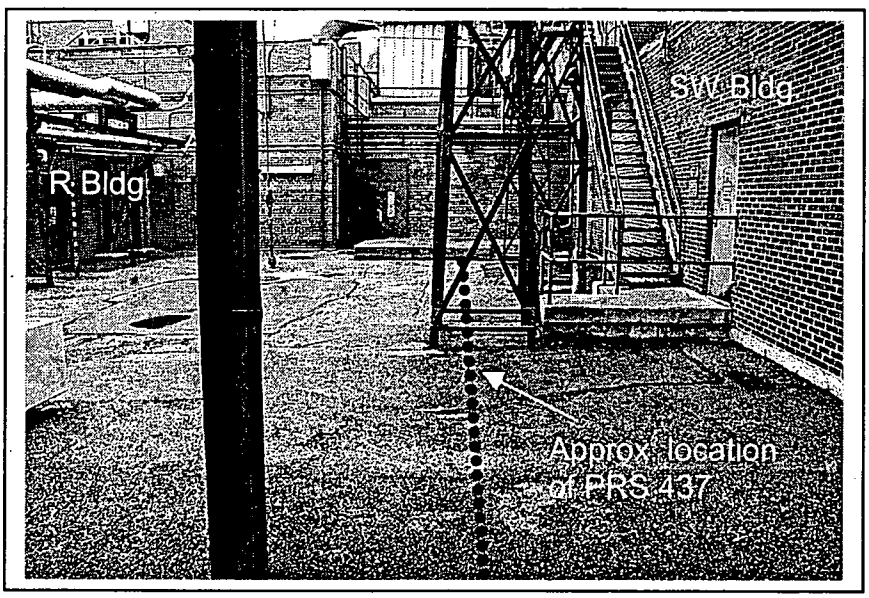
Approved:

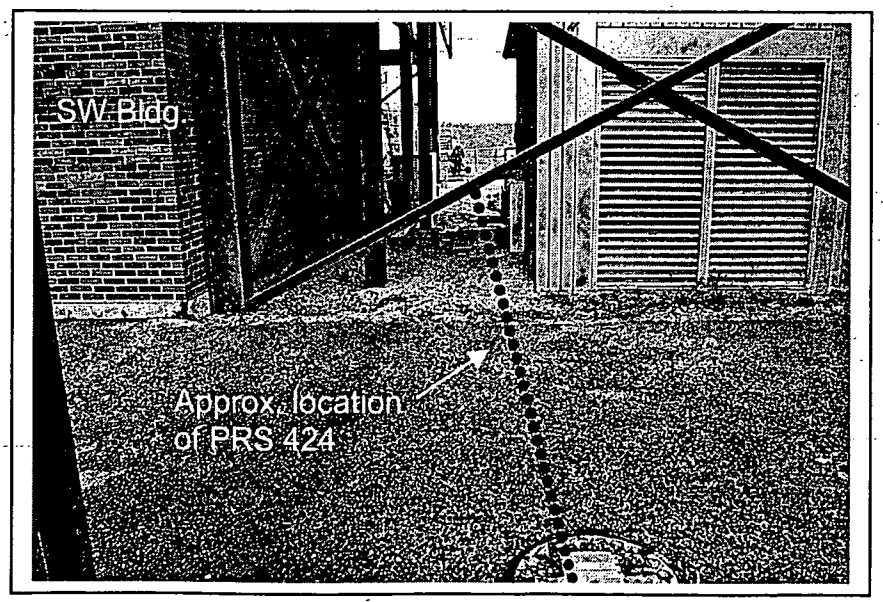
| | | |
|---|---|---|
| DOE/MCP: | Paul Lucas<br>Paul Lucas, Remedial Project Manager | 8/22/03<br>Date |
| USEPA: | David P. Seely<br>David P. Seely, Remedial Project Manager | 8/22/03<br>Date |
| OEPA: | B. K. Nickel<br>Brian K. Nickel, Project Manager | 8/22/03<br>Date |

