780603 - 0908180001

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CH2MHILL

SMO-010-09
July 8, 2009

Mr. Paul C. Lucas, Deputy Project Director
U. S. Department of Energy
Environmental Management Consolidated Business Center
Miamisburg Closure Project
955 Mound Road
Miamisburg, OH 45342

Subject: **Contract No. DE-AC24-03OH20152**: Deliverable #24, Draft Final Site-Wide ROD; Post Closure Support of Regulatory Documents, Parcel 6, 7, & 8 Proposed Plan, Public Review Copy

Dear Mr. Lucas:

CH2M HILL Mound, Inc. acknowledges authorization from your office to release of the following document for public review:

- Parcel 6, 7, and 8 Proposed Plan, Public Review Copy

If you have any questions regarding the attached document, or if additional support is needed, please contact Shari Raisor at 937-438-4400.

Sincerely,

VL Matis /pl

Virginia L. Matis
Contract Closeout Manger
CH2M HILL Mound, Inc.

Attachments

cc: Frank Bullock, MMCIC, (3) w/attachments
Joe Crombie, ODH, (1) w/attachments
Sharon Cowdrey, MESH, (1) w/attachments
Tim Fischer, USEPA, (2) w/attachments
Mindy Gould, Tetra Tech, (1) w/attachments
Paul Lucas, DOE/MCP, (2) w/attachments
Joyce Massie, LM Web, (1) w/attachments
Brian Nickel, OEPA, (3) w/attachments
Don Pfister, DOE/EMCBC, (1) w/attachments
Ellen Stanifer, City of Miamisburg, (3) w/attachments
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Timothy Walker, ODH, (1) w/attachments
Public Reading Room, (4) w/attachments
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File: CH2M HILL, (1) w/attachments

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Parcels 6, 7, and 8

Proposed Plan

Public Review Copy

May 2009

Miamisburg Closure Project

Miamisburg, Ohio

Table of Contents

Section page

1 INTRODUCTION 1
- 1.1 Site Name and Location 1
- 1.2 Basis and Purpose 1
- 1.3 Site Assessment 1
- 1.4 Description of Preferred Alternative 2
- 1.5 Statutory Determinations 3
- 1.6 Proposed Plan and ROD Data Certification Checklist 3

2 DECISION SUMMARY 5
- 2.1 Site Description 5
- 2.2 Site History and Enforcement Activities 5
- 2.3 Community Participation 6
- 2.4 Scope and Role of Parcels 6, 7, and 8 6
- 2.5 Site Characteristics 7
  - 2.5.1 Geologic Setting 7
  - 2.5.2 Hydrogeologic Setting 7
  - 2.5.3 Wetlands 8
  - 2.5.4 Available Data for Parcels 6, 7, and 8 8
    - 2.5.4.1 Background Data 9
    - 2.5.4.2 Groundwater Contaminant Data 9
    - 2.5.4.3 Soil Contaminant Data 12
    - 2.5.4.4 Building Contaminant Data 14
    - 2.5.4.5 Air Contaminant Data 14
- 2.6 Potential Future Uses for Mound 14
- 2.7 Summary of Site Risk 15
  - 2.7.1 Identification of Contaminants 15
  - 2.7.2 Exposure Assessment 15
  - 2.7.3 Toxicity Assessment 16
  - 2.7.4 Risk Characterization 16
  - 2.7.5 Evaluation of Potential Cumulative Risks 17
  - 2.7.6 Comparison of Groundwater Contaminants to MCLs 17
  - 2.7.7 Ecological Risk Assessment 18
  - 2.7.8 Summary of Risk Associated with T Building 18
- 2.8 Remediation Objectives 19
- 2.9 Description of Alternatives 19
  - 2.9.1 No Action 19
  - 2.9.2 Institutional Controls and Monitored Natural Attenuation 19
  - 2.9.3 Monitoring Program Summary 23
    - 2.9.3.1 Objectives 23
    - 2.9.3.2 Well 0315 and 0347 Monitoring 23
    - 2.9.3.3 Seeps Monitoring 25
    - 2.9.3.4 Contingencies 27
- 2.10 Preferred Alternative 29
  - 2.10.1 Description 29
  - 2.10.2 Estimated Costs 30
  - 2.10.3 Decisive Factors 30
- 2.11 Statutory Determinations 34
- 2.12 Documentation of Significant Changes 34

3 ADMINISTRATIVE RECORD FILE REFERENCES 35

Appendices

Appendix A Figures
Appendix B Tables
Appendix C Parcels 6, 7, and 8 Legal Descriptions
Appendix D ARARs for Parcels 6, 7, and 8
Appendix E Memorandum to File
Appendix F Verification Data for soil adjacent to PRS 441

Figures (in Appendix A)

Figure 1 Regional Context of the Mound Plant
Figure 2 Location of Parcels 6, 7, and 8
Figure 3 Parcels 6, 7, and 8 Buildings and PRSs
Figure 4 Conceptual Site Model for the Parcels 6, 7, and 8 RRE
Figure 5 Parcels 6, 7, and 8 Wells and Seeps
Figure 6 T Building Restricted Areas
Figure 7 TCE in Well 0315
Figure 8 TCE in Well 0347
Figure 9 Tritium Concentration in Seeps
Figure 10 TCE Concentration in Seeps
Figure 11 Radium 226/228 and Strontium 90 Concentration in Seep 601

Tables (in Appendix B)

Table 1 Parcels 6, 7, and 8 Documents and Public Comment Periods
Table 2 PRSs and Core Team Conclusions
Table 3 Transfer Buildings and Core Team Conclusions
Table 4 Parcels 6, 7, and 8 Risk Summary
Table 5 Identification of Contaminants of Potential Concern for the Construction Worker Exposed to Surface and Subsurface Soil in Parcel 6
Table 6 Identification of Contaminants of Potential Concern for a Site Employee Exposed to Surface Soil in Parcel 6
Table 7 Identification of Contaminants of Potential Concern for the Construction Worker Exposed to Surface and Subsurface Soil in Parcel 7
Table 8 Identification of Contaminants of Potential Concern for a Site Employee Exposed to Surface Soil in Parcel 7
Table 9 Identification of Contaminants of Potential Concern for the Construction Worker Exposed to Surface and Subsurface Soil in Parcel 8
Table 10 Identification of Contaminants of Potential Concern for the Site Employee Exposed to Surface Soil in Parcel 8

Acronyms

ARAR	Applicable or Relevant and Appropriate Requirement
BDP	Building Data Package
BVA	Buried Valley Aquifer
CERCLA	Comprehensive Environmental Response, Compensation & Liability Act
CFR	Code of Federal Regulations
COC	Contaminant of concern
COPC	Contaminant of potential concern
CSM	Conceptual Site Model
D&D	Decontamination & Decommissioning
DCE	cis-1,2-dichloroethene
DOE	Department of Energy
FFA	Federal Facility Agreement
HEAST	Health Effects Assessment Summary Table
HI	Hazard Index
HQ	Hazard Quotient
HTO	tritium oxide
IRIS	Integrated Risk Information System
LM	Legacy Management
MCL	maximum contaminant level
MCP	Miamisburg Closure Project
MMCIC	Miamisburg Mound Community Improvement Corporation
MNA	Monitored Natural Attenuation
nCi/L	nanoCuries per liter
NCP	National Contingency Plan
NFA	No Further Assessment
NPL	National Priorities List
ODH	Ohio Department of Health
OEPA	Ohio Environmental Protection Agency
O&M	Operations and Maintenance
OU	Operable Unit
PCE	tetrachloroethene
pCi/L	picoCuries per liter
ppb	part per billion
PRS	Potential Release Site
RA	Removal Action
RCRA	Resource Conservation and Recovery Act
RD/RA	Remedial Design/Remedial Action
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RRE	Residual Risk Evaluation
RREM	Residual Risk Evaluation Methodology
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
SM/PP	Special Metallurgical/Plutonium Processing
TCE	trichloroethene
ug/L	micrograms per liter
USEPA	United States Environmental Protection Agency
VC	vinyl chloride
VOC	volatile organic compound
WWTP	wastewater treatment plant

1 INTRODUCTION

This Proposed Plan identifies the preferred alternative for addressing contaminated soil and groundwater at the U.S. Department of Energy's (DOE) Mound Plant (CERCLIS ID No. 04935) Parcels 6, 7, and 8. The plan provides rationale for selection of the preferred alternative and includes a summary of the alternatives evaluated for use at the site.

This document is issued by DOE as the lead agency for site activities with the support of the U.S. Environmental Protection Agency (USEPA) and the Ohio Environmental Protection Agency (OEPA). DOE, in consultation with USEPA and OEPA, will select a final remedy for the site after reviewing and considering all information submitted during the Proposed Plan's 30-day public comment period.

DOE is issuing this Proposed Plan as part of its public participation responsibilities under Section 300.430(f)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and Section 117(a) of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). The plan summarizes information that can be found in greater detail in documents contained in the site's CERCLA Reading Room.

The agencies may modify the preferred alternative or select another response action based on new information or public comments. Therefore, the public is encouraged to review and comment on all alternatives presented in this document.

1.1 Site Name and Location

The DOE Mound Plant is located within the City of Miamisburg, in southern Montgomery County, Ohio. The Plant is located approximately 10 miles southwest of Dayton and 45 miles north of Cincinnati. This Proposed Plan addresses Parcels 6, 7, and 8, which comprise most of the original operating area of the plant. Parcels 6, 7, and 8 are generally bound to the south by Phase I, to the west by the historic Miami-Erie Canal, to the north by Parcel 3 and Release Block H, and to the east by Mound Road.

1.2 Basis and Purpose

This decision document presents the Preferred Alternative for Parcels 6, 7, and 8 of the Mound Plant. The remedy was chosen in accordance with CERCLA, as amended by the Superfund Amendments and Reauthorization Act (SARA), and to the extent practicable, the NCP. Information used to select the remedy is contained in the Administrative Record file. The file is available for review at the Mound CERCLA Reading Room, 955 Mound Road, Miamisburg, Ohio.

1.3 Site Assessment

As documented in the Parcels 6, 7, and 8 Residual Risk Evaluation (RRE), (Reference 1), the risks from carcinogens and non-carcinogens to current and future occupants of Parcels 6, 7, and 8 were evaluated. In those analyses, land use was limited to the

industrial/commercial use scenario and the type of occupant was limited to and represented by a construction worker and a site employee (office employee). Based on the RRE, the incremental risks from potential exposure to residual carcinogenic contaminants for current industrial/commercial use are within the acceptable range. The incremental carcinogenic risks for future industrial/commercial use are within the acceptable risk range for the Construction Worker scenario and for the Site Worker scenario. The incremental non-carcinogenic hazards for current industrial/commercial use are less than the target Hazard Index (HI) of one for the Site Employee scenario and the Construction Worker scenario. In order to ensure that future use of the site conforms to the RRE assumptions, it was necessary to consider a remedy that would prevent the site from being used for non-industrial/commercial purposes.

As described below, the remedy will protect future occupants of Parcels 6, 7, and 8 from the threat of contaminants in the groundwater. The remedy will also ensure that soil from Parcels 6, 7, and 8 will be appropriately evaluated prior to removal from the Mound Site Boundary. Parcels 6, 7, and 8 are a subset of the Mound Site as defined in 1989 when the site was added to the National Priorities List (NPL).

1.4 Description of Preferred Alternative

The proposed remedy for Parcels 6, 7, and 8 is institutional controls in the form of deed restrictions on future land and groundwater use and Monitored Natural Attenuation (MNA). The DOE Office of Legacy Management (DOE LM) or its successors or assigns, as the lead agency for this Proposed Plan, has the responsibility to implement, report on, monitor, maintain, and enforce these institutional controls both before and after the transfer.

In order to maintain protection of human health and the environment at Parcels 6, 7, and 8 in the future, the institutional controls to be adopted will ensure:

- maintenance of industrial/commercial land use;
- prohibition against residential use;
- prohibition against the use of groundwater; without prior approval from USEPA and OEPA;
- site access for federal and state agencies for the purpose of sampling and monitoring;
- prohibition against the removal of soil from within the site boundary (as of 1998) to offsite locations without prior approval from USEPA, OEPA, and ODH;
- prohibition against the removal of concrete floor material in specified rooms of T Building (see Figure 6) to offsite locations without prior approval from USEPA, OEPA, and ODH; and
- prohibition against the penetration of concrete floors in specified rooms of T Building (see Figure 6) locations without prior approval from USEPA, OEPA, and ODH.

MNA of groundwater contaminants in Parcels 6, 7 and 8, will be performed by DOE LM. Groundwater will be monitored for trichloroethene (TCE), dichloroethene (DCE) and vinyl chloride (VC) and seep water will be monitored for TCE, DCE, VC, tetrachloroethene (PCE), tritium, radium-226/228 and strontium-90. MNA activities are only relevant for the VOC contaminants. Radioactive contaminants are being monitored to verify that concentrations are decreasing to below Maximum Contaminant Levels (MCLs) now that the source areas have been removed. The specifics of the monitoring will be established in the Parcels 6, 7, and 8 Groundwater Monitoring Plan that will require approval by USEPA and OEPA. This will become part of the Operation & Maintenance (O&M) Plan required by the Proposed Plan and Record of Decision (ROD). Key elements of the monitoring are outlined in Section 2.9.3 of this Proposed Plan. Groundwater monitoring provides assurance that the concentration of contaminants observed in Parcels 6, 7, and 8 wells and seeps are decreasing, that natural attenuation is occurring, and that the BVA is not being negatively impacted.

1.5 Statutory Determinations

The proposed remedy for Parcels 6, 7, and 8 is protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate, is cost-effective, and utilizes a permanent solution to the maximum extent practicable. Because this remedy will result in hazardous substances remaining above levels that allow for unlimited use and unrestricted exposure, DOE LM, in consultation with the USEPA, OEPA, and ODH, will review the effectiveness of the remedial action each year to assure that human health and the environment are being protected by the remedial action being implemented. DOE reserves the right to petition the USEPA, OEPA, and ODH for a modification to the frequency established for conducting the effectiveness reviews.

1.6 Proposed Plan and ROD Data Certification Checklist

Based on a commitment made by USEPA to the General Accounting Office, the Proposed Plan and ROD must contain a checklist, which certifies that key information regarding the selection of the remedy has been included in the Proposed Plan and ROD.

Therefore, note that the following information is located in this document. Additional information on any of these topics can be found in the Administrative Record for Mound.

- Contaminants of concern (COCs) and their respective concentrations (Tables 5-10);
- Guideline levels for the COCs (Tables 5-10);
- Risks represented by the COCs (Table 4);
- Current and future land and groundwater use assumptions used in the risk assessment, Proposed Plan, and ROD (Section 2.6);
- Land and groundwater uses that will be available at the site as a result of the remedy (Section 2.6);
- Estimated cost of the remedy; and the (Section 2.10.2)
- Decisive factor(s) that led to the selection of the remedy (Section 2.10.3).

2 DECISION SUMMARY

This section provides an overview of the site and the alternatives evaluated. The proposed remedy and the basis for its selection are also described.

2.1 Site Description

The DOE Mound Plant is located within the city limits of Miamisburg, in southern Montgomery County, Ohio (Figure 1). The Mound Plant is located approximately 10 miles southwest of Dayton and 45 miles north of Cincinnati. Miamisburg is predominantly a residential community with supportive commercial facilities and industrial development. The adjacent areas are used primarily for residences and agriculture or are undeveloped open spaces.

Originally, the Mound property was divided into nineteen "release blocks" which are contiguous tracts of property designated for transfer of ownership. Release Blocks D and H were transferred to Miamisburg Mound Community Improvement Corporation (MMCIC) in 1999. The remaining release blocks were reconfigured and renamed parcels. Parcel 4 was transferred to MMCIC in 2001. Parcel 3 was transferred to MMCIC in 2002. The remaining parcels were reconfigured and renamed phases. Phase I was available for transfer in December 2003. The remaining phases were reconfigured and renamed parcels. Parcels 6, 7, and 8 were available for transfer in 2008.

This Proposed Plan addresses Parcels 6, 7, and 8 which are 103 acres located in the middle of the plant (Figure 2). The legal description of Parcels 6, 7, and 8 is reproduced in Appendix C. There are 10 structures and 332 Potential Release Sites (PRSs) in Parcels 6, 7, and 8.

2.2 Site History and Enforcement Activities

As a result of historic disposal practices and contaminant releases to the environment, the Mound Plant was placed on the NPL on November 21, 1989. DOE signed a CERCLA Section 120 Federal Facility Agreement (FFA) with USEPA, effective October 1990. In 1993, this agreement was modified and expanded to include OEPA (Reference 2). DOE serves as the lead agency for CERCLA-related activities at Mound.

DOE, USEPA, and OEPA had originally planned to address the Mound Plant's environmental restoration issues under a set of Operable Units (OUs), each of which would include a number of PRSs (locations of known or suspected contamination). For each OU, the site would follow the traditional CERCLA process: a Remedial Investigation/Feasibility Study (RI/FS), followed by a ROD, followed by Remedial Design/Remedial Action (RD/RA). After initiating remedial investigations for several OUs, DOE and its regulators realized during a strategic review in 1995 that, for Mound, the OU approach was inefficient. DOE and its regulators agreed that it would be more appropriate to evaluate each PRS or

building separately, use removal action authority to remediate them as needed, and establish a goal for no additional remediation other than institutional controls for the final remedy. To evaluate any residual risk after all removals have been completed, an RRE is conducted to ensure the conditions at the parcel do not pose an unacceptable risk to human health and the environment when the parcel is used for industrial/commercial purposes. This process was known as the Mound 2000 Process. DOE and its regulators pursued this approach with the understanding that USEPA and OEPA reserve all rights to enforce all provisions of the FFA and participation in the Mound 2000 Process does not constitute a waiver of USEPA and OEPA rights to enforce the FFA.

The Mound 2000 Process established a Core Team consisting of representatives of the Miamisburg Closure Project (MCP) of DOE, USEPA, and OEPA. The Core Team evaluates each of the PRSs and recommends the appropriate response. The Core Team uses process knowledge, site visits, and existing data to determine whether or not any action is warranted concerning each PRS. If a decision cannot be made, the Core Team identifies specific information needed to make a decision (e.g., data collection, investigations). The Core Team also receives input from technical experts as well as the general public and/or public interest groups. Thus, all stakeholders have the opportunity to express their opinions or suggestions involving each PRS. The details of this process are explained in the Work Plan for Environmental Restoration of the DOE Mound Site, The Mound 2000 Approach (Reference 3).

The Mound 2000 Residual Risk Evaluation Methodology (RREM) (Reference 4) was developed as a framework for evaluating human health risks associated with residual levels of contamination. The RREM is applied to a parcel once necessary remediation has been completed, and the remaining PRSs or buildings in the parcel have been designated as No Further Assessment (NFA). Once the Core Team has adequately addressed these environmental concerns, a RRE is performed. The RRE forms part of the basis for determining what restrictions should be placed on the parcel.

2.3 Community Participation

Opportunities for the public to comment on the NFA and Removal Action (RA) decisions for the Parcels 6, 7, and 8 PRSs and buildings were provided. A listing of the documents and their comment periods is shown in Table 1. The Parcels 6, 7, and 8 Residual Risk Evaluation and this Proposed Plan will also be made available for public comment.

2.4 Scope and Role of Parcels 6, 7, and 8

Parcels 6, 7, and 8 lie within areas previously known as Operable Unit 5 (OU5) and Operable Unit 2 (OU2). There are ten remaining structures in Parcels 6, 7, and 8. There are 332 PRSs in Parcels 6, 7, and 8. The PRSs at Mound were identified based on knowledge of historical land use that was considered potentially detrimental and/or an actual sampling result showing elevated concentrations of contaminants. Tables 2 and 3 contain information and closeout status for Parcels 6, 7, and 8 PRSs and buildings. Figure 3 depicts buildings and PRSs currently within Parcels 6, 7, and 8.

Before transfer of a parcel can be completed, all buildings and PRSs must be evaluated for protectiveness or remediated to be protective. Any residual risks associated with remaining contamination in Parcels 6, 7, and 8 have been evaluated and are presented in the Parcels 6, 7, and 8 Residual Risk Evaluation (Reference 1).

The remedy proposed for Parcels 6, 7, and 8 is similar to previous Mound Site parcels that have already been transferred. Industrial use and soil removal restrictions are identical to previous parcels. Groundwater monitoring is similar in that other parcels also have MNA activities which combined with Parcels 6, 7, and 8 become part of an overall Mound Site ground water monitoring strategy. Restrictions proposed for T Building are unique to Parcels 6, 7 and 8 remedy because of the nature of the building and the residual contamination.

2.5 Site Characteristics

2.5.1 Geologic Setting

The bedrock section beneath Mound Plant consists of thin, nearly flat-lying beds of alternating shale and limestone of the Richmond Stage of the Cincinnati Group (Upper Ordovician -- about 450 million years ago). The Cincinnati Group is present at the surface of the Mound Plant and underlies Parcels 6, 7, and 8. The limestone beds range from two to six inches in thickness and the shale layers are commonly five to eight feet thick.

Pleistocene age (less than about two million years old) glacial deposits at Mound Plant include both till and outwash deposits. The till in the area of Mound Plant is composed of an unsorted, unstratified mixture of clay, silt, sand, and coarser material. Water-lain deposits consist of outwash composed of well-sorted sand and gravel. The sand and gravel are horizontally layered, and commonly cross-bedded. The outwash in the vicinity of Mound Plant occurs as restricted valley-train deposits that were formed by the aggregation of glacial meltwater streams.

The outwash deposited in the Miami River Valley and the associated tributary valley forms the Buried Valley Aquifer and contiguous deposits. A general discussion of the geology is presented in the Remedial Investigation/Feasibility Study, Operable Unit 9, Site-Wide Work Plan (Reference 5).

2.5.2 Hydrogeologic Setting

There are two hydrogeologic regimes at Mound Plant: flow through the bedrock beneath the Main Hill and the Special Metallurgical/Plutonium Processing (SM/PP) Hill, and flow within the unconsolidated glacial deposits and alluvium associated with the BVA in the Great Miami River Valley and the tributary valley between the Main Hill and SM/PP Hill. The BVA is a USEPA-designated sole source aquifer. The bedrock system, an interbedded sequence of shale and limestone, is dominated by fracture flow especially in the upper portions of the bedrock. Groundwater movement within the till and sand and gravel, within the buried valley, is through porous media. Groundwater flow from Mound Plant is generally to the west and southwest toward the BVA of the Great Miami River Valley. A

discussion of the hydrogeology of Mound is presented in the Remedial Investigation/Feasibility Study, Site-Wide Work Plan (Reference 5), the Hydrogeologic Investigation: Buried Valley Aquifer Report (Reference 6), and the Hydrogeologic Investigation: Bedrock Report (Reference 7).

2.5.3 Wetlands

There are several areas in Parcels 7 and 8 that are designated as wetlands (i.e., those areas that are inundated by surface or groundwater with a frequency sufficient to support and under normal circumstances does or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction). These wetlands are defined in Delineation of Federal Wetlands and Other Waters of the U.S. (Reference 8). There are two designated wetlands (0.04 acre total) in Parcel 7. In 1999 there were six designated wetlands (0.107 acres total) in Parcel 8. However some of the wetlands were removed during remediation efforts in Parcel 8. There are no designated wetland areas in Parcel 6.

2.5.4 Available Data for Parcels 6, 7, and 8

The PRSs within Parcels 6, 7, and 8 have been evaluated by the Core Team and deemed NFA (with the exception of the offsite portion of PRS 7). PRS 7 is defined to include the wastewater line segment exiting at 15 feet from the former WD Building and proceeding west to the manhole just south of the old SD Building before proceeding in its southwest travel to the river. Also included is the connector segment to the wastewater treatment plant (WWTP). In July of 2006, Ohio EPA filed an FFA dispute with the DOE over the sewer systems on the Mound Site. As part of the resolution of this dispute, radiological surveys of the piping and samples of the sediment were taken from the active and abandoned sanitary and storm sewers as agreed upon by the parties. In addition, the DOE agreed to remove or decontaminate to free release criteria Manholes A-5 and A-9 and the associated pipe. One of these manholes (A-9) was within PRS 7. The other manhole, A-5, was located on the Main Hill. Consistent with the DOE/Miami Conservancy District agreement, the offsite portion of PRS 7 was also removed and the DOE performed post removal characterization under OEPA and USEPA oversight. During the pipe removal and characterization, radioactive contaminants were found and removed. Post excavation sampling indicates the area is protective for unrestricted residential use. For more information and data regarding the off property PRS 7 effluent pipe removal and clean up, see the PRS 7 Removal Action Closeout Report dated February 2009.

In addition, during the final remediation of the eastern portions of PRS 441 (the Rail Spur), an area of contamination was identified and removed. This area extended into a small portion of Parcel 8 in the area of the parking lot just east of PRS 441. Fifteen soil samples were collected and analyzed offsite via alpha spectroscopy. Contaminants included Th-232, U-238 and Ra-226. Final verification sampling was conducted in accordance with the Mound 2000 Process. All verification sample results were below risk-based cleanup objectives. As this is consistent with the Mound 2000 process, it will ensure that all associated risk is at an acceptable level. Verification results can be found in Appendix F of this Proposed Plan and will be reported in the Final PRS 441 On-scene coordinator (OSC)

report. Since all of the verification sample results are below clean up objectives and the area represents a small portion of Parcel 8, the Parcel 8 Residual Risk Evaluation will not be revised. The data will be included in the Parcel 9 Residual Risk Evaluation.

The following sections of this proposed plan discuss relevant data that are available from the general source documents and all relevant PRS Packages.

2.5.4.1 Background Data

Soils. Background concentrations measure the amount of a chemical that is naturally occurring (like metals) or anthropogenic (man-made but, for purposes of evaluating background, originating from sources other than the Mound Plant). Background concentrations are used as a screening tool to determine which contaminants should be carried through a risk evaluation as described in Section 2.7. Regional background concentrations in soil were determined and are documented in the Background Soils Investigation Soil Chemistry Report (Reference 9) and Regional Soils Investigation Report (Reference 10).

Groundwater. Background concentrations for groundwater were identified in the RREM (Reference 4). These background values were originally reported in Hydrogeologic Investigation: Groundwater Sweeps Report (Reference 11).

2.5.4.2 Groundwater Contaminant Data

Historically, the Environmental Management programs have monitored numerous wells in the bedrock and in the BVA on and near the Mound Plant. The program did not identify any areas of concern in Parcels 6 and 7; however, the monitoring program did reveal two areas of concern related to Parcel 8 that need to be addressed.

Groundwater monitoring Wells 0315 and 0347 show MCL exceedances for TCE. The wells both show recent TCE concentrations in excess of the MCL of 5 μg/L (micrograms per liter) or 5 ppb (parts per billion). Figures 7 and 8 show time series charts of TCE concentration in Wells 0315 and 0347 respectively. As can be seen from the charts, recent concentrations in Well 0347 have ranged between 15 and 33.2 ppb while those in Well 0315 have recently ranged from 5 to 14 ppb. Neither chart offers a clear indication of a trend although it does appear that concentrations may have stabilized in both wells.

Groundwater flow near Wells 0315 and 0347 was directed toward the Mound production wells when the wells were in operation. The production wells have been abandoned and are no longer removing groundwater from the BVA. However, recent groundwater modeling studies conducted by the Savannah River National Laboratory in conjunction with input from Core Team members indicates that shutting down the production wells did not have a significant impact on the groundwater flow.

The Main Hill seeps are associated with PRSs 91-92 and 94-98 which are also known as Seeps 0601, 0602, 0604/0605, 0606, 0607, and 0608 (Figure 5). Seep 0604-0605 is hereafter referred to as Seep 0605. Although located both on and off the Mound Site property, these seeps are considered part of Parcels 6, 7, and 8 because contamination

from these parcels came to be located in these offsite locations. The seeps have been part of the environmental monitoring program at Mound since the early 1990s. Contaminants detected at the seeps include the volatile organic compounds (VOCs) TCE, DCE, and PCE. Radionuclides of interest include tritium and recent indications of radium-226/228 and strontium-90.

Prior to the initiation of the SW-R Demolition Project, VOC levels in the offsite seeps (Seeps 0605, 0606, 0607, and 0608) and onsite Seep 0602 were below or very close to the drinking water maximum contaminant levels (MCLs) for VOCs. Onsite Seep 0601 showed PCE levels slightly in excess of 30 ppb with TCE and DCE at or below the MCL. With the physical changes occurring to the site as a result of the SW-R Demolition Project (e.g., removal of buildings, building slabs and extensive misting for dust suppression) VOC levels have increased in several offsite seeps with concentrations approaching 100 ppb in Seep 0605 in the summer of 2005, during remediation of the SW-R Demolition Project. A vast majority of the contaminated soils were removed from the SW-R area thereby removing the source of VOCs.

Prior to initiation of the SW-R Demolition Project tritium concentrations in a majority of the seeps (with the exception of Seep 0602 and 0608) were above the MCL of 20,000 pCi/L. Concentration versus time plots for tritium at the seeps (Figures 9 and 10) are steadily decreasing and if this trend continues, tritium concentrations could be below MCLs by sometime in 2010. With the physical changes that occured to the site as a result of the SW-R Demolition Project (e.g., removal of buildings, building slabs and extensive misting operations) tritium levels increased sharply in all the seeps. Ongoing sampling results suggest that peak tritium concentrations have passed through the system with maximum concentrations observed in mid 2005. A vast majority of the contaminated soils were removed from the SW-R area thereby removing the largest source of tritium. The observed, declining tritium data trend is expected to continue.

As noted above, prior to the SW-R Demolition Project, both tritium and VOC seep concentrations were, in the case of tritium, trending downward towards the MCL, or in the case of VOCs, at or below the MCL, (an exception is onsite Seep 0601 which has always had higher concentrations because of its closer proximity to the source area). As the SW-R Demolition Project progressed, significant physical changes occurred in the suspected tritium and VOC source areas. Both SW and R buildings were demolished with subsequent removal of the building foundation, slabs, and soils. Demolition required the use of significant volumes of misting water to suppress airborne particulate from entering the atmosphere. In the past, with the buildings in place, building slabs and pavement covered contaminated soils. Most precipitation falling onto the area was quickly routed away to the storm sewers and did not permeate in to source area soils. With the removal of the building slabs soils were exposed, and due to the misting operations significant volumes of water were now available for infiltration into the soil. Ultimately this water emerges as hillside seeps or discharges into the adjacent down gradient buried valley aquifer. As the water was free to interact with the contaminated soils, soluble contaminants entered the infiltrating water and migrated away from the source area. Tritium and VOC concentrations increased largely as a result of the increased and focused volume of mist water entering

the groundwater system in the vicinity of the SW-R project.

At project completion in July of 2006, tritium and VOC concentrations had not yet declined to pre-SW-R demolition levels. As a result, the DOE continued to monitor the seeps associated with PRSs 91-92 and 94-98 and several select down gradient BVA wells to ensure that concentrations were declining. Sample data to date indicates significant reductions in the concentration of tritium and VOCs as expected. Concentrations have not yet achieved a level below the MCL but are expected to now that the source has been removed.

Down gradient wells selected for monitoring are:

Wells West of PRS131 (SW-R Building)

Well 0118	Well 0138	Well 0301
Well 0333	Well 0334	

Tributary Valley Wells

Well 0346	Well 0347	Well 0379

Sampling data from these wells and seeps, as well as other wells that are part of a continued long term monitoring program, are available through the DOE Legacy Management Program. At present, data can be obtained on-line at the internet website **http://gems.lm.doe.gov/imf/ext/gems/jsp/launch.jsp**. After the website appears, select the Mound Site, then launch the Map Viewer. When the map of the Mound Site appears, select Environmental Reports from the drop down menu. This screen allows you to select the type of Environmental Report you would like such as "Water Quality by Analyte" and the well or seep location.

2.5.4.3 Soil Contaminant Data

Soil data can be divided into three types: (1) data obtained through commercial analytical laboratory analysis; (2) data obtained through screening techniques conducted in a DOE laboratory; and, (3) data obtained through screening techniques conducted in the field. Analytical laboratory data are obtained using strict methods and are subjected to exacting quality control procedures. These data are of the highest quality and are quantitative. The laboratory screening data are considered to be of lower quality because sample preparation does not occur, and the measuring instruments are less precise. The field screening techniques are the least accurate due to instrument limitations and the effects of ambient conditions on field measurements. Due to these limitations, field-screening data were not used for any calculations in the RRE.

Soil contaminant data collected for Parcels 6, 7, and 8 collected prior to the Mound 2000 Process are documented in the following reports:

- **Miscellaneous Sites Limited Field Investigation Report, Volumes 1, 2, and 3** – The purpose of this investigation was to address areas noted in previous surveys but not thought to endanger human health or the environment. (Reference 12),
- **New Property Extended Phase I Field Investigation Report** - The purpose of this investigation was to augment previous reconnaissance surveys with surface and subsurface sampling, groundwater sampling, and sediment sampling in ephemeral streams. (Reference 13),
- **Remedial Investigation Report** - this report identifies the nature and extent of contamination in groundwater, surface water, soils, and sediment in Operable Unit 5. (Reference 14),
- **Operational Area Phase I Investigation Area 22** - The purpose of this investigation was to present results of the radiological and soil gas reconnaissance surveys conducted in Area 22 as part of the larger OU5 Phase I investigation and identify potential areas of radiological and chemical contamination. It provided a qualitative screen that can be used to determine a strategy for directing additional investigations. (Reference 15),
- **Operational Area Phase I Investigation Area 13** - The purpose of this investigation was to present results of the radiological and soil gas reconnaissance surveys conducted in Area 13 as part of the larger OU5 Phase I investigation and identify potential areas of radiological and chemical contamination. It provides a qualitative screen that can be used to determine a strategy for directing additional investigations. (Reference 16),
- **Reconnaissance Sampling Report Decontamination and Decommissioning Areas** - The purpose of this sampling campaign was to characterize the non-radioactive hazardous contaminant in the soil areas that were included in the Decontamination & Decommissioning (D&D) Program as of 1989. Some onsite analyses for plutonium-238 and thorium-232 were also reported.) (Reference 17),
- **Regional Soils Investigation Report** – The purpose of this investigation was to give a regional soil description without including the impacts of Mound operations) (Reference 10),
- **Site Scoping Report, Volume 3 - Radiological Site Survey** - This report was a compendium of existing data (Reference 18).
- **Parcel 4/5 Boundary Sampling** - The purpose of this sampling campaign was to assure radioactively contaminated soil had not migrated from the south ridge area (PRS 421) downward towards the Parcel 4 region and possibly across the Parcel 4/5 boundary. These data were collected after implementation of the Mound 2000 Process. (Reference 29).

In the Mound 2000 Process, radionuclide and chemical contaminants were studied on a PRS basis. There are 332 PRSs located in Parcels 6, 7, and 8 as identified in Table 2. Their locations are shown in Figure 3. Summaries of the contaminants detected in Mound Plant soil are shown in Tables 5 through 10.

2.5.4.4 Building Contaminant Data

The final radiological surveys for the buildings remaining in Parcels 6, 7, and 8 meet the criteria established in The Work Plan for Environmental Restoration at the Mound Plant, The Mound 2000 Approach (Reference 3) for the transfer of buildings. This work plan spells out surface release criteria and dose requirements of DOE Order 5400.5, Radiation Protection of the Public and the Environment. These requirements are consistent with NRC guidance "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source and Special Nuclear Material" July 1992 and "Termination of operating Licenses for Nuclear Reactors," Regulatory Guide 1.86, July 1974. Radiological information is available in the building data package (BDP) or OSC Report for each building. Table 3 lists the buildings that were transferred and the Core Team's conclusion about the building. A significant amount of radiological data is available for T Building because of the extensive clean up and verification effort necessary to assure that the building was protective of human health. T building was decommissioned in accordance with an approved work plan. A significant portion of the building met surface free release criteria, however, some residual volumetric contamination remains in a few rooms. This contamination was evaluated from a dose perspective using the RESRAD Build Model and were found to be protective based on the 15mrem/yr criteria established in the work plan.

2.5.4.5 Air Contaminant Data

For purposes of evaluating cumulative residual risk, air pathway data are also reported in each RRE. Per the RREM, 1994 data collected at the Mound Plant perimeter air sampling stations were used to bound the concentrations, and, therefore, the risks from inhalation of radionuclides present in the ambient air. The risk data for tritium oxide (HTO), plutonium-238, and plutonium-239/240 reported in the Residual Risk Evaluation, Release Block D (Reference 19) were reviewed and found to require no update or changes. It was observed, however, that the site employee risk calculations did not include an adjustment factor to account for the time spent indoors. While this approach is inconsistent with that applied to analogous outdoor pathways, it is conservative in nature.

2.6 Potential Future Uses for Mound

The Mound Plant will remain in industrial/commercial use into the future. This future use has been determined based upon agreement among DOE, USEPA, OEPA, and interested stakeholders. This land use is reflected in the Mound Comprehensive Reuse Plan of the MMCIC and is currently codified in the City of Miamisburg Zoning Ordinance.

2.7 Summary of Site Risk

The human health risks for Parcels 6, 7, and 8 were evaluated using the RREM document developed for Mound. An RRE is a five-step process:

(1) Identification of contaminants,

(2) Exposure assessment,

(3) Toxicity assessment,

(4) Risk characterization, and

(5) Evaluation of potential cumulative risks.

Steps 1 through 5 are described below. After the Core Team reviews and approves the RRE, it is placed in the public reading room for a formal 30-day public review period. Also included below is a brief discussion of the Summary of Site Risk associated with T Building.

2.7.1 Identification of Contaminants

The contaminant of potential concern (COPCs) for Parcels 6, 7, and 8 were identified by reviewing all of the sampling data for each parcel. Based on that review, contaminants were eliminated for further evaluation based on criteria established in the RREM. Specifically, only contaminants exceeding frequency of detection criteria, background concentrations, and a base level of potential health concern were carried through the RRE. The contaminants of concern established on the basis of risk are listed in Tables 5 through 10 and in the Parcels 6, 7, and 8 RRE (Reference 1).

2.7.2 Exposure Assessment

The Conceptual Site Model (CSM) for Mound provides the basis for evaluating human exposure scenarios. The CSM for Mound was defined in the RREM. Because DOE and its regulators and stakeholders agree that the future use of Parcels 6, 7, and 8 will be industrial/commercial in nature, two receptor scenarios from the Mound CSM apply: an onsite construction worker and a site employee engaged in non-construction activities (office work). The routes of exposure applicable to these two receptors are shown in Figure 4. The significant pathways for potential exposure in Parcels 6, 7, and 8 include ingestion of soil and direct radiation from contaminated soil.

Using equations developed to support the CSM, exposures to specific concentrations of contaminants of concern are evaluated based on assuming current and future intake rates for soil, air, and groundwater. Once the intake is estimated, the human health implications of the intake are evaluated by reviewing toxicological data for the contaminants of concern.

Because the City of Miamisburg now provides water service to the Mound site there is no longer a completed groundwater exposure pathway for the construction worker and site employee exposure scenarios defined in the RREM. However, because of groundwater detections above MCLs groundwater monitoring will continue at the site.

2.7.3 Toxicity Assessment

Toxicity criteria used in the Parcels 6, 7, and 8 were obtained from the most current update of the EPA Integrated Risk Information System (IRIS) or, if the information was not available in IRIS, the EPA Health Effects Assessment Summary Tables (HEAST). IRIS is an electronic database containing the most current descriptive and quantitative EPA regulatory information related to non-carcinogenic and carcinogenic health effects of chemical contaminant. HEAST is a published reference, updated periodically by EPA. It contains toxicity information and values for contaminants from health effects documents and profiles. These toxicity criteria were accessed using DOE's Risk Assessment Information System website (http://risk.lsd.ornl.gov/). The information on this website was last updated January 6, 2005.

2.7.4 Risk Characterization

Risks are quantified for both carcinogenic and non-carcinogenic contaminants in accordance with the RREM. The risk associated with the intake of a known or suspected carcinogen is reported in terms of the incremental lifetime cancer risk presented by that contaminant of concern, as estimated using the appropriate slope factor and the amount of material available for uptake. The acceptable risk range as defined by CERCLA and the NCP is 10-4 to 10-6 (one human in ten-thousand to one human in one-million incremental cancer incidence). Potential human health hazards from exposure to non-carcinogenic contaminants are evaluated by using a Hazard Quotient (HQ). The HQ is determined by the ratio of the intake of a contaminant of concern to a reference dose or concentration for the contaminant of concern that is believed to represent a no-observable effect level. The specific HQ for each contaminant of concern is then summed to provide an overall HI. USEPA guidance sets a limit of 1.0 for the comprehensive HI.

For the Construction Worker scenario in Parcel 6, the calculated incremental risk ($1.5x10^{-5}$) is acceptable. For the Site Employee scenario, the incremental risk (1.5×10^{-5}) is also acceptable. The calculated HI for the Construction Worker and Site Employee scenarios could not be calculated due to the absence of toxicity data.

For the Construction Worker scenario in Parcel 7, the calculated incremental risk ($2.1x10^{-5}$) is within acceptable USEPA guidelines and the calculated HI ($8.6x10^{-3}$) for the Construction Worker scenario is below the acceptable limit (1.0). For the Site Employee scenario, the incremental risk ($1.7x10^{-5}$) is acceptable. The calculated HI for the Site Employee scenario ($6.8x10^{-7}$) is also acceptable.

For the Construction Worker scenario in Parcel 8, the calculated incremental risk ($2.2x10^{-5}$) is within acceptable USEPA guidelines. The calculated HI (0.16) is below the acceptable limit (1.0). For the Site Employee scenario, the incremental risk (2.6×10^{-5}) is acceptable. The calculated HI for the Site Employee scenario ($1.8x10^{-10}$) is also acceptable.

Because the scope of the RRE was limited to industrial/commercial use, the soils within Parcels 6, 7, and 8 have not been evaluated for unrestricted release (e.g., residential use).

Disposition of Parcels 6, 7, and 8 soils without proper handling, sampling, and management could create an unacceptable risk to human health and the environment.

2.7.5 Evaluation of Potential Cumulative Risks

For purposes of the RREM, risks resulting from contaminants that originate outside the release block/parcel under consideration are called cumulative risks. In general, cumulative risks are possible via air, surface water, and groundwater. For Mound, cumulative risks from surface waters are not expected because, other than storm water drainage and some groundwater seeps present year-round, there are no surface water bodies such as ponds or streams flowing through Parcels 6, 7, or 8 from other areas. Groundwater is not a concern because water service is provided by the City of Miamisburg. Therefore, air is the media of concern for cumulative risks.

The Mound RREM accounts for cumulative residual risk via the air pathway by using data collected in 1994 from the Mound Plant perimeter air sampling stations to bound the concentrations, and therefore the risks from inhalation of radionuclides present in ambient air. These values are reported in the Technical Position Report in Support of the Release Block D Residual Risk Evaluation (Reference 20). This evaluation demonstrated that the air pathway was an insignificant contributor to overall risk. The risk values presented in Table 4 are therefore believed to adequately bound the potential overall risk.

2.7.6 Comparison of Groundwater Contaminants to MCLs

As noted previously, groundwater monitoring Wells 0315 and 0347 show MCL exceedances for TCE. Concentrations between 16 and 33 ppb have been observed in Well 0347 since 1999. Concentrations in Well 0315 have fluctuated between 6 and 18 ppb since 1990. The MCL for TCE is 5 ppb. There is no clear trend that shows whether the TCE concentration is increasing or decreasing although it does appear that concentrations may have stabilized in both wells.

The other area of concern is contaminants observed in Main Hill Seeps 0601, 0602, 0604/0605, 0606, 0607, and 0608 (PRSs 91-92 and 94-98). Onsite Seeps 0601 and 0602 reached peak tritium concentrations of 1,084,000 pCi/L and 82,700 pCi/L respectively versus the MCL of 20,000 pCi/L. The most recently measured concentrations, in February of 2008, were 61,200 pCi/L at Seep 0601 and 27,200 pCi/L at Seep 0602. Offsite Seep 0605 has shown a peak tritium concentration of 302,000 pCi/L and most recently 26,100 pCi/L.