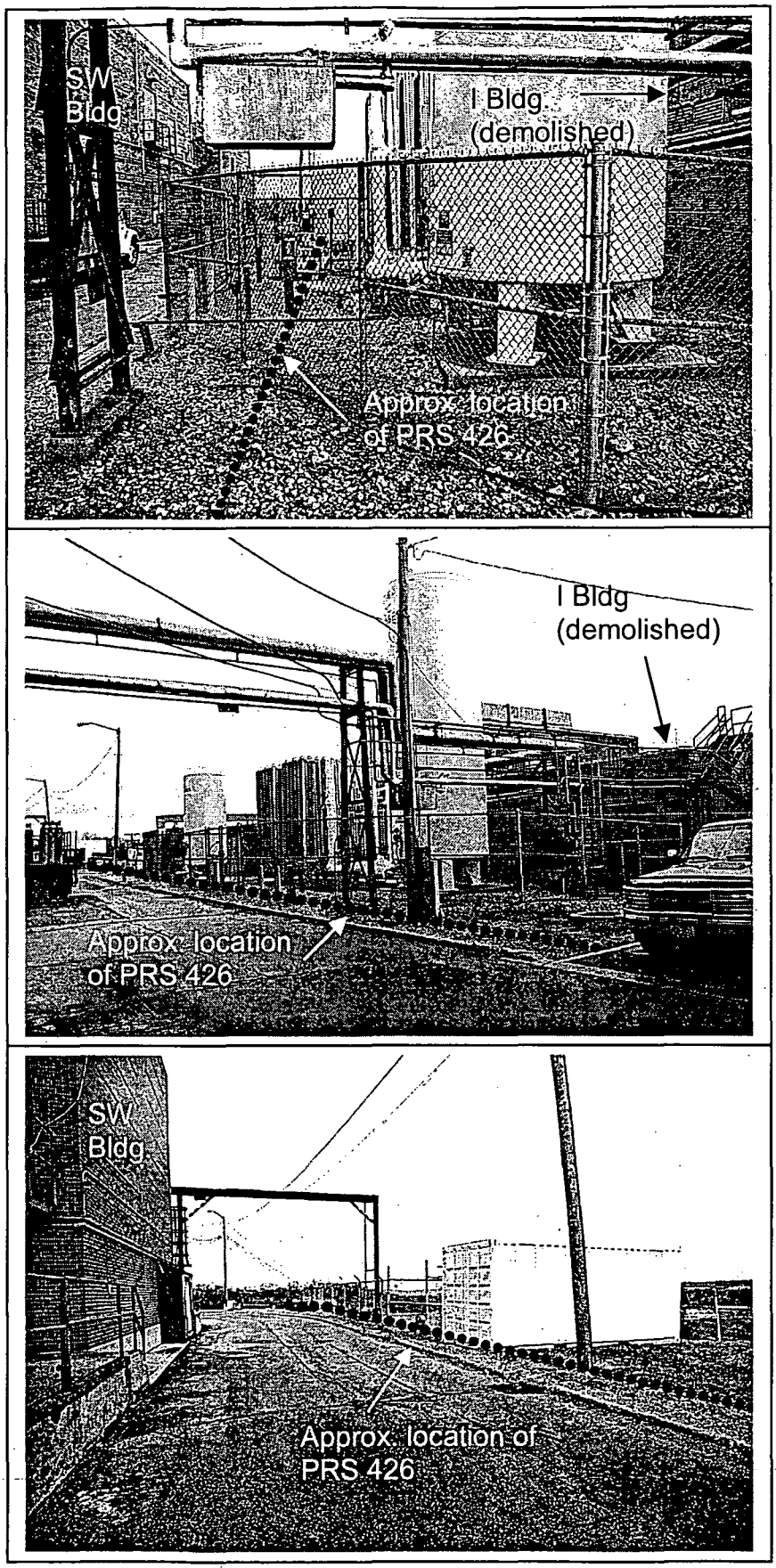
# Appendix A

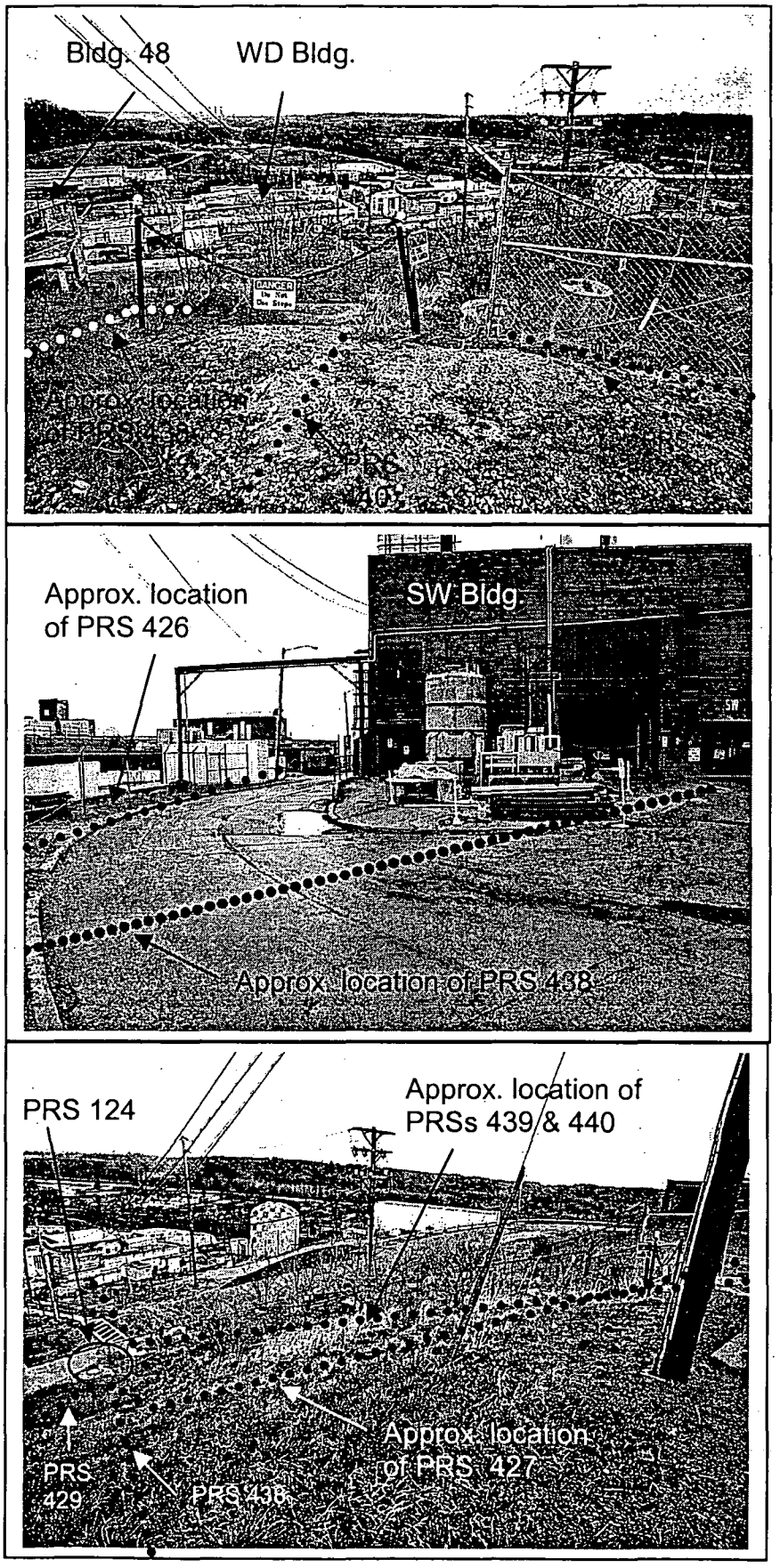
Photographs

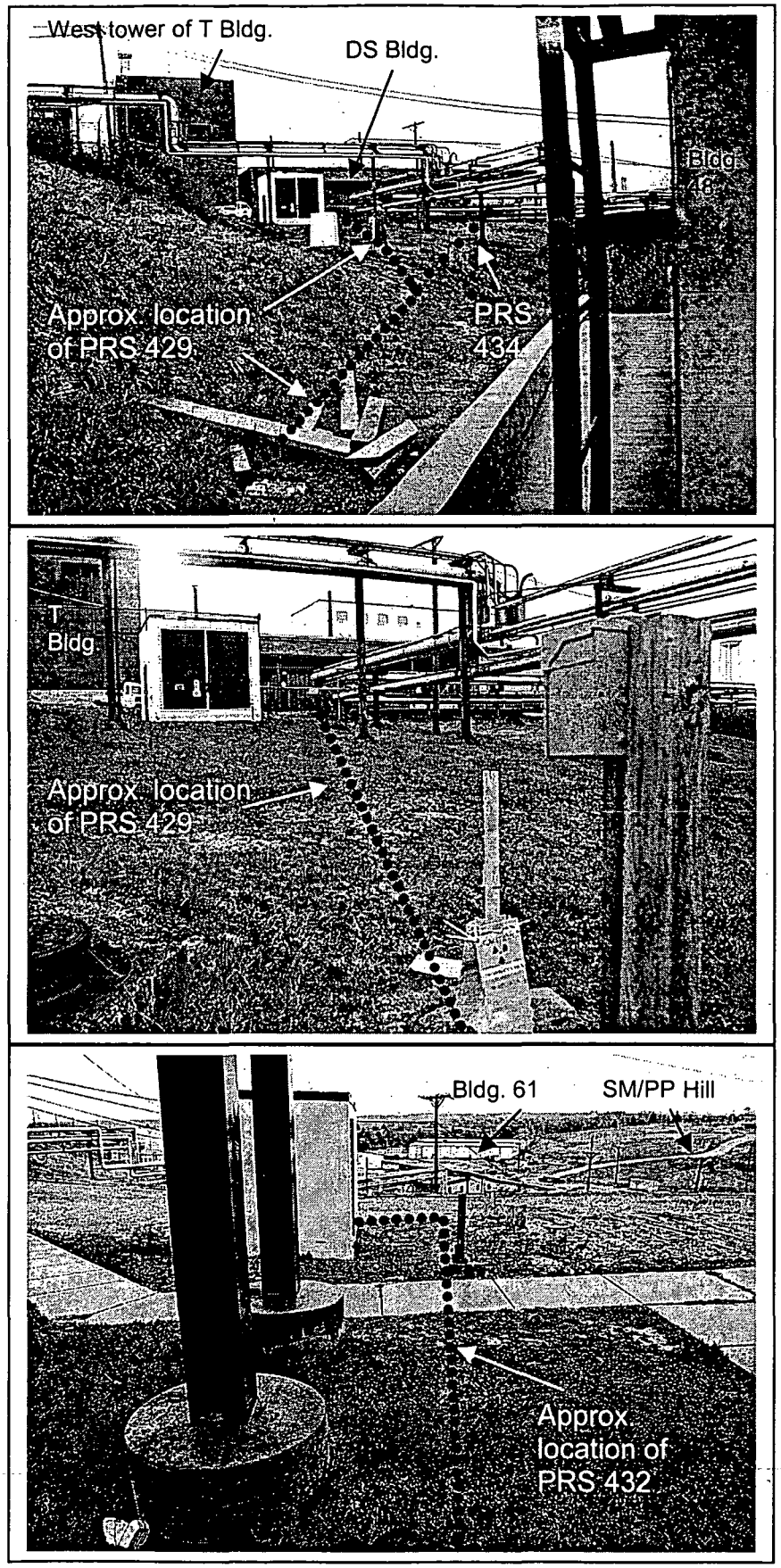

H Bldg.
Approx. location of PRS 423

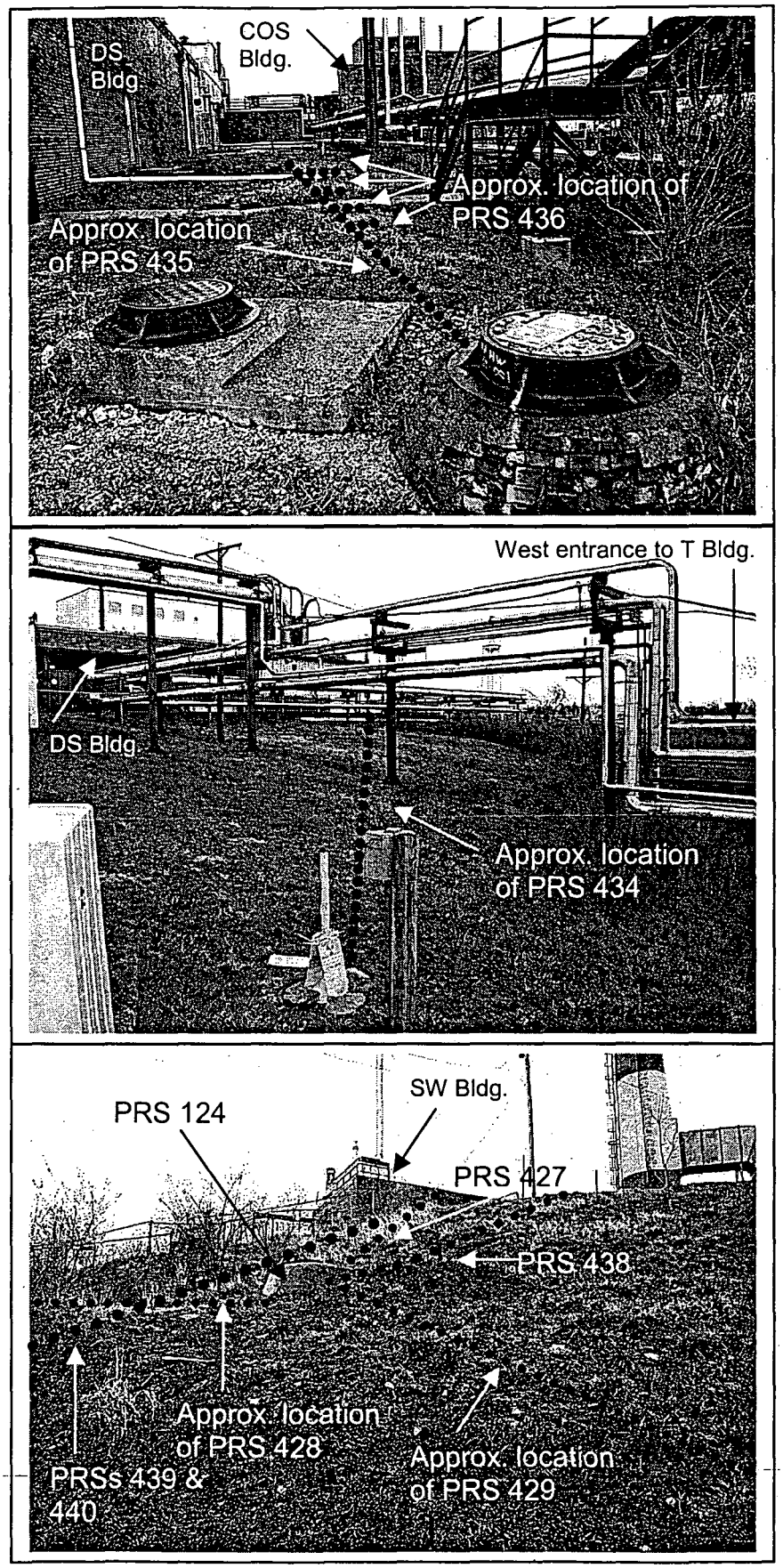

SW Bldg.
R Bldg.
Approx. location of PRS 437

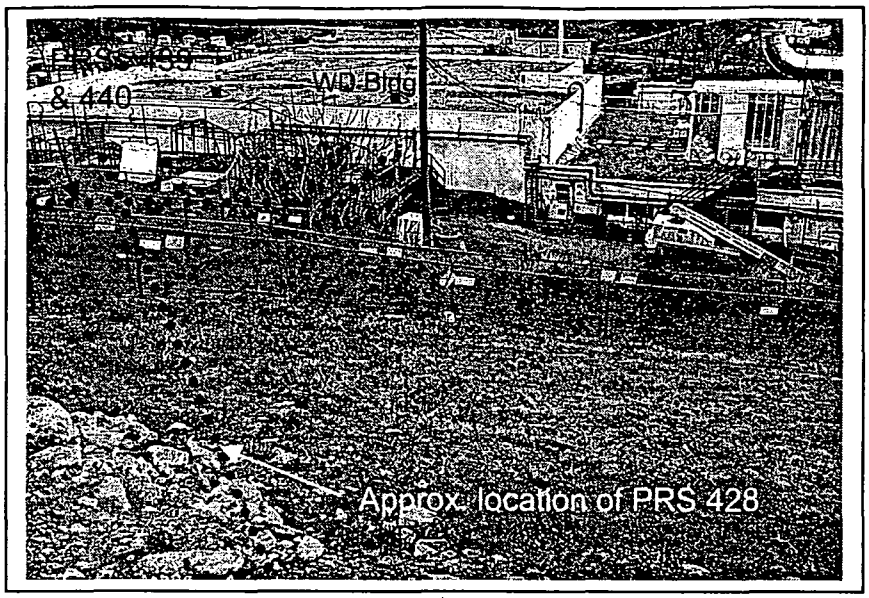

SW Bldg.
Approx. location of PRS 424


SW Bldg
I Bldg (demolished)
Approx. location of PRS 426
I Bldg (demolished)
Approx. location of PRS 426
SW Bldg
Approx. location of PRS 426


Bldg. 48
WD Bldg.
Approx. location of PRS 428
PRS 40
Approx. location of PRS 426
SW Bldg.
Approx. location of PRS 438
PRS 124
Approx. location of PRSs 439 & 440
Approx. location of PRS 427
PRS 429
PRS 438


West tower of T Bldg.
DS Bldg.
Bldg. 6
Approx. location of PRS 429
PRS 434
T Bldg
Approx. location of PRS 429
Bldg. 61
SM/PP Hill
Approx. location of PRS 432


DS Bldg.
COS Bldg.
Approx. location of PRS 436
Approx. location of PRS 435
West entrance to T Bldg.
DS Bldg.
Approx. location of PRS 434
SW Bldg.
PRS 124
PRS 427
PRS 438
Approx. location of PRS 428
PRSs 439 & 440
Approx. location of PRS 429


PRS 439
& 440
WD Bldg
Approx. location of PRS 428

# Appendix B

PRS Information

# MOUND PLANT
# PRS 124

## BUILDING 48 HILLSIDE

**RECOMMENDATION:**

Potential Release Site (PRS) 124 was identified due to a release on Nov. 9, 1967. 1,500 to 2,000 gallons of low-level radioactive wastewater were accidentally released during waste line repair. Several Main Hill radiological process waste lines join near this location and continue to the Waste Disposal (WD) Building. Soil Sampling accomplished in support of a construction project (Circa 1986) indicated Plutonium-238 concentrations as high as 32,000 pCi/g.

Therefore, a RESPONSE ACTION is recommended ~~for~~ PRS 124.