Seep 0605 has shown the highest TCE concentration with a peak of 97 ppb and most recently a concentration of 15.3 ppb. Seeps 601, 602, 606, and 607 have also shown TCE concentrations slightly above the MCL from time to time.

Strontium-90 and Radium-226/228 have also recently been detected in Seep 0601 above the MCL with peak Radium-226/228 and Strontium-90 concentrations of 186 pCi/L and 14.3 pCi/L respectively. More recent data indicates that concentrations have dropped below MCL values. Figure 11 shows the sample concentration of these two isotopes over time.

2.7.7 Ecological Risk Assessment

A site visit was conducted by the OEPA based on Guidance for Conducting Ecological Risk Assessments, DERR - 00 - RR – 031, February 2003 (Reference 33). During that visit it was determined that no threatened or endangered species were observed within Parcels 6, 7, and 8 and that no sensitive environments or ecologically important resources could be identified within Parcels 6, 7, and 8. In addition, the following documents provide information as to the ecological impact on Parcels 6, 7 and 8:

- Final Environmental Impact Statement (Reference 23)
- OU 9 Ecological Characterization Report (Reference 24)
- Parcel 4 Ecological Assessment (Reference 25)
- Environmental Assessment for the Commercialization of the Mound Plant (Reference 26)

Considering these facts and the future reuse of Parcels 6, 7, and 8 as a commercial and industrial park a more detailed assessment of the ecological risk is not warranted.

2.7.8 Summary of Risk Associated with T Building

The majority of T Building was verified to meet free release criteria as specified in the MD2000 Approach (Reference 3). RESRAD-Build modeling was conducted in certain areas that had residual volumetric contamination, and the estimated dose from that modeling indicated that institutional controls will be needed to ensure that any future building occupant will not receive a maximum dose greater than the Mound 2000 dose limit criteria (15 mRem/year). Two specific proposed institutional controls were selected based on the modeling:

First, some areas of T Building have residual contamination greater than free release criteria. The areas were evaluated against both a construction worker and office worker scenario and found to be protective (less than 15 mRem/year). In these areas, penetration and removal of the floors is permitted, but the resulting debris may not meet free release criteria and should be disposed of properly. This resulted in a proposed "prohibition against the removal of concrete floor material in specified rooms of T Building (see Figure 6) to offsite locations without prior approval from USEPA, OEPA, and ODH"

Second, some areas of T Building have residual contamination greater than free release criteria. The areas were evaluated against both the construction worker and office worker scenario. With no controls in place, these areas would have the potential to produce greater than a 15 mRem/year dose. In order to keep the potential risk to less than 15 mRem/yr a red concrete cap was poured in two rooms of the building. With this engineered control (the concrete cap), these rooms are protective (less than 15 mRem/yr). In order to maintain the integrity of the engineered control, an institutional control is proposed that prohibits "against the penetration of concrete floors in specified rooms of T Building (see Figure 6) locations without prior approval from USEPA, OEPA, and ODH." Red concrete was selected to aid in the implementation of the proposed institutional

control. In addition, long term monitoring of the condition of the specified floors and repair or maintenance, as necessary, are included in the O&M Plan for the facility.

2.8 Remediation Objectives

The primary remediation objective for Parcels 6, 7, and 8 is to ensure that the residual risk associated with the parcel is acceptable for the defined use scenario of industrial/commercial occupants.

2.9 Description of Alternatives

In light of the planned exit of DOE from the site, and the residual levels of contaminants in the soil and groundwater in Parcels 6, 7, and 8, a remedy must be implemented to protect human health and the environment into the future. The two alternatives presented below were considered for Parcels 6, 7, and 8. No other alternatives were evaluated because Parcels 6, 7, and 8 removal actions have eliminated the area's contamination sources and reduced the site's residual risks to acceptable levels for industrial/commercial use. Active treatment systems were not deemed practicable for ground water because contamination levels are only slightly above MCLs and the principal threat can be addressed by engineering and institutional controls while natural attenuation takes place.

2.9.1 No Action

Regulations governing the Superfund program require that the "no action" alternative be evaluated at each site to establish a baseline for comparison. Under this alternative, DOE would take no action to prevent exposure to soil and groundwater contamination associated with Parcels 6, 7, and 8.

2.9.2 Institutional Controls and Monitored Natural Attenuation

The Institutional Controls alternative would involve implementation of deed restrictions and other controls that would limit the use of property (including T Building), soil, and groundwater within the three parcels.

Under this alternative, an unacceptable risk is avoided by restricting use of Parcels 6, 7, and 8 to that which is consistent with assumptions in the Parcels 6, 7, and 8 RRE. Resources within the parcels would only be used for industrial or commercial development. A groundwater monitoring plan will be created to monitor for adverse migration of contaminants and to ascertain the degree of natural degradation of contaminants at both Wells 0315 and 0347 and the Main Hill seeps.

The Department of Energy LM, or its successor organizations, would retain the right and responsibility to monitor, maintain, and enforce the controls. The following institutional controls would be adopted.

Deed restrictions will be incorporated into the deeds for transfer of Parcels 6, 7, and 8 and will include:

- maintenance of industrial or commercial land use;
- prohibition against residential land use;
- prohibition against the use of groundwater without prior approval from USEPA and OEPA;
- site access for federal and state agencies for the purpose of sampling and monitoring;
- prohibition against the removal of soil from within the site boundary (as of 1998) to offsite locations without prior approval from USEPA, OEPA, and ODH;
- prohibition against the removal of concrete floor material in specified rooms of T Building (see Figure 6) to offsite locations without prior approval from USEPA, OEPA, and ODH; and
- prohibition against the penetration of concrete floors in specified rooms of T Building (see Figure 6) locations without prior approval from USEPA, OEPA, and ODH.

In addition to the institutional controls above, the DOE is proposing as part of the remedy to monitor groundwater and seep water to ensure unacceptable levels of contamination do not migrate into drinking water sources in and around the plant and to verify that the concentration of VOCs is decreasing due to natural attenuation. An annual review and report will be submitted to OEPA, ODH, and USEPA (pursuant to CERCLA).

According to the guidance Use of Monitored Natural Attenuation at Superfund, Resource Conservation and Recovery Act (RCRA) Corrective Action, and Underground Storage Tank Sites, April 1999, EPA/540/R-99/009, there are generally ten factors that should be considered to evaluate the appropriateness of a Monitored Natural Attenuation remedy. The factors, along with a brief explanation of how they relate to Parcels 6, 7, and 8, are presented below:

1. *Whether the contaminants present in soil or groundwater can be effectively remediated by natural attenuation processes*

The concentration of TCE in the groundwater is expected to decrease to a concentration less than the MCL through a naturally-occurring biodegradation process called reductive dehalogenation. In this process, chlorinated solvent compounds (such as TCE) gradually break down by having a halogen, in this case chlorine atoms, replaced with a hydrogen atom. This progression results in a successively lower number of halogens (chlorine atoms) attached to the compound structure, shown by:

$$TCE \rightarrow DCE \rightarrow VC \rightarrow ethene + Cl^-$$

The assumption that this process is already taking place in the area is supported by the fact that DCE has been detected consistently along with the TCE.

The B Building Solvent Storage Shed Soil Vapor Extraction Removal Action and the R/SW Removal Action have removed the probable source of contaminants at the Main Hill seeps. It is expected that the contaminants remaining in bedrock will degrade in place and will be released in seep groundwater at progressively lower concentrations, eventually reaching levels below MCLs.

2. Whether or not the contaminant plume is stable and the potential for the environmental conditions that influence plume stability to change over time

The wells and seeps in the Parcels 6, 7, and 8 area have been sampled over a period of several years (see Figures 7, 8, and 10). Sample results of both Wells 0315 and 0347 as well as down gradient wells have consistently shown that the TCE contamination is limited to a small area near the location of Wells 0315 and 0347. Levels at the seeps spiked due to dust suppression measures (misting) used during the R/SW removal action, which removed the source soils (see Figures 9 and 10). The levels have begun to return to historically observed concentrations. Contamination at the seeps is limited to the immediate area where water is expressed. Soil samples have not indicated contaminants in soil near the seeps.

3. Whether human health, drinking water supplies, other groundwater, surface waters, ecosystems, sediments, air, or other environmental resources could be adversely impacted as a consequence of selecting MNA as the remediation option

There is no indication that the BVA or other environmental resources in the area of Parcels 6, 7, and 8 will be adversely affected by selecting MNA as the remediation option for VOCs in Parcels 6, 7, and 8 since the contamination is stationary (not moving) and is expected to diminish. In addition, the Preferred Alternative calls for a restriction to be placed on the deed that will prohibit the installation of drinking water wells in the Parcels 6, 7, and 8 area in the future.

4. Current and projected demand for the affected resource over the time period that the remedy will remain in effect

The bedrock aquifer is not currently used as a groundwater resource for the Mound Plant, nor is it anticipated to be used in the future. The City of Miamisburg municipal water supply supplies all potable water to the site. Finally, the Preferred Alternative calls for a restriction to be placed on the deed that will prohibit the installation of drinking water wells in the Parcels 6, 7, and 8 area in the future.

5. Whether the contamination, either by itself or as an accumulation with other nearby sources (onsite or offsite), will exert a long-term detrimental impact on available water supplies or other environmental resources

The BVA is designated as a sole-source aquifer and serves as the primary potable water supply for the City of Miamisburg. Based upon years of groundwater data collected down gradient of Wells 0315 and 0347, there is no indication that the BVA is threatened by the TCE contamination in the area. In addition, the bedrock aquifer is not currently used as a groundwater resource for the Mound Plant, nor is it anticipated to be used in the future.

6. Whether the estimated timeframe of remediation is reasonable compared to timeframes required for other more active methods of remediation

Based on analysis of historical data and the intended remediation goal, it is expected that the timeframe for remediation will be achieved in a reasonable period of time.

First, historical data indicate that natural attenuation is occurring. Although data has shown that TCE concentrations may have stabilized in both wells, DCE has been detected along with TCE in both wells indicating that the natural attenuation process is taking place. It is expected that this process will continue to occur and that TCE concentrations will be fall below MCLs in a reasonable amount of time.

Second, proposed deed restrictions, prevent the use of ground water from the Mound Site for drinking water. Therefore there is no intended use for the groundwater on the Mound Site. The remediation goal is to contain and eliminate the contamination before it impacts the BVA. Historical data from wells down gradient of the plume indicate that the plume is stationary and is not moving with time. Therefore, it is reasonable to assume that the natural attenuation will occur prior to impacting the BVA.

7. The nature and distribution of sources of contamination and whether these sources have been, or can be, adequately controlled

There are no known sources of TCE contamination in soil in the Parcels 6, 7, and 8 area. There are no indications of further migration of contaminants at Wells 0315 and 0347 or at the seeps. The monitoring plan will include action levels for adversely high concentrations and will be designed to detect migration of contaminants.

8. Whether the resulting transformation products present a greater risk, due to increased toxicity and/or mobility, than do the parent contaminants

Although vinyl chloride, a breakdown product of TCE, generally presents a higher risk to human receptors than TCE and is more persistent in groundwater, historical sampling data indicate that the low concentrations of TCE in Wells 0315 and 0347 do not support the production of high enough concentrations of vinyl chloride in the bedrock aquifer to pose an unacceptable risk. Concentrations of vinyl chloride remain at or below the minimum detectable limit (MDL).

In addition, there is no current exposure pathway to Parcels 6, 7, and 8 groundwater, and the Preferred Alternative prohibits the installation of drinking water wells in Parcels 6, 7, and 8.

9. The impact of existing and proposed active remediation measures upon the MNA component of the remedy, or the impact of remediation measures or other operations/activities (e.g., pumping wells) in close proximity to the site.

There are no operations or activities in close proximity to Wells 0315 or 0347 or the seeps that would impact the MNA component of the Preferred Alternative.

10. Whether reliable site-specific mechanisms for implementing institutional controls (e.g., zoning ordinances) are available, and if an institution responsible for their monitoring and enforcement can be identified

Institutional Controls will be implemented as part of the Preferred Alternative for the Parcels 6, 7, and 8 properties. The controls will restrict use of the bedrock groundwater; and DOE, or its successors, have the responsibility to monitor, maintain and enforce these institutional controls in the future.

Based on these factors, it has been determined that Monitored Natural Attenuation is an appropriate remedy for the VOCs in the groundwater in Parcels 6, 7, and 8. The specifics of the monitoring will be established in a Groundwater Monitoring Plan that will require approval by USEPA and OEPA. This will become part of the O&M Plan required by the ROD.

2.9.3 Monitoring Program Summary

Details of the groundwater monitoring program are fully described in the Parcels 6, 7, and 8 Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan (Reference 30).

2.9.3.1 Objectives

The objective is to protect the BVA by verifying that the concentrations of TCE in the vicinity of Wells 0315 and 0347 are decreasing and that TCE is not impacting the BVA and demonstrate the TCE in the groundwater of wells does not exceed the MCL. With respect to the seeps (PRSs 91-92 and 94-98) the objective is to ensure contaminant levels in the seep water return to acceptable levels. The long-term objective for Wells 0315 and 0347and for the seeps (PRSs 91-92 and 94-98) is for all contaminants (VOCs and tritium) to drop below MCLs.

2.9.3.2 Well 0315 and 0347 Monitoring

BVA Wells 0315 and 0347 will be monitored for VOCs to provide spatial monitoring coverage of the zone of localized TCE groundwater contamination.

The following BVA wells will be monitored for VOCs to provide spatial coverage of groundwater flow paths down gradient from the Well 0315 and 0347 area: Wells 0124, 0126, 0386, 0387, 0389, and 0392.

VOC analysis will be conducted in accordance with the Parcels 6, 7, and 8 Ground Water monitoring Plan to obtain chemical concentrations of TCE, DCE, and VC. DCE and VC are degradation products of TCE and their presence indicates that TCE is being decomposed. In addition to TCE, DCE and VC, the following field parameters will be taken during each sampling event: dissolved oxygen, temperature, Eh, and pH.

Monitoring Frequency

The monitoring frequency is determined based on concentration trends previously observed in TCE data collected from the monitoring locations noted in the section above. Quarterly sampling has been effective in the past at capturing both the general trend and minor fluctuations in TCE concentration observed in these wells. Based on the data, TCE concentrations in these wells are not expected to fluctuate rapidly and therefore initial

quarterly monitoring will be sufficient to capture any potential geochemical changes that may occur in the future.

If geochemical conditions improve, the monitoring frequency can be adjusted to reflect the increased understanding and predictability of the flow system. If the geochemical conditions remain stable, the USEPA and OEPA will evaluate a request for decreased sampling frequency.

If geochemical conditions do not remain stable or improve (TCE concentrations trend above pre-established trigger levels) an appropriate sampling frequency shall be determined by DOE and regulatory agencies during the annual data review (see Section 6.0 on reporting requirements).

Quarterly Groundwater Monitoring

Wells 0347, 0315, 0386, 0389, 0387, 0392, 0124 and 0126 will be monitored quarterly for VOCs (in particular TCE). The quarterly monitoring frequency must be maintained for a minimum of one year. The following schedule represents an outline for potential monitoring frequency. Any change to the initial quarterly monitoring defined in this section must be agreed to by the regulatory agencies and DOE. Sampling requirements associated with Parcels 6, 7, and 8 remedy monitoring are outlined in the Parcels 6, 7, and 8 Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan, December 2006 (Reference 30).

Reduction to Semi-Annual Groundwater Monitoring (2 sampling events)

If TCE/DCE/VC concentrations in monitoring Wells 0315 and 0347 decline after 4 quarterly sampling events, DOE may petition for a sampling reduction to semi-annually for wells in the Well 0315 and 0347 area. If the geochemical conditions remain stable, the USEPA and OEPA will evaluate a request for decreased sampling frequency.

Reduction to Annual Groundwater Monitoring

If TCE/DCE/VC concentrations in monitoring Wells 0315 and 0347 continue to decline after 2 semi-annual sampling events, DOE may petition for a sampling reduction to annually for all wells in the Well 0315 and 0347 area. If the geochemical conditions remain stable, the USEPA and OEPA will evaluate a request for decreased sampling frequency.

If TCE/DCE/VC concentrations in monitoring Wells 0315 and 0347 continue to decline after 3 annual sampling events, the DOE may petition to discontinue sampling for the downgradient wells in the Well 0315 and 0347 area. If the geochemical conditions remain stable, the USEPA and OEPA will evaluate a request for decreased sampling frequency.

Discontinuation of Sampling

If at any time TCE/DCE/VC concentrations in Wells 0315 and 0347 drop below MCLs for the analytes listed in Table 1, for a minimum period of two years, the DOE may petition to discontinue sampling for all wells in the Well 0315 and 0347 area.

2.9.3.3 Seeps Monitoring

Water from Seeps 0601, 0602, 0604/0605, 0606, and 0607 will be collected and tested for the contaminants of concern. This section outlines the relevant seeps and wells, the sampling frequency, sampling parameters and sampling methodology required to ensure contaminant levels in the seep water return to acceptable levels. The seeps are associated with PRS 91-92 and 94-98.

Seep Monitoring Locations

Water from Seeps 0601, 0602, 0605, 0606, and 0607 will be collected and tested for the contaminants of concern as shown in Table 2. Seep 0608 will not have water collected and tested as part of this remedy. This location has consistently shown tritium concentrations below the MCL.

Down Gradient Monitoring for Seep Contaminants

The following groundwater monitoring wells will be monitored as part of the remedy. The wells are located within the BVA down gradient of the bedrock groundwater discharge area of the SW-R Hillside. Monitoring Wells 0346 and 0138 both show a response to migrating tritium and are therefore suitable for continued monitoring to track the progress of both tritium and VOC concentrations in the BVA. Well 0379 is in the vicinity of Well 0347 and will be sampled as well. The remaining wells are located in the vicinity of Well 0138 or are down gradient of Well 0346 and samples will not be collected as part of this remedy. Well 0347 will continue to be monitored as part of Wells 0315 and 0347.

Wells West of PRS131 (SW-R Building)

Well 0118	Well 0138	Well 0301
Well 0333	Well 0334	

Tributary Valley Wells

Well 0346	Well 0347	Well 0379

Monitoring Frequency

Quarterly sampling has been effective in the past at capturing both the general trend and minor fluctuations in contaminant concentration observed in these wells. Based on the data, concentrations in these wells are not expected to fluctuate rapidly and therefore initial

quarterly monitoring will be sufficient to capture any potential geochemical changes that may occur in the future.

If geochemical conditions improve the monitoring frequency can be adjusted to reflect the increased understanding and predictability of the flow system. If the geochemical conditions remain stable the USEPA and OEPA will evaluate a request for decreased sampling frequency.

If geochemical conditions do not remain stable or improve (TCE concentrations trend above pre-established trigger levels) an appropriate sampling frequency shall be determined by DOE and regulatory agencies during the annual data review (see Section 6.0 on reporting requirements).

Quarterly Groundwater Monitoring

The quarterly monitoring frequency must be maintained for a minimum of one year. The following schedule represents an outline for potential monitoring frequency. Any change to the standard initial quarterly monitoring defined in this section must be agreed to by the regulatory agencies and DOE.

Reduction to Semi-Annual Groundwater Monitoring (2 sampling events)

If concentrations in Seeps 0601, 0602, 0605, 0606, and 0607 continue to decline after 4 quarterly sampling events, DOE may petition for a sampling reduction to semi-annually for these wells and seeps. If the geochemical conditions remain stable, USEPA and OEPA will evaluate a request for decreased sampling frequency.

Reduction to Annual Groundwater Monitoring

If concentrations in Seeps 0601, 0602, 0605, 0606 and 0607 continue to decline after 2 semi-annual sampling events, DOE may petition for a sampling reduction to annually for these wells and seeps. If the geochemical conditions remain stable, USEPA and OEPA will evaluate a request for decreased sampling frequency.

If TCE/DCE/VC concentrations in Seeps 0601, 0602, 0605, 0606, and 0607 continue to decline after 3 annual sampling events DOE may petition to discontinue sampling for Wells 0138, 0346 and 0379 and Seeps 0602 and 0606. The monitoring frequency for Seeps 0601, 0605, and 0607 would remain annual until the concentrations drop below MCLs. If the geochemical conditions remain stable, USEPA and OEPA will evaluate a request for decreased sampling.

Concentrations in Seeps 0601, 0605, and 0607 Drop Below MCLs

If at any time TCE/DCE/VC concentrations in Seeps 0601, 0605, and 0607 drop below MCLs for the monitored analytes, for a minimum period of two years, DOE may petition to discontinue sampling for Main Hill seep monitoring wells and seeps.

2.9.3.4 Contingencies

If the quarterly monitoring results indicate that MNA is not adequately addressing the contamination, DOE, USEPA and OEPA will evaluate more active remediation approaches.

Remedy Trigger Levels and Response Actions

The objective of the trigger level is to provide a threshold level that is indicative of a definitive change in the geochemical condition of the Parcels 6, 7, and 8 bedrock groundwater system. The objective of the response action is to provide notification of the detected geochemical change to the DOE who will in turn notify the USEPA, and OEPA within 7 days. Collectively the DOE, USEPA and OEPA will re-evaluate the situation and determine a course of action.

Indicator Wells – 0315 and 0347

Monitoring Wells 0315 and 0347 represent the location within the BVA system showing the highest concentrations of TCE. TCE concentrations in Wells 0315 and 0347 have been relatively stable for the past three years, *averaging approximately 10 ppb and 20 ppb respectively*. The following trigger levels are designed to indicate that a change has occurred in the current BVA conditions relative to TCE contamination in Wells 0315 and 0347. Any of the conditions noted in the table below would be interpreted as a potential change in the local BVA system and will require the associated response action. The trigger levels and associated response actions are broken down according to the specific location that is being monitored.

Well 0315/0347 Monitoring Trigger Levels and Actions.

Location	Trigger Level	Response Action
Well 0315 and 0347	Monitoring results show the concentration of TCE increasing to 30 ppb.	Immediately Notify (within 7 days) Federal and State Environmental Protection Agencies.
BVA Wells With past TCE Detections downgradient of wells 0315 and 0347		
Monitoring Wells 0386 and 0389	Monitoring results show the concentration of TCE above the MCL of 5 ppb.	Immediately Notify (within 7 days) Federal and State Environmental Protection Agencies.
BVA Wells With No Historical TCE Detections downgradient of wells 0315 and 0347		
Monitoring Wells 0387, 0392, 0124, and 0126	Monitoring results show the concentration of TCE above the MCL of 5 ppb.	Immediately Notify (within 7 days) Federal and State Environmental Protection Agencies.

Indicators – Seeps

The following trigger levels are designed to indicate that a change has occurred relative to TCE or tritium contamination in the seeps. Any of the conditions noted in the table below would be interpreted as a potential change in the local BVA system and will require the associated response action. The trigger levels and associated response actions are broken down according to the specific location that is being monitored. Concentrations have not stabilized since completion of the SW/R/B Building soils excavations so some variability in monitoring results is expected.

Seep 0601 represents the location showing the highest concentrations of tritium, PCE, radium-226/228, and strontium-90. Significantly exceeding that concentration should trigger a response; therefore, the tritium trigger level is set at 1,500 nCi/L at all seeps. Trigger levels are also established for PCE, strontium-90, and radium-226/228 above the recent maximum concentrations.

Seep 0605 is the location with the highest recorded TCE concentration (150 ppb). Significantly exceeding that maximum recorded concentration will trigger a response; therefore, the TCE trigger level is set at 150 ppb.

Seeps Monitoring Trigger Levels and Actions.

Location	Trigger Level	Response Action
Seeps		
Seep 0601	Tritium Concentration: Trigger Point 1,500 nCi/L spike or a sustained upward trend over three quarterly monitoring events leading to concentrations in excess of 300 nCi/L above the baseline concentration. Strontium-90 Concentration Trigger Point 20 pCi/L Radium-226/228 Concentration Trigger Point: 20 pCi/L PCE Concentration Trigger Point: 75 ppb	Immediately Notify (within 7 days) Federal and State Environmental Protection Agencies.
Seep 0602 Seep 0605 Seep 0606 Seep 0607	TCE Concentration Trigger Point: 150 ppb Tritium Concentration Trigger Point: 1,500 nCi/L spike or a sustained upward trend over three quarterly monitoring events.	Immediately Notify (within 7 days) Federal and State Environmental Protection Agencies.

2.10 Preferred Alternative

2.10.1 Description

The Preferred Alternative for Parcels 6, 7, and 8 is Institutional Controls and Monitored Natural Attenuation. Institutional controls in the form of deed restrictions on future land use will be imposed. The specific restrictions to be adopted include:

- maintenance of industrial or commercial land use;
- prohibition against residential land use;
- prohibition against the use of groundwater without prior approval from the United States EPA and Ohio EPA;
- site access for federal and state agencies for the purpose of sampling and monitoring;
- prohibition against the removal of soil from within the site boundary (as of 1989) to offsite locations without prior approval from USEPA, OEPA, and ODH;
- prohibition against the removal of concrete floor material in specified rooms of T Building to offsite locations without prior approval from USEPA, OEPA and ODH; and
- prohibition against the penetration of concrete floors in specified rooms of T Building locations without prior approval from USEPA, OEPA, and ODH.

In addition, DOE will continue to monitor groundwater in Parcels 6, 7, and 8 for TCE and its degradation products to verify that the concentration of TCE is decreasing due to natural attenuation and is not impacting the BVA. The specifics of the monitoring are established in the Parcels 6, 7, and 8 Groundwater Monitoring Plan (Reference 30) that will require

approval by USEPA and OEPA. This will become part of the O&M Plan required by the Proposed Plan and ROD. Key elements of the monitoring were outlined in Section 2.9.3. In addition, the O&M Plan will include a provision to monitor and maintain the specified concrete floors in T building.

DOE or its successors or assigns, as the lead agency for this Proposed Plan, has the responsibility to implement, report on, monitor, maintain, and enforce these institutional controls both before and after transfer. This responsibility includes the duty to conduct annual assessments of compliance with the deed restrictions and the duty to enforce the deed restrictions if any non-compliance is detected. The assessment and enforcement processes are part of the O&M Plan and are outlined in the Site-wide Operations and Maintenance Plan (Reference 32), which is intended to serve as a framework for implementation of operation and maintenance activities for the Preferred Alternative. Within 90 days of the date on which the ROD is signed, DOE shall submit to USEPA and OEPA for their approval a formal proposal regarding operation and maintenance of the institutional controls and Monitored Natural Attenuation and groundwater monitoring plan. This proposal and the annual compliance assessments shall be considered primary documents under the Federal Facilities Agreement. If DOE, USEPA, and OEPA agree, the frequency of the compliance assessments may be changed at any time.

2.10.2 Estimated Costs

The initial costs associated with these deed restrictions are those associated with the writing and recording of the restrictions with the deed. The costs associated with monitoring and enforcing the land use and property deed restrictions are estimated to be $5,000 per year. Sufficient groundwater monitoring wells are in place in Parcels 6, 7, and 8 so there are no initial costs anticipated for groundwater monitoring. The costs associated with continuing groundwater monitoring in Parcels 6, 7, and 8 are estimated to be $50,000 per year.

2.10.3 Decisive Factors

The USEPA has developed threshold, balancing, and modifying criteria to aid in the selection of the remedy. There are two threshold criteria, five balancing criteria, and two modifying criteria. Each is listed below.

Threshold Criteria

CRITERION 1 - Overall protection of human health and the environment

This criterion addresses an alternative's ability to protect human health and the environment. Alternative 1, No Action, does not satisfy the criterion since it would allow unrestricted future use including uses that pose more risk than the industrial/commercial scenarios that were the basis for site remediation and risk assessment. Alternative 2, Institutional Controls and Monitored Natural Attenuation, does meet Criterion 1. Deed restrictions are required as a mechanism to ensure the continued future use is limited to industrial/commercial purposes, to prohibit soil removed offsite, and to prohibit groundwater usage. The groundwater monitoring provides the mechanism to demonstrate that the VOC contaminants remain localized, do not affect drinking water, and therefore do not impact human health.

CRITERION 2 - Compliance with applicable or relevant and appropriate requirements

Evaluation of applicable or relevant and appropriate requirements determines whether an alternative will satisfy legal requirements associated with site cleanup. Applicable Requirements are Federal or State laws or regulations that specifically address contaminants found at a release site and Relevant and Appropriate Requirements are laws or regulations that address issues that are similar to those found at a release site. An alternative must satisfy both types of requirements to be acceptable. Alternative 1 does not need to meet ARARs since ARARs apply to active remediation alternatives. ARARs are of several types: chemical-specific, location-specific, and action-specific.

Chemical-specific ARARs are usually health-based or risk-based numerical values or methodologies which, when applied to site-specific conditions, result in the establishment of numerical values. These values establish the acceptable amount or concentration of a chemical that may be found in, or discharged to, the ambient environment. For Parcels 6, 7, and 8, MCLs established under the Safe Drinking Water Act constitute chemical-specific ARARs and are referenced in Appendix D. They apply to the groundwater beneath Parcels 6, 7, and 8. MCL exceedances for TCE and tritium have been observed in groundwater within the Parcels 6, 7, and 8 boundaries. Alternative 2 meets the chemical-specific ARAR because natural attenuation will reduce the groundwater contaminants to required levels and monitoring will give DOE the data to determine that contamination values are declining as planned.

Location-specific ARARs are restrictions placed on the concentration of hazardous substances or the conduct of activities solely because they are located in specific locations, e.g., floodplains, wetlands, historic places, etc. For Parcels 6, 7, and 8, Ohio has identified two statutory provisions that describe site conditions that would prompt certain response actions (See Appendix D). These provisions are similar to location-specific ARARs. Alternative 2 meets both of these requirements.

Under ORC § 6111.03, the Director of the Ohio EPA has the authority to "issue, modify, or revoke orders to prevent, control, or abate water pollution by ... prohibiting or abating discharges of sewage, industrial waster, or other wastes into the waters of the state." The Director of Ohio EPA uses this authority to bring actions to address hazardous waste or industrial waste that has or may contaminate waters of the state. The Proposed Plan meets this ARAR because the ground water will continue to be monitored until contaminants decrease to acceptable levels and the proposed deed restrictions limit access to contaminated groundwater on the Mound site. Sources of the contaminants were investigated and eliminated to the extent practicable.

ORC § 3734.20 provides the Director of the Ohio EPA with the authority to undertake two types of activities. Under paragraph (A), the Director may "conduct such investigations and make such inquiries ... as are reasonable and necessary to determine if conditions at a hazardous waste facility ... or other location where the director has reason to believe hazardous waste was treated, stored, or disposed of constitute a substantial threat to

public health or safety or are causing or contributing to or threatening to cause or contribute to air or water pollution or soil contamination." Under paragraph (B), the Director "shall initiate appropriate action under this chapter [3734] or Chapter 3704 or 6111 of the Revised Code" if the Director "determines that conditions at a hazardous waste facility ... or other location where hazardous waste was treated, stored, or disposed of constitute a substantial threat to public health or safety or are causing or contributing to or threatening to cause or contribute to air or water pollution or soil contamination...." The Director of Ohio EPA uses the authority under this statute to initiate such actions as entering into agreements or orders with parties to conduct both investigations and remedial activities to address conditions caused by hazardous waste contamination that may pose a threat to the public health or safety or the environment. The Proposed Plan meets this ARAR because the proposed remedy is a result of a thorough investigation that has been completed at the site and the remedy in the form of proposed deed restrictions and ground water monitoring will prevent the public from being exposed to hazardous waste contamination. The proposed plan also included a deed restriction that ensures site access for monitoring and sampling.

Action-specific ARARs are usually technology- or activity-based requirements or limitations on actions taken with respect to hazardous wastes. These requirements are triggered by the particular remedial activities that are selected to accomplish a remedy. For Alternative 2, the remedy is an institutional control in the form of deed restrictions. The ARARs are applicable State requirements concerning the recording of deeds. (See Appendix D) Alternative 2 meets these requirements.

Balancing Criteria

CRITERION 3 - Long-term effectiveness and permanence

Long-term effectiveness and permanence refers to expected residual risk and the ability of a remedy to maintain reliable protection of human health and the environment over time, once cleanup levels have been met. This criterion includes the consideration of residual risk and the adequacy and reliability of controls.

Only Alternative 2, Institutional Controls and Monitored Natural Attenuation, provides the means to demonstrate long-term protectiveness. The implementation of institutional controls in the form of land use restrictions is necessary to ensure that future use remains compatible with the evaluated residual risk associated with Parcels 6, 7, and 8. These restrictions will be recorded as part of the deed and will remain in place in perpetuity. Monitored Natural Attenuation will assure that contamination levels decrease through the naturally-occurring biodegradation process resulting in a permanent elimination of the hazard. Monitoring will be performed as necessary to demonstrate that the VOCs remain localized and concentrations are decreasing as anticipated..

An annual review and report will be submitted to OEPA, ODH, and USEPA (pursuant to CERCLA) determining whether or not the remedy is in effect and being complied with to

ensure that it is adequately protective of human health and the environment. DOE reserves the right to petition the USEPA, OEPA, and ODH for a modification to the frequency established for conducting the effectiveness reviews and reporting.

CRITERION 4 - Reduction of toxicity, mobility, or volume through treatment

This criterion relates to the effectiveness of treatment options that might be included in a site's remedial alternatives. Neither of the alternatives involves use of treatment technologies and therefore neither alternative has an advantage for this criterion.

CRITERION 5 - Short-term effectiveness

Short-term effectiveness addresses the period of time needed to implement the remedy and any adverse impacts that may be posed to workers and the community during construction and operation of the remedy until cleanup goals are achieved.

Alternative 1, No Action, would not provide short-term effectiveness because there is no assurance of protection of human health and the environment after the property is transferred. Alternative 2, Institutional Controls and Monitored Natural Attenuation, provides this assurance.

CRITERION 6 - Implementability

The implementability criterion addresses the technical and administrative feasibility of putting a remedy in place. Both alternatives can be implemented since neither would require the use of unusual technologies or complicated cleanup actions.

The Institutional Controls portion of Alternative 2 is expected to require approximately one month and minimal cost to implement in accordance with the memorandum to file from Randolph Tormey, Deputy Chief Counsel, Ohio Field Office, US DOE dated February 17, 1999 (Appendix E). The Groundwater Monitoring portion of Alternative 2 is readily implementable. All of the wells identified in this Proposed Plan are already installed and have been sampled. The services required to collect groundwater samples, analyze, and report TCE results are readily available.

CRITERION 7 – Cost

The range of costs is zero dollars ($0) for Alternative 1, No Action, to approximately $55,000 annually for Alternative 2, Institutional Controls and Monitored Natural Attenuation.

Modifying Criteria

CRITERION 8 - State and Support Agency Acceptance

DOE, USEPA, and OEPA do not believe the No Action alternative provides adequate protection of human health and the environment. However, all three agencies support selection of the Institutional Controls and Monitored Natural Attenuation alternative.

CRITERION 9 - Community Acceptance

Community acceptance of the preferred alternative will be evaluated after the end of the Proposed Plan public comment period. A summary of input received during the public comment period will be included in the Parcels 6, 7, and 8 ROD.

The No Action alternative is determined unacceptable because it is not protective of human health and therefore fails to satisfy the threshold Criterion 1. The institutional controls alternative is deemed acceptable when evaluated against the nine criteria.

2.11 Statutory Determinations

The Preferred Alternative for Parcels 6, 7, and 8 is Institutional Controls in the form of deed restrictions and Monitored Natural Attenuation. This remedy is protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate, is cost-effective, and utilizes a permanent solution to the maximum extent practicable. Because this remedy will result in hazardous substances remaining in Parcels 6, 7, and 8 above levels that allow for unlimited use and unrestricted exposure, DOE in consultation with USEPA, OEPA, and ODH will review the remedial action each year to assure that human health and the environment are being protected by the remedial action being implemented.

DOE reserves the right to petition the USEPA, OEPA, and ODH for a modification to the frequency established for conducting the effectiveness reviews.

2.12 Documentation of Significant Changes

New information may be received or generated that could affect the implementation of the remedy. DOE, as the lead agency, has the responsibility to evaluate the significance of any such new information. The type of documentation required for a post-ROD change depends on the nature of the change. Three categories of changes are recognized by the USEPA: non-significant, significant, and fundamental. Non-significant post-ROD changes may be documented using a memo to the Administrative Record file. Changes that significantly affect the ROD must be evaluated pursuant to CERCLA Section 117 and the NCP at 40 CFR (Code of Federal Regulations) 300.435(c)(2)(I). Fundamental changes typically require a revised Proposed Plan and an amendment to the ROD. Significant or fundamental changes to this Proposed Plan and ROD are not anticipated.

3 ADMINISTRATIVE RECORD FILE REFERENCES

Information used to select the remedy is contained in the Administrative Record file. The file is available for review at the Mound CERCLA Reading Room, 955 Mound Road, Miamisburg, Ohio. The Administrative Record File references for Parcels 6, 7, and 8, which are not necessarily directly referred to in the text, include the following:

Reference 1	Parcel 6, 7, and 8 Residual Risk Evaluation, Public Review Draft, September 2007.
Reference 2	Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Section 120 Federal Facility Agreement, August 1993.
Reference 3	Work Plan for Environmental Restoration of the DOE Mound Site, The Mound 2000 Approach, Final, Revision 0, February 1999.
Reference 4	The Mound 2000 Residual Risk Evaluation Methodology (RREM), Mound Plant, Final, Revision 0, January 1997.
Reference 5	Remedial Investigation/Feasibility Study, Operable Unit 9, Site-Wide Work Plan, Final, May 1992.
Reference 6	Operable Unit 9; Hydrogeologic Investigation: Buried Valley Aquifer Report, Technical Memorandum, Revision 1, September 1994.
Reference 7	Operable Unit 9; Hydrogeologic Investigation: Bedrock Report, Technical Memorandum, Revision 0, January 1994.
Reference 8	Delineation of Federal Wetlands and Other Waters of the U.S., Final, August 1999.
Reference 9	Operable Unit 9 Background Soils Investigation Soil Chemistry Report, Technical Memorandum, Revision 2, September 1994.
Reference 10	Operable Unit 9 Regional Soils Investigation Report, Revision 2, August 1995.
Reference 11	Operable Unit 9 Hydrogeologic Investigation: Groundwater Sweeps Report, Technical Memorandum, April 1995.
Reference 12	OU-3 Miscellaneous Sites Limited Field Investigation Report, Volumes 1, 2, and 3, Final, Revision 0, July 1993.
Reference 13	OU-5 New Property Extended Phase I Field Investigation Report, Final, Revision 0, July 1995.
Reference 14	OU-5 Remedial Investigation Report, Final, Revision 0, February 1996.
Reference 15	OU-5 Operational Area Phase I Investigation Area 22, Final, Revision 1, June 1995.
Reference 16	OU-5 Operational Area Phase I Investigation Area 13, Final, Revision 1, June 1995.

Reference 17 OU-6 Reconnaissance Sampling Report Decontamination and Decommissioning Areas, Final, Revision 0, May 1992.

Reference 18 OU-9 Site Scoping Report, Volume 3 - Radiological Site Survey, Final, June 1993.

Reference 19 Residual Risk Evaluation, Release Block D, Final, December 1996.

Reference 20 Technical Position Report in Support of the Release Block D Residual Risk Evaluation, Final, January 1999.

Reference 21 Sampling Investigation to Determine the Nature of Elevated Chromium and Nickel Levels in Two Stainless Steel Monitoring Wells at Mound, Final, August 2002.

Reference 22 Summary of the Investigation and Resolution of MCL Exceedences in the Phase I Parcel, Draft, June 2002.

Reference 23 Final Environmental Impact Statement, Mound Facility, US Department of Energy, June 1979.

Reference 24 Operable Unit 9 Ecological Characterization Report, Technical Memorandum, Revision 0, March 1994.

Reference 25 Screening Level Ecological Risk Assessment, Parcel 4, Final, February 2001.

Reference 26 Environmental Assessment for the Commercialization of the Mound Plant, DOE/EA-1001, October 1994.

Reference 27 Parcel 6, 7, and 8 Ecological Scoping Report, Final, June 2005.

Reference 28 Memorandum, Randolph Tormey, Deputy Chief Counsel, Ohio Field Office, USDOE dated February 17, 1999 regarding Institutional Controls, Mound.

Reference 29 Sampling & Analysis Plan, Parcel 4/5 Boundary, Final, September 2000.

Reference 30 Parcel 6, 7, and 8 Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan, US DOE, July 2006.

Reference 31 Parcel 6, 7, and 8 Proposed Plan, Draft Proposed Final, Revision 1, May 2006.

Reference 32 Site-wide Operations and Maintenance Plan, Draft, US DOE, July 2006.

Reference 33 Guidance for Conducting Ecological Risk Assessments, DERR - 00 - RR – 031, February 2003

See Table 1 for a list of PRS and building documents associated with Parcels 6, 7, and 8.

APPENDIX A - Figures

Figure 1	Regional Context of the Mound Plant
Figure 2	Location of Parcels 6, 7, and 8
Figure 3	Parcels 6, 7, and 8 Buildings and PRSs
Figure 4	Conceptual Site Model for the Parcels 6, 7, and 8 RRE
Figure 5	Parcels 6, 7, and 8 Wells and Seeps
Figure 6	T Building Restricted Areas
Figure 7	TCE in Well 0315
Figure 8	TCE in Well 0347
Figure 9	Tritium Concentration in Seeps
Figure 10	TCE Concentration in Seeps
Figure 11	Radium 226/228 and Strontium 90 Concentration in Seep 601

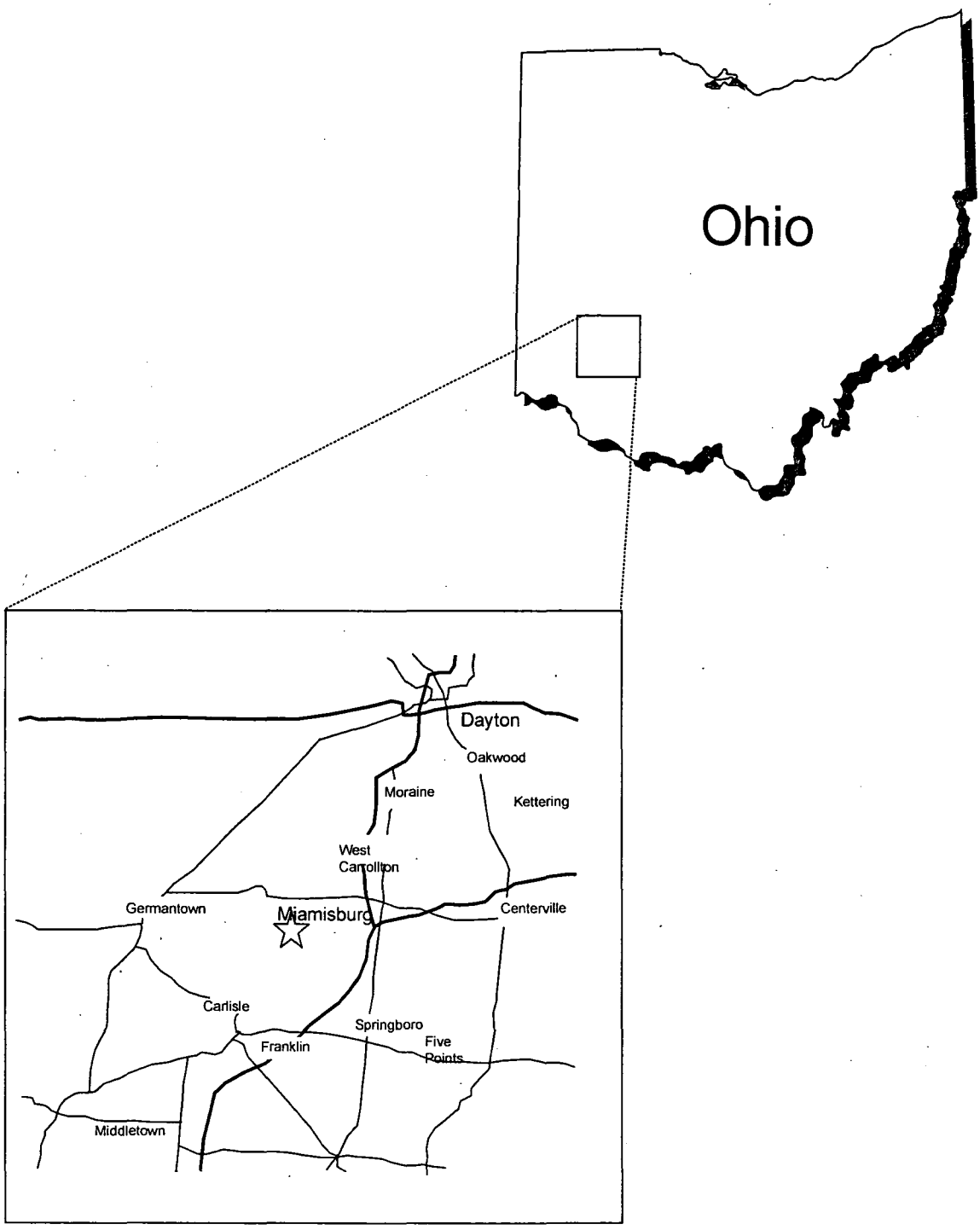


Figure 1 Regional Context of the Mound Plant

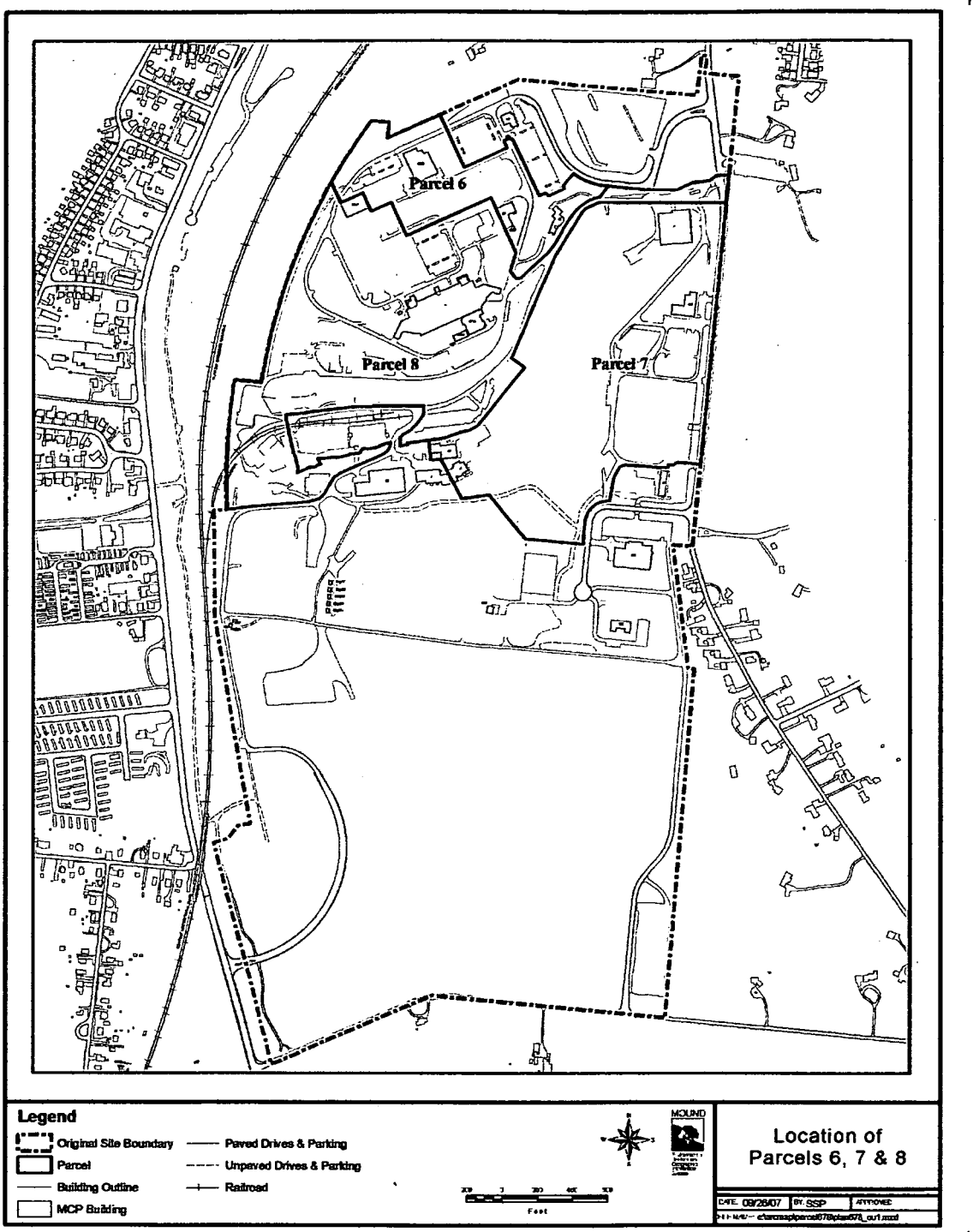


Figure 2 Location of Parcels 6, 7, and 8 Within Site Boundary

Figure 3 Parcels 6, 7, and 8 Buildings and PRSs
(See larger map enclosed)

Legend

- Parcel
- MCP Building in Parcel 6, 7, & 8
- MCP Site Boundary
- Building Outline
- Railroad
- Paved Drives & Parking
- PRS Area in Parcel 6, 7, & 8
- PRS Area not in Parcel Transfer
- PRS Line in Parcel 6, 7, & 8
- PRS Point in Parcel 6, 7, & 8
- PRS Leader Line

N

MOUND
Environmental Restoration Geographic Information System

Parcels 6, 7 & 8 Buildings and PRSs

DATE: 08/22/07 | BY: SSP | APPROVED: *

FILE NAME: e:\arcmap\parcel678\bldgprs678_082207d.mxd

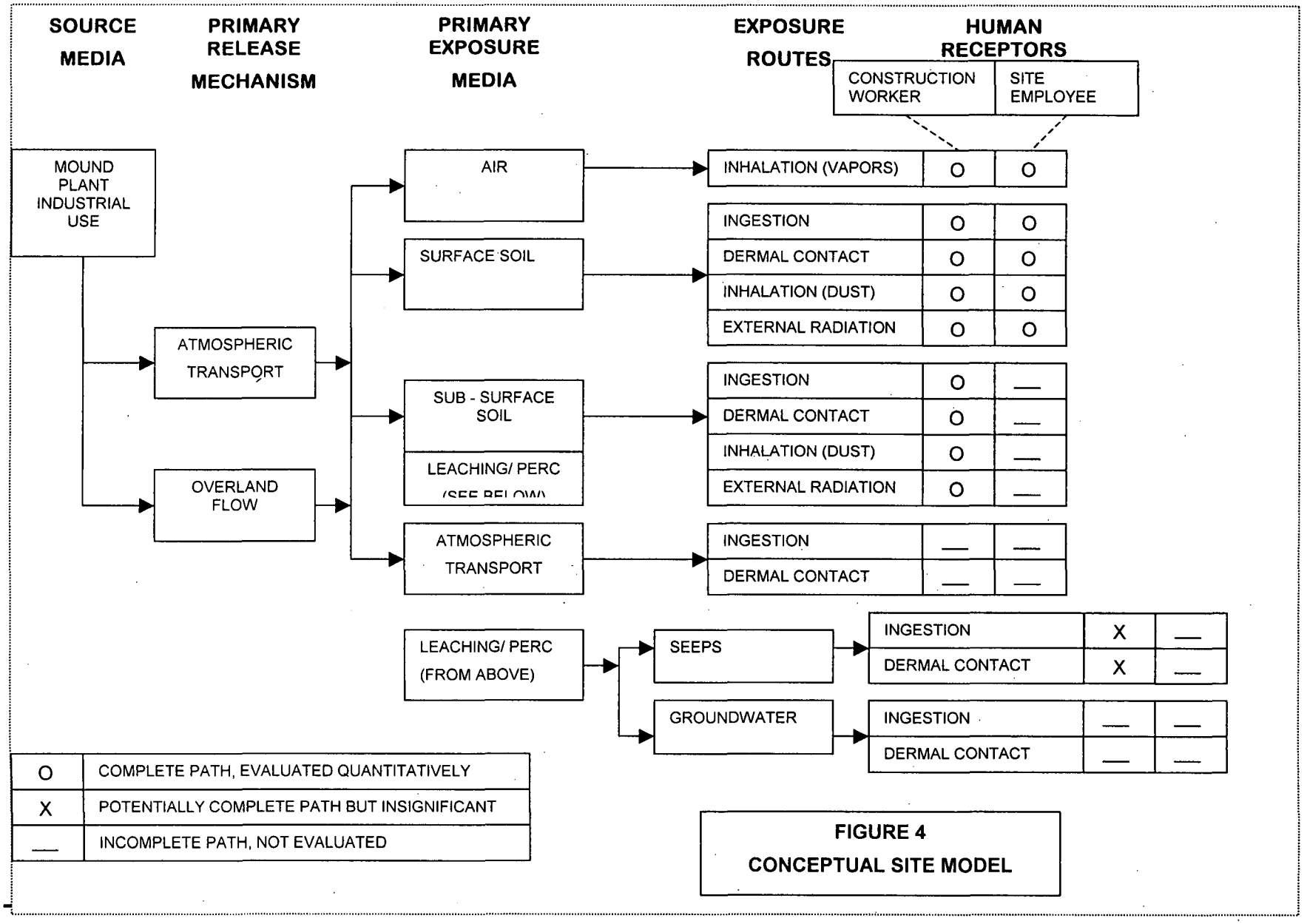


FIGURE 4
CONCEPTUAL SITE MODEL

FIGURE 5 LOCATION OF PARCELS 6, 7, & 8 SEEPS AND WELLS

T - BLDG. FIRST FLOOR

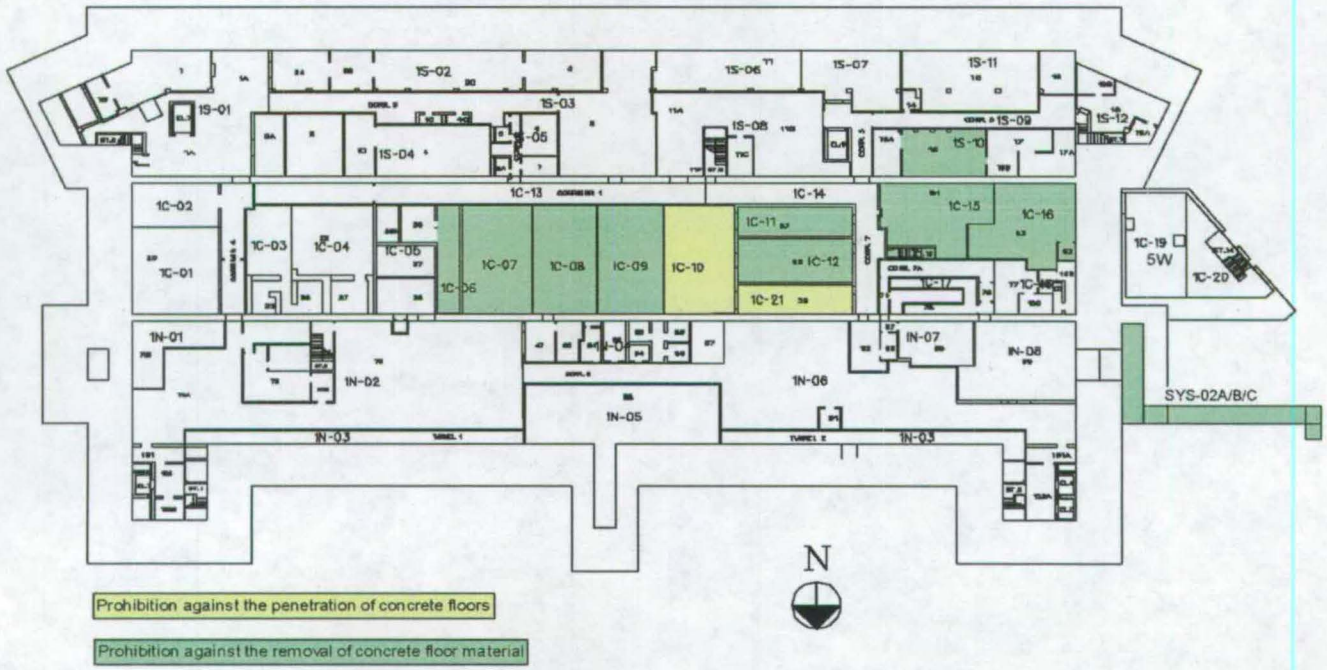
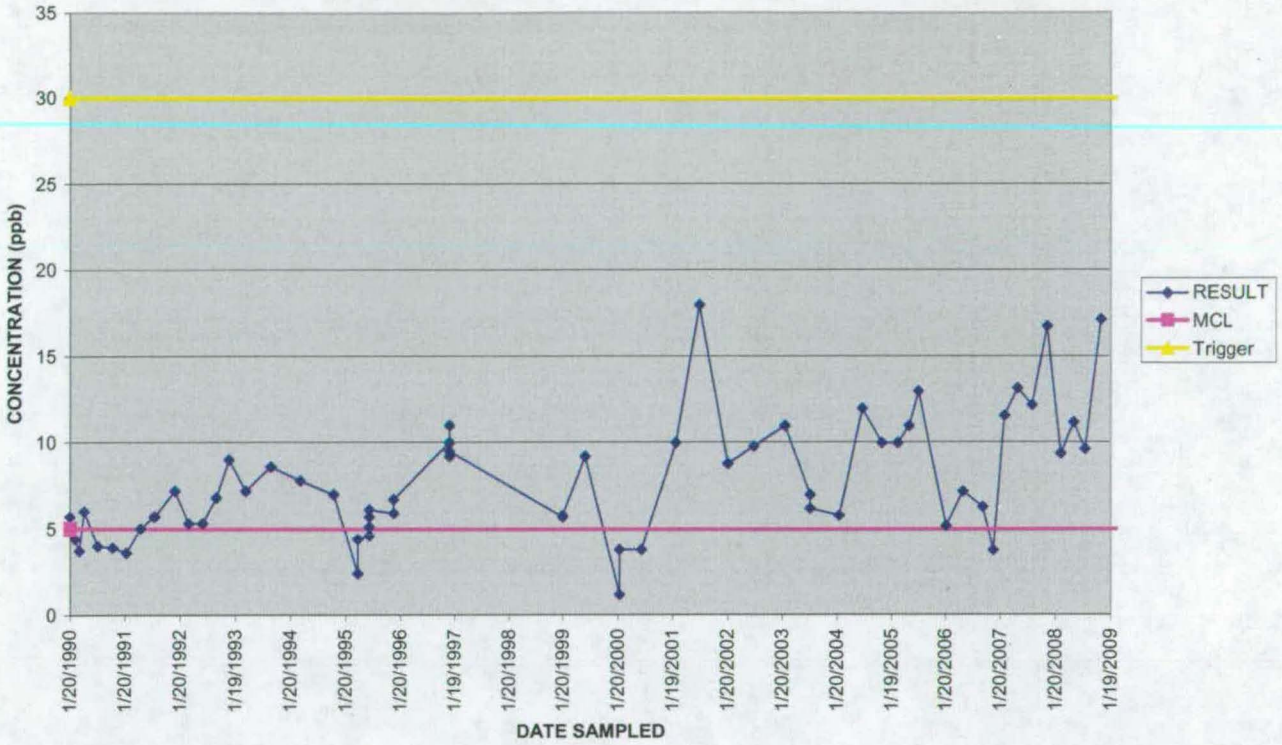


Figure 6 T Building Restricted Areas

FIGURE 7 - TCE CONCENTRATION IN WELL 315



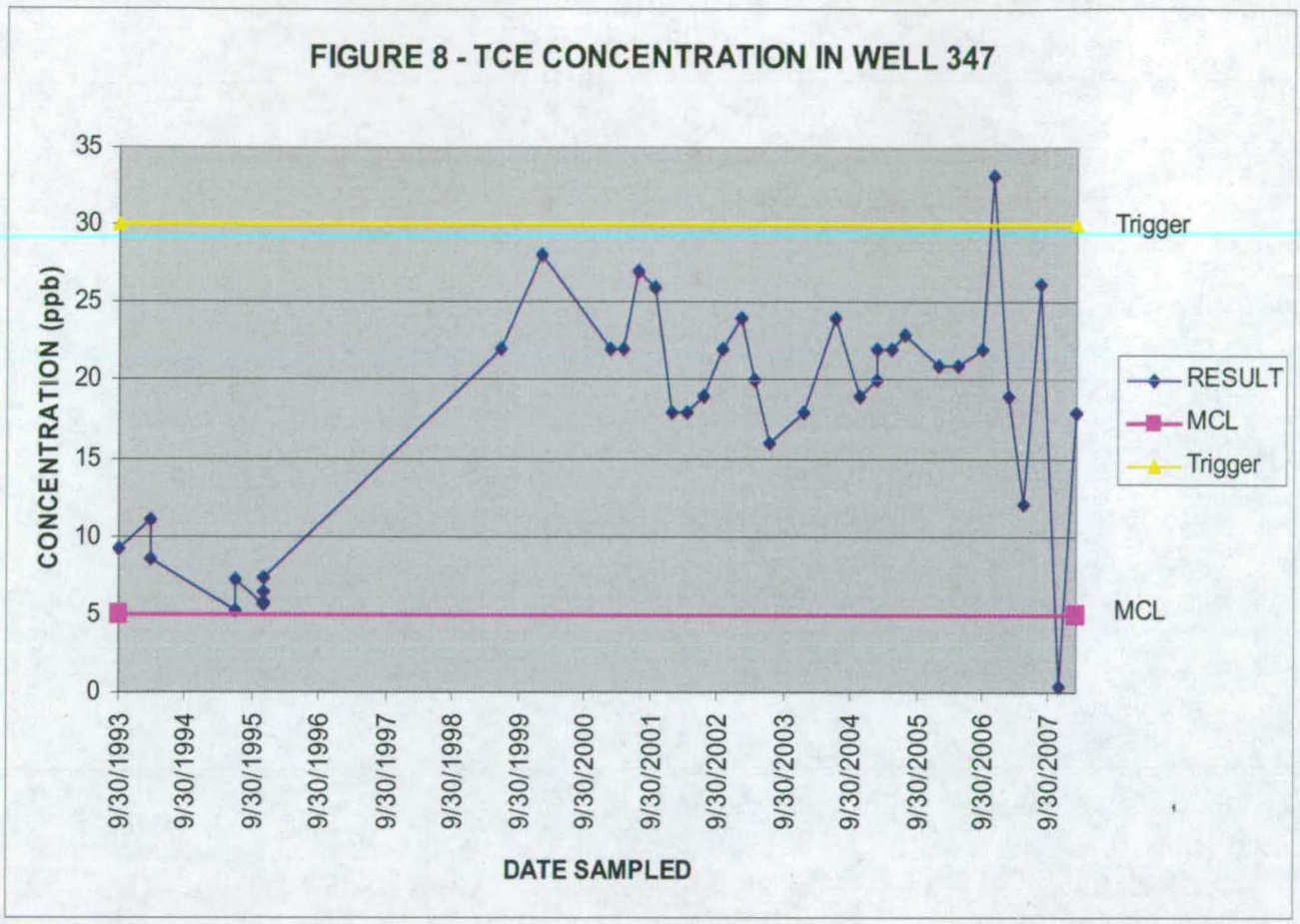


FIGURE 8 - TCE CONCENTRATION IN WELL 347
CONCENTRATION (ppb)
35
30
25
20
15
10
5
0
Trigger
MCL
RESULT
MCL
Trigger
9/30/1993
9/30/1994
9/30/1995
9/30/1996
9/30/1997
9/30/1998
9/30/1999
9/30/2000
9/30/2001
9/30/2002
9/30/2003
9/30/2004
9/30/2005
9/30/2006
9/30/2007
DATE SAMPLED

FIGURE 9 - TRITIUM CONCENTRATION IN SEEPS

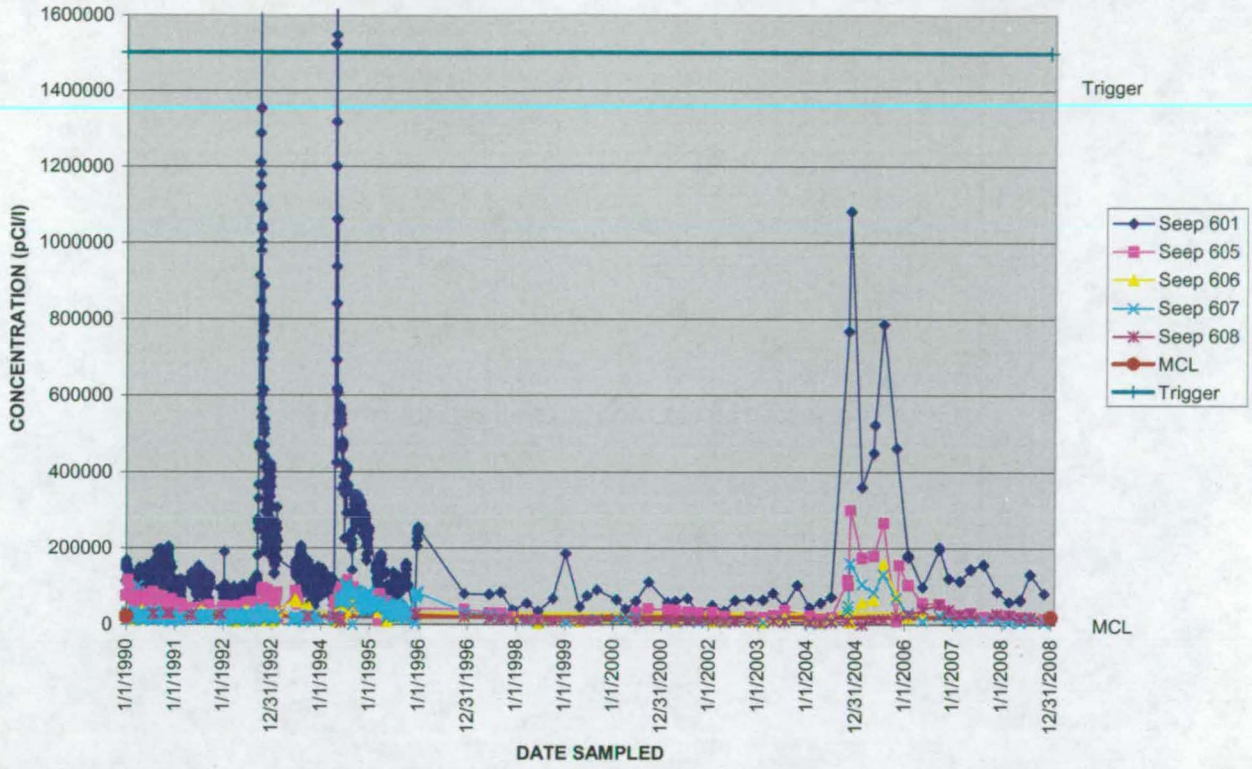


FIGURE 10 - TCE CONCENTRATION IN SEEPS

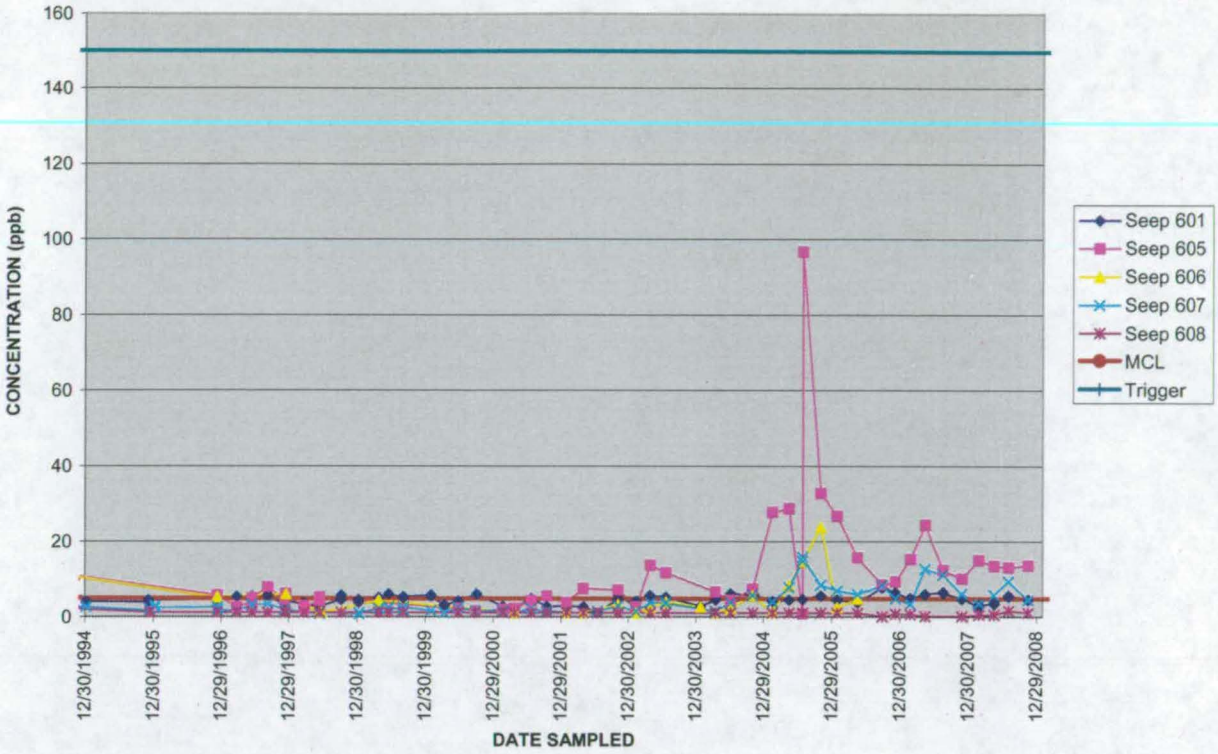
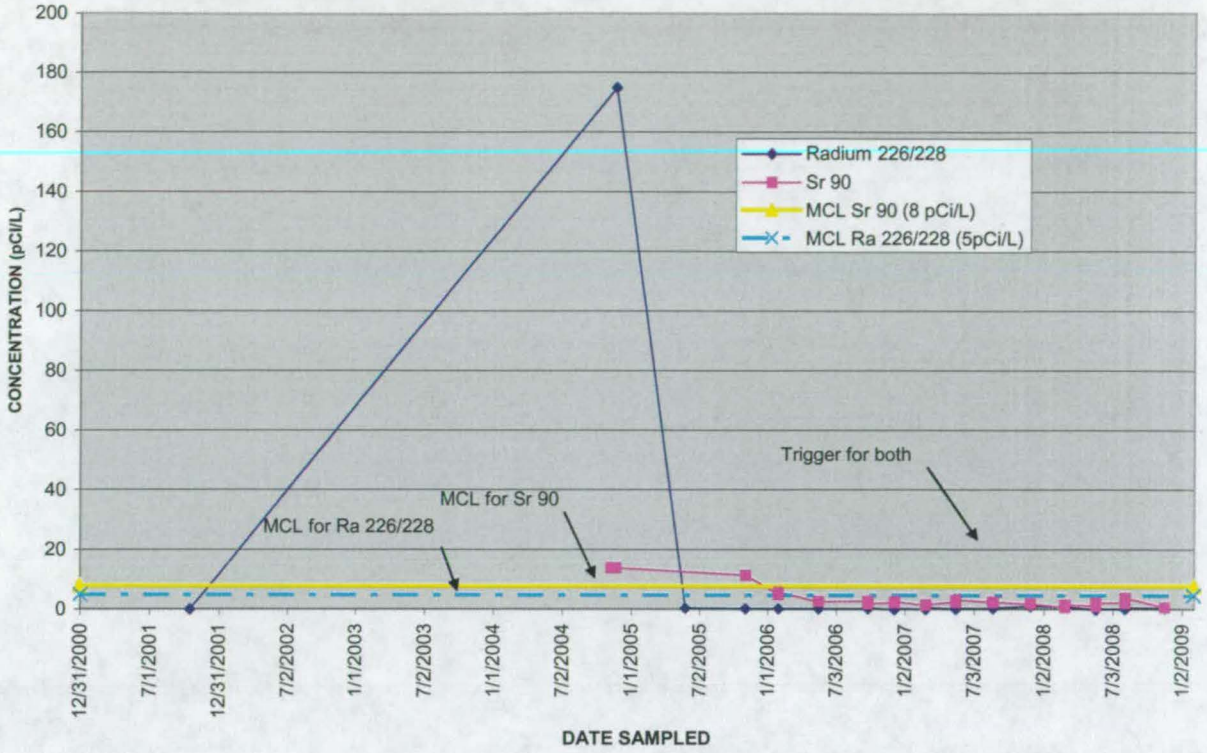


Figure 11 - Strontium 90 and Radium 226/228 in Seep 601



APPENDIX B - Tables

Table 1	Parcels 6, 7, and 8 Documents and Public Comment Periods
Table 2	PRSs and Core Team Conclusions
Table 3	Transfer Buildings and Core Team Conclusions
Table 4	Parcels 6, 7, and 8 Risk Summary
Table 5	Identification of Contaminants of Potential Concern for the Construction Worker Exposed to Surface and Subsurface Soil in Parcel 6
Table 6	Identification of Contaminants of Potential Concern for a Site Employee Exposed to Surface Soil in Parcel 6
Table 7	Identification of Contaminants of Potential Concern for the Construction Worker Exposed to Surface and Subsurface Soil in Parcel 7
Table 8	Identification of Contaminants of Potential Concern for a Site Employee Exposed to Surface Soil in Parcel 7
Table 9	Identification of Contaminants of Potential Concern for the Construction Worker Exposed to Surface and Subsurface Soil in Parcel 8
Table 10	Identification of Contaminants of Potential Concern for the Site Employee Exposed to Surface Soil in Parcel 8

Table 1. Parcels 6, 7, and 8 Documents and Public Comment Periods

Parcel	Document	Comment Period Start	Comment Period End
6	Bldg 28 BDP/FSR	07/26/03	08/25/03
6	Bldg 40 BDP/WP	08/18/03	09/17/03
6	Bldg 45 BDP/FSR	05/16/05	06/15/05
6	Bldg 46 BDP/WP	05/14/03	06/13/03
6	Bldg 47 BDP/WP	05/19/03	06/18/03
6	Bldg 60 BDP/WP	03/11/03	04/10/03
6	Bldg 99 BDP/WP	8/18/03	9/17/03
6	Bldg A BDP/WP	02/14/04	03/15/04
6	Bldg C BDP/WP	1/6/98	2/5/98
6	Bldg G BDP/WP	06/30/03	07/30/03
6	Bldg GW, W BDP/WP	7/2/03	8/1/03
6	Bldg OSE BDP/FSR	10/24/03	11/23/03
6	PRS 106 (G soil) PRS Pkg	11/29/04	12/29/04
6	PRS 107-109 (G Gas Tank) PRS Pkg	2/12/98	3/16/98
6	PRS 126-127 (Bldg -28 Solvent Shed)	10/15/96	11/15/96
6	PRS 211,212 PRS Pkg	11/29/04	12/29/04
6	PRS 242	6/19/96	7/17/96
6	PRS 332	1/30/97	3/6/97
7	Bldg 2 BDP	4/17/02	5/17/02
7	Bldg 29 BDP/FSR	8/19/02	9/18/02
7	Bldg 30 BDP	06/12/04	07/12/04
7	Bldg 31 BDP	06/12/04	07/12/04
7	Bldg 31 Fact Sheet	06/12/04	07/12/04
7	Bldg 33 Slab PRS Pkg	11/13/03	12/13/03
7	Bldg 36 BDP/WP	11/10/03	12/10/03
7	Bldg 36 Dock Fact Sheet	05/05/04	06/04/04
7	Bldg 36 FSR Add 1	11/17/03	12/17/03
7	Bldg 37 BDP/WP	10/06/03	11/05/03
7	Bldg 38 AM Add 1	02/13/04	03/14/04
7	Bldg 38 AM	02/18/03	03/20/03
7	Bldg 44 BDP/FSR	8/19/2002	9/18/2002
7	Bldg 49 BDP/WP	11/01/01	12/01/01
7	Bldg 49 BDP/WP	02/13/03	03/15/03
7	Bldg 50 BDP/WP	11/07/03	12/07/03
7	Bldg 61 BDP	12/4/02	1/3/03

Table 1. Parcels 6, 7, and 8 Documents and Public Comment Periods

Parcel	Document	Comment Period Start	Comment Period End
7	Bldg 63 BDP/FSR	8/28/02	9/27/02
7	Bldg 98 BDP/FSR	10/2/02	11/1/02
7	Bldg 126 BDP/FSR	10/25/04	11/27/04
7	Bldg 128 BDP/FSR	03/18/05	04/17/05
7	Bldg GP-44 BDP/FSR	7/9/98	8/8/98
7	CRA Add 1 Structures AM Add 1	04/22/04	05/22/04
7	PRS 31-36, 125 &270 PRS Pkg	12/4/02	1/3/03
7	PRS 37, 399 PRS Pkg	11/29/96	1/1/97
7	PRS65/402/403/404 PRS Pkg	11/29/96	1/1/97
7	PRS 66 AM	01/05/03	02/04/03
7	PRS 66, 40 PRS Pkg	02/13/00	03/14/00
7	PRS 67 Fact Sheet	03/30/04	04/29/04
7	PRS 72 PRS Pkg	1/16/02	3/27/02
7	PRS 80 PRS Pkg	7/3/02	8/2/02
7	PRS 85 PRS Pkg	11/29/96	1/1/97
7	PRS 86 PRS Pkg	11/29/96	1/1/97
7	PRS 87 AM	11/17/04	12/17/04
7	PRS 87 PRS Pkg Add 1	9/3/03	10/3/03
7	PRS 176/177/178/300 PRS Pkg	1/9/97	2/13/97
7	PRS 266, 395 PRS Pkg	10/24/95	2/15/96
7	PRS 267 PRS Pkg Add 1	06/11/03	07/11/03
7	PRS 269 PRS Pkg	4/9/03	5/9/03
7	PRS 269 PRS Pkg Add 1	04/09/03	05/09/03
7	PRS 271, 336 PRS Pkg	11/29/04	12/29/04
7	PRS 274/275 PRS Pkg	12/18/02	1/18/03
7	PRS 274/275 Fact Sheet	4/3/02	5/3/02
7	PRS 277,278 PRS Pkg	4/17/02	5/17/02
7	PRS 277, 278 Fact Sheet	8/28/02	9/26/02
7	PRS 279 PRS Pkg	2/15/96	2/29/96
7	PRS 302 PRS Pkg	10/15/96	11/15/96
7	PRS 307 PRS Pkg	6/17/97	7/18/97
7	PRS 308 PRS Pkg	4/26/01	5/31/01
7	PRS 309 PRS Pkg	1/30/97	3/6/97
7	PRS 310, 382 PRS Pkg	1/15/97	2/15/97
7	PRS 315, 316, 319 PRS Pkg	1/30/97	3/6/97
7	PRS 330 PRS Pkg	4/3/97	5/8/97

Table 1. Parcels 6, 7, and 8 Documents and Public Comment Periods

Parcel	Document	Comment Period Start	Comment Period End
7	PRS 331 PRS Pkg	10/15/96	11/15/96
7	PRS 338 PRS Pkg	1/30/97	3/6/97
7	PRS 351-353/357/359/360-362/385-387 PRS Pkg	12/19/96	1/23/97
7	PRS 364 PRS Pkg	12/19/96	1/23/97
7	PRS 388 PRS Pkg	12/19/96	1/23/97
7	PRS 389/392 PRS Pkg	12/19/96	1/23/97
7	PRS 390/393/394 PRS Pkg	2/27/97	4/3/97
7	PRS 391 PRS Pkg	4/3/97	5/8/97
7	PRS 396 PRS Pkg	4/3/97	5/8/97
7	PRS 397 PRS Pkg Add 1	2/25/03	3/27/03
7	PRS 400 PRS Pkg	1/30/97	3/6/97
7	PRS 401 PRS Pkg	1/30/97	3/6/97
7	PRS 412 PRS Pkg	4/15/98	5/15/98
7	Bldg 30 OSC Report	No public review, finalized 12/22/04	
7	Bldg 31 OSC Report	No public review, finalized 5/31/05	
7	Bldg 38 Structure OSC Report	No public review, finalized 12/10/03	
7	Bldg 38 Soils OSC Report	No public review, finalized 1/30/06	
7	Bldg 50 RDS OSC Report	No public review, finalized 5/31/05	
7	PRS 277 OSC Report	No public review, finalized 3/06/03	
7	PRS 67 OSC Report	No public review, finalized 2/06/06	
7	PRS 68 OSC Report	No public review, finalized 3/20/06	
7	PRS 66 OSC Report	No public review, finalized 10/12/05	
7	PRS 66 OSC Report, Addendum 1	No public review, finalized 7/19/06	
7	PRS 87 OSC Report	No public review, finalized 3/06/06	
7	PRS 266 OSC Report	No public review, finalized 8/28/03	
8	Bldg 19 BDP/WP	4/30/03	5/30/03
8	Bldg 22 BDP/WP	10/07/04	11/06/04
8	Bldg 23 AM	7/16/03	8/15/03
8	Bldg 24 BDP/WP	2/25/05	3/27/05
8	Bldg 34 BDP/WP	5/22/03	6/21/03
8	Bldg 34 Slab/Soil Fact Sheet	11/22/05	12/22/05
8	Bldg 48 BDP/WP	12/05/03	1/04/04
8	Bldg 55 BDP/FSR	7/10/02	8/9/02
8	Bldg 56 BDP/WP	8/27/04	9/26/04
8	Bldg 57 AM	2/07/05	3/09/05
8	Bldg 72 BDP/WP	10/29/04	11/28/04

Table 1. Parcels 6, 7, and 8 Documents and Public Comment Periods

Parcel	Document	Comment Period Start	Comment Period End
8	Bldg 89 BDP/WP	4/07/03	5/07/03
8	Bldg 94 BDP/WP	1/21/03	2/20/03
8	Bldg 104 BDP/WP	3/25/05	4/24/05
8	Bldg 124 (CWPF) AM	12/06/04	1/05/05
8	Bldg B AM	3/02/04	4/01/04
8	Bldg COS BDP	11/15/00	12/15/00
8	Bldg DS BDP/WP	04/05/04	5/05/04
8	Bldg E AM	4/18/00	5/18/00
8	Bldg GP-8 BDP/WP	11/19/04	12/19/04
8	Bldg H AM	6/28/03	7/28/03
8	Bldg HH AM	8/22/02	9/21/02
8	Bldg I AM	5/6/02	6/5/02
8	Bldg MH Water Tower BDP/WP	4/09/04	5/09/04
8	Bldg M BDP/WP	7/25/01	8/27/01
8	Bldg OSW BDP/FSR	10/24/03	11/23/03
8	Bldg P BDP/WP	1/21/05	2/20/05
8	Bldg PS BDP	3/3/99	4/1/99
8	Bldg R AM	1/30/03	3/01/03
8	Bldg R/SW/58 & 68 Slab AM Add 1	8/23/04	9/22/04
8	Bldg SD, UGL AM	3/29/00	4/29/00
8	Bldg T AM	3/07/03	4/06/03
8	Bldg T BDP	3/07/03	4/06/03
8	Bldg T Factsheet	2/27/06	3/1/06
8	Bldg WD AM	2/21/00	3/22/00
8	Magazine 7 BDP	8/26/97	9/25/97
8	Magazine 11 BDP	8/26/97	9/25/97
8	Magazine 52 BDP	2/15/99	3/17/99
8	Magazine 54 BDP	8/26/97	9/25/97
8	Magazine 64 BDP	2/15/99	3/17/99
8	PRS 7 PRS Pkg	pending	pending
8	PRS 14 PRS Pkg	6/19/96	7/17/96
8	PRS 17 Fact Sheet	4/26/04	5/26/04
8	PRS 17 PRS Pkg	1/9/97	2/13/97
8	PRS 18 PRS Pkg	10/15/96	11/15/96
8	PRS 19 PRS Pkg	10/15/96	11/15/96
8	PRS 20 PRS Pkg	1/9/97	2/13/97

Table 1. Parcels 6, 7, and 8 Documents and Public Comment Periods

Parcel	Document	Comment Period Start	Comment Period End
8	PRS 31-36, 125 & 270 PRS Pkg	12/4/02	1/3/03
8	PRS 41 Fact Sheet	12/05/03	1/04/04
8	PRS 41 PRS Pkg	2/24/03	3/26/03
8	PRS 42 PRS Pkg	1/9/97	2/13/97
8	PRS 59 PRS Pkg	7/15/97	8/17/97
8	PRS 60 PRS Pkg	8/19/05	9/18/05
8	PRS 63 PRS Pkg	9/15/97	10/15/97
8	PRS 63 PRS Pkg Add 1	9/30/03	10/30/03
8	PRS 67-70 Fact Sheet	3/29/04	4/29/04
8	PRS 75 Fact Sheet	11/06/03	12/06/03
8	PRS 75 PRS Pkg	12/02/96	1/01/97
8	PRS 76 AM	11/17/04	12/17/04
8	PRS 81 PRS Pkg	5/15/96	6/17/96
8	PRS 82 PRS Pkg	1/14/97	2/13/97
8	PRS 84 PRS Pkg	9/16/96	10/15/96
8	PRS 90 PRS Pkg	3/1/96	4/1/96
8, offsite	PRS 91,92,94-98 PRS Pkg Add 1 (Rev 1)	2/17/06	3/19/06
8	PRS 101, 102 PRS Pkg	9/12/05	10/12/05
8	PRS 103 PRS Pkg	9/16/96	10/15/96
8	PRS 105 PRS Pkg	9/16/96	10/15/96
8	PRS 111 AM	3/18/96	4/1/96
8	PRS 110 PRS Pkg	5/8/97	6/16/97
8	PRS 112, 368 PRS Pkg	1/23/06	2/22/06
8	PRS 113-117 PRS Pkg	5/8/97	6/16/97
8	PRS 129, 130 PRS Pkg	06/18/97	07/18/97
8	PRS 147 PRS Pkg	3/18/96	4/1/96
8	PRS 153 PRS Pkg	1/9/97	2/13/97
8	PRS 154, 238 Fact Sheet	09/08/03	10/08/03
8	PRS 154, 238 PRS Pkg Add 1	01/21/03	02/20/03
8	PRS176, 177, 178, 300	1/9/97	2/13/97
8	PRS 234 PRS Pkg	09/15/96	10/15/96
8	PRS 235 PRS Pkg	5/8/97	6/16/97
8	PRS 236 PRS Pkg	6/19/96	7/17/96
8	PRS 237 Fact Sheet	09/08/03	10/08/03
8	PRS 237 PRS Pkg	11/15/97	12/15/97
8	PRS 238 Fact Sheet	09/08/03	10/08/03

Table 1. Parcels 6, 7, and 8 Documents and Public Comment Periods

Parcel	Document	Comment Period Start	Comment Period End
8	PRS 239 PRS Pkg	3/18/96	4/14/96
8	PRS 240 Fact Sheet	08/21/03	09/20/03
8	PRS 240 PRS Pkg Add 1	2/27/06	3/26/06
8	PRS 243 PRS Pkg	9/16/96	10/10/96
8	PRS 244 PRS Pkg	2/04/97	3/06/97
8	PRS 245 PRS Pkg	9/16/96	10/10/96
8	PRS 246 PRS Pkg	10/15/96	11/15/96
8	PRS 247 PRS Pkg	5/15/96	6/17/96
8	PRS 345 PRS Pkg	6/19/96	7/17/96
8	PRS 356 PRS Pkg	5/8/97	6/16/97
8	PRS 363 Fact Sheet	9/23/04	10/23/04
8	PRS 363 PRS Pkg	2/14/98	3/16/98
8	PRS 366 PRS Pkg	2/27/97	4/3/97
8	PRS 367 PRS Pkg	2/27/97	4/3/97
8	PRS 405 Fact Sheet	9/15/97	10/15/97
8	PRS 405 PRS Pkg	9/15/97	10/15/97
8	PRS 408 PRS Pkg	6/17/97	7/18/97
8	PRS 409 PRS Pkg Add 1	8/25/05	9/24/05
8	PRS 410 PRS Pkg Add 1	12/10/04	01/09/05
8	PRS 411 PRS Pkg	9/15/97	10/15/97
8	PRS 411 AM	9/15/97	10/15/97
8	PRS 413, 415, 423-440, Underground Lines AM	08/05/03	09/04/03
8	PRS 414 PRS Pkg Add 1	12/09/04	01/08/05
8	PRS 416 PRS Pkg	3/22/00	4/22/00
8	PRS 417 PRS Pkg	4/2/03	5/2/03
8	PRS 420 PRS Pkg	3/15/00	4/15/00
8	PRS 442 PRS Pkg	01/23/06	02/22/06
8	Bldg 124 (CWPF) OSC Report	No public review, finalized 6/15/06	
8	Bldg 34 Slab/Soil OSC Report	No public review, finalized 6/5/06	
8	Bldg T Stacks West OSC Report	No public review, finalized 2/9/06	
8	Bldg H OSC Report	No public review, finalized 9/27/04	
8	Bldg HH Structure OSC Report	No public review, finalized 4/20/05	
8	Bldg HH Structure OSC Report, Addendum 1	No public review, finalized 7/27/6	
8	Bldg 57 OSC Report	No public review, finalized 8/8/6	
8	Bldg R Structure OSC Report	No public review, finalized 2/02/06	
8	Bldg R/SW/B Slab OSC Report	No public review, finalized 8/3/6	

Table 1. Parcels 6, 7, and 8 Documents and Public Comment Periods

Parcel	Document	Comment Period Start	Comment Period End
8	Bldg SW Structure OSC Report	No public review, finalized 2/02/06	
8	Bldg 58 Structure OSC Report	No public review, finalized 2/02/06	
8	Bldg T OSC Report	No public review, finalized 8/2/6	
8	Bldg 23 OSC Report	No public review, finalized 5/09/05	
8	Bldg WD OSC Report	No public review, finalized 2/07/06	
8	PRS 411 OSC Report	No public review, finalized 4/11/05	
8	PRS 41 OSC Report	No public review, finalized 7/20/06	
8	PRS 17 OSC Report	No public review, finalized 3/30/06	
8	PRS 69 OSC Report	No public review, finalized 3/15/06	
8	PRS 70 OSC Report	No public review, finalized 7/19/6	
8	PRS 75 OSC Report	No public review, finalized 2/08/06	
8	PRS 76 OSC Report	No public review, finalized 5/31/05	
8	PRS 237 OSC Report	No public review, finalized 4/20/05	
8	PRS 11 OSC Report	No public review, finalized 8/2/6	
8	Grp 9 Subcontractor Compound OSC Report	No public review, finalized 5/11/06	
8	PRS 423 OSC Report	No public review, finalized 2/01/06	
8	Bldg HH Soils/Slab OSC Report	No public review, finalized 3/28/06	
8	PRS 123 OSC Report	No public review, finalized 10/10/05	
8	PRS 124 OSC Report	No public review, finalized 6/15/06	
8	PRS 153 OSC Report	No public review, finalized 6/15/06	
8	PRS 159 OSC Report	No public review, finalized 7/31/6	
6, 7, & 8	PRS 317 PRS Pkg	1/23/06	2/22/06
6, 7, & 8	Ecological Scoping Report, Parcels 6, 7, & 8	05/09/05	06/08/05
6, 7, & 8	Proposed Plan	pending	pending
6, 7, & 8	Residual Risk Evaluation	pending	pending

Note: OSC Reports do not require public review.