**CONCURRENCE:**

DOE/MEMP: _____ 6/19/01
Robert S. Rothman, Remedial Project Manager (date)

USEPA: _____ 6/19/01
Timothy J. Fischer, Remedial Project Manager (date)

OEPA: _____ 6/19/01
Brian K. Nickel, Project Manager (date)

**SUMMARY OF COMMENTS AND RESPONSES:**

Comment period from _____ to _____

☐ No comments were received during the comment period.

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

# MOUND PLANT
# PRS #423, 424, 425, 426, 427, 428
# MAIN HILL UNDERGROUND LINES
# H Building to WD Building

## RECOMMENDATION:

PRS 423, 424, 425, 426, 427, and 428 were identified because the underground line segments carried radioactively contaminated effluent from H Building operations to the Waste Disposal building (WD).

Therefore, a RESPONSE ACTION is recommended for PRS 423, 424, 425, 426, 427, and 428.

## CONCURRENCE:

DOE/MEMP: _____ 7/18/01
Robert S. Rothman, Remedial Project Manager (date)

USEPA: _____ 7/18/01
Timothy J. Fischer, Remedial Project Manager (date)

OEPA: _____ 7/18/01
Brian K. Nickel, Project Manager (date)

## SUMMARY OF COMMENTS AND RESPONSES:

Comment period from _____ to _____

☐ No comments were received during the comment period.