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
6	106	G Building Soils (AKA Garage Area)	NFA	Recommendation signed 11/17/04
6	107	G Building Gasoline Tank (Tank 202)	NFA	Recommendation signed 12/17/97
6	108	G Building Gasoline Tank (Tank 203)	NFA	Recommendation signed 12/17/97
6	109	G Building Gasoline Tank (Tank 204)	NFA	Recommendation signed 12/17/97
6	126	Building 28 Solvent Storage Area	NFA	Recommendation signed 10/3/96
6	127	Building 28 Solvent Storage Shed	NFA	Recommendation signed 10/3/96
6	211	A Building Decontamination Shower Water Tank (Tank 28)	NFA	Recommendation signed 11/17/04
6	212	A Building Decontamination Shower Water Tank (Tank 29)	NFA	Recommendation signed 11/17/04
6	241	Northwest Parking Lots	NFA	Recommendation signed 5/13/97
6	242	VOC Potential Hot Spot Location 1016	NFA	Recommendation signed 5/8/96
7	32	Underground Sanitary Sewer Line G12	NFA	Recommendation signed 11/26/02
7	36	Underground Sanitary Sewer Line G15	NFA	Recommendation signed 11/26/02
7	37	Building 51 Waste Solvent Storage Tank (Tank 220)	NFA	Recommendation signed 11/21/96
7	38	Building 51 Waste Incinerator	NFA	Closed with PRS 66 OSC
7	39	Building 51 Waste Incinerator Scrubber	NFA	Closed with PRS 66 OSC
7	40	Building 66 Lot	NFA	Closed with PRS 66 OSC
7	65	Building 61 Area, Former Heavy Equipment Area	NFA	Recommendation signed 11/21/96
7	66	Area 7, Thorium and Polonium Wastes	Removal Action	OSC signed 9/30/05
7	67	Plant Drainage Ditch	Removal Action	OSC signed 1/10/06
7	68	Asphalt-Lined Pond	Removal action	OSC signed 1/10/06
7	72	Area 13, Polonium-Contaminated Wood from Dayton, Unit IV	NFA	Recommendation signed 1/16/02
7	77	Warehouse 10	Removal Action	OSC Signed 9/27/05

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
7	78	Warehouse 13	Removal Action	OSC Signed 9/27/05
7	79	Warehouse 15	NFA	Recommendation signed 12/17/96
7	80	Warehouse 15A	Removal Action	OSC Signed 9/30/05
7	83	Building 2 Propane Storage Tank (Tank 122)	NFA	Recommendation signed 2/02
7	85	Building 29 Solvent Storage Shed	NFA	Recommendation signed 11/21/96
7	86	Building 29 Septic Tank (Tank 224)	NFA	Recommendation signed 11/21/96
7	87	Building 49 Solvent Storage Shed	Removal Action	OSC Signed 6/28/05
7	89	Test Fire Residual Storage Area	NFA	Recommendation signed 2/02
7	235	Area of Possible Elevated Thorium Activity	NFA	Recommendation signed 2/19/97
7	266	Area 8, Thorium-Contaminated Soils from Areas 1 and 9	Removal Action	OSC signed 8/22/03
7	267	Area 9, Thorium Storage and Redrumming Area	Removal Action	OSC Signed 9/27/05
7	268	Building 31, Contaminated Material Storage Building	Removal Action	OSC Signed 5/25/05
7	269	Building 36 Historic Gasoline Tanks (Tanks 239 and 240)	NFA	Recommendation signed 3/19/03
7	270	Underground Sanitary Sewer Lines G6 and G7	NFA	Recommendation signed 11/26/02
7	271	Building 37 Sanitary Waste Tank (Tank 100)	NFA	Recommendation signed 11/17/04
7	272	Area 10, Concrete Debris	NFA	Closed with Building 38 Soils OSC 9/27/05
7	273	Area 12, Thorium-Contaminated Soil from Area 1	Removal Action	OSC Signed 9/27/05
7	274	Area 21 Old Bunker	Removal Action	OSC signed 10/31/02
7	275	Area 21, Detonator Shack	Removal Action	OSC signed 10/31/02
7	277	Area J, Hillside Disposal Area (AKA Dredged Material Disposal Area 11a)	Removal Action	OSC signed 3/6/03
7	278	Area J, Hillside Catch Basin	Removal Action	OSC signed 3/6/03
7	285	Area 11, Contamination from SM Building Operations	Removal Action	Closed with Building 38 Soils OSC 9/27/05
7	286	Area 16, SM Building Sanitary Sewage Septic Tank Leach Field	Removal Action	Closed with Building 38 Soils OSC 9/27/05
7	287	SM Building Historic Septic Tank (Tank 241)	Removal Action	Closed with Building 38 Soils OSC 9/27/05

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
7	288	Area 17, SM Building Soils	Removal Action	Closed with Building 38 Soils OSC 9/27/05
7	289	SM Building Alpha Wastewater Tank (Tank 210)	Removal Action	Closed with Building 38 Soils OSC 9/27/05
7	290	SM Building Alpha Wastewater Tank (Tank 211)	Removal Action	Closed with Building 38 Soils OSC 9/27/05
7	291	SM Building Alpha Wastewater Tank (Tank 212)	Removal Action	Closed with Building 38 Soils OSC 9/27/05
7	292	SM Building Alpha Wastewater Tank (Tank 213)	Removal Action	Closed with Building 38 Soils OSC 9/27/05
7	293	SM Building Solidification Unit (Room SM-1)	Removal Action	OSC Signed 5/03/05
7	294	WS Building Solidification Unit	Removal Action	OSC signed 11/19/03
7	295	Building 38 Solid Radioactive Waste Compactors (2 units)	Removal Action	OSC signed 11/19/03
7	296	Building 38 West Dock Sump (Tank 25)	Removal Action	Closed with Building 38 Soils OSC 9/27/05
7	297	Building 38 Alpha Wastewater Sump (Tank 26)	Removal Action	Closed with Building 38 Soils OSC 9/27/05
7	298	Building 38 Alpha Wastewater Sump (Tank 27)	Removal Action Complete	Closed with Building 38 Soils OSC 9/27/05
7	299	Building 38 Diesel Fuel Storage Tank (Tank 121)	Removal Action	OSC Signed 10/11/05
7	300	Area 19, Underground Waste Transfer Line	NFA	Recommendation signed 12/17/96
7	301	Building 38 In-Line Incinerator	Removal Action	OSC signed 11/19/03
7	302	Area D, Acid Leach Field	NFA	Recommendation signed 10/3/96
7	303	Warehouse 14 (AKA Pad 14)	Removal Action	OSC Signed 9/27/05
7	305	SM Stack	Removal Action	OSC signed 11/19/03
7	307	Site Survey Project Potential Hot Spot Location C0007	NFA	Recommendation signed 3/31/97
7	308	Site Survey Project Potential Hot Spot Location C0028	NFA	Recommendation signed 2/21/01
7	309	Site Survey Project Potential Hot Spot Location S0307	NFA	Recommendation signed 12/17/96
7	310	Site Survey Project Potential Hot Spot Location S0647	NFA	Recommendation signed 1/14/97
7	319	Epoxy Resin Disposal	NFA	Recommendation signed 12/17/96
7	326	Building 38 Sanitary Sump (Tank 254)	Removal Action	OSC signed 11/19/03
7	330	Building 2 Fuel Oil Tank (Tank 260)	NFA	Recommendation signed 2/19/97

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
7	331	Building 2 Tank (Tank 261)	NFA	Recommendation signed 10/3/96
7	336	Building 37 Waste Tank (AKA Low Risk Waste Tank) (Tank 267)	NFA	Recommendation signed 11/17/04
7	338	Building 29 Septic Tank (Tank 270)	NFA	Recommendation signed 12/17/96
7	364	Elevated Soil Gas Location	NFA	Recommendation signed 11/20/96
7	382	Elevated Soil Gas Location	NFA	Recommendation signed 1/14/97
7	385	Elevated Soil Gas Location	NFA	Recommendation signed 11/20/96
7	386	Elevated Soil Gas Location	NFA	Recommendation signed 11/20/96
7	387	Elevated Soil Gas Location	NFA	Recommendation signed 11/20/96
7	388	Elevated Soil Gas Location	NFA	Recommendation signed 11/20/96
7	389	Elevated Soil Gas Location	NFA	Recommendation signed 11/20/96
7	390	Elevated Soil Gas Location	NFA	Recommendation signed 12/17/96
7	391	Elevated Soil Gas Location	NFA	Recommendation signed 2/19/97
7	392	Elevated Soil Gas Location	NFA	Recommendation signed 11/20/96
7	393	Elevated Soil Gas Location	NFA	Recommendation signed 12/17/96
7	394	Elevated Soil Gas Location	NFA	Recommendation signed 12/17/96
7	395	Elevated Soil Gas Location	NFA	Recommendation signed 12/18/96
7	396	Elevated Soil Gas Location	NFA	Recommendation signed 12/18/96
7	397	Elevated Soil Gas Location	NFA	Recommendation signed 2/19/3
7	398	Elevated Soil Gas Location	NFA	Recommendation signed 8/20/3
7	399	Elevated Soil Gas Location	NFA	Recommendation signed 11/21/96
7	400	Elevated Soil Gas Location	NFA	Recommendation signed 12/17/96

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
7	401	Elevated Soil Gas Location	NFA	Recommendation signed 12/17/96
7	402	Elevated Soil Gas Location	NFA	Recommendation signed 11/21/96
7	403	Elevated Soil Gas Location	NFA	Recommendation signed 11/21/96
7	404	Elevated Soil Gas Location	NFA	Recommendation signed 11/21/96
7	412	Soil Contamination – Radiological	Removal Action	OSC signed 8/22/03
7	422	Plutonium Hot Spot	NFA	Recommendation signed 8/22/01
8	14	Area C, Waste Storage Area (AKA Drum Staging Area and Chemical Waste Storage)	NFA	Recommendation signed 5/8/96
8	15	Area C, Lithium Burn Area (AKA Lithium Carbonate Disposal)	NFA	Recommendation signed 2/19/97
8	17	Oil Burn Structure	Removal Action	OSC signed 1/10/06
8	18	Building 34, Fire Fighting Training Facility Pits	NFA	Recommendation signed 10/3/96
8	19	Building 34, Historical Firefighting Training Pit	NFA	Recommendation signed 10/3/96
8	20	Building 34, Aviation Fuel Storage Tank (Tank 219)	NFA	Recommendation signed 12/17/96
8	31	Underground Sanitary Sewer Line G5	NFA	Recommendation signed 11/26/02
8	32	Underground Sanitary Sewer Line G12	NFA	Recommendation signed 11/26/02
8	35	Underground Sanitary Sewer Lines G19 and G14	NFA	Recommendation signed 11/26/02
8	41	Area 3, Thorium Drum Storage and Redrumming Area	Removal Action	Pending
8	42	Area A, construction Soils from T Building	NFA	Recommendation signed 12/17/96
8	43	Wastewater Treatment plant Building 57 Grit Chamber (Tank 101)	Removal Action	Closed with Building 57 OSC 7/13/6
8	44	Building 57 Grit Conveyor	Removal Action	Closed with Building 57 OSC 7/13/6
8	45	Building 57 Comminuter (Tank 102)	Removal Action	Closed with Building 57 OSC 7/13/6
8	46	Building 57 Equalization Basin (Tank 103)	Removal Action	Closed with Building 57 OSC 7/13/6
8	47	Building 57 Equalization Basin (Tank 104)	Removal Action	Closed with Building 57 OSC 7/13/6

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
8	48	Building 57 Equalization Basin (Tank 105)	Removal Action	Closed with Building 57 OSC 7/13/6
8	49	Building 57 Equalization Basin (Tank 106)	Removal Action	Closed with Building 57 OSC 7/13/6
8	50	Building 57 Aeration Basin (Tank 107)	Removal Action	Closed with Building 57 OSC 7/13/6
8	51	Building 57 Aeration Basin (Tank 108)	Removal Action	Closed with Building 57 OSC 7/13/6
8	52	Building 57 Clarifier (Tank 109)	Removal Action	Closed with Building 57 OSC 7/13/6
8	53	Building 57 Clarifier (Tank 110)	Removal Action	Closed with Building 57 OSC 7/13/6
8	54	Building 57 Sand Filters (2 units)	Removal Action	Closed with Building 57 OSC 7/13/6
8	55	Building 57 Chlorine Contact Chamber (Tank 111)	Removal Action	Closed with Building 57 OSC 7/13/6
8	56	Building 57 Chlorine Contact Chamber (Tank 112)	Removal Action	Closed with Building 57 OSC 7/13/6
8	57	Sludge Drying Beds	NFA	Recommendation signed 11/21/96
8	58	Dredge Spoil Drying Beds	NFA	Recommendation signed 11/21/96
8	59	Contaminated Soil Box Storage Area	NFA	Recommendation signed 5/13/97
8	60	Hazardous Waste Storage Area (Building 72)	NFA	Recommendation signed 6/14/05
8	61	Building 72 Outdoor Hazardous Waste Storage Area	NFA	Recommendation signed 6/14/05
8	62	Building 72 Empty Drum Storage Area	NFA	Recommendation signed 6/14/05
8	63	Building 19 Soils	NFA	Recommendation signed 9/19/03
8	64	Building 19 Historic Gasoline Tank (Tank 238)	NFA	Recommendation signed 2/19/03
8	67	Plant Drainage Ditch	Removal Action	OSC signed 1/10/06
8	69	Overflow Pond	Removal Action	OSC signed 1/10/06
8	70	Retention Basins and Weir Basin	Removal Action	OSC signed 7/6/6
8	75	Railroad Siding	Removal Action	6/29/05
8	76	Warehouse 9	Removal Action	5/25/05
8	82	Building 57 Diesel Fuel Storage Tank (Tank 118)	NFA	Recommendation signed 12/17/96

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
8	84	Building 56 Diesel Fuel Storage Tank (Tank 123)	NFA	Recommendation signed 8/20/96
8	90	Site Survey Project Potential Hot Spot Location S0425	NFA	Recommendation signed 3/4/96
8	91	Main Hill Seep 0601	Retired	1/24/06
8	92	Main Hill Seep 0602	Retired	1/24/06
8	101	Cooling Tower Basins	NFA	8/16/00
8	102	Cooling Tower Drum Storage Area	NFA	8/16/00
8	103	E Building Soils	NFA	Recommendation signed 8/20/96
8	104	Scintillation Vial Storage Area	Removal Action	E Building OSC signed 10/21/02
8	105	E Building Solvent Storage Shed	NFA	Recommendation signed 8/20/96
8	110	I Building Soils	NFA	Recommendation signed 3/18/97
8	111	Monitor Well 0034	Removal Action	OSC signed 10/15/96
8	112	Paint Shop Area	NFA	Recommendation signed 10/11/5
8	113	Powerhouse Soils	NFA	Recommendation signed 3/18/97
8	114	Powerhouse Fuel Oil Storage Tank (Tank 113)	NFA	Recommendation signed 3/18/97
8	115	Powerhouse Fuel Oil Storage Tank (Tank 114)	NFA	Recommendation signed 3/18/97
8	116	Powerhouse Fuel Oil Storage Tank (Tank 115)	NFA	Recommendation signed 3/18/97
8	117	Powerhouse Fuel Oil Storage Tank (Tank 116)	NFA	Recommendation signed 3/18/97
8	118	M Building Soils	NFA	Recommendation signed 2/20/01
8	119	Room M-38 Metal Plating Rinse Water Sump (Tank 225)	NFA	Recommendation signed 2/20/01
8	120	Room M-108 Metal Plating Rinse Water Tank (Tank 119)	NFA	Recommendation signed 2/20/01
8	121	Vapor Degreasers	NFA	Recommendation signed 2/20/01
8	123	Area 5, Radioactive Waste Line Break	Removal Action	OSC signed 9/30/05
8	124	Building 48 Hillside	Removal Action	OSC signed 6/13/6
8	125	Underground Sanitary Sewer Line G24	NFA	Recommendation signed 11/26/02

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
8	126	Building 28 Solvent Storage Area	NFA	Recommendation signed 10/3/96
8	128	DS Building Solvent Storage Shed	NFA	Recommendation signed 4/16/98
8	129	B Building Solvent Storage Shed	NFA	Recommendation signed 5/13/97
8	130	B Building Temporary Drum Storage Area	NFA	Recommendation signed 5/13/97
8	131	SW Building Soils	Removal Action	Closed with RSWB OSC 7/20/6
8	132	Area 15, Entombed SW Cave (Rooms SW 1-B)	Removal Action	Closed with RSWB OSC 7/20/6
8	133	SW Building Room 1-A	Removal Action	Closed with RSWB OSC 7/20/6
8	134	SW Building Drum Storage Area	Removal Action	Closed with RSWB OSC 7/20/6
8	135	Rooms SW-8 Beta Wastewater Tank (Tank 20)	Removal Action	Closed with RSWB OSC 7/20/6
8	136	Room SW-125 Beta Wastewater Tank (Tank 21)	Removal Action	Closed with RSWB OSC 7/20/6
8	137	Room SW-143 Beta Wastewater Tank (Tank 22)	Removal Action	Closed with RSWB OSC 7/20/6
8	138	Room SW-137 Beta Wastewater Sump (Tank 23)	Removal Action	Closed with RSWB OSC 7/20/6
8	139	Room SW-10 Beta Wastewater Sump (Tank 226)	Removal Action	Closed with RSWB OSC 7/20/6
8	140	Beta Waste Solidification Facility - SW Building	Removal Action	Closed with RSWB OSC 7/20/6
8	141	Tritium Effluent Removal System	Removal Action	Closed with RSWB OSC 7/20/6
8	142	SW/R Building Solid Radioactive Waste Compactor	Removal Action	Closed with RSWB OSC 7/20/6
8	143	R/SW/T Building Stack Diesel Fuel Storage Tank (Tank 117)	Removal Action	Closed with RSWB OSC 7/20/6
8	144	R Building Sanitary Waste Collection Tank (Tank 120)	Removal Action	Closed with RSWB OSC 7/20/6
8	145	Room R-128 Alpha Wastewater Tank (Tank 19)	Removal Action	Closed with RSWB OSC 7/20/6
8	146	R Building Room 121, 144, 146, and 148 entombed drains	Removal Action	Closed with RSWB OSC 7/20/6
8	147	HH Building Soils	NFA	Recommendation signed 3/14/96
8	148	HH Building Solidification Unit	Removal Action	OSC Signed 4/19/05

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
8	149	HH Building Pilot Incinerator	Removal Action	OSC Signed 4/19/05
8	150	Room HH-15 Beta Wastewater Sump (Tank 236)	Removal Action	OSC Signed 4/19/05
8	151	Room HH-6 Alpha Wastewater Sump (Tank 237)	Removal Action	OSC Signed 4/19/05
8	152	HH Building Beta Wastewater Sump (Tank 24)	Removal Action	OSC Signed 4/19/05
8	153	Area 20, Radioactive Waste Line Break	Removal Action	OSC signed 7/13/6
8	154	Area 23, Thorium Contaminated Soil	Removal Action	OSC signed 7/13/6
8	155	Old Sanitary Disposal (SD) Plant (AKA Old Sanitary Wastewater Treatment Plant)	Removal Action	OSC signed 7/6/6
8	156	Old SD Plant Tank (Tank 205)	Removal Action	OSC signed 7/6/6
8	157	Old SD Plant Tank (Tank 206)	Removal Action	OSC signed 7/6/6
8	158	Old SD Plant Tank (Tank 207)	Removal Action	OSC signed 7/6/6
8	159	Area 4A, Sewage Sludge Drying Pits	Removal Action	OSC signed 7/6/6
8	160	Mixed Waste Storage Area (Building 23)	Removal Action	OSC Signed 5/03/05
8	161	Glass Melter Furnace	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	162	Glass Melter Feed Drum	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	163	Off-Gas Treatment System Deluge Tank	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	164	Off-Gas Treatment System Venturi Scrubber	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	165	Off-Gas Treatment System Cyclone Demister	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	166	Off-Gas Treatment System HEPA Filter	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	167	Off-Gas Treatment System WD Building Filter Bank	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	168	Off-Gas Treatment system Recycle Tank	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	169	Off-Gas Treatment System Strainer	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	170	Off-Gas Treatment System Leaf Solution Filter	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	171	Off-Gas Treatment System Iodine Absorption Filter	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	172	WDA Building Basement Wash Sump (Tank 11) (AKA Glass Melter Room Sump)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	173	Cyclone Incinerator	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	174	WD Building Drum Staging Area	Removal Action	Closed in WD Building Structure OSC 9/29/05

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
8	175	Area 4, WD Building Influent Tank Overflow	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	176	Area 14, Radioactive Waste Line Break	NFA	Recommendation signed 12/17/96
8	177	Building 41 Alpha Wastewater Tank (Tank 208)	NFA	Recommendation signed 12/17/96
8	178	Building 41 Alpha Wastewater Tank (Tank 209)	NFA	Recommendation signed 12/17/96
8	179	WD Building Alpha Wastewater Influent Tank (Tank 3)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	180	WD Building Alpha Wastewater Influent Tank (Tank 4)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	181	WD Building Alpha Wastewater Influent Tank (Tank 5)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	182	WD Building Alpha Influent Tank (Tank 6)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	183	Room WD-1 Basement Sump (Tank 12)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	184	Room WD-1 Alpha Wastewater Sump (Tank 17)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	185	Room WD-1 Sanitary Waste Sump (Tank 134)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	186	Room WD-8 Alpha Wastewater Sump (Tank 18)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	187	WD Building Alpha Wastewater Clariflocculators (2 units)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	188	WD Building Alpha Wastewater Mixing Box	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	189	WD Building Alpha Wastewater Sand Filters (2 units)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	190	WD Building Alpha Wastewater Bone Char Columns (2 units)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	191	WD Building Alpha Wastewater Effluent Tank (Tank 7)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	192	WD Building Alpha Wastewater Effluent Tank (Tank 8)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	193	WD Building Alpha Wastewater Effluent Tank (Tank 9)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	194	WD Building Alpha Wastewater Effluent Tank (Tank 10)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	195	WD Building Alpha Wastewater Sludge Pits (2 units)	Removal Action	Closed in WD Building Structure OSC 9/29/05

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
8	196	WD Building Alpha Wastewater Solidification/Drumming Unit	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	197	WD Building Solid Radioactive Waste Compactor	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	198	WDA Building Basement Sanitary Waste Tank (Tank 135)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	199	WDA Building Beta Wastewater Influent Tank (Tank 13)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	200	WDA Building Beta Wastewater Influent Tank (Tank 14)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	201	WDA Building Beta Wastewater Metering Station	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	202	WDA Building Beta Wastewater Mixing/Solidification Unit	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	203	WDA Building Alpha Wastewater Influent Tank (Tank 15)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	204	WDA Building Alpha Wastewater Influent Tank (Tank 16)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	205	WDA Building Alpha Wastewater Effluent Tank (Tank 214)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	206	WDA Building Alpha Wastewater Influent Tank (Tank 215)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	207	WDA Building Alpha Wastewater Influent Tank (Tank 216)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	208	WDA Building Solidification Unit	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	209	Building 62 Stack Deluge Tank (Tank 1)	Removal Action	Closed in RSWB OSC 7/20/6
8	210	Room H-131 Laundry Water Tank (Tank 2)	Removal Action	OSC signed 9/22/04
8	213	T Building Solidification Unit	Removal Action	Closed in T Building OSC 7/27/6
8	214	T Building Solid Radioactive Waste Compactor	Removal Action	Closed in T Building OSC 7/27/6
8	215	Room T-1 Cooling Water Sump (Tank 124)	Removal Action	Closed in T Building OSC 7/27/6
8	216	T Building, Corridor 2 Sanitary Wastewater Sump (Tank 125)	Removal Action	Closed in T Building OSC 7/27/6
8	217	Room T-11F Sanitary Wastewater Sump (Tank 126)	Removal Action	Closed in T Building OSC 7/27/6
8	218	Room T-15 Sanitary Wastewater Sump (Tank 127)	Removal Action	Closed in T Building OSC 7/27/6
8	219	T Building, Stair 3 Cooling Water Sump (Tank 128)	Removal Action	Closed in T Building OSC 7/27/6

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
8	220	Room T-78 Steam Condensate Sump (Tank 129)	Removal Action	Closed in T Building OSC 7/27/6
8	221	T Building, Corridor 8 Sanitary Wastewater Sump (Tank 130)	Removal Action	Closed in T Building OSC 7/27/6
8	222	Room T-78A Sanitary Wastewater Sump (Tank 131)	Removal Action	Closed in T Building OSC 7/27/6
8	223	Room T-90 Cooling System Condensate Sump (Tank 132)	Removal Action	Closed in T Building OSC 7/27/6
8	224	Room T-99 Sanitary Wastewater Sump (Tank 133)	Removal Action	Closed in T Building OSC 7/27/6
8	225	Room T-23 Beta Wastewater Sump (Tank 227)	Removal Action	Closed in T Building OSC 7/27/6
8	226	Room T-3 Floor Drain Sump (Tank 228)	Removal Action	Closed in T Building OSC 7/27/6
8	227	Room T-40 Alpha Wastewater Sump (Tank 229)	Removal Action	Closed in T Building OSC 7/27/6
8	228	Room T-41 Alpha Wastewater Sump (Tank 230)	Removal Action	Closed in T Building OSC 7/27/6
8	229	Room T-50 Alpha Wastewater Sump (Tank 231)	Removal Action	Closed in T Building OSC 7/27/6
8	230	Room T-50 Alpha Wastewater Sump (Tank 232)	Removal Action	Closed in T Building OSC 7/27/6
8	231	T Building, Corridor 8 Alpha Wastewater Sump (Tank 233)	Removal Action	Closed in T Building OSC 7/27/6
8	232	T Building, Corridor 7 Alpha Wastewater Sump (Tank 234)	Removal Action	Closed in T Building OSC 7/27/6
8	233	Room T-63 Alpha Wastewater Sump (Tank 235)	Removal Action	Closed in T Building OSC 7/27/6
8	234	Building 58 Diesel Fuel Storage Tank (Tank 222)	NFA	Recommendation signed 8/20/96
8	235	Area of Possible Elevated Thorium Activity	NFA	Recommendation signed 2/19/97
8	236	Site Survey Project Potential Hot Spot Location S0166	NFA	Recommendation signed 5/8/96
8	237	Site Survey Project Potential Hot Spot Location S0175	Removal Action Complete	OSC signed 4/14/05
8	238	Site Survey Project Potential Hot Spot Location S1092	Removal Action	OSC signed 7/13/6
8	239	Site Survey Project Potential Hot Spot Location S0208	NFA	Recommendation signed 3/4/96
8	240	Site Survey Project Potential Hot Spot Location S0472	Removal Action	OSC signed 7/13/6
8	243	VOC Potential Hot Spot Location 1064	NFA	Recommendation signed 8/20/96

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
8	244	VOC Potential Hot Spot Locations 1076, 1077, 1079, and 1080	NFA	Recommendation signed 12/17/96
8	245	VOC Potential Hot Spot Location 1085	NFA	Recommendation signed 8/20/96
8	246	VOC Potential Hot Spot Locations 1117 and 1118	NFA	Recommendation signed 10/3/96
8	247	VOC Potential Hot Spot Location 1129	NFA	Recommendation signed 5/8/96
8	248	HH Building Stack	Removal Action	OSC signed 4/19/05
8	249	SW Building Stack (NCPDF)	Removal Action	Closed in RSWB OSC 7/20/6
8	250	SW Building Stack (SW1C)	Removal Action	Closed in RSWB OSC 7/20/6
8	251	SW Building Stack (HEFS)	Removal Action	Closed in RSWB OSC 7/20/6
8	252	B Building Stack	Removal Action	Closed in RSWB OSC 7/20/6
8	253	T Building WEST Stack	Removal Action	Closed in RSWB OSC 7/20/6
8	254	T Building EAST Stack	Removal Action	Closed in RSWB OSC 7/20/6
8	255	WD Building Stack (ALR)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	256	WD Building Stack (AHR)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	257	WD Building Stack (SS)	Removal Action	Closed in WD Building Structure OSC 9/29/05
8	300	Area 19, Underground Waste Transfer Line	NFA	Recommendation signed 12/17/96
8	327	R-111 Calorimetry Bath (Tank 255)	Removal Action	Closed in RSWB OSC 7/20/6
8	328	R-111 Calorimetry Bath (Tank 266)	Removal Action	Closed in RSWB OSC 7/20/6
8	329	Building 62 Hot Waste Sump (Tank 258)	Removal Action	Closed in RSWB OSC 7/20/6
8	337	Building H Condensate Sump (Tank 268)	Removal Action Complete	OSC signed 9/22/04
8	339	T-44 Wastewater Sump (Tank 250)	Removal Action	Closed in T Building OSC 7/27/6
8	340	T-16b Wastewater Sump (Tank 251)	Removal Action	Closed in T Building OSC 7/27/6
8	341	T-90 Condensate Sump (Tank 269)	Removal Action	Closed in T Building OSC 7/27/6

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
8	342	T-1 Hot Side Fire Water Tank (Tank 271)	Removal Action	Closed in T Building OSC 7/27/6
8	343	T-20 Fire Water Sump (Tank 272)	Removal Action	Closed in T Building OSC 7/27/6
8	344	T-37 Fire Water Sump (Tank 273)	Removal Action	Closed in T Building OSC 7/27/6
8	345	Former Equipment Storage Area (see related site 16)	NFA	Recommendation signed 5/8/96
8	347	Elevated Soil Gas Location	NFA	Recommendation signed 11/20/96
8	351	Elevated Soil Gas Location	NFA	Recommendation signed 11/20/96
8	355	Elevated Soil Gas Location	NFA	Recommendation signed 11/20/96
8	356	Elevated Soil Gas Location	NFA	Recommendation signed 2/19/97
8	360	Elevated Soil Gas Location	NFA	Recommendation signed 11/20/96
8	363	Elevated Soil Gas Location	Removal Action	OSC signed 1/10/06
8	366	Elevated Soil Gas Location	NFA	Recommendation signed 12/17/96
8	367	Elevated Soil Gas Location	NFA	Recommendation signed 12/17/96
8	368	Elevated Soil Gas Location	NFA	Recommendation signed 10/11/05
8	405	(North of Bldg. 23) Oil and PCB potential in soil	Removal Action	OSC signed 7/13/6
8	408	Prism Separator Oil Leak	NFA	Recommendation signed 5/13/97
8	411	Soil contamination – asphalt roadway	Removal Action	OSC signed 3/23/05
8	413	Soil contamination – creosote	Removal Action	OSC signed 3/7/2006
8	415	Soil Contamination - Radiological	Removal Action	OSC signed 9/30/05
8	417	Soil Contamination-High Soil Gas near Well 0312	NFA	Recommendation signed 3/19/03
8	423	Hot Waste Line - Segment 1A	Removal Action	OSC signed 9/27/05
8	424	Hot Waste Line - Segment 1B	Removal Action	OSC signed 9/27/05
8	425	Hot Waste Line - segment 2	Removal Action	Closed in RSWB Building OSC 7/20/6
8	426	Hot Waste Line - segment 5	Removal Action	OSC signed 9/27/05
8	427	Hot Waste Line - Segment 6	Removal Action	OSC signed 7/13/6
8	428	Hot Waste Line - Segment 7	Removal Action	OSC signed 7/13/6
8	429	Hot Waste Line - Segment 9	Removal Action	OSC signed 9/27/05

Table 2 - PRSs and Core Team Conclusions

Parcel	PRS	Description	Initial Core Team Decision	Closeout of PRS
8	430	Hot Waste Line - Segment 9a	Removal Action	OSC signed 9/27/05
8	431	Hot Waste Line - Segment 10	Removal Action	OSC signed 9/27/05
8	432	Hot Waste Line - Segment 11	Removal Action	OSC signed 9/27/05
8	433	Hot Waste Line - Segment 12	Removal Action	OSC signed 9/27/05
8	434	Hot Waste Line - Segment 13a	Removal Action	OSC signed 9/27/05
8	435	Hot Waste Line - Segment 13b	Removal Action	OSC signed 9/27/05
8	436	Hot Waste Line - Segment 14	Removal Action	OSC signed 9/27/05
8	437	Hot Waste Line - Segment 3	Removal Action	Closed in RSWB Building OSC 7/20/6
8	438	Hot Waste Line - Segment 4	Removal Action	Closed in RSWB Building OSC 7/20/6
8	439	Hot Waste Line - Segment 4a	Removal Action	OSC signed 6/13/6
8	440	Hot Waste Line - Segment 8	Removal Action	Closed in RSWB Building OSC 7/20/6
OFFSITE	94	Main Hill Seep 604	Retired	1/24/2006
OFFSITE	95	Main Hill Seep 605	Retired	1/24/2006
OFFSITE	96	Main Hill Seep 606	Retired	1/24/2006
OFFSITE	97	Main Hill Seep 607	Retired	1/24/2006
OFFSITE	98	Main Hill Seep 608	Retired	1/24/2006
OFFSITE	320	Dayton Unit 1	NFA	9/29/1997
OFFSITE	321	Dayton Unit 2	NFA	9/29/1997
OFFSITE	322	Dayton Unit 3	NFA	9/29/1997
OFFSITE	323	Dayton Unit 4	NFA	9/29/1997
OFFSITE	324	Dayton Warehouse	NFA	9/29/1997
OFFSITE	325	Marion Standby Facility	NFA	9/29/1997

NFA: No Further Action

PRS: Potential Release Site

OSC: On-Scene Coordinator Report

Table 3 - Transfer Buildings and Core Team Conclusions

Parcel	Building	Description	Core Team Decision	Closeout Action
6	28	Ceramic Production	NFA	Recommendation signed 7/23/03
	45	Health Physics Calibration Facility	NFA	Recommendation signed 5/5/2005
	OSE	Operations Support East	NFA	Recommendation signed 9/16/03
7	2	Energetic Materials Test Facility	NFA	Recommendation signed 2/19/97
	61	Warehouse (Logistical Support)	NFA	Recommendation signed 11/25/02
	63	Surveillance Facility	NFA	Recommendation signed 2/20/02
	126	Power System Technology Administration Building	NFA	Recommendation signed 9/22/04
8	COS	Central Operations Support	NFA	Recommendation signed 9/18/00
	OSW	Operations Support West	NFA	Recommendation signed 9/17/03
	T	Technical	Removal Action Complete	Recommendation signed 2/27/03

NFA: No Further Action

PRS: Potential Release Site

OSC: On-Scene Coordinator Report

Table 4 – Parcels 6, 7, and 8 Risk Summary

Scenario and Receptor	Overall Risk Types	Total Non-Carcinogen Risk HI	Total Excess Lifetime Cancer Risk
Parcel 6			
Construction Worker	Total	NC	$3.5x10^{-5}$
	Background	NC	$2.0x10^{-5}$
	Incremental	NC	$1.5x10^{-5}$
Site Employee	Total	NC	$3.5x10^{-5}$
	Background	NC	$2.0x10^{-5}$
	Incremental	NC	$1.5x10^{-5}$
Parcel 7			
Construction Worker	Total	$8.6x10^{-3}$	$2.1x10^{-5}$
	Background	NC	$2.6x10^{-7}$
	Incremental	$8.6x10^{-3}$	$2.1x10^{-5}$
Site Employee	Total	$6.8x10^{-7}$	$1.7x10^{-5}$
	Background	NC	$1.1x10^{-8}$
	Incremental	$6.8x10^{-7}$	$1.7x10^{-5}$
Parcel 8			
Construction Worker	Total	0.17	$2.2x10^{-5}$
	Background	NC	$1.7x10^{-8}$
	Incremental	0.16	$2.2x10^{-5}$
Site Employee	Total	$1.8x10^{-10}$	$2.6x10^{-5}$
	Background	NC	$9.0x10^{-9}$
	Incremental	$1.8x10^{-10}$	$2.6x10^{-5}$

NA: not applicable

NC: not calculated due to the absence of toxicity data.

Table 5:

Identification of Constituents of Potential Concern for the Construction Worker Exposed to Surface and Subsurface Soil in Parcel 6

Analyte (SRC)	CAS Number	Minimum Concentration	Maximum Concentration	Detection Frequency	95% UCL	EPC	Background Value	RBGV	COPC?
Inorganics (mg/kg)									
Aluminum	7429-90-5	2.69E+03	1.47E+04	4/ 4	6.45E+05	1.47E+04	1.90E+04	1.89E+05	NO:2
Arsenic	7440-38-2	2.10E+00	5.30E+00	4/ 4	1.15E+01	5.30E+00	8.60E+00	2.26E+00	NO:2
Barium	7440-39-3	1.57E+01	4.54E+01	4/ 4	4.10E+02	4.54E+01	1.80E+02	1.25E+04	NO:2
Beryllium	7440-41-7	1.40E-01	8.60E-01	4/ 4	3.99E+01	8.60E-01	1.30E+00	3.70E+02	NO:2
Bismuth	7440-69-9	1.50E+00	1.50E+00	1/ 3	2.22E+01	1.50E+00	3.84E+01	---	NO:2
Cadmium	7440-43-9	3.00E-01	4.20E-01	3/ 5	1.02E+01	4.20E-01	2.10E+00	0.00E+00	NO:2
Calcium	7440-70-2	5.80E+04	2.17E+05	4/ 4	4.19E+06	2.17E+05	3.10E+05	---	NO:2
Chromium	**7440-47-3**	**5.40E+00**	**2.08E+01**	**5/ 5**	**2.61E+01**	**2.08E+01**	**2.00E+01**	---	**YES**
Cobalt	7440-48-4	3.00E+00	1.94E+01	4/ 4	2.39E+03	1.94E+01	1.90E+01	1.93E+03	NO:3
Copper	7440-50-8	1.06E+01	2.91E+01	4/ 4	1.11E+02	2.91E+01	2.60E+01	8.18E+03	NO:3
Iron	7439-89-6	6.51E+03	3.04E+04	4/ 4	5.92E+05	3.04E+04	3.50E+04	---	NO:2
Lead	7439-92-1	2.60E+00	2.67E+01	6/ 6	5.83E+01	2.67E+01	4.80E+01	---	NO:2
Lithium	**7439-93-2**	**1.03E+01**	**3.88E+01**	**4/ 4**	**2.56E+02**	**3.88E+01**	**0.00E+00**	---	**YES**
Magnesium	7439-95-4	1.05E+04	1.02E+05	4/ 4	8.61E+08	1.02E+05	4.00E+04	---	NO:5
Manganese	7439-96-5	2.64E+02	1.08E+03	4/ 4	8.39E+03	1.08E+03	1.40E+03	0.00E+00	NO:2
Mercury	7439-97-6	1.30E-01	1.30E-01	1/ 4	1.17E+03	1.30E-01	1.50E-01	5.78E+04	NO:2
Molybdenum	7439-98-7	5.10E-01	2.10E+00	2/ 3	7.96E+05	2.10E+00	2.72E+01	1.02E+03	NO:2
Nickel	7440-02-0	6.40E+00	3.46E+01	5/ 5	5.71E+01	3.46E+01	3.20E+01	4.09E+03	NO:3
Potassium	7440-09-7	5.55E+02	3.28E+03	4/ 4	1.52E+05	3.28E+03	1.90E+03	---	NO:5
Silver	7440-22-4	2.10E-01	2.10E-01	2/ 4	8.33E-01	2.10E-01	1.70E+00	1.02E+03	NO:2
Sodium	7440-23-5	2.16E+02	7.07E+02	4/ 4	5.85E+03	7.07E+02	2.40E+02	---	NO:5
Tin	7440-31-5	8.90E-01	1.20E+00	2/ 3	1.63E+01	1.20E+00	2.09E+01	1.23E+05	NO:2
Vanadium	7440-62-2	6.70E+00	1.97E+01	4/ 4	1.45E+02	1.97E+01	2.50E+01	2.04E+02	NO:2
Zinc	7440-66-6	2.71E+01	2.54E+02	4/ 4	1.23E+05	2.54E+02	1.40E+02	6.13E+04	NO:3
Semi-Volatile Organic Compounds (ug/kg)									
Acenaphthene	83-32-9	4.17E+01	3.37E+02	3/ 8	9.97E+02	3.37E+02	---	3.09E+06	NO:3
Anthracene	120-12-7	2.60E+01	9.28E+02	5/ 8	1.44E+03	9.28E+02	---	1.55E+07	NO:3
Benzo(a)anthracene	56-55-3	1.80E+01	1.64E+03	7/ 8	6.07E+03	1.64E+03	---	1.98E+03	NO:3
Benzo(a)pyrene	**50-32-8**	**2.30E+01**	**1.22E+03**	**6/ 8**	**1.96E+03**	**1.22E+03**	---	**1.98E+02**	**YES**
Benzo(b)fluoranthene	205-99-2	2.30E+01	1.89E+03	6/ 8	3.56E+03	1.89E+03	---	1.98E+03	NO:3
Benzo(g,h,i)perylene	**191-24-2**	**6.38E+01**	**8.55E+02**	**5/ 8**	**5.70E+02**	**5.70E+02**	---	**0.00E+00**	**YES**
Benzo(k)fluoranthene	207-08-9	2.30E+01	7.45E+02	6/ 8	8.79E+02	7.45E+02	---	1.98E+04	NO:3
Bis(2-ethylhexyl)phthalate	117-81-7	4.30E+01	5.80E+01	2/ 4	3.37E+04	5.80E+01	---	1.25E+05	NO:3
Chrysene	218-01-9	2.90E+01	3.01E+02	6/ 8	4.93E+02	3.01E+02	---	1.98E+06	NO:3
Dibenz(a,h)anthracene	**53-70-3**	**2.90E+01**	**2.18E+02**	**2/ 8**	**1.96E+03**	**2.18E+02**	---	**1.98E+02**	**YES**
Di-n-octyl Phthalate	117-84-0	1.70E+02	1.70E+02	1/ 4	2.17E+02	1.70E+02	---	8.18E+06	NO:3
Fluoranthene	206-44-0	4.50E+01	3.67E+03	7/ 8	1.27E+04	3.67E+03	---	2.06E+06	NO:3
Fluorene	86-73-7	4.60E+01	4.74E+02	3/ 8	1.15E+03	4.74E+02	---	2.06E+06	NO:3
Indeno(1,2,3-cd)pyrene	193-39-5	7.90E+01	9.77E+02	5/ 8	6.63E+02	6.63E+02	---	1.98E+03	NO:3
Phenanthrene	**85-01-8**	**2.50E+01**	**3.89E+03**	**7/ 8**	**3.21E+04**	**3.89E+03**	---	**0.00E+00**	**YES**
Pyrene	129-00-0	5.00E+01	4.56E+03	7/ 8	1.53E+04	4.56E+03	---	1.55E+06	NO:3
Volatile Organic Compounds (ug/kg)									
4-Methyl-2-pentanone	108-10-1	7.97E-01	7.97E-01	1/ 8	4.87E+03	7.97E-01	---	1.64E+07	NO:3
Acetone	67-64-1	1.10E+01	1.80E+01	3/ 8	4.50E+01	1.80E+01	---	1.84E+08	NO:3
Dichloromethane (Methylene Chloride)	75-09-2	6.00E+00	1.60E+01	4/ 8	2.37E+04	1.60E+01	---	7.63E+05	NO:3
Naphthalene	91-20-3	3.43E+01	3.43E+01	1/ 8	1.09E+03	3.43E+01	---	1.24E+06	NO:3
Tetrachloroethene	127-18-4	1.31E+00	1.30E+01	2/ 8	7.23E+02	1.30E+01	---	1.06E+04	NO:3
Toluene	108-88-3	5.41E-01	1.15E+00	4/ 9	9.56E+01	1.15E+00	---	2.00E+02	NO:3
Radionuclides (pCi/g)									
Actinium-227	14952-40-0(+D)	7.00E-02	1.10E-01	4/ 136	1.14E-01	1.10E-01	0.00E+00	5.02E-01	NO:1
Cesium-137	10045-97-3(+D)	2.00E-02	5.00E-01	79/ 148	5.82E-02	5.82E-02	4.20E-01	3.56E-01	NO:4
Cobalt-60	10198-40-0	3.00E-02	3.00E-02	1/ 146	2.18E-02	2.18E-02	0.00E+00	7.35E-02	NO:1
Lead-210	14255-04-0(+D)	1.50E-01	2.05E+00	102/ 145	6.23E-01	6.23E-01	1.20E+00	1.19E+00	NO:4
Plutonium-238	**13981-16-3**	**1.24E-02**	**4.10E+01**	**70/ 428**	**2.90E+01**	**2.90E+01**	**1.30E-01**	**1.13E+01**	**YES**
Plutonium-239/240	OER-100-70	3.70E-02	3.70E-02	1/ 9	7.16E-01	3.70E-02	1.80E-01	6.01E+00	NO:2
Potassium-40	13966-00-2	1.80E+01	2.31E+01	3/ 3	2.78E+01	2.31E+01	3.70E+01	1.12E+00	NO:2
Radium-226	13982-63-3(+D)	1.30E-01	3.53E+00	140/ 149	1.31E+00	1.31E+00	2.00E+00	1.05E-01	NO:4
Thorium-227	15623-47-9	1.80E-01	1.80E-01	1/ 2	0.00E+00	1.80E-01	0.00E+00	2.17E+00	NO:3
Thorium-228	14274-82-9(+D)	2.81E-01	9.00E-01	10/ 12	5.82E+01	9.00E-01	1.50E+00	1.14E-01	NO:2
Thorium-230 +D	**14269-63-7(+D)**	**3.28E-01**	**2.32E+00**	**12/ 150**	**2.76E+00**	**2.32E+00**	**1.90E+00**	**9.26E-02**	**YES**
Thorium-232	7440-29-1(+D)	4.00E-02	2.30E+00	157/ 452	1.12E+00	1.12E+00	1.40E+00	6.90E-02	NO:4
Tritium	10028-17-8p	1.87E-01	3.91E+00	4/ 4	3.33E+09	3.91E+00	1.60E+00	1.45E+04	NO:3
Uranium-233/234	13966-29-5	1.80E-01	6.70E-01	2/ 2	0.00E+00	6.70E-01	1.10E+00	5.52E-01	NO:2
Uranium-234	13966-29-5	2.31E-01	7.23E-01	5/ 5	1.37E+00	7.23E-01	1.10E+00	1.97E+01	NO:2
Uranium-235	15117-96-1(+D)	2.40E-02	4.75E-02	2/ 9	4.99E+01	4.75E-02	1.10E-01	1.55E+00	NO:2
Uranium-238	7440-61-1(+D)	2.32E-01	8.85E-01	8/ 11	3.51E+01	8.85E-01	1.20E+00	5.22E+00	NO:2

CAS - Chemical Abstract Service
COPC - Constituents of Potential Concern
EPC - Exposure Point Concentration
mg/kg - milligram per kilogram
ug/kg - microgram per kilogram
pCi/g - picocurie per gram
RBGV - Risk Based Guideline Value
UCL - Upper Confidence Limit

NO:1 - <5% Detects
NO:2 - Max<Background
NO:3 - Max< Risk Based Guideline Value
NO:4 - EPC< Background
NO:5 - Essential Human Nutrient

Bold text indicates COPCs selected

Lithium note: The RREM background value for lithium is 26 mg/kg and not 0.00 mg/kg as presented in this table. However, since the analyte would still become a COPC the value in the table was not modified.

Background values are base on the Operable Unit 9 Background Soils Investigation Chemistry Report (DOE 1994) or, in the case of nuclides with short half lives (Ac-227 Pb-210, and Pa-231) are based on the parent nuclide background and assumption of equilibrium with the parent nuclide.

--- not applicable, not available, or not calculated due to insufficient toxicity data

Table 6:

Identification of Constituents of Potential Concern for a Site Employee Exposed to Surface Soil in Parcel 6

Analyte (SRC)	CAS Number	Minimum Concentration	Maximum Concentration	Detection Frequency	95% UCL	EPC	Background Value*	RBGV	COPC?
Inorganics (mg/kg)									
Aluminum	7429-90-5	2.69E+03	1.47E+04	4/ 4	6.45E+05	1.47E+04	1.90E+04	1.69E+05	NO:2
Arsenic	7440-38-2	2.10E+00	5.30E+00	4/ 4	1.15E+01	5.30E+00	8.60E+00	2.26E+00	NO:2
Barium	7440-39-3	1.57E+01	4.54E+01	4/ 4	4.10E+02	4.54E+01	1.80E+02	1.25E+04	NO:2
Beryllium	7440-41-7	1.40E-01	8.60E-01	4/ 4	3.99E+01	8.60E-01	1.30E+00	3.70E+02	NO:2
Bismuth	7440-69-9	1.50E+00	1.50E+00	1/ 3	2.22E+01	1.50E+00	3.84E+01	---	NO:2
Cadmium	7440-43-9	3.00E-01	4.20E-01	3/ 5	1.02E+01	4.20E-01	2.10E+00	---	NO:2
Calcium	7440-70-2	5.80E+04	2.17E+05	4/ 4	4.19E+06	2.17E+05	3.10E+05	---	NO:2
Chromium	**7440-47-3**	**5.40E+00**	**2.08E+01**	**5/ 5**	**2.61E+01**	**2.08E+01**	**2.00E+01**	---	**YES**
Cobalt	7440-48-4	3.00E+00	1.94E+01	4/ 4	2.39E+03	1.94E+01	1.90E+01	1.93E+03	NO:3
Copper	7440-50-8	1.06E+01	2.91E+01	4/ 4	1.11E+02	2.91E+01	2.60E+01	8.18E+03	NO:3
Iron	7439-89-6	6.51E+03	3.04E+04	4/ 4	5.92E+05	3.04E+04	3.50E+04	---	NO:2
Lead	7439-92-1	2.60E+00	2.67E+01	6/ 6	5.83E+01	2.67E+01	4.80E+01	---	NO:2
Lithium	**7439-93-2**	**1.03E+01**	**3.86E+01**	**4/ 4**	**2.56E+02**	**3.86E+01**	---	---	**YES**
Magnesium	7439-95-4	1.05E+04	1.02E+05	4/ 4	8.81E+08	1.02E+05	4.00E+04	---	NO:5
Manganese	7439-96-5	2.64E+02	1.08E+03	4/ 4	8.39E+03	1.08E+03	1.40E+03	---	NO:2
Mercury	7439-97-6	1.30E-01	1.30E-01	1/ 4	1.17E+03	1.30E-01	1.50E-01	5.78E+04	NO:2
Molybdenum	7439-98-7	5.10E-01	2.10E+00	2/ 3	7.96E+05	2.10E+00	2.72E+01	1.02E+03	NO:2
Nickel	7440-02-0	6.40E+00	3.46E+01	5/ 5	5.71E+01	3.46E+01	3.20E+01	4.09E+03	NO:3
Potassium	7440-09-7	5.55E+02	3.28E+03	4/ 4	1.52E+05	3.28E+03	1.90E+03	---	NO:5
Silver	7440-22-4	2.10E-01	2.10E-01	2/ 4	8.33E-01	2.10E-01	1.70E+00	1.02E+03	NO:2
Sodium	7440-23-5	2.16E+02	7.07E+02	4/ 4	5.65E+03	7.07E+02	2.40E+02	---	NO:5
Tin	7440-31-5	8.90E-01	1.20E+00	2/ 3	1.63E+01	1.20E+00	2.09E+01	1.23E+05	NO:2
Vanadium	7440-62-2	6.70E+00	1.97E+01	4/ 4	1.45E+02	1.97E+01	2.50E+01	2.04E+02	NO:2
Zinc	7440-66-6	27.1	254.0	4/ 4	123,000.0	254.0	140.0	61,320.0	NO:3
Semi-Volatile Organic Compounds (ug/kg)									
Acenaphthene	83-32-9	4.17E+01	3.37E+02	3/ 8	9.97E+02	3.37E+02	---	3.09E+06	NO:3
Anthracene	120-12-7	2.60E+01	9.28E+02	5/ 8	1.44E+03	9.28E+02	---	1.55E+07	NO:3
Benzo(a)anthracene	56-55-3	1.80E+01	1.64E+03	7/ 8	6.07E+03	1.64E+03	---	1.98E+03	NO:3
Benzo(a)pyrene	**50-32-8**	**2.30E+01**	**1.22E+03**	**6/ 8**	**1.96E+03**	**1.22E+03**	---	**1.98E+02**	**YES**
Benzo(b)fluoranthene	205-99-2	2.30E+01	1.89E+03	6/ 8	3.56E+03	1.89E+03	---	1.98E+03	NO:3
Benzo(g,h,i)perylene	**191-24-2**	**8.38E+01**	**8.55E+02**	**5/ 8**	**5.70E+02**	**5.70E+02**	---	---	**YES**
Benzo(k)fluoranthene	207-08-9	2.30E+01	7.45E+02	6/ 8	8.79E+02	7.45E+02	---	1.98E+04	NO:3
Bis(2-ethylhexyl)phthalate	117-81-7	4.30E+01	5.80E+01	2/ 4	3.37E+04	5.80E+01	---	1.25E+05	NO:3
Chrysene	218-01-9	2.90E+01	3.01E+02	6/ 8	4.93E+02	3.01E+02	---	1.98E+05	NO:3
Dibenz(a,h)anthracene	**53-70-3**	**2.90E+01**	**2.18E+02**	**2/ 8**	**1.96E+03**	**2.18E+02**	---	**1.98E+02**	**YES**
Di-n-octyl Phthalate	117-84-0	1.70E+02	1.70E+02	1/ 4	2.17E+02	1.70E+02	---	8.18E+06	NO:3
Fluoranthene	206-44-0	4.50E+01	3.67E+03	7/ 8	1.27E+04	3.67E+03	---	2.06E+06	NO:3
Fluorene	86-73-7	4.60E+01	4.74E+02	3/ 8	1.15E+03	4.74E+02	---	2.06E+06	NO:3
Indeno(1,2,3-cd)pyrene	193-39-5	7.90E+01	9.77E+02	5/ 8	6.63E+02	6.63E+02	---	1.98E+03	NO:3
Phenanthrene	**85-01-8**	**2.50E+01**	**3.89E+03**	**7/ 8**	**3.21E+04**	**3.89E+03**	---	---	**YES**
Pyrene	129-00-0	5.00E+01	4.56E+03	7/ 8	1.53E+04	4.56E+03	---	1.55E+06	NO:3
Volatile Organic Compounds (ug/kg)									
4-Methyl-2-pentanone	108-10-1	7.97E-01	7.97E-01	1/ 8	4.87E+03	7.97E-01	#REF!	1.64E+07	NO:3
Acetone	67-64-1	1.10E+01	1.80E+01	3/ 8	4.50E+01	1.80E+01	#REF!	1.84E+08	NO:3
Dichloromethane (Methylene C	75-09-2	6.00E+00	1.60E+01	4/ 8	2.37E+04	1.60E+01	#REF!	7.63E+05	NO:3
Naphthalene	91-20-3	3.43E+01	3.43E+01	1/ 8	1.09E+03	3.43E+01	#REF!	1.24E+06	NO:3
Tetrachloroethene	127-18-4	1.31E+00	1.30E+01	2/ 8	7.23E+02	1.30E+01	#REF!	1.06E+04	NO:3
Toluene	108-88-3	5.41E-01	1.15E+00	4/ 9	9.56E+01	1.15E+00	#REF!	4.09E+07	NO:3
Radionuclides (pCi/g)									
Actinium-227	14952-40-0(+D)	7.00E-02	1.10E-01	4/ 136	1.14E-01	1.10E-01	1.10E-01	5.02E-01	NO:1
Cesium-137	10045-97-3(+D)	2.00E-02	5.00E-01	79/ 148	5.82E-02	5.82E-02	4.20E-01	3.56E-01	NO:4
Cobalt-60	10198-40-0	3.00E-02	3.00E-02	1/ 146	2.18E-02	2.18E-02	---	7.35E-02	NO:1
Lead-210	14255-04-0(+D)	1.50E-01	2.05E+00	102/ 145	6.23E-01	6.23E-01	1.20E+00	1.19E+00	NO:4
Plutonium-238	**13981-16-3**	**1.24E-02**	**4.10E+01**	**70/ 428**	**2.90E+01**	**2.90E+01**	**1.30E-01**	**1.13E+01**	**YES**
Plutonium-239/240	OER-100-70	3.70E-02	3.70E-02	1/ 9	7.16E-01	3.70E-02	1.80E-01	---	NO:2
Potassium-40	13966-00-2	1.80E+01	2.31E+01	3/ 3	2.78E+01	2.31E+01	3.70E+01	1.12E+00	NO:2
Radium-226	13982-63-3(+D)	1.30E-01	3.53E+00	140/ 149	1.31E+00	1.31E+00	2.00E+00	1.05E-01	NO:4
Thorium-227	15623-47-9	1.80E-01	1.80E-01	1/ 2	---	1.80E-01	---	2.17E+00	NO:3
Thorium-228	14274-82-9(+D)	2.81E-01	9.00E-01	10/ 12	5.82E+01	9.00E-01	1.50E+00	1.14E-01	NO:2
Thorium-230 +D	**14269-63-7(+D)**	**3.28E-01**	**2.32E+00**	**12/ 150**	**2.76E+00**	**2.32E+00**	**1.90E+00**	**5.86E-01**	**YES**
Thorium-232	7440-29-1(+D)	4.00E-02	2.30E+00	157/ 452	1.12E+00	1.12E+00	1.40E+00	---	NO:4
Tritium	10028-17-8p	1.87E-01	3.91E+00	4/ 4	3.33E+09	3.91E+00	1.60E+00	1.45E+04	NO:3
Uranium-233/234	13966-29-5	1.80E-01	6.70E-01	2/ 2	---	6.70E-01	1.10E+00	5.52E-01	NO:2
Uranium-234	13966-29-5	2.31E-01	7.23E-01	5/ 5	1.37E+00	7.23E-01	1.10E+00	1.97E+01	NO:2
Uranium-235	15117-96-1(+D)	2.40E-02	4.75E-02	2/ 9	4.99E+01	4.75E-02	1.10E-01	1.55E+00	NO:2
Uranium-238	7440-61-1(+D)	2.32E-01	8.85E-01	8/ 11	3.51E+01	8.85E-01	1.20E+00	5.22E+00	NO:2

CAS - Chemical Abstract Service
COPC - Constituents of Potential Concern
EPC - Exposure Point Concentration
mg/kg - milligram per kilogram
ug/kg - microgram per kilogram
pCi/g - picocurie per gram
RBGV - Risk Based Guideline Value
UCL - Upper Confidence Limit
--- not applicable, not available, or not calculated due to insufficient toxicity data

NO:1 - <5% Detects
NO:2 - Max<Background
NO:3 - Max< Risk Based Guideline Value
NO:4 - EPC< Background
NO:5 - Essential Human Nutrient

Bold text indicates COPCs selected

Background values are base on the Operable Unit 9 Background Soils Investigation Chemistry Report (DOE 1994) or, in the case of nuclides with short half lives (Ac-227 Pb-210, and Pa-231) are based on the parent nuclide background and assumption of equilibrium with the parent nuclide.

Table 7:

Identification of Constituents of Potential Concern for the Construction Worker Exposed to Surface and Subsurface Soil in MCP Parcel 7

Analyte (SRC)	CAS Number	Minimum Concentration	Maximum Concentration	Detection Frequency	95% UCL	EPC	Background Value	10^{-6} RBGV	COPC?
Inorganics (mg/kg)									
Aluminum	7429-90-5	7.45E+01	3.03E+05	491/ 492	1.30E+04	1.30E+04	1.90E+04	2.08E+04	NO:4
Antimony	**7440-36-0**	**1.90E-01**	**3.37E+01**	**122/ 476**	**7.23E-01**	**7.23E-01**	---	**8.52E+00**	**YES**
Arsenic	7440-38-2	1.00E+00	1.46E+01	493/ 529	5.59E+00	5.59E+00	8.60E+00	1.85E+00	NO:4
Barium	7440-39-3	1.90E-01	5.64E+02	497/ 527	6.36E+01	6.36E+01	1.80E+02	1.47E+03	NO:3
Beryllium	7440-41-7	9.00E-02	1.80E+00	463/ 493	6.46E-01	6.46E-01	1.30E+00	4.21E+01	NO:3
Bismuth	7440-69-9	4.60E-01	1.41E+02	37/ 134	1.76E+01	1.76E+01	3.84E+01	---	NO:4
Cadmium	7440-43-9	4.00E-02	7.30E+00	341/ 507	4.49E-01	4.49E-01	2.10E+00	---	NO:4
Calcium	7440-70-2	1.19E+03	3.09E+05	499/ 522	1.98E+05	1.98E+05	3.10E+05	---	NO:2
Cerium	7440-45-1	1.27E+01	7.41E+01	21/ 38	3.31E+01	3.31E+01	---	3.85E+04	NO:3
Chromium	7440-47-3	1.00E-01	7.57E+01	492/ 520	1.61E+01	1.61E+01	2.00E+01	---	NO:4
Cobalt	7440-48-4	6.00E-02	2.89E+01	480/ 516	8.66E+00	8.66E+00	1.90E+01	3.83E+02	NO:3
Copper	7440-50-8	1.00E-01	4.30E+02	494/ 516	1.73E+01	1.73E+01	2.60E+01	8.52E+02	NO:3
Cyanide	57-12-5	1.10E-01	3.14E+01	14/ 184	5.90E-01	5.90E-01	---	4.26E+02	NO:3
Dysprosium	**7429-91-6**	**2.40E+00**	**5.90E+00**	**10/ 25**	**3.05E+00**	**3.05E+00**	---	---	**YES**
Erbium	**7440-52-0**	**6.60E+00**	**7.90E+00**	**6/ 38**	**4.78E+00**	**4.78E+00**	---	---	**YES**
Europium	**7440-53-1**	**8.80E-01**	**2.00E+00**	**16/ 24**	**1.31E+00**	**1.31E+00**	---	---	**YES**
Gadolinium	**7440-54-2**	**7.10E+00**	**8.83E+01**	**9/ 38**	**1.95E+01**	**1.95E+01**	---	---	**YES**
Holmium	**7440-60-0**	**2.20E+00**	**2.40E+00**	**2/ 38**	**1.47E+00**	**1.47E+00**	---	---	**YES**
Iron	7439-89-6	1.42E+02	1.28E+05	501/ 523	5.19E+04	5.19E+04	3.50E+04	---	NO:5
Lanthanum	**7439-91-0**	**5.50E+00**	**1.57E+01**	**10/ 38**	**9.59E+00**	**9.59E+00**	---	---	**YES**
Lead	7439-92-1	1.30E+00	8.83E+01	502/ 532	1.19E+01	1.19E+01	4.80E+01	---	NO:4
Lithium	**7439-93-2**	**1.40E-01**	**4.96E+01**	**410/ 446**	**2.25E+01**	**2.25E+01**	---	---	**YES**
Lutetium	**7439-94-3**	**5.00E-01**	**9.20E-01**	**4/ 24**	**3.87E-01**	**3.87E-01**	---	---	**YES**
Magnesium	7439-95-4	4.22E+01	1.46E+05	501/ 523	4.08E+04	4.08E+04	4.00E+04	---	NO:5
Manganese	7439-96-5	9.50E+00	1.79E+03	488/ 510	8.95E+02	8.95E+02	1.40E+03	---	NO:4
Mercury	7439-97-6	1.00E-02	2.60E+00	157/ 515	5.56E-02	5.56E-02	1.50E-01	5.78E+04	NO:3
Molybdenum	7439-98-7	1.90E-01	1.08E+01	57/ 117	2.47E+00	2.47E+00	2.72E+01	1.06E+02	NO:2
Neodymium	**7440-00-8**	**1.32E+01**	**4.61E+01**	**31/ 38**	**2.44E+01**	**2.44E+01**	---	---	**YES**
Nickel	7440-02-0	1.10E-01	5.67E+01	485/ 517	1.84E+01	1.84E+01	3.20E+01	4.26E+02	NO:3
Potassium	7440-09-7	2.26E+01	6.49E+03	483/ 500	2.89E+03	2.89E+03	1.90E+03	---	NO:5
Praseodymium	**7440-10-0**	**7.30E+00**	**1.21E+02**	**7/ 38**	**2.34E+01**	**2.34E+01**	---	---	**YES**
Samarium	**7440-19-9**	**1.81E+01**	**2.04E+01**	**3/ 38**	**1.19E+01**	**1.19E+01**	---	---	**YES**
Selenium	7782-49-2	2.40E-01	1.20E+00	60/ 494	3.17E-01	3.17E-01	5.90E-01	1.06E+02	NO:3
[illegible]er	7440-22-4	7.00E-02	1.85E+01	93/ 507	5.45E-01	5.45E-01	1.70E+00	1.06E+02	NO:3
[illegible]dium	7440-23-5	2.40E+00	4.08E+03	483/ 523	4.36E+02	4.36E+02	2.40E+02	---	NO:5
[illegible]antalum	**7440-25-7**	**2.01E+02**	**4.59E+02**	**7/ 31**	**1.41E+03**	**4.59E+02**	---	---	**YES**
Terbium	**7440-27-9**	**1.37E+01**	**1.49E+01**	**2/ 38**	**8.54E+00**	**8.54E+00**	---	---	**YES**
Thallium	7440-28-0	1.70E-01	1.30E+00	54/ 517	3.36E-01	3.36E-01	4.60E-01	1.41E+00	NO:3
Tin	7440-31-5	6.40E-01	6.30E+00	38/ 141	3.40E+00	3.40E+00	2.09E+01	1.28E+04	NO:2
Vanadium	7440-62-2	9.00E-02	5.57E+01	491/ 516	1.99E+01	1.99E+01	2.50E+01	2.13E+01	NO:4
Ytterbium	**7440-64-4**	**3.30E+00**	**3.90E+00**	**4/ 38**	**2.48E+00**	**2.48E+00**	---	---	**YES**
Zinc	7440-66-6	4.70E-01	3.49E+03	498/ 520	6.79E+01	6.79E+01	1.40E+02	6.39E+03	NO:3
Explosives (ug/kg)									
2,6-Dinitrotoluene	606-20-2	5.00E+02	5.00E+02	1/ 516	2.20E+02	2.20E+02	---	3.54E+03	NO:1
HMX	2691-41-0	2.40E+02	2.40E+02	2/ 84	1.36E+03	2.40E+02	---	1.06E+06	NO:1
RDX	121-82-4	1.90E+02	1.90E+02	1/ 83	1.00E+03	1.90E+02	---	2.71E+04	NO:1
Pesticides and/or PCBs (ug/kg)									
4,4'-DDD	72-54-8	1.40E-01	1.40E-01	1/ 389	3.90E+00	1.40E-01	---	1.24E+04	NO:1
4,4'-DDE	72-55-9	7.90E-02	5.60E+00	6/ 389	3.64E+00	3.64E+00	---	8.77E+03	NO:1
4,4'-DDT	50-29-3	2.90E-01	7.90E+00	5/ 389	3.88E+00	3.88E+00	---	8.12E+03	NO:1
Aldrin	309-00-2	1.70E-01	2.20E-01	3/ 389	1.83E+00	2.20E-01	---	1.42E+02	NO:1
Alpha Chlordane	5103-71-9	1.00E-01	4.20E+01	9/ 367	7.83E+00	7.83E+00	---	7.61E+03	NO:1
Alpha-BHC	319-84-6	8.80E-01	3.00E+00	2/ 389	1.84E+00	1.84E+00	---	4.73E+02	NO:1
Aroclor-1248	12672-29-6	4.10E+01	1.70E+03	7/ 390	3.14E+01	3.14E+01	---	---	NO:1
Aroclor-1254	11097-69-1	1.40E+01	2.00E+02	10/ 390	4.05E+01	4.05E+01	---	3.20E+02	NO:1
Aroclor-1260	11096-82-5	4.00E+01	9.60E+01	3/ 390	3.94E+01	3.94E+01	---	---	NO:1
Beta-BHC	319-85-7	1.20E+01	1.20E+01	1/ 374	1.63E+00	1.63E+00	---	1.66E+03	NO:1
Chlordane	57-74-9	1.80E+01	4.00E+01	2/ 17	1.03E+01	4.00E+01	---	7.61E+03	NO:3
Delta-BHC	319-86-8	1.90E-01	1.50E+00	2/ 388	2.01E+00	1.50E+00	---	---	NO:1
Dieldrin	60-57-1	1.70E-01	7.90E-01	3/ 388	3.67E+00	7.90E-01	---	1.86E+02	NO:1
Endosulfan I	959-98-8	1.40E+00	1.70E+01	3/ 389	2.18E+00	2.18E+00	---	---	NO:1
Endosulfan II	33213-65-9	1.50E-01	2.50E+00	2/ 389	3.56E+00	2.50E+00	---	---	NO:1
Endosulfan Sulfate	1031-07-8	7.30E-01	7.30E-01	1/ 388	4.68E+00	7.30E-01	---	---	NO:1
Endrin	72-20-8	1.60E-01	1.30E+00	5/ 389	3.62E+00	1.30E+00	---	6.39E+03	NO:1
Endrin Aldehyde	7421-93-4	5.20E-01	8.40E-01	3/ 342	2.49E+00	8.40E-01	---	---	NO:1
Endrin Ketone	53494-70-5	1.00E-01	2.00E+01	4/ 388	4.71E+00	4.71E+00	---	---	NO:1
Gamma Chlordane	5103-74-2	6.60E-02	5.00E+01	14/ 372	7.84E+00	7.84E+00	---	7.61E+03	NO:1
Heptachlor	76-44-8	9.30E-02	2.90E+00	4/ 389	1.83E+00	1.83E+00	---	6.62E+02	NO:1
Heptachlor Epoxide	1024-57-3	5.60E-01	5.60E-01	1/ 389	2.80E+00	5.60E-01	---	2.77E+02	NO:1
Methoxychlor	72-43-5	7.80E-01	1.12E+01	4/ 388	2.15E+01	1.12E+01	---	1.06E+05	NO:1
[illegible]i-Volatile Organic Compounds (ug/kg)									
2-Dichlorobenzene	95-50-1	1.30E+01	1.30E+01	1/ 520	2.31E+02	1.30E+01	---	1.55E+06	NO:1
2,4,6-Tribromophenol	**118-79-6**	**1.70E+03**	**1.70E+03**	**1/ 1**	---	**1.70E+03**	---	---	**YES**
2-Fluorobiphenyl	**321-60-8**	**1.40E+03**	**1.40E+03**	**1/ 1**	---	**1.40E+03**	---	---	**YES**
2-Fluorophenol	**367-12-4**	**1.90E+03**	**1.90E+03**	**1/ 1**	---	**1.90E+03**	---	---	**YES**
2-Methylnaphthalene	91-57-6	2.00E+01	2.70E+03	28/ 517	2.28E+02	2.28E+02	---	8.52E+04	NO:3

Table 7:

Identification of Constituents of Potential Concern for the Construction Worker Exposed to Surface and Subsurface Soil in MCP Parcel 7

Analyte (SRC)	CAS Number	Minimum Concentration	Maximum Concentration	Detection Frequency	95% UCL	EPC	Background Value	10^{-6} RBGV	COPC?
4-Nitroaniline	100-01-6	9.20E+02	9.20E+02	1/ 515	6.63E+02	6.63E+02	---	5.16E+04	NO:1
Acenaphthene	83-32-9	1.90E+01	2.80E+03	59/ 517	2.32E+02	2.32E+02	---	9.76E+05	NO:3
Acenaphthylene	208-96-8	2.40E+01	6.10E+02	14/ 517	2.24E+02	2.24E+02	---	---	NO:1
Anthracene	120-12-7	1.80E+01	4.90E+03	88/ 517	2.39E+02	2.39E+02	---	4.88E+06	NO:3
Benzo(a)anthracene	**56-55-3**	**1.70E+01**	**5.70E+03**	**143/ 517**	**2.57E+02**	**2.57E+02**	**---**	**3.12E+03**	**YES**
Benzo(a)pyrene	**50-32-8**	**2.20E+01**	**5.10E+03**	**135/ 518**	**2.53E+02**	**2.53E+02**	**---**	**3.12E+02**	**YES**
Benzo(b)fluoranthene	**205-99-2**	**1.70E+01**	**5.00E+03**	**140/ 517**	**2.50E+02**	**2.50E+02**	**---**	**3.12E+03**	**YES**
Benzo(g,h,i)perylene	**191-24-2**	**1.30E+01**	**3.50E+03**	**113/ 517**	**2.38E+02**	**2.38E+02**	**---**	**---**	**YES**
Benzo(k)fluoranthene	207-08-9	2.00E+01	4.80E+03	132/ 517	2.58E+02	2.58E+02	---	3.12E+04	NO:3
Benzoic Acid	65-85-0	4.60E+01	1.80E+02	13/ 138	1.63E+03	1.80E+02	---	6.88E+07	NO:3
Bis(2-ethylhexyl)phthalate	117-81-7	1.90E+01	1.20E+04	188/ 515	2.50E+02	2.50E+02	---	1.72E+05	NO:3
Butyl Benzyl Phthalate	85-68-7	5.80E+01	1.00E+03	13/ 515	2.29E+02	2.29E+02	---	3.44E+06	NO:1
Carbazole	86-74-8	1.90E+01	1.50E+03	52/ 467	2.07E+02	2.07E+02	---	1.20E+05	NO:3
Chrysene	218-01-9	1.90E+01	6.30E+03	148/ 517	2.62E+02	2.62E+02	---	3.12E+05	NO:3
Di-n-butyl Phthalate	84-74-2	1.90E+01	5.30E+03	115/ 515	2.41E+02	2.41E+02	---	1.72E+06	NO:3
Di-n-octyl Phthalate	117-84-0	2.20E+01	8.20E+01	12/ 515	2.23E+02	8.20E+01	---	8.52E+05	NO:1
Dibenz(a,h)anthracene	**53-70-3**	**2.00E+01**	**9.30E+02**	**46/ 517**	**2.24E+02**	**2.24E+02**	**---**	**3.12E+02**	**YES**
Dibenzofuran	132-64-9	1.80E+01	9.90E+02	39/ 517	2.25E+02	2.25E+02	---	3.44E+04	NO:3
Diethyl Phthalate	84-66-2	1.20E+01	1.60E+03	23/ 515	2.25E+02	2.25E+02	---	1.38E+07	NO:1
Dimethyl Phthalate	131-11-3	3.90E+02	3.90E+02	1/ 515	2.24E+02	2.24E+02	---	2.13E+08	NO:1
Fluoranthene	206-44-0	2.00E+01	1.50E+04	184/ 516	3.23E+02	3.23E+02	---	6.51E+05	NO:3
Fluorene	86-73-7	1.90E+01	4.50E+03	51/ 517	2.32E+02	2.32E+02	---	6.51E+05	NO:3
Hexachlorobenzene	118-74-1	7.40E+02	7.40E+02	1/ 519	2.24E+02	2.24E+02	---	1.51E+03	NO:1
Hexachlorobutadiene	87-68-3	7.40E+02	7.40E+02	1/ 519	2.24E+02	2.24E+02	---	5.16E+03	NO:1
Hexachlorocyclopentadiene	77-47-4	7.40E+02	7.40E+02	1/ 515	2.24E+02	2.24E+02	---	1.03E+05	NO:1
Hexachloroethane	67-72-1	7.40E+02	7.40E+02	1/ 519	2.24E+02	2.24E+02	---	1.72E+04	NO:1
Indeno(1,2,3-cd)pyrene	193-39-5	1.70E+01	3.10E+03	103/ 515	2.36E+02	2.36E+02	---	3.12E+03	NO:3
Isophorone	78-59-1	1.30E+01	4.80E+01	4/ 515	2.25E+02	4.80E+01	---	2.54E+06	NO:1
N-Nitrosodiphenylamine	86-30-6	2.80E+02	2.80E+02	1/ 515	2.22E+02	2.22E+02	---	3.44E+05	NO:1
Nitrobenzene-d5	**4165-60-0**	**1.30E+03**	**1.30E+03**	**1/ 1**	**---**	**1.30E+03**	**---**	**---**	**YES**
P-Terphenyl-d14	**1718-51-0**	**1.40E+03**	**1.40E+03**	**1/ 1**	**---**	**1.40E+03**	**---**	**---**	**YES**
Pentachlorophenol	87-86-5	9.40E+01	9.40E+01	1/ 518	6.62E+02	9.40E+01	---	1.56E+04	NO:1
Phenanthrene	**85-01-8**	**1.80E+01**	**1.20E+04**	**176/ 517**	**2.99E+02**	**2.99E+02**	**---**	**---**	**YES**
Phenol	108-95-2	2.00E+01	1.50E+02	7/ 514	2.25E+02	1.50E+02	---	5.16E+06	NO:1
enol-d5	**4165-62-2**	**1.90E+03**	**1.90E+03**	**1/ 1**	**---**	**1.90E+03**	**---**	**---**	**YES**
ene	129-00-0	1.80E+01	2.10E+04	187/ 516	3.18E+02	3.18E+02	---	4.88E+05	NO:3
Volatile Organic Compounds (ug/kg)									
1,1,1-Trichloroethane	71-55-6	1.00E+00	8.00E+00	8/ 969	3.65E+00	3.65E+00	---	6.84E+05	NO:1
1,1,2,2-Tetrachloroethane	79-34-5	6.00E-01	3.00E+00	4/ 968	3.64E+00	3.00E+00	---	3.50E+03	NO:1
1,1,2-Trichloroethane	79-00-5	1.00E+00	1.00E+00	2/ 968	3.64E+00	1.00E+00	---	8.19E+03	NO:1
1,1-Dichloroethane	75-34-3	6.00E+00	6.00E+00	1/ 969	3.65E+00	3.65E+00	---	1.93E+05	NO:1
1,1-Dichloroethene	75-35-4	3.00E+00	5.30E+01	4/ 973	3.69E+00	3.69E+00	---	4.20E+04	NO:1
1,2-Dichloroethane	107-06-2	2.00E+00	2.00E+00	1/ 973	3.65E+00	2.00E+00	---	3.45E+03	NO:1
1,2-Dichloroethene	540-59-0	9.00E-02	1.10E+04	50/ 962	5.36E+00	5.36E+00	---	1.92E+05	NO:3
1,2-Dichloropropane	78-87-5	1.00E+00	2.00E+00	2/ 969	3.64E+00	2.00E+00	---	2.08E+03	NO:1
1,2-Diethylbenzene	135-01-3	1.30E+01	1.30E+01	1/ 398	5.42E+00	5.42E+00	---	---	NO:1
1,2-cis-Dichloroethene (DCE)	156-59-2	2.00E+01	3.20E+03	15/ 28	1.59E+04	3.20E+03	---	2.13E+05	NO:3
1,3-Dichlorobenzene	541-73-1	1.00E+00	1.60E+01	2/ 520	2.34E+02	1.60E+01	---	5.16E+05	NO:1
1,3-cis-Dichloropropene	10061-01-5	8.00E-01	8.00E-01	1/ 762	3.76E+00	8.00E-01	---	---	NO:1
1,3-trans-Dichloropropene	10061-02-6	9.00E-01	9.00E-01	1/ 969	3.64E+00	9.00E-01	---	---	NO:1
1,4-Dichlorobenzene	106-46-7	1.30E+01	7.90E+01	3/ 524	2.28E+02	7.90E+01	---	1.00E+05	NO:1
2-Butanone	78-93-3	1.00E+00	2.50E+02	214/ 972	7.71E+00	7.71E+00	---	6.65E+06	NO:3
2-Hexanone	591-78-6	2.00E+00	1.30E+01	8/ 970	6.48E+00	6.48E+00	---	---	NO:1
4-Methyl-2-pentanone	108-10-1	8.00E-01	2.00E+01	20/ 970	6.51E+00	6.51E+00	---	1.47E+06	NO:1
Acetone	67-64-1	2.00E+00	3.40E+04	532/ 968	2.17E+01	2.17E+01	---	1.92E+07	NO:3
Acetonitrile	75-05-8	3.20E+01	1.20E+02	3/ 387	6.63E+01	6.63E+01	---	2.00E+05	NO:1
Acrylonitrile	107-13-1	4.00E+00	1.30E+01	3/ 399	6.73E+01	1.30E+01	---	1.82E+03	NO:1
Benzene	71-43-2	6.00E-01	9.00E+00	12/ 974	3.62E+00	3.62E+00	---	6.46E+03	NO:1
Bromodichloromethane	75-27-4	6.00E-01	6.00E-01	1/ 969	3.64E+00	6.00E-01	---	4.81E+04	NO:1
Bromoform	75-25-2	8.00E-01	1.00E+00	2/ 969	3.64E+00	1.00E+00	---	3.77E+05	NO:1
Carbon Disulfide	75-15-0	1.00E+00	3.70E+01	88/ 969	3.66E+00	3.66E+00	---	1.16E+05	NO:3
Carbon Tetrachloride	56-23-5	1.00E+00	2.00E+00	4/ 973	3.64E+00	2.00E+00	---	2.44E+03	NO:1
Chlorobenzene	108-90-7	5.00E-01	5.30E+03	15/ 974	3.83E+00	3.83E+00	---	4.85E+04	NO:1
Chloromethane	74-87-3	4.00E-01	1.10E+01	2/ 763	6.56E+00	6.56E+00	---	1.59E+04	NO:1
Dibromochloromethane	124-48-1	7.00E-01	7.00E-01	1/ 969	3.64E+00	7.00E-01	---	3.55E+04	NO:1
Dichloromethane (Methylene Chloride)	75-09-2	1.00E+00	3.00E+04	756/ 970	2.31E+01	2.31E+01	---	8.25E+04	NO:3
Ethylbenzene	100-41-4	1.00E+00	2.80E+02	18/ 971	3.62E+00	3.62E+00	---	7.80E+04	NO:1
FREON-113	76-13-1	3.00E+00	2.10E+01	4/ 572	3.73E+00	3.73E+00	---	6.93E+06	NO:1
Hexane	110-54-3	1.00E+00	4.20E+01	71/ 566	5.42E+00	5.42E+00	---	4.08E+04	NO:3
Isopropyl Benzene	98-82-8	2.00E+00	2.00E+00	1/ 5	7.08E+01	2.00E+00	---	5.28E+04	NO:3
Methyl Cyclohexane	**108-87-2**	**5.00E+00**	**6.00E+00**	**2/ 5**	**6.19E+00**	**6.00E+00**	**---**	**---**	**YES**
Naphthalene	91-20-3	2.40E+01	1.90E+03	26/ 517	2.25E+02	2.25E+02	---	3.44E+05	NO:3
Styrene	100-42-5	1.00E-01	2.80E+01	16/ 969	3.62E+00	3.62E+00	---	1.46E+06	NO:1
achloroethene (PCE)	127-18-4	5.00E-01	8.00E+00	24/ 973	3.62E+00	3.62E+00	---	3.66E+03	NO:1
uene	108-88-3	3.00E-01	3.20E+01	144/ 971	3.51E+00	3.51E+00	---	2.00E+05	NO:3
ichloroethylene (TCE)	**79-01-6**	**8.00E-01**	**2.30E+04**	**81/ 996**	**5.54E+00**	**5.54E+00**	**---**	**4.38E+02**	**YES**
Trichloromethane (Chloroform)	67-66-3	4.00E-01	6.70E+01	15/ 972	3.69E+00	3.69E+00	---	2.56E+03	NO:1
Vinyl Chloride	75-01-4	1.00E+00	4.40E+02	22/ 996	7.71E+00	7.71E+00	---	1.07E+03	NO:1
Xylenes, Total	1330-20-7	5.00E-01	2.70E+02	35/ 971	3.72E+00	3.72E+00	---	6.42E+04	NO:1

Table 7:

Identification of Constituents of Potential Concern for the Construction Worker Exposed to Surface and Subsurface Soil in MCP Parcel 7

Analyte (SRC)	CAS Number	Minimum Concentration	Maximum Concentration	Detection Frequency	95% UCL	EPC	Background Value	10^{-6} RBGV	COPC?
Radionuclides (pCi/g)									
Actinium-227	**14952-40-0(+D)**	**6.00E-02**	**3.10E+00**	**177/1914**	**2.12E-01**	**2.12E-01**	**1.10E-01**	**4.56E-01**	**YES**
Actinium-228	14331-83-0	3.00E-01	1.83E+00	87/ 87	1.02E+00	1.02E+00	---	2.17E-01	NO:6
Americium-241	14596-10-2	2.00E-02	2.60E+00	103/2540	7.14E-02	7.14E-02	---	6.32E+00	NO:1
Bismuth-207	13982-38-2	1.00E-02	2.00E-01	14/ 623	3.24E-02	3.24E-02	---	1.39E-01	NO:1
Bismuth-210	14331-79-4	1.00E-02	1.00E-01	7/ 148	5.11E-02	5.11E-02	---	5.52E+01	NO:1
Bismuth-210M	BI-210M	4.70E-02	4.70E-02	1/ 581	4.20E-02	4.20E-02	---	---	NO:1
Bismuth-212	14913-49-6	6.60E-01	1.74E+00	18/ 18	1.09E+00	1.74E+00	---	1.11E+00	NO:6
Bismuth-214	14733-03-0	2.20E-01	1.40E+00	89/ 89	6.92E-01	6.92E-01	1.20E+00	1.31E-01	NO:6
Cerium-141	13967-74-3	1.61E+00	1.61E+00	1/ 1	---	1.61E+00	---	4.18E+00	NO:3
Cerium-144	14762-78-8	5.12E-01	5.12E-01	1/ 1	---	5.12E-01	---	8.91E+00	NO:3
Cerium-144/Praseodymium	14762-78-8(+D)	1.02E+00	1.02E+00	1/ 1	---	1.02E+00	---	3.23E+00	NO:3
Cesium-137	10045-97-3(+D)	1.00E-02	3.10E+01	545/2614	5.21E-02	5.21E-02	4.20E-01	3.82E-01	NO:4
Cobalt-60	10198-40-0	1.00E-02	9.19E-02	80/2514	3.22E-02	3.22E-02	---	7.91E-02	NO:1
Lead-210	14255-04-0	1.40E-01	3.97E+00	770/1932	6.48E-01	6.48E-01	1.20E+00	9.05E-01	NO:6
Lead-212	15092-94-1	8.50E-02	2.42E+00	204/ 204	8.46E-01	8.46E-01	---	1.79E+00	NO:6
Lead-214	15067-28-4	1.33E-01	1.66E+00	191/ 191	8.06E-01	8.06E-01	1.20E+00	1.00E+00	NO:6
Plutonium-238	**13981-16-3**	**3.10E-03**	**4.94E+02**	**2083/5827**	**5.94E+01**	**5.94E+01**	**1.30E-01**	**6.12E+00**	**YES**
Plutonium-239	15117-48-3	2.20E-02	3.20E-02	3/ 5	1.42E-01	3.20E-02	---	6.03E+00	NO:3
Plutonium-239/240	OER-100-70	1.60E-03	7.26E+00	422/1303	3.59E-02	3.59E-02	1.80E-01	---	NO:4
Plutonium-242	13982-10-0	4.26E-03	8.48E-03	2/ 6	1.03E-02	8.48E-03	---	6.33E+00	NO:3
Potassium-40	13966-00-2	1.15E+00	4.26E+01	720/ 749	2.28E+01	2.28E+01	3.70E+01	1.18E+00	NO:4
Protactinium-231	14331-85-2	6.30E-01	1.87E+00	2/ 441	9.09E-01	9.09E-01	---	2.73E+00	NO:1
Radium-224	13233-32-4	3.30E-01	1.94E+00	61/ 61	1.10E+00	1.10E+00	---	3.24E+00	NO:3
Radium-226	13982-63-3(+D)	1.50E-01	4.06E+00	2195/2527	1.18E+00	1.18E+00	2.00E+00	1.10E-01	NO:4
Radium-228 +D	**15262-20-1(+D)**	**2.12E-01**	**1.32E+01**	**502/ 515**	**1.06E+00**	**1.06E+00**	---	**1.67E-01**	**YES**
Strontium-90	10098-97-2(+D)	1.06E-01	1.58E+00	18/ 127	2.98E-01	2.98E-01	7.20E-01	9.40E+00	NO:3
Thallium-208	14913-50-9	4.00E-02	8.00E-01	149/ 150	3.34E-01	3.34E-01	---	5.59E-02	NO:6
Thorium-227	15623-47-9	2.30E-02	4.21E-01	36/ 37	1.82E-01	1.82E-01	---	2.14E+00	NO:3
Thorium-228	14274-82-9(+D)	7.30E-03	4.10E+01	1232/1508	1.84E+00	1.84E+00	1.50E+00	1.19E-01	NO:6
Thorium-230	14269-63-7(+D)	2.06E-02	1.32E+01	1204/2931	2.72E+00	2.72E+00	1.90E+00	9.26E-02	NO:6
Thorium-232	7440-29-1(+D)	6.80E-03	2.92E+01	3374/5057	8.10E-01	8.10E-01	1.40E+00	6.90E-02	NO:4
Thorium-234	15065-10-8	6.40E-01	2.20E+00	10/ 10	1.73E+00	2.20E+00	---	1.76E+01	NO:3
Tritium	10028-17-8p	1.00E-02	5.85E+01	221/ 318	2.44E+00	2.44E+00	1.60E+00	7.58E+03	NO:3
Uranium-233/234	**13966-29-5**	**7.34E-01**	**1.39E+00**	**4/ 4**	**2.24E+00**	**1.39E+00**	---	**4.82E-01**	**YES**
Uranium-234	13966-29-5	7.05E-02	1.70E+00	505/ 545	5.70E-01	5.70E-01	1.10E+00	1.05E+01	NO:3
Uranium-235	15117-96-1(+D)	4.00E-03	2.50E-01	206/ 742	1.29E-01	1.29E-01	1.10E-01	1.54E+00	NO:3
Uranium-235/236	15117-96-1	2.02E-02	5.38E-02	10/ 37	3.88E-02	3.88E-02	---	3.10E-01	NO:3
Uranium-238	7440-61-1(+D)	5.62E-02	2.20E+00	569/1031	2.04E+00	2.04E+00	1.20E+00	4.13E+00	NO:3

CAS - Chemical Abstract Service
COPC - Constituents of Potential Concern
EPC - Exposure Point Concentration
mg/kg - milligram per kilogram
ug/kg - microgram per kilogram

NO:1 - <5% Detects
NO:2 - Max<Background
NO:3 - Max< Risk Based Guideline Value
NO:4 - EPC< Background
NO:5 - Essential Human Nutrient
NO:6 - Part of a chain which has members above that are COPCs
Bold text indicates COPCs selected

--- not applicable, not available, or not calculated due to insufficient toxicity data

Lithium note: The RREM background value for lithium is 26 mg/kg and not 0.00 mg/kg as presented in this table. However, since the analyte would still become a COPC the value in the table was not modified.