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

R

**MOUND PLANT**
**PRS #429, 430, 431, 432, 433**

**RECOMMENDATION:**

PRSs 429, 430, 431, 432, & 433 were identified because the underground line segments carried radioactively contaminated effluent from T Building operations to the Waste Disposal building (WD). Several radionuclides (including Cobalt-60) are present in the waste lines at a greater than 1 in 10,000 ($10^{-4}$) risk level.

Therefore, a RESPONSE ACTION is recommended for PRSs 429, 430, 431, 432, & 433.

**CONCURRENCE:**

DOE/MEMP: _____ 9/18/00
Robert S. Rothman, Remedial Project Manager (date)

USEPA: _____ 9/18/00
Timothy J. Fischer, Remedial Project Manager (date)

OEPA: _____ 9/18/00
Brian K. Nickel, Project Manager (date)

**SUMMARY OF COMMENTS AND RESPONSES:**

Comment period from _____ to _____

☐ No comments were received during the comment period.

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

R

# MOUND PLANT
# PRS #434, 435, 436

RECOMMENDATION:

PRSs 434, 435 and 436 were identified because the underground line segments carried radioactively contaminated effluent from T Building operations to the Waste Disposal building (WD). Several radionuclides (including Cobalt-60) are present in the waste lines at a greater than 1 in 10,000 ($10^{-4}$) risk level.

Therefore, a RESPONSE ACTION is recommended for PRSs 434, 435, & 436.

**CONCURRENCE:**

DOE/MEMP: _____ 9/18/00
Robert S. Rothman, Remedial Project Manager (date)

USEPA: _____ 9/18/00
Timothy J. Fischer, Remedial Project Manager (date)

OEPA: _____ 9/18/00
Brian K. Nickel, Project Manager (date)

**SUMMARY OF COMMENTS AND RESPONSES:**

Comment period from _____ to _____

☐ No comments were received during the comment period.

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

R

# MOUND PLANT
# PRS #437, 438, 439
# MAIN HILL UNDERGROUND LINES
# Man Hole 20 to WD Building

RECOMMENDATION:

PRS 437, 438, and 439 were identified because the underground line segments carried radioactively contaminated effluent from R and SW Building operations to the Waste Disposal building (WD).

Therefore, a RESPONSE ACTION is recommended for PRS 437, 438, and 439.

CONCURRENCE:

DOE/MEMP: _____ 7/18/01
Robert S. Rothman, Remedial Project Manager (date)

USEPA: _____ 7/18/01
Timothy J. Fischer, Remedial Project Manager (date)

OEPA: _____ 7/18/01
Brian K. Nickel, Project Manager (date)

SUMMARY OF COMMENTS AND RESPONSES:

Comment period from _____ to _____

☐ No comments were received during the comment period.

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

R

# MOUND PLANT
# PRS #440
# MAIN HILL UNDERGROUND LINES
# Building SW to Building WD

RECOMMENDATION:

PRS 440 was identified because the underground line segment carried radioactively contaminated effluent from SW Building operations to the Waste Disposal building (WD).

Therefore, a RESPONSE ACTION is recommended for PRS 440.

CONCURRENCE:

DOE/MEMP: _____ 7/18/01
Robert S. Rothman, Remedial Project Manager (date)

USEPA: _____ 7/18/01
Timothy J. Fischer, Remedial Project Manager (date)

OEPA: _____ 7/18/01
Brian K. Nickel, Project Manager (date)

SUMMARY OF COMMENTS AND RESPONSES:

Comment period from _____ to _____

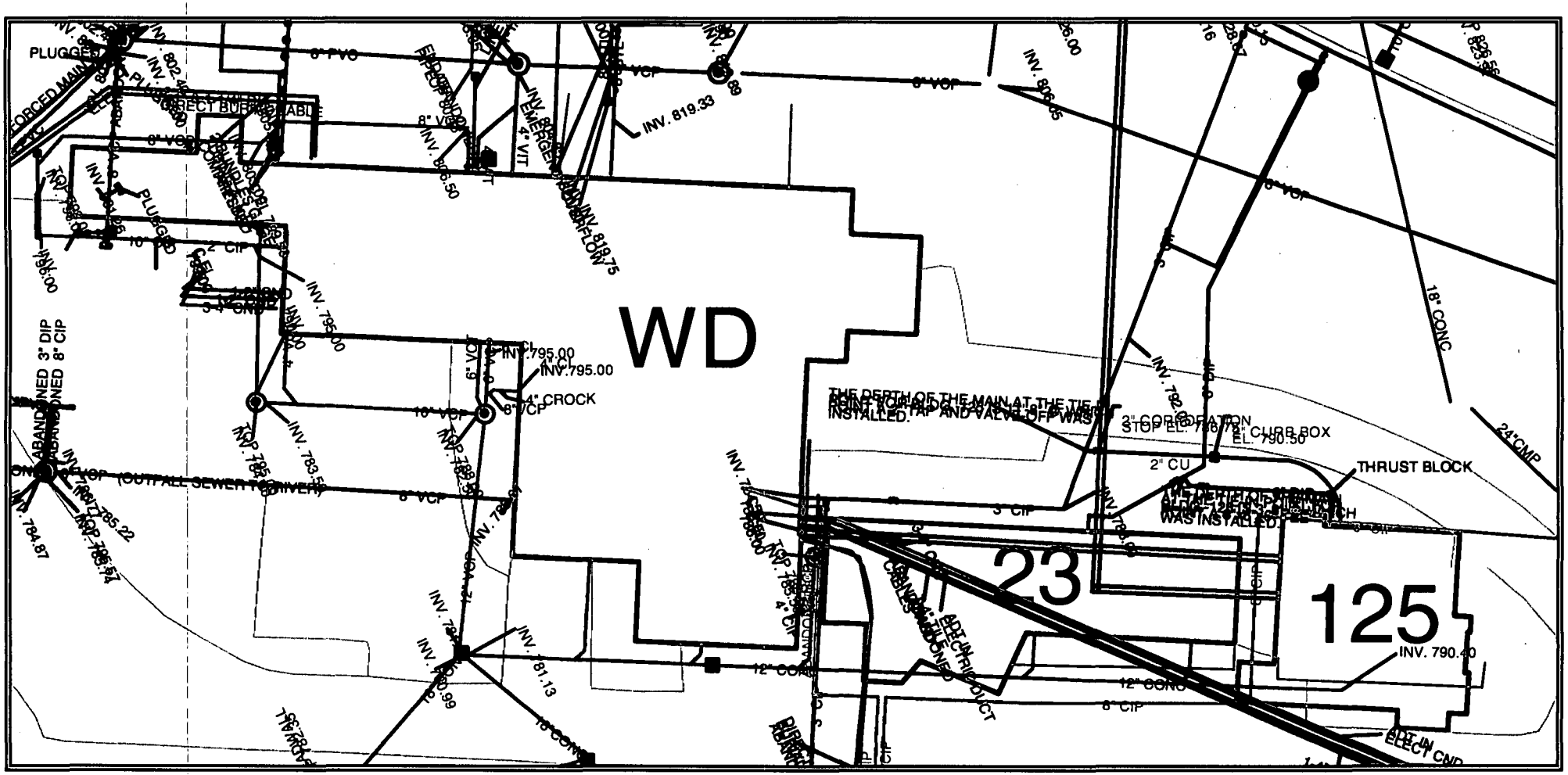
☐ No comments were received during the comment period.

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

R

# Appendix C

General Utility Map




——Underground Waste lines (all **waste lines** are included in this UGL Action Memo)
═══Overhead waste line on stanchion
·····Ground-level waste line

**Figure 2: Underground utilities in the Vicinity of Buildings WD, 23, & 125**

The **remainder of the underground utilities** (listed below) will be dispositioned (capped, removed, or otherwise transferred) via work planning documents associated with the Building AMs (see note) and associated parcel transfer documents. Site utility personnel are involved in ongoing utility transition dialogue with MMCIC

——Underground communication
——Domestic water
——Sanitary sewer
——Supply water
——Storm sewer
——Underground power supply
——Compressed air
——Fire protection

**Note:**
WD Building AM: Action Memorandum Engineering Evaluation/Cost Analysis, Buildings WD Removal Action, Final (Rev. 1), August 2002

Buildings 23 & 125 AM: Action Memorandum Engineering Evaluation/Cost Analysis, Buildings 23 and 125 Removal Action, Public Review Draft (Final in process), July 2003