Background values are base on the Operable Unit 9 Background Soils Investigation Chemistry Report (DOE 1994) or, in the case of nuclides with short half lives (Ac-227 Pb-210, and Pa-231) are based on the parent nuclide background and assumption of equilibrium with the parent nuclide.

R-228 note: A background value has not been calculated for Ra-228 and why none is provided in the table above. However, if Ra-228's parent nuclide background is considered (Th-232 at 1.4 pCi/g), Ra-228 would not be brought forward as a COPC. To be consistent with previous RREs, Ra-228 was presented with no background value and was brought forward as a COPC

Table 8:

Identification of Constituents of Potential Concern for the Site
Employee Exposed to Surface Soil in Parcel 7

Analyte (SRC)	CAS Number	Minimum Concentration	Maximum Concentration	Detection Frequency	95% UCL	EPC	Background Value	RBGV	COPC?
Inorganics (mg/kg)									
Aluminum	7429-90-5	6.59E+02	1.57E+05	84/ 84	1.21E+04	1.21E+04	1.90E+04	1.69E+05	NO:3
Antimony	7440-36-0	2.30E-01	2.60E+00	21/ 74	2.37E+00	2.37E+00	0.00E+00	8.18E+01	NO:3
Arsenic	7440-38-2	1.20E+00	1.46E+01	83/ 89	5.58E+00	5.58E+00	8.60E+00	2.26E+00	NO:4
Barium	7440-39-3	6.10E+00	4.24E+02	80/ 89	7.06E+01	7.06E+01	1.80E+02	1.25E+04	NO:3
Beryllium	7440-41-7	9.00E-02	1.10E+00	63/ 85	8.67E-01	8.67E-01	1.30E+00	3.70E+02	NO:2
Bismuth	7440-69-9	4.60E-01	1.41E+02	12/ 60	7.32E+00	7.32E+00	3.84E+01	---	NO:4
Cadmium	7440-43-9	1.00E-01	6.80E+00	36/ 83	1.57E+00	1.57E+00	2.10E+00	0.00E+00	NO:4
Calcium	7440-70-2	4.93E+03	3.09E+05	84/ 85	1.94E+05	1.94E+05	3.10E+05	---	NO:2
Cerium	7440-45-1	1.27E+01	4.47E+01	6/ 9	4.63E+01	4.47E+01	0.00E+00	3.85E+04	NO:3
Chromium	7440-47-3	1.30E+00	5.78E+01	82/ 86	1.42E+01	1.42E+01	2.00E+01	---	NO:4
Cobalt	7440-48-4	8.50E-01	2.04E+01	71/ 83	8.55E+00	8.55E+00	1.90E+01	1.93E+03	NO:3
Copper	7440-50-8	1.30E+00	4.80E+01	82/ 83	1.66E+01	1.66E+01	2.60E+01	8.18E+03	NO:3
Cyanide	57-12-5	2.40E-01	2.70E-01	2/ 73	5.17E-01	2.70E-01	0.00E+00	4.09E+03	NO:1
Dysprosium	**7429-91-6**	**4.50E+00**	**4.50E+00**	**1/ 6**	**4.58E+00**	**4.50E+00**	0.00E+00	---	**YES**
Erbium	**7440-52-0**	**7.20E+00**	**7.20E+00**	**1/ 9**	**5.78E+00**	**7.20E+00**	0.00E+00	---	**YES**
Europium	**7440-53-1**	**1.40E+00**	**1.60E+00**	**2/ 6**	**2.13E+00**	**1.60E+00**	0.00E+00	---	**YES**
Gadolinium	**7440-54-2**	**2.89E+01**	**6.59E+01**	**3/ 9**	**2.02E+02**	**6.59E+01**	0.00E+00	---	**YES**
Iron	7439-89-6	2.33E+03	3.88E+04	85/ 86	2.64E+04	2.64E+04	3.50E+04	---	NO:4
Lanthanum	**7439-91-0**	**7.20E+00**	**1.57E+01**	**3/ 9**	**1.49E+01**	**1.57E+01**	0.00E+00	---	**YES**
Lead	7439-92-1	3.60E+00	8.83E+01	89/ 91	1.61E+01	1.61E+01	4.80E+01	---	NO:4
Lithium	**7439-93-2**	**1.90E+00**	**4.31E+01**	**62/ 65**	**2.02E+01**	**2.02E+01**	0.00E+00	---	**YES**
Magnesium	7439-95-4	2.51E+03	1.46E+05	85/ 86	4.78E+04	4.78E+04	4.00E+04	---	NO:5
Manganese	7439-96-5	1.63E+02	9.76E+02	82/ 83	6.30E+02	6.30E+02	1.40E+03	—	NO:2
Mercury	7439-97-6	2.00E-02	6.60E-01	24/ 86	7.26E-02	7.26E-02	1.50E-01	5.78E+04	NO:3
Molybdenum	7439-98-7	1.90E-01	1.08E+01	44/ 55	2.68E+00	2.68E+00	2.72E+01	1.02E+03	NO:2
Neodymium	**7440-00-8**	**1.32E+01**	**2.99E+01**	**8/ 9**	**3.16E+01**	**2.99E+01**	0.00E+00	---	**YES**
Nickel	7440-02-0	1.40E+00	3.22E+01	75/ 83	1.73E+01	1.73E+01	3.20E+01	4.09E+03	NO:3
Potassium	7440-09-7	2.50E+02	6.09E+03	76/ 85	1.81E+03	1.81E+03	1.90E+03	---	NO:4
Praseodymium	**7440-10-0**	**1.21E+02**	**1.21E+02**	**1/ 9**	**9.52E+01**	**1.21E+02**	0.00E+00	---	**YES**
Selenium	7782-49-2	3.10E-01	7.60E-01	6/ 82	7.02E-01	7.02E-01	5.90E-01	1.02E+03	NO:3
Silver	7440-22-4	1.00E-01	6.60E+00	12/ 83	6.14E-01	6.14E-01	1.70E+00	1.02E+03	NO:3
Sodium	7440-23-5	9.48E+01	2.15E+03	71/ 86	5.13E+02	5.13E+02	2.40E+02	---	NO:5
Tantalum	**7440-25-7**	**2.74E+02**	**4.59E+02**	**3/ 5**	**1.69E+03**	**4.59E+02**	0.00E+00	---	**YES**
Thallium	7440-28-0	8.00E-01	8.00E-01	1/ 82	8.47E-01	8.00E-01	4.60E-01	1.35E+01	NO:1
Tin	7440-31-5	6.40E-01	6.30E+00	30/ 56	2.42E+00	2.42E+00	2.09E+01	1.23E+05	NO:2
Vanadium	7440-62-2	3.40E+00	4.00E+01	79/ 83	1.92E+01	1.92E+01	2.50E+01	2.04E+02	NO:3
Zinc	7440-66-6	4.90E+00	3.28E+02	84/ 85	7.01E+01	7.01E+01	1.40E+02	6.13E+04	NO:3
Pesticides and/or PCBs (ug/kg)									
4,4'-DDE	72-55-9	2.20E-01	3.90E-01	2/ 79	4.56E+00	3.90E-01	0.00E+00	1.68E+04	NO:1
4,4'-DDT	50-29-3	2.90E-01	4.90E+00	2/ 79	4.67E+00	4.67E+00	0.00E+00	9.56E+03	NO:1
Alpha Chlordane	5103-71-9	1.50E+00	1.60E+01	6/ 73	1.83E+01	1.60E+01	0.00E+00	7.64E+03	NO:3
Aroclor-1248	12672-29-6	9.80E+01	9.80E+01	1/ 79	3.14E+01	3.14E+01	0.00E+00	0.00E+00	NO:1
Aroclor-1254	11097-69-1	3.80E+01	1.30E+02	6/ 79	4.78E+01	4.78E+01	0.00E+00	6.83E+02	NO:3
Delta-BHC	319-86-8	1.90E-01	1.90E-01	1/ 78	2.41E+00	1.90E-01	0.00E+00	0.00E+00	NO:1
Dieldrin	60-57-1	2.40E-01	7.90E-01	2/ 78	5.23E+00	7.90E-01	0.00E+00	3.58E+02	NO:1
Endosulfan I	959-98-8	2.40E+00	2.40E+00	1/ 79	2.33E+00	2.33E+00	0.00E+00	0.00E+00	NO:1
Endrin	72-20-8	3.30E-01	1.30E+00	3/ 79	4.31E+00	1.30E+00	0.00E+00	6.13E+04	NO:1
Endrin Aldehyde	7421-93-4	5.70E-01	5.70E-01	1/ 69	2.84E+00	5.70E-01	0.00E+00	0.00E+00	NO:1
Endrin Ketone	53494-70-5	2.10E-01	2.10E-01	1/ 79	5.78E+00	2.10E-01	0.00E+00	0.00E+00	NO:1
Gamma Chlordane	5103-74-2	4.80E-01	1.60E+01	8/ 76	1.76E+01	1.60E+01	0.00E+00	7.64E+03	NO:3
Heptachlor	76-44-8	1.40E-01	2.90E+00	3/ 79	2.16E+00	2.16E+00	0.00E+00	1.27E+03	NO:1
Heptachlor Epoxide	1024-57-3	5.60E-01	5.60E-01	1/ 79	3.30E+00	5.60E-01	0.00E+00	6.29E+02	NO:1
Methoxychlor	72-43-5	7.80E-01	7.80E-01	1/ 78	2.50E+01	7.80E-01	0.00E+00	1.02E+06	NO:1
Semi-Volatile Organic Compounds (ug/kg)									
1,2-Dichlorobenzene	95-50-1	1.30E+01	1.30E+01	1/ 90	3.04E+02	1.30E+01	0.00E+00	2.92E+00	NO:1
2,4,6-Tribromophenol	**118-79-6**	**1.70E+03**	**1.70E+03**	**1/ 1**	**0.00E+00**	**1.70E+03**	0.00E+00	0.00E+00	**YES**
2-Fluorobiphenyl	**321-60-8**	**1.40E+03**	**1.40E+03**	**1/ 1**	**0.00E+00**	**1.40E+03**	0.00E+00	0.00E+00	**YES**
2-Fluorophenol	**367-12-4**	**1.90E+03**	**1.90E+03**	**1/ 1**	**0.00E+00**	**1.90E+03**	0.00E+00	0.00E+00	**YES**
2-Methylnaphthalene	91-57-6	3.30E+01	2.70E+03	7/ 87	2.64E+02	2.64E+02	0.00E+00	8.18E+05	NO:3
Acenaphthene	83-32-9	2.20E+01	2.80E+03	20/ 87	2.90E+02	2.90E+02	0.00E+00	3.09E+06	NO:3
Acenaphthylene	208-96-8	3.10E+01	6.10E+02	4/ 87	2.45E+02	2.45E+02	0.00E+00	0.00E+00	NO:1
Anthracene	120-12-7	2.50E+01	4.90E+03	30/ 87	3.31E+02	3.31E+02	0.00E+00	1.55E+07	NO:3
Benzo(a)anthracene	56-55-3	2.10E+01	5.70E+03	46/ 87	4.51E+02	4.51E+02	0.00E+00	1.98E+03	YES
Benzo(a)pyrene	50-32-8	2.40E+01	5.10E+03	44/ 88	4.41E+02	4.41E+02	0.00E+00	1.98E+02	YES
Benzo(b)fluoranthene	205-99-2	1.70E+01	5.00E+03	46/ 87	4.67E+02	4.67E+02	0.00E+00	1.98E+03	YES
Benzo(g,h,i)perylene	191-24-2	1.30E+01	3.50E+03	43/ 87	3.53E+02	3.53E+02	0.00E+00	0.00E+00	YES
Benzo(k)fluoranthene	207-08-9	2.00E+01	4.80E+03	46/ 87	5.01E+02	5.01E+02	0.00E+00	1.98E+04	NO:3
Benzoic Acid	65-85-0	4.80E+01	1.80E+02	8/ 35	1.93E+03	1.80E+02	0.00E+00	2.49E+08	NO:3
Bis(2-ethylhexyl)phthalate	117-81-7	2.00E+01	6.50E+03	44/ 85	3.14E+02	3.14E+02	0.00E+00	1.25E+05	NO:3
Butyl Benzyl Phthalate	85-68-7	5.80E+01	5.20E+02	2/ 85	2.38E+02	2.38E+02	0.00E+00	1.25E+07	NO:1
Carbazole	86-74-8	1.90E+01	1.50E+03	23/ 72	2.53E+02	2.53E+02	0.00E+00	8.72E+04	NO:3

Table 8:

Identification of Constituents of Potential Concern for the Site
Employee Exposed to Surface Soil in Parcel 7

Analyte (SRC)	CAS Number	Minimum Concentration	Maximum Concentration	Detection Frequency	95% UCL	EPC	Background Value	RBGV	COPC?
Chrysene	218-01-9	2.30E+01	6.30E+03	48/ 87	5.23E+02	5.23E+02	0.00E+00	1.98E+05	NO:3
Di-n-butyl Phthalate	84-74-2	3.40E+01	2.80E+02	9/ 85	2.38E+02	2.38E+02	0.00E+00	6.23E+06	NO:3
Dibenz(a,h)anthracene	**53-70-3**	**2.00E+01**	**9.30E+02**	**22/ 87**	**2.50E+02**	**2.50E+02**	0.00E+00	**1.98E+02**	**YES**
Dibenzofuran	132-64-9	1.80E+01	9.90E+02	14/ 87	2.50E+02	2.50E+02	0.00E+00	1.25E+05	NO:3
Diethyl Phthalate	84-66-2	2.30E+01	7.90E+01	6/ 85	2.28E+02	7.90E+01	0.00E+00	4.99E+07	NO:3
Fluoranthene	206-44-0	2.20E+01	1.50E+04	51/ 87	8.71E+02	8.71E+02	0.00E+00	2.06E+06	NO:3
Fluorene	86-73-7	1.90E+01	4.50E+03	18/ 87	2.93E+02	2.93E+02	0.00E+00	2.06E+06	NO:3
Hexachlorobenzene	118-74-1	7.40E+02	7.40E+02	1/ 88	2.36E+02	2.36E+02	0.00E+00	1.09E+03	NO:1
Hexachlorobutadiene	87-68-3	7.40E+02	7.40E+02	1/ 88	2.36E+02	2.36E+02	0.00E+00	1.87E+04	NO:1
Hexachlorocyclopentadiene	77-47-4	7.40E+02	7.40E+02	1/ 85	2.38E+02	2.38E+02	0.00E+00	3.70E+05	NO:1
Hexachloroethane	67-72-1	7.40E+02	7.40E+02	1/ 88	2.36E+02	2.36E+02	0.00E+00	6.23E+04	NO:1
Indeno(1,2,3-cd)pyrene	**193-39-5**	**1.70E+01**	**3.10E+03**	**42/ 87**	**3.34E+02**	**3.34E+02**	0.00E+00	**1.98E+03**	**YES**
N-Nitrosodiphenylamine	86-30-6	2.80E+02	2.80E+02	1/ 85	2.26E+02	2.26E+02	0.00E+00	3.56E+05	NO:1
Nitrobenzene-d5	**4165-60-0**	**1.30E+03**	**1.30E+03**	**1/ 1**	**0.00E+00**	**1.30E+03**	0.00E+00	0.00E+00	**YES**
P-Terphenyl-d14	**1718-51-0**	**1.40E+03**	**1.40E+03**	**1/ 1**	**0.00E+00**	**1.40E+03**	0.00E+00	0.00E+00	**YES**
Phenanthrene	**85-01-8**	**2.10E+01**	**1.20E+04**	**50/ 87**	**7.16E+02**	**7.16E+02**	0.00E+00	0.00E+00	**YES**
Phenol	108-95-2	4.00E+01	1.50E+02	2/ 84	2.35E+02	1.50E+02	0.00E+00	1.87E+07	NO:1
Phenol-d5	**4165-62-2**	**1.90E+03**	**1.90E+03**	**1/ 1**	**0.00E+00**	**1.90E+03**	0.00E+00	0.00E+00	**YES**
Pyrene	129-00-0	1.80E+01	2.10E+04	53/ 86	9.97E+02	9.97E+02	0.00E+00	1.55E+08	NO:3
Volatile Organic Compounds (ug/kg)									
1,1,2,2-Tetrachloroethane	79-34-5	3.00E+00	3.00E+00	1/ 264	4.15E+00	3.00E+00	0.00E+00	2.86E+04	NO:1
1,1,2-Trichloroethane	79-00-5	1.00E+00	1.00E+00	1/ 264	4.15E+00	1.00E+00	0.00E+00	1.00E+05	NO:1
1,2-Dichloroethane	107-06-2	2.00E+00	2.00E+00	1/ 267	4.14E+00	2.00E+00	0.00E+00	6.29E+04	NO:1
1,2-Dichloroethene	540-59-0	1.00E+00	1.40E+02	13/ 259	4.92E+00	4.92E+00	0.00E+00	1.84E+06	NO:3
1,2-Dichloropropane	78-87-5	2.00E+00	2.00E+00	1/ 264	4.13E+00	2.00E+00	0.00E+00	8.42E+04	NO:1
1,2-cis-Dichloroethene (DCE)	156-59-2	2.00E+01	3.20E+03	15/ 28	1.59E+04	3.20E+03	0.00E+00	2.04E+06	NO:3
1,3-Dichlorobenzene	541-73-1	1.00E+00	1.60E+01	2/ 90	3.32E+02	1.60E+01	0.00E+00	1.87E+06	NO:1
1,4-Dichlorobenzene	106-46-7	1.30E+01	4.40E+01	2/ 93	2.83E+02	4.40E+01	0.00E+00	7.27E+04	NO:1
2-Butanone	78-93-3	2.00E+00	5.50E+01	27/ 267	7.83E+00	7.83E+00	0.00E+00	1.23E+08	NO:3
2-Hexanone	591-78-6	5.00E+00	1.30E+01	2/ 265	6.96E+00	6.96E+00	0.00E+00	0.00E+00	NO:1
4-Methyl-2-pentanone	108-10-1	7.00E+00	2.00E+01	4/ 265	7.01E+00	7.01E+00	0.00E+00	1.64E+07	NO:1
Acetone	67-64-1	2.00E+00	6.00E+03	97/ 264	1.41E+01	1.41E+01	0.00E+00	1.84E+08	NO:3
Acrylonitrile	107-13-1	4.00E+00	5.00E+00	2/ 141	6.43E+01	5.00E+00	0.00E+00	1.06E+04	NO:1
Bromoform	75-25-2	1.00E+00	1.00E+00	1/ 264	4.15E+00	1.00E+00	0.00E+00	7.24E+05	NO:1
Carbon Disulfide	75-15-0	1.00E+00	2.00E+00	2/ 264	4.14E+00	2.00E+00	0.00E+00	2.04E+07	NO:1
Chlorobenzene	108-90-7	3.00E+00	1.00E+02	5/ 268	4.34E+00	4.34E+00	0.00E+00	4.09E+06	NO:1
Dichloromethane (Methylene Chloride)	75-09-2	3.00E+00	1.20E+04	203/ 265	2.16E+01	2.16E+01	0.00E+00	7.63E+05	NO:3
Ethylbenzene	100-41-4	1.00E+00	4.00E+00	4/ 266	4.10E+00	4.00E+00	0.00E+00	2.04E+07	NO:1
FREON-113	76-13-1	3.00E+00	3.00E+00	3/ 167	3.57E+00	3.00E+00	0.00E+00	6.13E+09	NO:1
Hexane	110-54-3	2.00E+00	8.00E+00	13/ 162	5.77E+00	5.77E+00	0.00E+00	2.25E+09	NO:3
Isopropyl Benzene	98-82-8	2.00E+00	2.00E+00	1/ 5	7.08E+01	2.00E+00	0.00E+00	2.04E+07	NO:3
Methyl Cyclohexane	**108-87-2**	**5.00E+00**	**6.00E+00**	**2/ 5**	**6.19E+00**	**6.00E+00**	0.00E+00	0.00E+00	**YES**
Naphthalene	91-20-3	2.70E+01	1.90E+03	11/ 87	2.62E+02	2.62E+02	0.00E+00	1.24E+06	NO:3
Styrene	100-42-5	4.00E-01	2.00E+00	3/ 265	4.12E+00	2.00E+00	0.00E+00	4.09E+07	NO:1
Tetrachloroethene (PCE)	127-18-4	1.00E+00	5.00E+00	5/ 268	4.13E+00	4.13E+00	0.00E+00	1.06E+04	NO:1
Toluene	108-88-3	1.00E+00	3.00E+00	33/ 266	4.00E+00	3.00E+00	0.00E+00	4.09E+07	NO:3
Trichloroethylene (TCE)	79-01-6	1.00E+00	5.40E+03	52/ 290	1.36E+01	1.36E+01	0.00E+00	1.43E+04	NO:3
Trichloromethane (Chloroform)	67-66-3	4.00E-01	6.70E+01	4/ 267	4.39E+00	4.39E+00	0.00E+00	2.04E+06	NO:1
Vinyl Chloride	75-01-4	9.00E+00	4.40E+02	10/ 290	9.98E+00	9.98E+00	0.00E+00	3.82E+03	NO:1
Xylenes, Total	1330-20-7	1.00E+00	1.80E+01	9/ 266	4.16E+00	4.16E+00	0.00E+00	4.09E+07	NO:1
Radionuclides (pCi/g)									
Actinium-227 +D	**14952-40-0(+D)**	**2.30E-01**	**3.10E+00**	**62/ 805**	**2.08E-01**	**2.08E-01**	**1.10E-01**	**5.02E-01**	**YES**
Actinium-228	14331-83-0	3.00E-01	1.78E+00	81/ 81	1.00E+00	1.00E+00	0.00E+00	2.01E-01	NO:6
Americium-241	14596-10-2	4.00E-02	2.60E+00	50/1145	7.30E-02	7.30E-02	0.00E+00	9.93E+00	NO:1
Bismuth-207	13982-38-2	1.50E-02	3.40E-02	4/ 205	3.47E-02	3.40E-02	0.00E+00	1.29E-01	NO:1
Bismuth-210	14331-79-4	1.00E-02	1.00E-02	2/ 61	6.96E-02	1.00E-02	0.00E+00	9.07E+01	NO:1
Bismuth-210M	BI-210M	4.70E-02	4.70E-02	1/ 251	3.62E-02	3.62E-02	0.00E+00	0.00E+00	NO:1
Bismuth-212	14913-49-6	6.60E-01	1.74E+00	18/ 18	1.09E+00	1.74E+00	0.00E+00	1.03E+00	NO:6
Bismuth-214	14733-03-0	2.20E-01	1.28E+00	83/ 83	6.64E-01	6.64E-01	1.20E+00	1.22E-01	NO:4
Cesium-137	10045-97-3(+D)	1.00E-02	2.90E+01	328/1229	7.20E-02	7.20E-02	4.20E-01	3.56E-01	NO:4
Cobalt-60	10198-40-0	2.00E-02	9.19E-02	24/1134	3.51E-02	3.51E-02	0.00E+00	7.35E-02	NO:1
Lead-210	14255-04-0(+D)	1.40E-01	3.97E+00	338/ 802	7.12E-01	7.12E-01	1.20E+00	1.19E+00	NO:4
Lead-212	15092-94-1	8.50E-02	2.42E+00	147/ 147	7.62E-01	7.62E-01	0.00E+00	1.73E+00	NO:6
Lead-214	15067-28-4	1.33E-01	1.23E+00	134/ 134	7.16E-01	7.16E-01	1.20E+00	9.29E-01	NO:4
Plutonium-238	**13981-16-3**	**3.10E-03**	**4.94E+02**	**1435/3726**	**4.39E+01**	**4.39E+01**	**1.30E-01**	**1.13E+01**	**YES**
Plutonium-239	15117-48-3	2.20E-02	3.20E-02	3/ 4	6.88E-02	3.20E-02	0.00E+00	1.12E+01	NO:3
Plutonium-239/240	OER-100-70	1.60E-03	7.26E+00	363/ 837	4.97E-02	4.97E-02	1.80E-01	0.00E+00	NO:4
Plutonium-242	13982-10-0	4.26E-03	8.48E-03	2/ 6	1.03E-02	8.48E-03	0.00E+00	1.17E+01	NO:3
Potassium-40	13966-00-2	1.15E+00	3.92E+01	339/ 342	1.94E+01	1.94E+01	3.70E+01	1.12E+00	NO:4
Radium-224	13233-32-4	8.09E-01	1.11E+00	3/ 3	1.38E+00	1.11E+00	0.00E+00	5.47E+00	NO:3
Radium-226	13982-63-3(+D)	1.68E-01	4.06E+00	965/1142	1.20E+00	1.20E+00	2.00E+00	1.05E-01	NO:4
Radium-228 +D	**15262-20-1(+D)**	**2.88E-01**	**3.97E+00**	**179/ 181**	**1.05E+00**	**1.05E+00**	0.00E+00	**1.76E-01**	**YES**
Strontium-90	10098-97-2(+D)	1.06E-01	1.58E+00	18/ 62	3.48E-01	3.48E-01	7.20E-01	1.50E+01	NO:3
Thallium-208	14913-50-9	4.00E-02	8.00E-01	115/ 116	3.27E-01	3.27E-01	0.00E+00	5.18E-02	NO:6
Thorium-227	15623-47-9	4.00E-02	4.21E-01	23/ 24	2.32E-01	2.32E-01	0.00E+00	2.17E+00	NO:3

Table 8:

Identification of Constituents of Potential Concern for the Site
Employee Exposed to Surface Soil In Parcel 7

Analyte (SRC)	CAS Number	Minimum Concentration	Maximum Concentration	Detection Frequency	95% UCL	EPC	Background Value	RBGV	COPC?
Thorium-228	14274-82-9(+D)	7.30E-03	4.34E+00	799/1032	2.57E+00	2.57E+00	1.50E+00	1.14E-01	NO:6
Thorium-230	14269-63-7(+D)	2.06E-02	7.62E+00	772/1526	2.47E+00	2.47E+00	1.90E+00	0.00E+00	NO:6
Thorium-232	7440-29-1(+D)	6.80E-03	2.92E+01	1794/2929	8.01E-01	8.01E-01	1.40E+00	0.00E+00	NO:4
Thorium-234	15065-10-8	6.40E-01	2.20E+00	8/ 8	2.08E+00	2.20E+00	0.00E+00	2.58E+01	NO:3
Tritium	10028-17-8p	3.91E-02	9.50E+00	12/ 28	3.57E+01	9.50E+00	1.60E+00	1.45E+04	NO:3
Uranium-233/234	**13966-29-5**	**7.34E-01**	**1.39E+00**	**4/ 4**	**2.24E+00**	**1.39E+00**	0.00E+00	**5.52E-01**	**YES**
Uranium-234	13966-29-5	9.60E-02	1.46E+00	242/ 246	6.57E-01	6.57E-01	1.10E+00	1.97E+01	NO:3
Uranium-235	15117-96-1(+D)	4.00E-03	2.30E-01	131/ 479	2.12E-01	2.12E-01	1.10E-01	1.55E+00	NO:3
Uranium-235/236	U-235/236	5.07E-02	5.07E-02	1/ 2	0.00E+00	5.07E-02	0.00E+00	3.32E-01	NO:3
Uranium-238	7440-61-1(+D)	9.00E-02	2.20E+00	265/ 568	2.43E+00	2.20E+00	1.20E+00	5.22E+00	NO:3

CAS - Chemical Abstract Service
COPC - Constituents of Potential Concern
EPC - Exposure Point Concentration
mg/kg - milligram per kilogram
ug/kg - microgram per kilogram
pCi/g - picocurie per gram
RBGV - Risk Based Guideline Value
UCL - Upper Confidence Limit

NO:1 - <5% Detects
NO:2 - Max<Background
NO:3 - Max< Risk Based Guideline Value
NO:4 - EPC< Background
NO:5 - Essential Human Nutrients
NO:6 - Part of a chain which has members above that are COPCs

Bold text indicates COPCs selected

- - - not applicable, not available, or not calculated due to insufficient toxicity data

Background values are base on the Operable Unit 9 Background Soils Investigation Chemistry Report (DOE 1994) or, in the case of nuclides with short half lives (Ac-227 Pb-210, and Pa-231) are based on the parent nuclide background and assumption of equilibrium with the parent nuclide.

Ra-228 note: A background value has not been calculated for Ra-228 and why none is provided in the table above. However, if Ra-228's parent nuclide background is considered (Th-232 at 1. pCi/g), Ra-228 would not be brought forward as a COPC. To be consistent with previous RREs, Ra-228 was presented with no background value and was brought forward as a COPC

Table 9

Identification of Constituents of Potential Concern for a Construction Worker Exposed to Surface Soil in the MCP Parcel 8

Analyte (SRC)	CAS Number	Minimum Concentration	Maximum Concentration	Detection Frequency	95% UCL	EPC	Background Value	10^{-6} RBGV	COPC?
Inorganics (mg/kg)									
Aluminum	7429-90-5	1.59E+00	2.14E+04	308/ 309	1.10E+04	1.10E+04	1.90E+04	2.08E+04	NO:4
Antimony	**7440-36-0**	**2.30E-01**	**6.90E+01**	**55/ 290**	**9.91E+00**	**9.91E+00**	**- - -**	**8.52E+00**	**YES**
Arsenic	7440-38-2	2.30E-03	3.22E+01	313/ 325	5.36E+00	5.36E+00	8.60E+00	1.85E+00	NO:4
Barium	7440-39-3	1.20E-02	6.23E+02	294/ 321	5.89E+01	5.89E+01	1.80E+02	1.47E+03	NO:3
Beryllium	7440-41-7	1.50E-04	1.30E+00	291/ 462	5.49E-01	5.49E-01	1.30E+00	4.21E+01	NO:3
Bismuth	7440-69-9	4.30E-01	1.01E+02	35/ 126	1.34E+01	1.34E+01	3.84E+01	- - -	NO:4
Cadmium	7440-43-9s	6.00E-02	2.42E+01	112/ 321	1.37E+00	1.37E+00	2.10E+00	5.46E+00	NO:4
Calcium	7440-70-2	1.33E+02	2.68E+05	309/ 311	1.42E+05	1.42E+05	3.10E+05	- - -	NO:2
Cerium	7440-45-1	2.46E+01	2.84E+01	2/ 25	2.38E+01	2.38E+01	- - -	3.85E+04	NO:3
Chromium	7440-47-3	3.60E-03	9.21E+01	303/ 308	1.73E+01	1.73E+01	2.00E+01	- - -	NO:4
Cobalt	7440-48-4	1.70E-03	2.80E+01	278/ 311	9.63E+00	9.63E+00	1.90E+01	3.83E+02	NO:3
Copper	7440-50-8	8.50E-03	3.82E+02	301/ 305	2.09E+01	2.09E+01	2.60E+01	8.52E+02	NO:3
Cyanide	57-12-5	1.10E-01	1.01E+01	45/ 254	5.58E-01	5.58E-01	- - -	4.26E+02	NO:3
Erbium	**7440-52-0**	**4.00E+01**	**1.62E+02**	**19/ 25**	**1.90E+02**	**1.62E+02**	**- - -**	**- - -**	**YES**
Iron	7439-89-6	4.33E+00	1.09E+05	312/ 314	2.28E+04	2.28E+04	3.50E+04	- - -	NO:4
Lead	7439-92-1	2.40E-03	3.10E+03	300/ 307	1.24E+01	1.24E+01	4.80E+01	- - -	NO:4
Lithium	**7439-93-2**	**1.10E+00**	**4.29E+01**	**195/ 208**	**1.97E+01**	**1.97E+01**	**- - -**	**- - -**	**YES**
Magnesium	7439-95-4	4.31E+01	1.08E+05	307/ 311	3.52E+04	3.52E+04	4.00E+04	- - -	NO:4
Manganese	7439-96-5s	1.75E-01	1.49E+03	304/ 306	5.49E+02	5.49E+02	1.40E+03	4.85E+02	NO:4
Mercury	7439-97-6	2.00E-02	9.10E-01	54/ 318	7.09E-02	7.09E-02	1.50E-01	5.78E+04	NO:3
Molybdenum	7439-98-7	5.30E-01	1.64E+01	58/ 122	2.65E+00	2.65E+00	2.72E+01	1.06E+02	NO:2
Neodymium	**7440-00-8**	**1.98E+01**	**2.22E+01**	**2/ 25**	**2.32E+01**	**2.22E+01**	**- - -**	**- - -**	**YES**
Nickel	7440-02-0	4.20E-03	1.07E+02	286/ 302	2.13E+01	2.13E+01	3.20E+01	4.26E+02	NO:3
Potassium	7440-09-7	5.16E-01	7.46E+03	286/ 313	2.22E+03	2.22E+03	1.90E+03	- - -	NO:5
Selenium	7782-49-2	1.20E-01	2.90E+00	34/ 303	5.41E-01	5.41E-01	5.90E-01	1.06E+02	NO:3
Silver	7440-22-4	1.90E-01	2.06E+01	92/ 319	3.74E+00	3.74E+00	1.70E+00	1.06E+02	NO:3
Sodium	7440-23-5	3.23E-01	2.62E+03	269/ 314	4.17E+02	4.17E+02	2.40E+02	- - -	NO:5
Tantalum	**7440-25-7**	**1.68E+02**	**5.53E+02**	**23/ 49**	**2.69E+02**	**2.69E+02**	**- - -**	**- - -**	**YES**
Thallium	**7440-28-0**	**6.20E-04**	**5.50E+00**	**58/ 312**	**7.05E-01**	**7.05E-01**	**4.60E-01**	**1.41E+00**	**YES**
Tin	7440-31-5	9.80E-01	8.00E+00	18/ 116	2.28E+00	2.28E+00	2.09E+01	1.28E+04	NO:2
Vanadium	7440-62-2	6.10E-03	4.88E+01	308/ 311	1.97E+01	1.97E+01	2.50E+01	2.13E+01	NO:4
Zinc	7440-66-6	1.20E-02	1.18E+03	305/ 307	6.55E+01	6.55E+01	1.40E+02	6.39E+03	NO:3
Dioxins/Dibenzofurans (µg/kg)									
2,3,4,6,7,8-HpCDD	**35822-46-9**	**2.10E-01**	**2.30E+00**	**3/ 27**	**4.34E-01**	**4.34E-01**	**- - -**	**- - -**	**YES**
2,3,6,7,8-HxCDF	55684-94-1	3.60E-01	3.60E-01	1/ 27	2.92E-01	2.92E-01	- - -	1.99E-01	NO:1
HpCDD	**37871-00-4**	**5.00E-01**	**4.10E+00**	**3/ 27**	**7.56E-01**	**7.56E-01**	**- - -**	**1.99E+00**	**YES**
HpCDF	38998-75-3	7.30E-01	7.30E-01	1/ 27	4.94E-01	4.94E-01	- - -	1.99E+00	NO:1
HxCDD	34465-46-8	1.70E-01	1.70E-01	1/ 27	2.02E-01	1.70E-01	- - -	1.99E-01	NO:1
OCDD	3268-87-9	3.10E-01	1.66E+01	3/ 27	1.71E+00	1.71E+00	- - -	1.99E+01	NO:3
OCDF	39001-02-0	5.40E-01	5.40E-01	1/ 27	6.28E-01	5.40E-01	- - -	1.99E+01	NO:1
Explosives (µg/kg)									
1,3,5-Trinitrobenzene	99-35-4	3.70E+02	3.70E+02	1/ 73	7.24E+02	3.70E+02	- - -	6.39E+05	NO:1
2,4-Dinitrotoluene	121-14-2	8.50E+02	8.50E+02	1/ 46	2.01E+02	2.01E+02	- - -	3.54E+03	NO:1
2,6-Dinitrotoluene	606-20-2	8.50E+01	9.50E+01	2/ 270	3.18E+02	9.50E+01	- - -	3.54E+03	NO:1
HMX	2691-41-0	3.80E+02	1.40E+03	4/ 73	1.40E+03	1.40E+03	- - -	1.06E+06	NO:3
RDX	121-82-4	2.90E+02	2.40E+03	6/ 73	1.11E+03	1.11E+03	- - -	2.71E+04	NO:3
Pesticides/PCBs (µg/kg)									
4,4'-DDD	72-54-8	2.40E-01	1.10E+01	5/ 220	6.19E+00	6.19E+00	- - -	1.24E+04	NO:1
4,4'-DDE	72-55-9	2.20E-01	3.10E+00	6/ 220	4.86E+00	3.10E+00	- - -	8.77E+03	NO:1
4,4'-DDT	50-29-3	1.40E-01	2.70E+01	23/ 219	6.49E+00	6.49E+00	- - -	8.12E+03	NO:3
Aldrin	309-00-2	5.70E-02	4.00E+00	10/ 220	2.85E+00	2.85E+00	- - -	1.42E+02	NO:1
Alpha Chlordane**	5103-71-9	2.70E-02	1.50E+00	10/ 216	2.02E+01	1.50E+00	- - -	7.61E+03	NO:1
Alpha-BHC	319-84-6	4.30E-02	3.20E+00	24/ 220	2.91E+00	2.91E+00	- - -	4.73E+02	NO:3
Aroclor-1248	12672-29-6	1.80E+01	1.80E+01	1/ 239	4.39E+01	1.80E+01	- - -	- - -	NO:1
Aroclor-1254	11097-69-1	1.50E+01	7.60E+01	10/ 239	8.24E+01	7.60E+01	- - -	3.20E+02	NO:1
Aroclor-1260	11096-82-5	1.50E+01	4.40E+01	2/ 238	8.03E+01	4.40E+01	- - -	- - -	NO:1
Beta-BHC	319-85-7	4.20E-01	1.30E+01	5/ 220	3.06E+00	3.06E+00	- - -	1.66E+03	NO:1
Delta-BHC	319-86-8	1.00E-02	4.10E-01	6/ 220	3.94E+00	4.10E-01	- - -	- - -	NO:1
Dieldrin	60-57-1	7.80E-02	5.00E+01	14/ 220	4.47E+00	4.47E+00	- - -	1.86E+02	NO:3
Endosulfan I	959-98-8	4.80E-01	4.80E-01	1/ 220	4.34E+00	4.80E-01	- - -	- - -	NO:1
Endosulfan II	33213-65-9	1.50E-01	4.40E+00	8/ 220	4.67E+00	4.40E+00	- - -	- - -	NO:1
Endosulfan Sulfate	1031-07-8	2.20E-01	1.30E+00	6/ 220	9.56E+00	1.30E+00	- - -	- - -	NO:1
Endrin	72-20-8	2.20E-01	4.10E+00	10/ 219	5.08E+00	4.10E+00	- - -	6.39E+03	NO:1
Endrin Aldehyde	7421-93-4	1.30E-01	1.40E+01	7/ 203	6.61E+00	6.61E+00	- - -	- - -	NO:1
Endrin Ketone	53494-70-5	1.60E-01	5.40E+00	7/ 220	9.20E+00	5.40E+00	- - -	- - -	NO:1
Gamma Chlordane	5103-74-2	6.80E-01	5.10E+00	6/ 216	1.96E+01	5.10E+00	- - -	7.61E+03	NO:1
Gamma-BHC (Lindane)	58-89-9	4.30E-01	4.30E-01	1/ 220	2.70E+00	4.30E-01	- - -	2.29E+03	NO:1
Heptachlor	76-44-8	2.00E-01	7.20E-01	3/ 220	2.49E+00	7.20E-01	- - -	6.62E+02	NO:1
Heptachlor Epoxide	1024-57-3	1.40E-01	7.00E+00	11/ 220	5.80E+00	5.80E+00	- - -	2.77E+02	NO:3
Methoxychlor	72-43-5	1.30E+00	1.00E+02	6/ 220	4.51E+01	4.51E+01	- - -	1.06E+05	NO:1
Semi-Volatile Organic Compounds (µg/kg)									
1,2,4-Trichlorobenzene	120-82-1	1.20E+03	1.20E+03	1/ 254	2.96E+02	2.96E+02	- - -	1.72E+05	NO:1
1,2-Dichlorobenzene	95-50-1	6.40E-01	6.40E-01	1/ 257	3.27E+02	6.40E-01	- - -	1.55E+06	NO:1
2,4-Dimethylphenol	105-67-9	3.10E+04	3.10E+04	1/ 254	3.09E+02	3.09E+02	- - -	3.44E+05	NO:1
2,4-Dinitrotoluene	121-14-2	8.50E+02	8.50E+02	1/ 46	2.01E+02	2.01E+02	- - -	3.54E+03	NO:1
2-Benzyl-4-Chlorophenol	120-32-1	1.20E+02	1.20E+02	1/ 40	1.95E+02	1.20E+02	- - -	- - -	NO:1
2-Chlorophenol	95-57-8	9.40E+01	1.80E+03	2/ 254	2.96E+02	2.96E+02	- - -	8.60E+04	NO:1
2-Methylnaphthalene	91-57-6	1.40E+01	2.30E+04	11/ 269	4.38E+02	4.38E+02	- - -	8.52E+04	NO:1

Table 9

Identification of Constituents of Potential Concern for a Construction Worker Exposed to Surface Soil in the MCP Parcel 8

Analyte (SRC)	CAS Number	Minimum Concentration	Maximum Concentration	Detection Frequency	95% UCL	EPC	Background Value	10^{-6} RBGV	COPC?
2-Methylphenol	95-48-7	9.00E+01	1.30E+04	2/ 261	2.96E+02	2.96E+02	- - -	1.06E+06	NO:1
3,3'-Dichlorobenzidine	91-94-1	4.80E+01	1.10E+02	2/ 254	4.49E+02	1.10E+02	- - -	5.35E+03	NO:1
4-Chloro-3-methylphenol	59-50-7	8.50E+01	2.20E+03	3/ 254	2.96E+02	2.96E+02	- - -	- - -	NO:1
4-Methylphenol	106-44-5	4.60E+01	2.50E+04	3/ 261	3.09E+02	3.09E+02	- - -	1.06E+05	NO:1
4-Nitrophenol	100-02-7	2.40E+03	2.40E+03	1/ 254	1.11E+03	1.11E+03	- - -	- - -	NO:1
Acenaphthene	83-32-9	1.90E+01	5.10E+03	29/ 269	4.38E+02	4.38E+02	- - -	9.76E+05	NO:3
Acenaphthylene	208-96-8	1.20E+01	7.30E+02	7/ 269	4.19E+02	4.19E+02	- - -	- - -	NO:1
Anthracene	120-12-7	1.80E+01	3.80E+04	45/ 269	4.90E+02	4.90E+02	- - -	4.88E+06	NO:3
Benzo(a)anthracene	**56-55-3**	**2.00E+01**	**9.60E+04**	**70/ 269**	**5.14E+02**	**5.14E+02**	**- - -**	**3.12E+03**	**YES**
Benzo(a)pyrene	**50-32-8**	**2.00E+01**	**1.10E+05**	**69/ 269**	**4.93E+02**	**4.93E+02**	**- - -**	**3.12E+02**	**YES**
Benzo(b)fluoranthene	**205-99-2**	**2.20E+01**	**1.20E+05**	**75/ 269**	**5.19E+02**	**5.19E+02**	**- - -**	**3.12E+03**	**YES**
Benzo(g,h,i)perylene	**191-24-2**	**2.00E+01**	**1.65E+05**	**59/ 269**	**5.23E+02**	**5.23E+02**	**- - -**	**- - -**	**YES**
Benzo(k)fluoranthene	**207-08-9**	**1.90E+01**	**1.10E+05**	**67/ 269**	**5.09E+02**	**5.09E+02**	**- - -**	**3.12E+04**	**YES**
Benzoic Acid	65-85-0	4.00E+01	5.80E+03	9/ 126	2.03E+03	2.03E+03	- - -	6.88E+07	NO:3
Benzyl Alcohol	100-51-6	1.70E+04	1.70E+04	1/ 132	3.27E+02	3.27E+02	- - -	5.16E+06	NO:1
Bis(2-ethylhexyl)phthalate	117-81-7	2.20E+01	3.40E+03	138/ 255	3.46E+02	3.46E+02	- - -	1.72E+05	NO:3
Butyl Benzyl Phthalate	85-68-7	3.20E+01	1.30E+03	33/ 254	3.10E+02	3.10E+02	- - -	3.44E+06	NO:3
Carbazole	86-74-8	1.90E+01	1.70E+03	25/ 169	2.85E+02	2.85E+02	- - -	1.20E+05	NO:3
Chrysene	218-01-9	2.60E+01	1.20E+05	73/ 256	4.75E+02	4.75E+02	- - -	3.12E+05	NO:3
Dibenz(a,h)anthracene	**53-70-3**	**2.00E+01**	**7.50E+02**	**28/ 267**	**4.27E+02**	**4.27E+02**	**- - -**	**3.12E+02**	**YES**
Dibenzofuran	132-64-9	2.80E+01	1.10E+03	15/ 254	3.05E+02	3.05E+02	- - -	3.44E+04	NO:3
Diethyl Phthalate	84-66-2	2.00E+01	1.00E+02	6/ 254	2.93E+02	1.00E+02	- - -	1.38E+07	NO:1
Dimethyl Phthalate	131-11-3	3.40E+01	1.30E+02	3/ 254	2.93E+02	1.30E+02	- - -	2.13E+08	NO:1
Di-n-butyl Phthalate	84-74-2	1.90E+01	7.80E+04	68/ 256	3.61E+02	3.61E+02	- - -	1.72E+06	NO:3
Di-n-octyl Phthalate	117-84-0	2.10E+01	3.50E+05	34/ 254	3.05E+02	3.05E+02	- - -	8.52E+05	NO:3
Fluoranthene	206-44-0	1.50E+01	1.80E+05	101/ 270	6.29E+02	6.29E+02	- - -	6.51E+05	NO:3
Fluorene	86-73-7	2.30E+01	2.10E+04	26/ 269	4.57E+02	4.57E+02	- - -	6.51E+05	NO:3
Hexachlorobenzene	118-74-1	4.90E+01	4.90E+01	1/ 261	2.89E+02	4.90E+01	- - -	1.51E+03	NO:1
Indeno(1,2,3-cd)pyrene	**193-39-5**	**1.60E+01**	**1.20E+05**	**57/ 267**	**4.56E+02**	**4.56E+02**	**- - -**	**3.12E+03**	**YES**
Isophorone	78-59-1	4.10E+02	7.80E+02	2/ 254	2.84E+02	2.84E+02	- - -	2.54E+06	NO:1
N-Nitroso-di-n-propylamine	621-64-7	4.10E+01	1.10E+03	6/ 254	2.94E+02	2.94E+02	- - -	3.44E+02	NO:1
N-Nitrosodiphenylamine	86-30-6	1.50E+02	1.50E+02	1/ 254	2.91E+02	1.50E+02	- - -	3.44E+05	NO:1
Pentachlorophenol	87-86-5	1.20E+02	1.80E+03	5/ 261	1.08E+03	1.08E+03	- - -	1.56E+04	NO:1
Phenanthrene	**85-01-8**	**1.80E+01**	**1.00E+05**	**82/ 269**	**6.23E+02**	**6.23E+02**	**- - -**	**- - -**	**YES**
Phenol	108-95-2	1.10E+02	2.20E+04	5/ 257	3.06E+02	3.06E+02	- - -	5.16E+06	NO:1
Pyrene	129-00-0	1.90E+01	1.60E+05	93/ 270	6.00E+02	6.00E+02	—	4.88E+05	NO:2
Volatile Organic Compounds (µg/kg)									
1,1,1-Trichloroethane	71-55-6	1.00E+00	3.04E+01	8/ 354	4.52E+00	4.52E+00	- - -	6.84E+05	NO:1
1,1-Dichloroethane	75-34-3	4.00E-01	4.00E-01	1/ 354	4.47E+00	4.00E-01	- - -	1.93E+05	NO:1
1,2-cis-Dichloroethene (DCE)	156-59-2	2.37E-01	1.12E+03	22/ 41	9.19E+01	9.19E+01	- - -	2.13E+05	NO:3
1,2-Dichloroethane	107-06-2	1.00E+00	1.00E+00	1/ 361	4.48E+00	1.00E+00	- - -	3.45E+03	NO:1
1,2-Dichloroethene	540-59-0	4.33E-01	1.16E+03	30/ 364	5.99E+00	5.99E+00	- - -	1.92E+05	NO:3
1,2-Dichloropropane	78-87-5	2.87E+00	2.87E+00	1/ 354	4.46E+00	2.87E+00	- - -	2.08E+03	NO:1
1,2-trans-Dichloroethene	156-60-5	2.00E+00	4.38E+02	3/ 44	4.35E+01	4.35E+01	- - -	4.26E+05	NO:3
1,4-Dichlorobenzene	106-46-7	1.10E+02	1.10E+03	2/ 264	3.16E+02	3.16E+02	- - -	1.00E+05	NO:1
2-Butanone	78-93-3	6.00E-01	4.60E+01	65/ 357	8.08E+00	8.08E+00	- - -	6.65E+06	NO:3
2-Hexanone	591-78-6	3.00E+00	6.10E+01	11/ 354	7.30E+00	7.30E+00	- - -	- - -	NO:1
4-Methyl-2-pentanone	108-10-1	6.00E-01	2.00E+01	23/ 354	7.17E+00	7.17E+00	- - -	1.47E+06	NO:3
Acetone	67-64-1	2.00E+00	2.50E+02	170/ 344	2.12E+01	2.12E+01	- - -	1.92E+07	NO:3
Acetonitrile	75-05-8	6.70E+01	6.70E+01	1/ 91	8.18E+01	6.70E+01	- - -	2.00E+05	NO:1
Acrylonitrile	107-13-1	8.00E+00	8.00E+00	1/ 94	9.65E+01	8.00E+00	- - -	1.82E+03	NO:1
Benzene	71-43-2	5.00E-01	8.00E+00	16/ 384	4.37E+00	4.37E+00	- - -	6.46E+03	NO:1
Carbon Disulfide	75-15-0	8.00E-01	1.33E+01	42/ 354	4.47E+00	4.47E+00	- - -	1.16E+05	NO:3
Carbon Tetrachloride	56-23-5	2.00E+00	2.00E+00	1/ 361	4.56E+00	2.00E+00	- - -	2.44E+03	NO:1
Chlorobenzene	108-90-7	2.00E+00	1.10E+01	2/ 361	4.49E+00	4.49E+00	- - -	4.85E+04	NO:1
Chloromethane	74-87-3	1.00E+00	6.00E+00	3/ 354	6.45E+00	6.00E+00	- - -	1.59E+04	NO:1
Dichloromethane (Methylene Chloride)	75-09-2	1.00E+00	1.40E+03	219/ 354	1.97E+01	1.97E+01	- - -	8.25E+04	NO:3
Ethylbenzene	100-41-4	7.00E-01	1.80E+01	33/ 377	4.32E+00	4.32E+00	- - -	7.80E+04	NO:3
FREON-113	76-13-1	2.00E+00	4.00E+01	4/ 128	6.39E+00	6.39E+00	- - -	6.93E+06	NO:1
Hexane	110-54-3	2.00E+00	3.00E+00	2/ 91	8.13E+00	3.00E+00	- - -	4.08E+04	NO:1
Naphthalene	91-20-3	1.60E+01	4.50E+03	11/ 269	4.31E+02	4.31E+02	- - -	3.44E+05	NO:1
Styrene	100-42-5	3.00E-01	3.00E+00	25/ 354	4.47E+00	3.00E+00	- - -	1.46E+06	NO:3
Tetrachloroethene (PCE)	**127-18-4**	**2.00E-01**	**5.94E+03**	**59/ 374**	**8.15E+00**	**8.15E+00**	**- - -**	**3.66E+03**	**YES**
Toluene	108-88-3	5.70E-01	7.00E+01	82/ 377	4.25E+00	4.25E+00	- - -	2.00E+05	NO:3
Trichloroethylene (TCE)	**79-01-6**	**2.81E-01**	**9.52E+03**	**63/ 374**	**9.27E+00**	**9.27E+00**	**- - -**	**4.38E+02**	**YES**
Trichloromethane (Chloroform)	67-66-3	3.00E-01	2.00E+00	25/ 361	4.46E+00	2.00E+00	- - -	2.56E+03	NO:3
Vinyl Chloride	75-01-4	3.86E-01	6.82E+01	6/ 374	7.35E+00	7.35E+00	- - -	1.07E+03	NO:1
Xylenes, Total	1330-20-7	3.00E-01	1.50E+02	45/ 377	4.75E+00	4.75E+00	- - -	6.42E+04	NO:3
Radionuclides (pCi/g)									
Actinium-227 +L ***	14952-40-0L	3.80E-02	2.65E+00	330/2319	2.57E-01	2.57E-01	1.10E-01	4.56E-01	YES
Actinium-228	14331-83-0	3.80E-05	2.48E+00	998/1309	6.69E-01	6.69E-01	- - -	2.17E-01	NO:6
Americium-241	**14596-10-2**	**3.00E-02**	**3.36E+01**	**226/2650**	**1.08E-01**	**1.08E-01**	**- - -**	**6.32E+00**	**YES**
Bismuth-207	13982-38-2	1.00E-02	1.53E-01	10/1708	3.50E-02	3.50E-02	- - -	1.39E-01	NO:1
Bismuth-210M	BI-210M	5.00E-02	2.41E+00	32/1617	4.96E-02	4.96E-02	- - -	- - -	NO:1
Bismuth-212	14913-49-6	5.30E-01	2.40E+00	36/ 37	1.48E+00	1.48E+00	- - -	1.11E+00	NO:6
Bismuth-214 ****	14733-03-0	2.81E-05	1.97E+00	1366/1381	6.18E-01	6.18E-01	1.20E+00	1.31E-01	NO:4
Cesium-137	10045-97-3(+D)	1.00E-02	2.50E+00	273/2643	5.94E-02	5.94E-02	4.20E-01	3.82E-01	NO:4
Cobalt-60	10198-40-0	1.00E-02	1.10E+00	40/2595	5.60E-02	5.60E-02	- - -	7.91E-02	NO:1
Lead-210 ****	14255-04-0(+D)	4.00E-02	1.17E+01	424/2255	1.10E+00	1.10E+00	1.20E+00	6.25E-01	NO:4
Lead-212	15092-94-1	3.44E-05	2.67E+00	1401/1407	6.51E-01	6.51E-01	- - -	1.79E+00	NO:6
Lead-214 ****	15067-28-4	2.10E-01	1.32E+00	481/ 483	5.99E-01	5.99E-01	1.20E+00	1.00E+00	NO:4

Table 9

Identification of Constituents of Potential Concern for a Construction Worker Exposed to Surface Soil in the MCP Parcel 8

Analyte (SRC)	CAS Number	Minimum Concentration	Maximum Concentration	Detection Frequency	95% UCL	EPC	Background Value	10^{-6} RBGV	COPC?
Neptunium-237	13994-20-2(+D)	5.00E-04	2.40E-01	13/ 14	6.91E-01	2.40E-01	- - -	1.10E+00	NO:3
Plutonium-238	**13981-16-3**	**3.38E-03**	**8.44E+03**	**2758/5349**	**3.23E+01**	**3.23E+01**	**1.30E-01**	**6.12E+00**	**YES**
Plutonium-239	15117-48-3	9.00E-03	1.24E-01	2/ 4	4.77E+03	1.24E-01	- - -	6.03E+00	NO:3
Plutonium-239/240	OER-100-70	3.30E-03	2.01E+01	821/2560	5.83E-02	5.83E-02	1.80E-01	- - -	NO:4
Plutonium-241	14119-32-5	1.50E+00	2.95E+00	4/ 6	1.03E+01	2.95E+00	- - -	5.06E+02	NO:3
Plutonium-242	13982-10-0	3.72E-03	5.50E-01	15/ 26	6.59E-01	5.50E-01	- - -	6.33E+00	NO:3
Potassium-40	13966-00-2	1.32E-03	4.64E+01	1526/1533	1.89E+01	1.89E+01	3.70E+01	1.18E+00	NO:4
Protactinium-231	14331-85-2(+D)	1.43E+00	3.00E+00	5/1666	9.62E-01	9.62E-01	- - -	- - -	NO:1
Radium-224	13233-32-4	2.36E-01	2.50E+00	20/ 20	9.35E-01	9.35E-01	- - -	3.24E+00	NO:3
Radium-226	13982-63-3(+D)	2.81E-05	3.91E+00	2435/2603	8.23E-01	8.23E-01	2.00E+00	1.10E-01	NO:4
Radium-228 +L	**15262-20-1L**	**2.40E-01**	**2.48E+00**	**341/ 498**	**7.00E-01**	**7.00E-01**	**- - -**	**6.96E-02**	**YES**
Strontium-90	10098-97-2(+D)	2.00E-01	1.62E+00	25/ 168	5.09E-01	5.09E-01	7.20E-01	9.40E+00	NO:3
Thallium-208	14913-50-9	4.70E-02	5.70E-01	428/ 430	2.61E-01	2.61E-01	- - -	5.59E-02	NO:6
Thorium-227	15623-47-9	2.00E-02	6.00E-01	48/ 53	3.07E-01	3.07E-01	- - -	2.14E+00	NO:6
Thorium-228 +L	14274-82-9L	3.85E-02	2.50E+01	2471/2528	8.26E-01	8.26E-01	1.50E+00	1.19E-01	NO:4
Thorium-229	15594-54-4	4.90E-01	8.45E-01	2/1201	4.78E-01	4.78E-01	- - -	1.90E+00	NO:1
Thorium-230	14269-63-7(+D)	5.00E-02	1.34E+01	2485/2953	1.25E+00	1.25E+00	1.90E+00	9.26E-02	NO:4
Thorium-232	7440-29-1(+D)	5.60E-02	3.77E+01	2979/5392	8.16E-01	8.16E-01	1.40E+00	6.90E-02	NO:4
Thorium-232 Daughters	TH-232DA	4.10E-01	4.90E-01	2/ 2	- - -	4.90E-01	1.40E+00	- - -	NO:2
Thorium-234	15065-10-8	5.48E-01	5.41E+00	21/ 21	1.53E+00	1.53E+00	- - -	1.76E+01	NO:3
Tritium	10028-17-8p	6.80E-02	8.95E+02	341/ 549	4.21E+01	4.21E+01	1.60E+00	7.58E+03	NO:3
Uranium-233/234	**U-233/234**	**4.47E-01**	**1.02E+00**	**37/ 37**	**7.34E-01**	**7.34E-01**	**- - -**	**4.82E-01**	**YES**
Uranium-234	13966-29-5	2.01E-01	1.26E+01	420/ 425	9.01E-01	9.01E-01	1.10E+00	1.05E+01	NO:4
Uranium-235	15117-96-1(+D)	3.00E-03	1.02E+00	269/1465	3.67E-01	3.67E-01	1.10E-01	1.54E+00	NO:3
Uranium-235/236	13966-29-5	1.94E-02	6.78E-02	13/ 27	4.69E-02	4.69E-02	- - -	3.10E-01	NO:3
Uranium-238 +L	7440-61-1L	1.10E-01	1.10E+02	528/1651	9.17E-01	9.17E-01	1.20E+00	8.98E-02	NO:4

CAS - Chemical Abstract Service
COPC - Constituents of Potential Concern
EPC - Exposure Point Concentration
mg/kg - milligram per kilogram
ug/kg - microgram per kilogram
pCi/g - picocurie per gram
RBGV - Risk Based Guideline Value
UCL - Upper Confidence Limit
D - Plus daughters up to the next long-lived daughter
L - Includes long-lived daughters.

NO:1 - <5% Detects
NO:2 - Max<Background
NO:3 - Max< Risk Based Guideline Value
NO:4 - EPC< Background
NO:5 - Essential Human Nutrients
NO:6 - Part of a chain which has members above that are COPCs
*** Ac-227 background level assumes secular equilibrium with U235/236.
**** Pb-210, Pb-214 and Bi-214 background levels assume secular equilibrium with U-238.

Background values are base on the Operable Unit 9 Background Soils Investigation Chemistry Report (DOE 1994) or, in the case of nuclides with short half lives (Ac-227 Pb-210, and Pa-231) are based on the parent nuclide background and assumption of equilibrium with the parent nuclide.

- - - not applicable, not available, or not calculated due to insufficient toxicity data

Ra-228 note: A background value has not been calculated for Ra-228 and why none is provided in the table above. However, if Ra-228's parent nuclide background is considered (Th-232 at 1.4 pCi/g), Ra-228 would not be brought forward as a COPC. To be consistent with previous RREs, Ra-228 was presented with no background value and was brought forward as a COPC

Table 10

Identification of Constituents of Potential Concern for the Site Employee Exposed to Surface Soil in Parcel 8

Analyte (SRC)	CAS Number	Minimum Concentration	Maximum Concentration	Detection Frequency	95% UCL	EPC	Background Value	RBGV	COPC?
Inorganics (mg/kg)									
Aluminum	7429-90-5	1.59E+00	1.93E+04	147/ 148	1.20E+04	1.20E+04	1.90E+04	1.69E+05	NO:3
Antimony	7440-36-0	2.30E-01	6.90E+01	24/ 133	1.06E+01	1.06E+01	0.00E+00	8.18E+01	NO:3
Arsenic	7440-38-2	2.30E-03	1.33E+01	148/ 156	5.87E+00	5.87E+00	8.60E+00	2.26E+00	NO:4
Barium	7440-39-3	1.20E-02	6.23E+02	129/ 154	8.76E+01	8.76E+01	1.80E+02	1.25E+04	NO:3
Beryllium	7440-41-7	1.50E-04	1.30E+00	134/ 296	4.78E-01	4.78E-01	1.30E+00	3.70E+02	NO:3
Bismuth	7440-69-9	4.30E-01	1.01E+02	13/ 49	8.71E+00	8.71E+00	3.84E+01	---	NO:4
Cadmium	7440-43-9s	6.00E-02	2.42E+01	67/ 154	1.47E+00	1.47E+00	2.10E+00	1.01E+01	NO:4
Calcium	7440-70-2	1.33E+02	2.64E+05	147/ 148	1.63E+05	1.63E+05	3.10E+05	---	NO:2
Chromium	7440-47-3	3.60E-03	9.21E+01	150/ 154	1.70E+01	1.70E+01	2.00E+01	---	NO:4
Cobalt	7440-48-4	1.70E-03	2.80E+01	124/ 148	1.06E+01	1.06E+01	1.90E+01	1.93E+03	NO:3
Copper	7440-50-8	6.50E-03	3.82E+02	144/ 147	2.79E+01	2.79E+01	2.60E+01	8.18E+03	NO:3
Cyanide	57-12-5	1.20E-01	1.01E+01	22/ 119	8.64E-01	8.64E-01	0.00E+00	4.09E+03	NO:3
Erbium	**7440-52-0**	**4.00E+01**	**6.87E+01**	**3/ 4**	**4.92E+08**	**6.87E+01**	**0.00E+00**	**---**	**YES**
Iron	7439-89-6	4.33E+00	1.00E+05	150/ 151	2.41E+04	2.41E+04	3.50E+04	---	NO:4
Lead	7439-92-1	2.40E-03	3.10E+03	135/ 138	1.96E+01	1.96E+01	4.80E+01	---	NO:4
Lithium	**7439-93-2**	**1.10E+00**	**3.93E+01**	**68/ 73**	**1.57E+01**	**1.57E+01**	**0.00E+00**	**---**	**YES**
Magnesium	7439-95-4	4.31E+01	1.08E+05	147/ 148	4.53E+04	4.53E+04	4.00E+04	---	NO:5
Manganese	7439-96-5s	1.75E-01	8.31E+02	142/ 143	5.71E+02	5.71E+02	1.40E+03	3.25E+03	NO:2
Mercury	7439-97-6	2.00E-02	9.10E-01	38/ 150	9.08E-02	9.08E-02	1.50E-01	5.78E+04	NO:3
Molybdenum	7439-98-7	5.30E-01	1.64E+01	37/ 56	2.79E+00	2.79E+00	2.72E+01	1.02E+03	NO:2
Nickel	7440-02-0	4.20E-03	1.07E+02	136/ 148	2.28E+01	2.28E+01	3.20E+01	4.09E+03	NO:3
Potassium	7440-09-7	5.16E-01	5.15E+03	127/ 148	1.90E+03	1.90E+03	1.90E+03	---	NO:5
Selenium	7782-49-2	1.20E-01	2.30E+00	12/ 138	6.04E-01	6.04E-01	5.90E-01	1.02E+03	NO:3
Silver	7440-22-4	1.90E-01	1.89E+01	46/ 152	2.91E+00	2.91E+00	1.70E+00	1.02E+03	NO:3
Sodium	7440-23-5	3.23E-01	2.62E+03	119/ 151	6.71E+02	6.71E+02	2.40E+02	---	NO:5
Tantalum	**7440-25-7**	**1.68E+02**	**4.44E+02**	**3/ 10**	**2.91E+02**	**4.44E+02**	**0.00E+00**	**---**	**YES**
Thallium	7440-28-0	6.20E-04	5.50E+00	26/ 148	8.27E-01	8.27E-01	4.60E-01	1.35E+01	NO:3
Tin	7440-31-5	9.80E-01	8.00E+00	16/ 48	4.12E+00	4.12E+00	2.09E+01	1.23E+05	NO:2
Vanadium	7440-62-2	6.10E-03	4.88E+01	147/ 148	2.07E+01	2.07E+01	2.50E+01	2.04E+02	NO:3
Zinc	7440-66-6	1.20E-02	1.18E+03	143/ 144	1.00E+02	1.00E+02	1.40E+02	6.13E+04	NO:3
Dioxins & Dibenzofurans (µg/kg)									
1,2,3,4,6,7,8-HpCDD	**35822-46-9**	**2.30E+00**	**2.30E+00**	**1/ 6**	**4.51E+02**	**2.30E+00**	**0.00E+00**	**0.00E+00**	**YES**
HpCDD	**37871-00-4**	**4.10E+00**	**4.10E+00**	**1/ 6**	**7.64E+02**	**4.10E+00**	**0.00E+00**	**3.81E+00**	**YES**
CDD	3268-87-9	3.10E-01	1.66E+01	2/ 6	1.77E+05	1.66E+01	0.00E+00	3.81E+01	NO:3
Pesticides/PCBs (µg/kg)									
4,4'-DDD	72-54-8	2.40E-01	2.40E-01	1/ 109	1.20E+01	2.40E-01	0.00E+00	2.38E+04	NO:1
4,4'-DDE	72-55-9	2.20E-01	3.10E+00	6/ 109	1.14E+01	3.10E+00	0.00E+00	1.68E+04	NO:3
4,4'-DDT	50-29-3	9.00E-01	2.70E+01	9/ 108	1.22E+01	1.22E+01	0.00E+00	9.56E+03	NO:3
Aldrin	309-00-2	5.70E-02	1.40E+00	8/ 109	6.30E+00	1.40E+00	0.00E+00	1.03E+02	NO:3
Alpha Chlordane**	5103-71-9	2.70E-02	1.50E+00	9/ 108	1.19E+02	1.50E+00	0.00E+00	7.64E+03	NO:3
Alpha-BHC	319-84-6	4.30E-02	2.50E+00	7/ 109	6.47E+00	2.50E+00	0.00E+00	9.08E+02	NO:3
Aroclor-1248	12672-29-6	1.80E+01	1.80E+01	1/ 116	6.84E+01	1.80E+01	0.00E+00	0.00E+00	NO:1
Aroclor-1254	11097-69-1	1.50E+01	6.30E+01	9/ 116	1.45E+02	6.30E+01	0.00E+00	6.83E+02	NO:3
Aroclor-1260	11096-82-5	1.50E+01	4.40E+01	2/ 115	1.42E+02	4.40E+01	0.00E+00	0.00E+00	NO:1
Beta-BHC	319-85-7	6.60E-01	1.30E+01	2/ 109	6.02E+00	6.02E+00	0.00E+00	3.18E+03	NO:1
Delta-BHC	319-86-8	1.20E-01	4.10E-01	5/ 109	7.44E+00	4.10E-01	0.00E+00	0.00E+00	NO:1
Dieldrin	60-57-1	7.80E-02	5.00E+01	10/ 109	1.21E+01	1.21E+01	0.00E+00	3.58E+02	NO:3
Endosulfan I	959-98-8	4.80E-01	4.80E-01	1/ 109	8.03E+00	4.80E-01	0.00E+00	0.00E+00	NO:1
Endosulfan II	**33213-65-9**	**1.50E-01**	**4.40E+00**	**8/ 109**	**1.06E+01**	**4.40E+00**	**0.00E+00**	**0.00E+00**	**YES**
Endosulfan Sulfate	**1031-07-8**	**2.20E-01**	**1.30E+00**	**6/ 109**	**1.91E+01**	**1.30E+00**	**0.00E+00**	**0.00E+00**	**YES**
Endrin	72-20-8	1.80E+00	4.10E+00	4/ 109	1.04E+01	4.10E+00	0.00E+00	6.13E+04	NO:1
Endrin Aldehyde	**7421-93-4**	**1.30E-01**	**1.40E+01**	**7/ 93**	**1.20E+01**	**1.20E+01**	**0.00E+00**	**0.00E+00**	**YES**
Endrin Ketone	**53494-70-5**	**1.60E-01**	**5.40E+00**	**6/ 109**	**1.75E+01**	**5.40E+00**	**0.00E+00**	**0.00E+00**	**YES**
Gamma Chlordane	5103-74-2	6.80E-01	5.10E+00	6/ 108	1.06E+02	5.10E+00	0.00E+00	7.64E+03	NO:3
Gamma-BHC (Lindane)	58-89-9	4.30E-01	4.30E-01	1/ 109	5.45E+00	4.30E-01	0.00E+00	4.40E+03	NO:1
Heptachlor	76-44-8	2.00E-01	2.00E-01	1/ 109	5.20E+00	2.00E-01	0.00E+00	1.27E+03	NO:1
Heptachlor Epoxide	1024-57-3	1.40E-01	6.80E-01	7/ 109	1.14E+01	6.80E-01	0.00E+00	6.29E+02	NO:3
Methoxychlor	72-43-5	1.50E+00	1.00E+02	2/ 109	8.37E+01	8.37E+01	0.00E+00	1.02E+06	NO:1
Semi-Volatile Organic Compounds (µg/kg)									
1,2-Dichlorobenzene	95-50-1	6.40E-01	6.40E-01	1/ 133	4.50E+02	6.40E-01	0.00E+00	2.92E+00	NO:1
2,4-Dimethylphenol	105-67-9	3.10E+04	3.10E+04	1/ 130	3.93E+02	3.93E+02	0.00E+00	1.25E+06	NO:1
2-Benzyl-4-Chlorophenol	**120-32-1**	**1.20E+02**	**1.20E+02**	**1/ 17**	**2.03E+02**	**1.20E+02**	**0.00E+00**	**0.00E+00**	**YES**
2-Methylnaphthalene	91-57-6	2.50E+01	2.30E+04	9/ 145	7.32E+02	7.32E+02	0.00E+00	8.18E+05	NO:3
2-Methylphenol	95-48-7	1.30E+04	1.30E+04	1/ 133	3.69E+02	3.69E+02	0.00E+00	1.02E+07	NO:1
3,3'-Dichlorobenzidine	91-94-1	4.80E+01	4.80E+01	1/ 130	6.12E+02	4.80E+01	0.00E+00	3.88E+03	NO:1
4-Methylphenol	106-44-5	4.60E+01	2.50E+04	2/ 133	4.01E+02	4.01E+02	0.00E+00	1.02E+06	NO:1
Acenaphthene	83-32-9	1.90E+01	5.10E+03	22/ 145	7.35E+02	7.35E+02	0.00E+00	3.09E+06	NO:3
Acenaphthylene	208-96-8	3.50E+01	7.30E+02	6/ 145	6.75E+02	6.75E+02	0.00E+00	0.00E+00	NO:1
Anthracene	120-12-7	1.90E+01	3.80E+04	35/ 145	9.03E+02	9.03E+02	0.00E+00	1.55E+07	NO:3
Benzo(a)anthracene	**56-55-3**	**2.00E+01**	**9.60E+04**	**54/ 145**	**1.00E+03**	**1.00E+03**	**0.00E+00**	**1.98E+03**	**YES**
Benzo(a)pyrene	**50-32-8**	**2.00E+01**	**1.10E+05**	**54/ 145**	**9.27E+02**	**9.27E+02**	**0.00E+00**	**1.98E+02**	**YES**
enzo(b)fluoranthene	**205-99-2**	**2.20E+01**	**1.20E+05**	**56/ 145**	**1.01E+03**	**1.01E+03**	**0.00E+00**	**1.98E+03**	**YES**
enzo(g,h,i)perylene	**191-24-2**	**2.00E+01**	**1.65E+05**	**47/ 145**	**1.04E+03**	**1.04E+03**	**0.00E+00**	**0.00E+00**	**YES**
3enzo(k)fluoranthene	**207-08-9**	**1.90E+01**	**1.10E+05**	**52/ 145**	**9.73E+02**	**9.73E+02**	**0.00E+00**	**1.98E+04**	**YES**
Benzoic Acid	65-85-0	4.50E+01	1.70E+02	5/ 72	1.91E+03	1.70E+02	0.00E+00	2.49E+08	NO:3

Table 10

Identification of Constituents of Potential Concern for the Site Employee Exposed to Surface Soil in Parcel 8

Analyte (SRC)	CAS Number	Minimum Concentration	Maximum Concentration	Detection Frequency	95% UCL	EPC	Background Value	RBGV	COPC?
Benzyl Alcohol	100-51-6	1.70E+04	1.70E+04	1/ 73	3.87E+02	3.87E+02	0.00E+00	1.87E+07	NO:1
Bis(2-ethylhexyl)phthalate	117-81-7	3.10E+01	2.30E+03	79/ 130	4.01E+02	4.01E+02	0.00E+00	1.25E+05	NO:3
Butyl Benzyl Phthalate	85-68-7	3.20E+01	5.20E+02	15/ 130	3.71E+02	3.71E+02	0.00E+00	1.25E+07	NO:3
Carbazole	86-74-8	1.90E+01	1.70E+03	23/ 74	4.48E+02	4.48E+02	0.00E+00	8.72E+04	NO:3
Chrysene	218-01-9	2.60E+01	1.20E+05	55/ 132	9.38E+02	9.38E+02	0.00E+00	1.98E+05	NO:3
Dibenz(a,h)anthracene	**53-70-3**	**2.00E+01**	**7.50E+02**	**27/ 143**	**7.40E+02**	**7.40E+02**	**0.00E+00**	**1.98E+02**	**YES**
Dibenzofuran	132-64-9	2.80E+01	1.10E+03	15/ 130	3.85E+02	3.85E+02	0.00E+00	1.25E+05	NO:3
Diethyl Phthalate	84-66-2	2.00E+01	1.00E+02	3/ 130	3.56E+02	1.00E+02	0.00E+00	4.99E+07	NO:1
Dimethyl Phthalate	131-11-3	1.30E+02	1.30E+02	1/ 130	3.52E+02	1.30E+02	0.00E+00	2.04E+09	NO:1
Di-n-butyl Phthalate	84-74-2	1.90E+01	7.80E+04	28/ 130	3.76E+02	3.76E+02	0.00E+00	6.23E+06	NO:3
Di-n-octyl Phthalate	117-84-0	2.70E+01	3.50E+05	16/ 130	3.81E+02	3.81E+02	0.00E+00	8.18E+06	NO:3
Fluoranthene	206-44-0	2.40E+01	1.80E+05	72/ 145	1.31E+03	1.31E+03	0.00E+00	2.06E+06	NO:3
Fluorene	86-73-7	2.30E+01	2.10E+04	24/ 145	8.29E+02	8.29E+02	0.00E+00	2.06E+06	NO:3
Hexachlorobenzene	118-74-1	4.90E+01	4.90E+01	1/ 133	3.48E+02	4.90E+01	0.00E+00	1.09E+03	NO:1
Indeno(1,2,3-cd)pyrene	**193-39-5**	**1.60E+01**	**1.20E+05**	**45/ 143**	**8.09E+02**	**8.09E+02**	**0.00E+00**	**1.98E+03**	**YES**
Isophorone	78-59-1	4.10E+02	7.80E+02	2/ 130	3.33E+02	3.33E+02	0.00E+00	1.84E+06	NO:1
N-Nitroso-di-n-propylamine	621-64-7	7.40E+02	7.40E+02	1/ 130	3.45E+02	3.45E+02	0.00E+00	2.49E+02	NO:1
N-Nitrosodiphenylamine	86-30-6	1.50E+02	1.50E+02	1/ 130	3.50E+02	1.50E+02	0.00E+00	3.56E+05	NO:1
Pentachlorophenol	87-86-5	1.80E+02	1.90E+02	2/ 133	1.34E+03	1.90E+02	0.00E+00	7.12E+03	NO:1
Phenanthrene	**85-01-8**	**1.80E+01**	**1.00E+05**	**61/ 145**	**1.42E+03**	**1.42E+03**	**0.00E+00**	**0.00E+00**	**YES**
Phenol	108-95-2	2.20E+04	2.20E+04	1/ 133	3.79E+02	3.79E+02	0.00E+00	1.87E+07	NO:1
Pyrene	129-00-0	1.90E+01	1.60E+05	69/ 145	1.28E+03	1.28E+03	0.00E+00	1.55E+06	NO:3
Volatile Organic Compounds (µg/kg)									
1,1,1-Trichloroethane	71-55-6	3.00E+00	1.10E+01	4/ 138	4.20E+00	4.20E+00	0.00E+00	5.72E+07	NO:1
1,2-cis-Dichloroethene (DCE)	156-59-2	2.37E-01	1.12E+03	11/ 13	3.04E+04	1.12E+03	0.00E+00	2.04E+06	NO:3
1,2-Dichloroethane	107-06-2	1.00E+00	1.00E+00	1/ 141	4.12E+00	1.00E+00	0.00E+00	6.29E+04	NO:1
1,2-Dichloroethene	540-59-0	4.33E-01	1.16E+03	12/ 148	6.48E+00	6.48E+00	0.00E+00	1.84E+06	NO:3
1,2-trans-Dichloroethene	156-60-5	3.61E+01	4.38E+02	2/ 16	6.82E+03	4.38E+02	0.00E+00	4.09E+06	NO:3
2-Butanone	78-93-3	1.00E+00	2.10E+01	11/ 140	9.60E+00	9.60E+00	0.00E+00	1.23E+08	NO:3
2-Hexanone	591-78-6	3.00E+00	6.10E+01	3/ 138	8.66E+00	8.66E+00	0.00E+00	0.00E+00	NO:1
4-Methyl-2-pentanone	108-10-1	6.00E-01	2.00E+01	5/ 138	8.49E+00	8.49E+00	0.00E+00	1.64E+07	NO:1
Acetone	67-64-1	3.00E+00	2.10E+02	61/ 136	2.20E+01	2.20E+01	0.00E+00	1.84E+08	NO:3
Acetonitrile	**75-05-8**	**6.70E+01**	**6.70E+01**	**1/ 20**	**7.99E+01**	**6.70E+01**	**0.00E+00**	**0.00E+00**	**YES**
Acrylonitrile	107-13-1	8.00E+00	8.00E+00	1/ 23	1.93E+02	8.00E+00	0.00E+00	1.06E+04	NO:1
enzene	71-43-2	1.00E+00	2.00E+00	2/ 159	4.14E+00	2.00E+00	0.00E+00	1.04E+05	NO:1
arbon Disulfide	75-15-0	3.00E+00	9.00E+00	2/ 138	4.37E+00	4.37E+00	0.00E+00	2.04E+07	NO:1
arbon Tetrachloride	56-23-5	2.00E+00	2.00E+00	1/ 141	4.32E+00	2.00E+00	0.00E+00	4.40E+04	NO:1
Chlorobenzene	108-90-7	2.00E+00	2.00E+00	1/ 141	4.11E+00	2.00E+00	0.00E+00	4.09E+06	NO:1
Chloromethane	74-87-3	6.00E+00	6.00E+00	1/ 138	6.45E+00	6.00E+00	0.00E+00	0.00E+00	NO:1
Dichloromethane (Methylene Chloride)	75-09-2	1.00E+00	1.40E+03	88/ 138	2.76E+01	2.76E+01	0.00E+00	7.63E+05	NO:3
Ethylbenzene	100-41-4	8.00E-01	1.70E+01	8/ 156	4.08E+00	4.08E+00	0.00E+00	2.04E+07	NO:3
FREON-113	76-13-1	2.00E+00	2.00E+00	1/ 37	6.54E+00	2.00E+00	0.00E+00	6.13E+09	NO:1
Naphthalene	91-20-3	4.50E+01	4.50E+03	10/ 145	7.11E+02	7.11E+02	0.00E+00	1.24E+06	NO:3
Styrene	100-42-5	6.00E-01	2.00E+00	4/ 138	4.26E+00	2.00E+00	0.00E+00	4.09E+07	NO:1
Tetrachloroethene (PCE)	127-18-4	2.58E-01	2.54E+03	18/ 154	8.96E+00	8.96E+00	0.00E+00	1.06E+04	NO:3
Toluene	108-88-3	5.70E-01	7.00E+01	23/ 156	4.36E+00	4.36E+00	0.00E+00	4.09E+07	NO:3
Trichloroethylene (TCE)	79-01-6	2.81E-01	9.52E+03	22/ 154	9.64E+00	9.64E+00	0.00E+00	1.43E+04	NO:3
Trichloromethane (Cholorform)	67-66-3	3.00E-01	2.00E+00	8/ 141	4.01E+00	2.00E+00	0.00E+00	2.04E+06	NO:3
Vinyl Chloride	75-01-4	3.86E-01	6.82E+01	5/ 154	9.14E+00	9.14E+00	0.00E+00	3.82E+03	NO:1
Xylenes, Total	1330-20-7	3.00E-01	1.50E+02	12/ 156	4.56E+00	4.56E+00	0.00E+00	4.09E+07	NO:3
Radionuclides (pCi/g)									
Actinium-227 +L ***	**14952-40-0L**	**3.80E-02**	**2.65E+00**	**296/2160**	**2.64E-01**	**2.64E-01**	**1.10E-01**	**5.02E-01**	**YES**
Actinium-228	14331-83-0	3.80E-05	2.48E+00	998/1309	6.69E-01	6.69E-01	0.00E+00	2.01E-01	NO:6
Americium-241	**14596-10-2**	**3.00E-02**	**3.36E+01**	**209/2258**	**1.07E-01**	**1.07E-01**	**0.00E+00**	**9.93E+00**	**YES**
Bismuth-207	13982-38-2	1.00E-02	1.53E-01	7/1562	3.57E-02	3.57E-02	0.00E+00	1.29E-01	NO:1
Bismuth-210M	BI-210M	9.70E-02	2.41E+00	30/1518	5.06E-02	5.06E-02	0.00E+00	8.67E-01	NO:1
Bismuth-212	14913-49-6	5.30E-01	2.40E+00	36/ 37	1.48E+00	1.48E+00	0.00E+00	1.03E+00	NO:6
Bismuth-214 ****	14733-03-0	2.81E-05	1.97E+00	1366/1381	6.18E-01	6.18E-01	1.20E+00	1.22E-01	NO:4
Cesium-137	10045-97-3(+D)	1.00E-02	1.40E+00	253/2281	5.61E-02	5.61E-02	4.20E-01	3.56E-01	NO:4
Cobalt-60	10198-40-0	1.00E-02	1.01E+00	33/2245	5.15E-02	5.15E-02	0.00E+00	7.35E-02	NO:1
Lead-210 +D ****	14255-04-0(+D)	2.40E-01	1.17E+01	374/2066	1.13E+00	1.13E+00	1.20E+00	1.19E+00	NO:4
Lead-212	15092-94-1	3.44E-05	2.67E+00	1400/1406	6.51E-01	6.51E-01	1.50E+00	1.73E+00	NO:4
Lead-214 ****	15067-28-4	2.10E-01	1.32E+00	480/ 482	5.99E-01	5.99E-01	1.20E+00	9.29E-01	NO:4
Neptunium-237	13994-20-2(+D)	2.00E-02	2.40E-01	4/ 4	3.16E+05	2.40E-01	0.00E+00	1.08E+00	NO:3
Plutonium-238	**13981-16-3**	**4.74E-03**	**8.44E+03**	**2473/4317**	**2.59E+01**	**2.59E+01**	**1.30E-01**	**1.13E+01**	**YES**
Plutonium-239	15117-48-3	9.00E-03	1.24E-01	2/ 4	4.77E+03	1.24E-01	0.00E+00	1.12E+01	NO:3
Plutonium-239/240	OER-100-70	3.30E-03	2.01E+01	788/2330	6.02E-02	6.02E-02	1.80E-01	1.11E+01	NO:4
Plutonium-242	13982-10-0	1.40E-01	5.50E-01	4/ 5	2.78E+02	5.50E-01	0.00E+00	1.17E+01	NO:3
Potassium-40	13966-00-2	1.32E-03	4.64E+01	1468/1471	1.88E+01	1.88E+01	3.70E+01	1.12E+00	NO:4
Radium-224	13233-32-4	2.36E-01	2.50E+00	8/ 8	1.97E+00	2.50E+00	1.50E+00	5.47E+00	NO:3
Radium-226	13982-63-3(+D)	2.81E-05	3.91E+00	2124/2249	7.96E-01	7.96E-01	2.00E+00	1.05E-01	NO:4
Radium-228 +L	**15262-20-1L**	**2.40E-01**	**2.48E+00**	**327/ 483**	**7.00E-01**	**7.00E-01**	**0.00E+00**	**6.92E-02**	**YES**
Strontium-90	10098-97-2(+D)	4.60E-01	1.62E+00	14/ 118	5.55E-01	5.55E-01	7.20E-01	1.50E+01	NO:3
allium-208	14913-50-9	4.70E-02	5.70E-01	428/ 430	2.61E-01	2.61E-01	0.00E+00	5.18E-02	NO:6
orium-227	15623-47-9	2.00E-02	6.00E-01	48/ 53	3.07E-01	3.07E-01	0.00E+00	2.17E+00	NO:3
horium-228 +L	14274-82-9L	3.85E-02	2.50E+01	2272/2291	7.96E-01	7.96E-01	1.50E+00	1.14E-01	NO:4
horium-230	14269-63-7(+D)	5.00E-02	5.23E+00	2281/2600	1.15E+00	1.15E+00	1.90E+00	9.58E-02	NO:4
Thorium-232	7440-29-1(+D)	5.60E-02	3.77E+01	2606/4290	7.52E-01	7.52E-01	1.40E+00	6.88E-02	NO:4
Thorium-232 Daughters (PCI/G)	7440-29-1	4.10E-01	4.90E-01	2/ 2	0.00E+00	4.90E-01	1.40E+00	0.00E+00	NO:2

Table 10

Identification of Constituents of Potential Concern for the Site Employee Exposed to Surface Soil in Parcel 8

Analyte (SRC)	CAS Number	Minimum Concentration	Maximum Concentration	Detection Frequency	95% UCL	EPC	Background Value	RBGV	COPC?
Thorium-234	15065-10-8	6.26E-01	5.41E+00	9/ 9	3.14E+00	5.41E+00	0.00E+00	2.58E+01	NO:3
Tritium	10028-17-8p	6.80E-02	8.95E+02	292/ 436	5.43E+01	5.43E+01	1.60E+00	1.45E+04	NO:3
Uranium-233/234	**13966-29-5**	**4.47E-01**	**8.13E-01**	**12/ 12**	**6.86E-01**	**8.13E-01**	**0.00E+00**	**5.52E-01**	**YES**
Uranium-234	13966-29-5	2.01E-01	1.26E+01	309/ 310	8.97E-01	8.97E-01	1.10E+00	1.97E+01	NO:3
Uranium-235	15117-96-1(+D)	3.00E-03	1.02E+00	188/1318	4.01E-01	4.01E-01	1.10E-01	1.55E+00	NO:3
Uranium-235/236	15117-96-1	4.82E-02	4.82E-02	1/ 4	2.02E-01	4.82E-02	0.00E+00	3.32E-01	NO:3
Uranium-238 +L	7440-61-1L	1.10E-01	1.10E+02	372/1421	8.41E-01	8.41E-01	1.20E+00	9.36E-02	NO:4

CAS - Chemical Abstract Service
COPC - Constituents of Potential Concern
EPC - Exposure Point Concentration
mg/kg - milligram per kilogram
ug/kg - microgram per kilogram
pCi/g - picocurie per gram
RBGV - Risk Based Guideline Value
UCL - Upper Confidence Limit
+D - Plus daughters up to the next long-lived daughter
+L - Includes long-lived daughters.

NO:1 - <5% Detects
NO:2 - Max<Background
NO:3 - Max< Risk Based Guideline Value
NO:4 - EPC< Background
NO:5 Essential Human Nutrients
NO:6 Part of a Chain that has members above that are COPCs
*** Ac-227 background level assumes secular equilibrium with U235/236.
**** Pb-210, Pb-214 and Bi-214 background levels assume secular equilibrium with U-238.
Bold text indicates COPCs selected

Lithium note: The RREM background value for lithium is 26 mg/kg and not 0.00 mg/kg as presented in this table, however, since the analyte would still become a COPC, the value in the table was not modified.

- - - not applicable, not available, or not calculated due to insufficient toxicity data

Background values are base on the Operable Unit 9 Background Soils Investigation Chemistry Report (DOE 1994) or, in the case of nuclides with short half lives (Ac-227 Pb-210, and Pa-231) are based on the parent nuclide background and assumption of equilibrium with the parent nuclide.

Ra-228 note: A background value has not been calculated for Ra-228 and why none is provided in the table above. However, if Ra-228's parent nuclide background is considered (Th-232 at 1.4 pCi/g), Ra-228 would not be brought forward as a COPC. To be consistent with previous RREs, Ra-228 was presented with no background value and was brought forward as a COPC

APPENDIX C – Legal Descriptions

Parcels 6, 7, and 8
Legal Descriptions

PARCEL 6
LEGAL DESCRIPTION

Exhibit "A"
DESCRIPTION OF

13.636 Acres

Parcel 6

located in
Section 30 and 36, Town 2, Range 5, M.Rs.
City of Miamisburg, Montgomery County, Ohio

Situate in Section 30 and 36, Town 2, Range 5, M.Rs., City of Miamisburg, County of Montgomery, State of Ohio, ***being part of a 87.28 acre tract conveyed to the United States of America, as recorded in Deed Book Volume 1214, Page 12*** of the Deed Records of Montgomery County, Ohio, said 87.28 acre tract being comprised of a 59.75 acre tract, also a 19.40 acre tract, also a 9.97 acre tract, also a 0.78 acre tract and a 0.78 acre tract all known as Lot Numbered 2259 of the consecutive numbered lots of the City of Miamisburg, ***also being part of a 33.11 acre tract conveyed to the United States of America, as recorded in Deed Book Volume 1246, Page 45*** of the Deed Records of Montgomery County, Ohio, said 33.11 acre tract being known as Lot Numbered 2290 of the consecutive numbered lots of the City of Miamisburg, ***also being part of a 1.61 acre tract conveyed to the United States of America, as recorded in Deed Book Volume 1256, Page 179***, of the Deed Records of Montgomery County, Ohio, said 1.61 acre tract being known as Lot Numbered 2290 of the consecutive numbered lots of the City of Miamisburg, ***being a new division of 13.635 acres from said 87.28 acre tract, 33.11 acre tract, and all the remainder of said 1.61 acre tract*** and being more fully bounded and described as follows:

Commencing at a "DOE" concrete monument found disturbed, said monument being the northwest corner of Section 30, said monument being the northeast corner of Section 36, said monument also being the northeasterly corner of a 6.63 acre tract (by deed) conveyed to the City of Miamisburg, Ohio, as recorded in Deed Book Volume 594, Page 410 of the Deed Records of Montgomery County, Ohio; thence with the east line of said City of Miamisburg 6.63 acre tract, the east line of Section 36 and the west line of Section 30, South 05° 16' 42" West, a distance of 130.25 feet to a point, witness a 1" pinched top pipe found, South 65° 36' 29" West, 1.28 feet, said pipe being the northwest corner of a 14.288 acre tract conveyed to Miamisburg Mound Community Improvement Corporation, as recorded in Deed Microfiche No. 99-0852B11 of the Deed Records of Montgomery County, Ohio, said 14.288 acre tract known as Parcel "H" of the recorded Mound Surveys, said 14.288 acre tract also known as Part of Lot Numbered 2259 of the consecutive numbered lots of the City of Miamisburg, Ohio, reference previous survey by HLS Surveyors & Engineers as recorded in Montgomery County Engineer's Record of Land Surveys Volume 1999, Page 0326, said pipe also being the northeasterly corner of a 4.805 acre tract conveyed to Miamisburg Mound Community Improvement Corporation, as recorded in Deed Microfiche No. _____ of the Deed Records of Montgomery County, Ohio, said 4.805 acre tract known as Parcel 3 of the recorded Mound Surveys, said 4.805 acre tract also known as Part of Lot Numbered 2259 and 2290 of the consecutive numbered lots of the City of Miamisburg, Ohio, reference previous survey by HLS Surveyors & Engineers as recorded in the Montgomery County Engineer's Record of Land Surveys, Volume 1999, Page 140; thence from said point with the northwesterly line of said 4.805 acre tract known as Parcel 3 and the southeasterly line of said City of Miamisburg 6.63 acre tract, South 65° 36' 29" West, a distance of 479.79 feet to a 5/8" capped "Schram" iron pin found, said pin set per previous survey reference, said iron pin being a westerly corner of said 4.805 acre tract known as Parcel 3, said iron pin being the **True Point of Beginning** of the hereinafter described new division of 13.636 acres;

Thence with a common boundary with said 4.805 acre tract known as Parcel 3 on the following thirteen (13) courses,

1) **South 24° 26' 30" East**, passing a point on the common boundary line of said United States of America 1.61 acre tract and said United States of America 87.28 acre tract at 87.13 feet, in all a distance of **308.52 feet to a 2-1/2" mag nail set**;
2) **Thence, South 65° 33' 30" West**, a distance of **7.67 feet to a railroad spike found**, said spike set per previous survey reference;
3) **Thence, South 24° 26' 30" East**, a distance of **24.31 feet to a 5/8" capped "LeRoy" iron pin found**, said iron pin per previous survey reference;
4) **Thence, North 65° 11' 32" East**, a distance of **268.32 feet to a cross notch found**, said cross notch set per previous survey reference;
5) **Thence, North 24° 54' 45" West**, a distance of **59.55 feet to a railroad spike found**, said spike set per previous survey reference;
6) **Thence, North 65° 05' 15" East**, a distance of **34.64 feet to a railroad spike found**, said spike set per previous survey reference;
7) **Thence, South 59° 41' 15" East**, passing a point on the east line of Section 36 and the west line of Section 30 at 29.11 feet, in all a distance of **32.00 feet to a railroad spike found**, said spike set per previous survey reference;
8) **Thence, South 23° 47' 05" East**, a distance of **359.64 feet to a railroad spike found**, said spike set per previous survey reference;
9) **Thence, North 66° 03' 34" East**, a distance of **39.97 feet to a railroad spike found**, said spike set per previous survey reference;
10) **Thence, South 50° 06' 58" East**, a distance of **22.74 feet to a 5/8" capped "Schram" iron pin found**, said iron pin per previous survey reference;
11) **Thence, North 64° 44' 27" East**, a distance of **98.64 feet to a 5/8" capped "Schram" iron pin found**, said iron pin per previous survey reference;
12) **Thence, North 23° 05' 32" West**, a distance of **17.73 feet to a 5/8" capped "Schram" iron pin found**, said iron pin per previous survey reference;
13) **Thence, North 40° 10' 30" East**, a distance of **91.47 feet to a 5/8" capped "LeRoy" iron pin found**, said iron pin per previous survey reference, said iron pin lying in the southwesterly line of said Miamisburg Mound Community Improvement Corporation 14.288 acre tract, said iron pin lying in a radial line having a radius to the left and a radial bearing of North 36° 23' 40" East;

Thence with the southwesterly and southerly line of said Miamisburg Mound Community Improvement Corporation 14.288 acre tract on the following two (2) courses,

1) with a curve to the left having **a delta angle of 30° 15' 10", a radius of 360.67 feet, an arc length of 190.44 feet** and a **chord bearing and distance of South 68° 43' 56" East, 188.23 feet to a 5/8" capped "LeRoy" iron pin found**, said iron pin per previous survey reference, said iron pin being the point of tangency of said curve;
2) **Thence, South 83° 51' 21" East**, a distance of **25.00 feet to a 5/8" iron pin set**, said iron pin being the northeasterly corner of the herein described new division;

Thence with a new division line through said United States of America 87.28 acre tract and said United States of America 33.11 acre tract on the following eighteen (18) courses,

1) **South 40° 32' 20" West**, a distance of **86.35 feet to a 5/8" iron pin set**, said iron pin being a non-tangential point at the beginning of a curve to the left and having a radial bearing of South 10° 26' 59" East;

2) **Thence** with a curve to the left having **a delta angle of 42° 00' 18", a radius of 223.57 feet, an arc length of 163.90 feet and a chord bearing and distance of South 58° 32' 52" West, 160.26 feet to a 5/8" iron pin set;**

3) **Thence, South 37° 32' 43" West**, a distance of **70.00 feet to a 5/8" iron pin set;**

4) **Thence, South 31° 32' 43" West**, a distance of **65.00 feet to a 5/8" iron pin set;**

5) **Thence, South 27° 32' 43" West**, a distance of **60.00 feet to a 5/8" iron pin set at a point of curvature to the right;**

6) **Thence** with a curve to the right having **a delta angle of 20° 18' 39", a radius of 349.79 feet, an arc length of 124.00 feet and a chord bearing and distance of South 37° 42' 02" West, 123.35 feet to a 5/8" iron pin set;**

7) **Thence, South 47° 51' 21" West**, a distance of **162.02 feet to a 5/8" iron pin set;**

8) **Thence, North 88° 48' 49" West**, a distance of **34.05 feet to a cross notch set in a concrete walk;**

9) **Thence, North 52° 01' 06" West**, a distance of **45.26 feet to a 5/8" iron pin set;**

10) **Thence, North 15° 43' 55" East**, a distance of **99.81 feet to a 5/8" iron pin set;**

11) **Thence, North 23° 23' 40" West**, passing a point on the east line of Section 36 and the west line of Section 30 at 143.57 feet, reference from said point a railroad spike found, South 05° 16' 42" West, 4400.37 feet, said spike being the south section corner of Section 30 and 36, also a concrete monument found, disturbed, North 05° 16' 42" East, 1006.61 feet, said concrete monument being the north corner of Section 30 and 36, in all a distance of **349.18 feet to a 5/8" iron pin set;**

12) **Thence, South 65° 40' 00" West**, a distance of **328.05 feet to a 5/8" iron pin set;**

13) **Thence, South 65° 00' 16" West**, passing a point on the common boundary line of said United States of America 33.11 acre tract and said United States of America 87.28 acre tract at 137.10 feet, in all a distance of **186.04 feet to a 5/8" iron pin set;**

14) **Thence, North 24° 22' 42" West**, passing a point on the common boundary line of said United States of America 33.11 acre tract and said United States of America 87.28 acre tract at 26.80 feet, in all a distance of **206.00 feet to a 5/8" iron pin set;**

15) **Thence, South 65° 37' 18" West**, passing a point on the common boundary line of said United States of America 33.11 acre tract and said United States of America 87.28 acre tract at 69.30 feet, in all a distance of **123.40 feet to a 5/8" iron pin set;**

16) **Thence, North 24° 17' 30" West**, a distance of **124.98 feet to a 5/8" iron pin set;**

17) **Thence, South 65° 44' 19" West**, a distance of **138.10 feet to a 5/8" iron pin set;**

18) **Thence, North 24° 15' 41" West**, a distance of **127.04 feet to a 5/8" iron pin set**, said iron pin lying in the northwesterly line of said United States of America 33.11 acre tract, said iron pin lying in the southeasterly line of the Consolidated Rail Corporation lands as conveyed in Deed Microfiche No. 78-502A01 of the Deed Records of Montgomery County, Ohio, said common boundary line being an curve to the right having a radial bearing of South 60° 51' 35" East;

Thence with the northwesterly line of said United States of America 33.11 acre tract and the southeasterly line of said Consolidated Rail Corporation lands with a curve to the right having **a delta angle of 06° 49' 51", a radius of 3519.83 feet, an arc length of 419.64 feet and a chord bearing and distance of North 32° 33' 20" East, 419.39 feet to a "DOE" concrete monument found**, said monument being the northwest corner of said United States of America 33.11 acre tract;

Thence with the north line of said United States of America 33.11 acre tract, **South 84° 14' 50" East**, a distance of **102.31 feet to a "DOE" concrete monument found**, said monument being the northeast corner of said United States of America 33.11 acre tract, said monument lying in the west line of said City of Miamisburg 6.63 acre tract;

Thence with the east line of said United States of America 33.11 acre tract and the west line of said City of Miamisburg 6.63 acre tract, **South 05° 37' 45" West**, a distance of **90.34 feet to a "DOE" concrete monument found**, said monument being the northwest corner of said United States of America 1.61 acre tract, said monument being the southwest corner of said City of Miamisburg 6.63 acre tract;

Thence with the northwesterly line of said United States of America 1.61 acre tract and the southeasterly line of said City of Miamisburg 6.63 acre tract, **North 65° 36' 29" East**, a distance of **330.66 feet to the True Point of Beginning**, containing **13.636 acres**, more or less, of which ***4.173 acres lying in Section 30, 9.463 acres lying in Section 36,*** of which ***4.173 acres being part of Lot Numbered 2259, 9.463 acres being part of Lot Numbered 2290, 6.431 acres being part of said United States of America 87.28 acre tract, 2.320 acres being part of said United States of America 33.11 acre tract and 0.712 acres being part of said United States of America 1.61 acre tract***, all of the consecutive numbered lots of the City of Miamisburg, Ohio, and being subject to all easements, highways and right of ways of record.

Bearing basis established as Grid North by GPS observation August 7th & 8th, 2002 at Latitude N39° 38' 25.81", Longitude W084° 17' 28.09" (Coast & Geodetic Survey Monument #G-139, 1947); Ohio State Plane Coordinate system, Ohio South Zone 3402 (NAD 83), True North being 01° 08' 11" east of Grid North.

This description prepared from an actual field survey performed under my direct supervision, Timothy W. Schram, Sr., Registered Professional Surveyor number 7299 of the State of Ohio, and that all monuments referenced herein and placed on the ground represents the boundaries of the herein described tract, and based on a Plat of Survey as recorded in the Montgomery County Engineer's Record of Land Surveys in Record Volume number **2004**, Page **0309**.

Timothy W. Schram, Sr., Regist. Prof. Surveyor No. 7299
of the State of Ohio, June 1, 2004.

F/040012 Mound Parcel 6

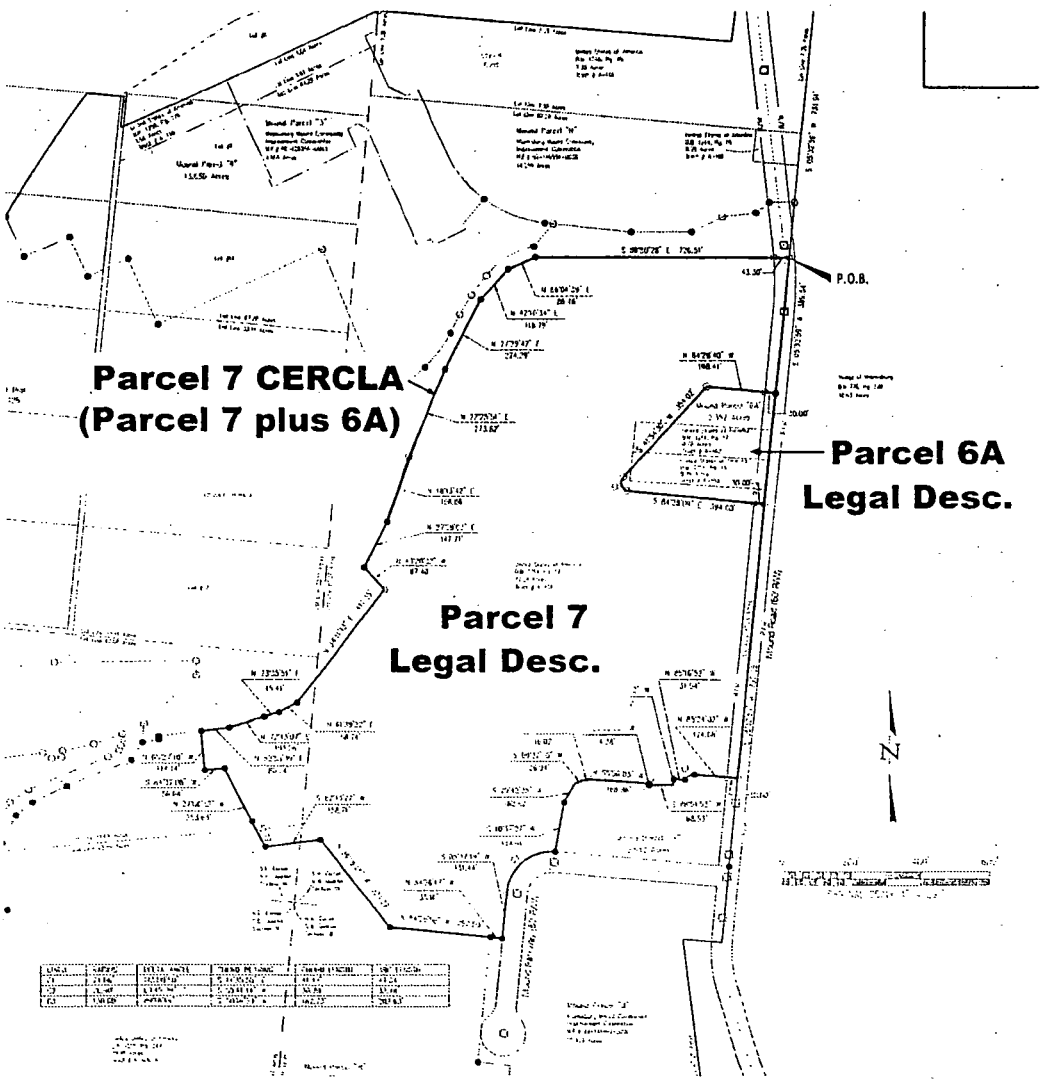
STATE OF OHIO
TIMOTHY W. SCHRAM, SR.
7299
REGISTERED
PROFESSIONAL LAND SURVEYOR

JOSEPH LITVIN, P.E., P.S.
MONTGOMERY COUNTY ENGINEER
DAYTON, OHIO
APPROVED
BY EJM DATE 7/28/04
FILE NO. 2004 0309

PARCEL 7
LEGAL DESCRIPTION

Note:

For the purposes of CERCLA and this Proposed Plan, the Parcel 7 boundary is defined in *Figure 2 Location of Parcels Within Site Boundary*. It should be noted however that the CERCLA Parcel 7 as defined in Figure 2 contains a small parcel of land (2.352 Acres) previously identified as "Parcel 6A". Although not shown in Figure 2, Parcel 6A was surveyed separate from the legal survey of Parcel 7 because it contains the DOE Legacy Management Building which may or may not be transferred in the future. So as to avoid any confusion on this matter, the legal description of Parcel 7 together with the legal description of Parcel 6A comprise the CERCLA Parcel 7 (see below).



Floyd Browne Group

Description of 42.307 Acres

Situated in the State of Ohio, County of Montgomery, City of Miamisburg, being part of Section 30 and Section 36, Fractional Township 2, Range 5, Miami Rivers Survey, being 40.385 acres out of Section 30, being 1.922 acres out of Section 36, being part of City of Miamisburg Lot No. 2259 and Lot No. 2290, being 40.219 acres of land that lie over and across an 87.28 acre tract of land described in deed to the United States of America of record in Deed Book 1214, Page 12, being 1.782 acres of land that lie over and across a 17.68 acre tract of land described in deed to the United States of America of record in Deed Book 1214, Page 248, being 0.140 acres of land that lie over and across a 20.46 acre tract of land described in deed to the United States of America of record in Deed Book 1215, Page 347, being 0.144 acres of land that lie over and across a 0.78 acre tract of land described in deed to the United States of America of record in Deed Book 1214, Page 17, being 0.022 acres of land that lie over and across a 0.78 acre tract of land described in deed to the United States of America of record in Deed Book 1214, Page 15, and being more particularly described as follows:

COMMENCING for reference at a concrete monument found at the northwest corner of said Section 30 and the northeast corner of said Section 36, being the northerly line of said Fractional Township 2, Range 5, and being the southerly line of Fractional Township 1, Range 6, Miami Rivers Survey;

Thence South 85°00'57" East with said Township line and the northerly line of said Section 30, a distance of 1249.65 feet to a point at the northeasterly corner of a 14.288 acre tract of land described in deed to Miamisburg Mound Community Improvement Corporation of record in Deed Microfiche No. 02-146504-0038;

Thence South 05°32'59" West with the easterly line of said 14.288 acre tract, a distance of 731.91 feet to an iron pin set on the westerly line of a 42.63 acre tract of land as described in deed to the Village of Miamisburg of record in Deed Book 776, Page 581, being on the easterly line of said 87.28 acre tract, and being the **TRUE POINT OF BEGINNING** of the tract to be described;

Thence South 05°32'59" West with the westerly line of said 42.63 acre tract and the easterly line of said 87.28 acre tract, a distance of 389.54 feet to a surveyor's nail found on the centerline of Mound Road;

Thence crossing said 87.28 acre tract and both said 0.78 acre tracts with the following four (4) courses and distances:

1.) North 84°28'40" West, a distance of 198.41 feet to an iron pin set;

2.) South 41°54'30" West, a distance of 354.02 feet to an iron pin set at a point of curvature;

3.) With a curve to the left having a radius of 24.86 feet, a central angle of 113°00'50", a chord bearing of South 14°35'55" East, a chord length of 41.47 feet, and an arc length of 49.04 feet to an iron pin set;

4.) South 84°28'09" East, a distance of 394.00 feet to a surveyor's nail set on the centerline of said Mound Road;

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Thence South 05°32'59" West with the westerly line of said 42.63 acre tract, the easterly line of said 87.28 acre tract, and the centerline of said Mound Road, a distance of 790.36 feet to a surveyor's nail set;
Thence crossing said 87.28 acre tract with the following eleven (11) courses and distances:

1.) North 85°24'02" West, a distance of 124.08 feet to an iron pin found at a point of curvature;

2.) With a curve to the left having a radius of 26.90 feet, a central angle of 69°49'29", a chord bearing of South 59°41'14" West, a chord length of 30.79 feet, and an arc length of 32.78 feet to an iron pin found;

3.) North 85°16'52" West, a distance of 31.54 feet to an iron pin found;

4.) South 06°33'12" West, a distance of 16.13 feet to a cross notch found;

5.) South 88°51'53" West, a distance of 68.53 feet to a surveyor's nail found;

6.) North 00°39'23" West, a distance of 4.38 feet to a railroad spike found;

7.) North 85°56'03" West, a distance of 168.86 feet to an iron pin set;

8.) South 85°36'28" West, a distance of 16.02 feet to an iron pin set;

9.) South 69°32'50" West, a distance of 26.94 feet to an iron pin set;

10.) South 29°42'35" West, a distance of 62.82 feet to an iron pin found;

11.) South 10°37'07" West, a distance of 144.91 feet to an iron pin found on the northerly line of a 12.429 acre tract of land as described in deed to Miamisburg Mound Community Improvement Corporation of record in Deed Microfiche No. 99-141468-0006 and being the northerly right of way of Mound Parkway;

Thence with the westerly line of said 12.429 acre tract and the westerly right of way line of said Mound Parkway the following two (2) courses and distances:

1.) With a curve to the left having a radius of 130.00 feet, a central angle of 89°18'19", a chord bearing of South 50°16'29" West, a chord length of 182.73 feet, and an arc length of 202.63 feet to an iron pin set;

2.) South 05°37'19" West, a distance of 131.44 feet to an iron pin found;

Thence North 84°26'17" West with a northerly line of said 12.429 acre tract, a distance of 35.16 feet to an iron pin found;

Thence crossing said 87.28 acre tract with the following three (3) courses and distances:

1.) North 84°29'56" West, a distance of 292.60 feet to an iron pin found;

2.) North 39°18'45" West, a distance of 324.29 feet to an iron pin found;

3.) South 82°43'27" West, a distance of 158.71 feet to an iron pin found in said 20.46 acre tract;

Thence crossing into and through said 17.68 acre tract with the following eight (8) courses and distances:

1.) North 27°06'32" West, a distance of 253.63 feet to an iron pin found;

2.) South 84°32'08" West, a distance of 56.64 feet to an iron pin found;

3.) North 05°27'10" West, a distance of 114.14 feet to an iron pin found;

4.) North 82°55'39" East, a distance of 80.24 feet to an iron pin found;

5.) North 72°43'07" East, a distance of 103.56 feet to an iron pin found;

6.) North 73°35'51" East, a distance of 45.41 feet to an iron pin found;

7.) North 61°39'22" East, a distance of 58.74 feet to an iron pin found;

8.) North 38°11'13" East, a distance of 411.35 feet to an iron pin set in said 87.28 acre tract;

Thence crossing said 87.28 acre tract with the following eight (8) courses and distances:

1.) North 43°20'32" West, a distance of 87.40 feet to an iron pin found;

2.) North 27°28'02" East, a distance of 147.71 feet to an iron pin found;

3.) North 18°13'42" East, a distance of 198.86 feet to an iron pin set;

4.) North 22°25'51" East, a distance of 273.82 feet to an iron pin found;

5.) North 27°29'42" East, a distance of 224.29 feet to an iron pin found;

6.) North 42°10'34" East, a distance of 116.79 feet to an iron pin found;

7.) North 66°04'39" East, a distance of 86.46 feet to an iron pin found;

1.) South 89°50'28" East, a distance of 726.51 feet to the **TRUE POINT OF BEGINNING,** containing 42.307 acres of land, more or less.

Subject however to all easements, restrictions and rights-of-way of record, if any.

Basis of Bearing is the section line between Sections 30 and 36 being North 05°16'47" East as determined by GPS measurements between Montgomery County Monuments 1057 and 1058 and the Ohio State Plane Coordinate System, South Zone. All iron pins Set are 5/8" solid iron pins 30" in length with an orange plastic cap stamped "Floyd Browne Group".

The above description is based on and referenced to an exhibit prepared by Floyd Browne Group dated 06-12-06, attached hereto and made a part hereof.

All references are to the records of the Recorder's Office, Montgomery County, Ohio.

6/12/06

Maynard H. Thompson, P.S. Date
Professional Surveyor No. 7128

STATE OF OHIO
MAYNARD H. THOMPSON S-7128
REGISTERED PROFESSIONAL SURVEYOR

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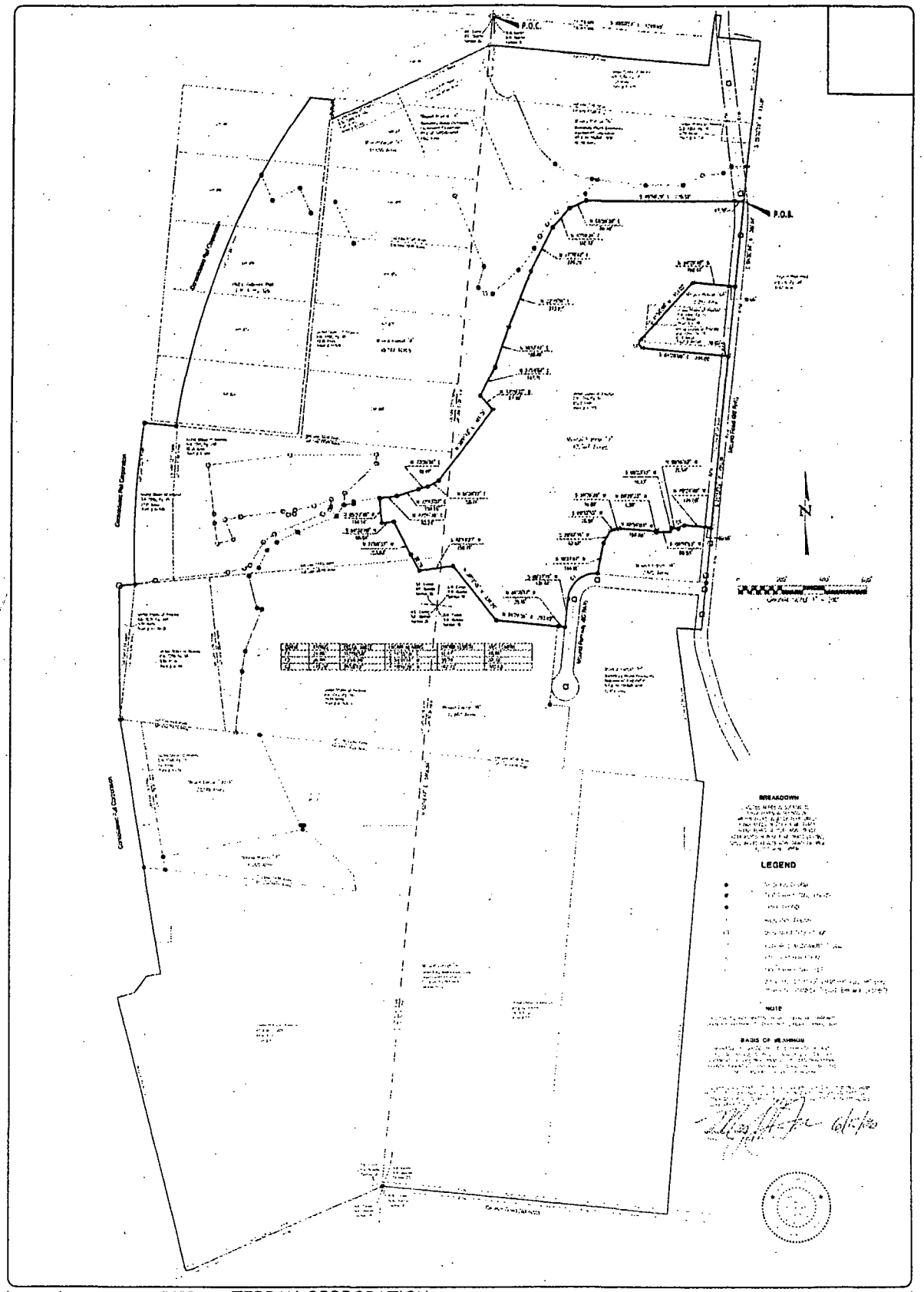

Floyd Browne Group

1 OF 1

TERRAN CORPORATION

BOUNDARY SURVEY
MOUND ROAD
MIAMISBURG, OHIO

42.307 ACRES

Div/2

K46-005-02.

Floyd Browne Group

Description of 3.320 Acres

Situate in the State of Ohio, County of Montgomery, City of Miamisburg, being part of Section 30, Township 2, Range 5, M.Rs., being 3.320 acres out of Section 30, being part of City of Miamisburg Lot Number 2259, being 0.637 acres of land that lie over and across a 0.78 acre tract of land described in deed to the United States of America of record in Deed Book 1214, Page 17, being 0.758 acres of land that lie over and across a 0.78 acre tract of land described in deed to the United States of America of record in Deed Book 1214, Page 15, being 1.925 acres of land that lie over and across an 87.28 acre tract of land described in deed to the United States of America of record in Deed Book 1214, Page 12, being Montgomery County Engineer Survey Record Number 2006-0269, and being more particularly described as follows:

COMMENCING for reference at a concrete monument found at the northwest corner of said Section 30 and the northeast corner of Section 36, being the northerly line of said Township 2, Range 5, and being the southerly line of Township 1, Range 6, M.Rs.;

Thence South 85°00'57" East with said Range line, the northerly line of City of Miamisburg Lot Number 2258, and the northerly line of said Section 30, a distance of 1249.65 feet to an iron pin set at the northeasterly corner of a 14.288 acre tract of land described in deed to Miamisburg Mound Community Improvement Corporation of record in Deed Instrument Record No. 02-146504;

Thence South 05°32'59" West with the easterly line of said 14.288 acre tract and the easterly line of said City Lot Number 2259, a distance of 1121.45 feet to a Mag nail set on the westerly line of a 42.63 acre tract of land as described in deed to the Village of Miamisburg of record in Deed Book 776, Page 581, passing a monument box found on the centerline of Mound Road (65 foot right of way) at a distance of 886.25 feet, being on the easterly line of said 87.28 acre tract, and being the **TRUE POINT OF BEGINNING** of the tract to be described;

Thence South 05°32'59" West with the centerline of said Mound Road, the westerly line of said 42.63 acre tract, the easterly line of said City Lot Number 2259, the easterly line of said 87.28 acre tract, and the easterly line of both said 0.78 acre tracts, a distance of 459.58 feet to a Mag nail set on the centerline of Mound Road, passing a Mag nail found at a distance of 324.29 feet;

Thence with a new division line though said 87.28 acre tract, said City Lot Number 2259, and both said 0.78 acre tracts with the following five (5) courses:

1.) North 84°28'09" West, a distance of 277.72 feet to an iron pin set, passing an iron pin set on the westerly right of way line of said Mound Road at a distance of 34.87 feet;

2.) North 05°31'51" East, a distance of 111.53 feet to a Mag nail set;

3.) North 84°28'09" West, a distance of 176.90 feet to a Mag nail set;

4.) North 41°54'30" East, a distance of 432.26 feet to a 5/8" iron pin found with a Schram cap, passing a 5/8" iron pin found at a distance of 77.95 feet;

5.) South 84°28'40" East, a distance of 198.41 feet, passing an iron pin set on the westerly right of way line of said Mound Road at a distance of 163.62

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feet, to the **TRUE POINT OF BEGINNING,** containing 3.320 acres of land, more or less.

Subject however to all easements, restrictions and rights-of-way of record, if any.

Basis of Bearing is the section line between Sections 30 and 36 being North 05°16'47" East as determined by GPS measurements between Montgomery County Monuments 1057 and 1058 and the Ohio State Plane Coordinate System, South Zone. All iron pins set are 5/8" solid iron pins 30" in length with an orange plastic cap stamped "Floyd Browne Group".

The above description is based on and referenced to an exhibit prepared by Floyd Browne Group dated 09-12-06, attached hereto and made a part hereof.

All references are to the records of the Recorder's Office, Montgomery County, Ohio.

9/06/06

Maynard H. Thompson, P.S. Date
Professional Surveyor No. 7128

STATE OF OHIO
MAYNARD H. THOMPSON S-7128 REGISTERED
PROFESSIONAL SURVEYOR

JOSEPH LITVIN, P.E., P.S
MONTGOMERY COUNTY ENGINEER
DAYTON, OHIO
APPROVED
BY _____ DATE _____
FILE NO. 2006-02694

PARCEL 8
LEGAL DESCRIPTION

Floyd Browne Group

Description of 45.247 Acres

Situated in the State of Ohio, County of Montgomery, City of Miamisburg, being part of Section 30 and Section 36, Fractional Township 2, Range 5, Miami Rivers Survey, being 5.297 acres out of Section 30, being 39.950 acres out of Section 36, being part of City of Miamisburg Lot No. 2259 and Lot No. 2290, being part of Lots Numbered 13, 14, 15, 16, 20, 21, 22, and 23 of the Philip Gebhart Plat of record in Plat Book Volume "A", Page 126, being 6.993 acres of land that lie over and across an 87.28 acre tract of land described in deed to the United States of America of record in Deed Book 1214, Page 12, being 7.878 acres of land that lie over and across a 17.68 acre tract of land described in deed to the United States of America of record in Deed Book 1214, Page 248, being 30.376 acres of land that lie over and across a 33.11 acre tract of land described in deed to the United States of America of record in Deed Book 1246, Page 45, and being more particularly described as follows:

COMMENCING for reference at a concrete monument found at the northwest corner of said Section 30 and the northeast corner of said Section 36, being the northerly line of said Fractional Township 2, Range 5, and being the southerly line of Fractional Township 1, Range 6, Miami Rivers Survey;

Thence South 85°00'57" East with said Township line and the northerly line of said Section 30, a distance of 1249.65 feet to a point at the northeasterly corner of a 14.288 acre tract of land described in deed to Miamisburg Mound Community Improvement Corporation of record in Deed Microfiche No. 02-146504-0038;

Thence South 05°32'59" West with the easterly line of said 14.288 acre tract, a distance of 572.24 feet to an iron pin set on the westerly line of a 42.63 acre tract of land as described in deed to the Village of Miamisburg of record in Deed Book 776, Page 581, being the southeasterly corner of said 14.288 acre tract, and being the **TRUE POINT OF BEGINNING** of the tract to be described;

Thence South 05°32'59" West with the westerly line of said 42.63 acre tract and the easterly line of said 87.28 acre tract, a distance of 159.67 feet to an iron pin set;

Thence crossing said 87.28 acre tract with the following nine (9) courses and distances:

1.) North 89°50'28" West, a distance of 726.51 feet to an iron pin found;

2.) South 66°04'39" West, a distance of 86.46 feet to an iron pin found;

3.) South 42°10'34" West, a distance of 116.79 feet to an iron pin found;

4.) South 27°29'42" West, a distance of 224.29 feet to an iron pin found;

5.) South 22°25'51" West, a distance of 273.82 feet to an iron pin set;

6.) South 18°13'42" West, a distance of 198.86 feet to an iron pin found;

7.) South 27°28'02" West, a distance of 147.71 feet to an iron pin found;

8.) South 43°20'32" East, a distance of 87.40 feet to an iron pin set;

9.) South 38°11'13" West, a distance of 411.35 feet to an iron pin found in said 17.68 acre tract;

3769 Columbus Pike, P.O. Box 8016 ■ Delaware, Ohio 43015-8016 ■ 740.363.6792 ■ fax: 740.363.6536
www.floydbrowne.com ■ 1.800.325.7647

Thence crossing said 17.68 acre tract with the following thirty-three (33) courses and distances:

1.) South 61°39'22" West, a distance of 58.74 feet to an iron pin found;

2.) South 73°35'51" West , a distance of 45.41 feet to an iron pin found;

3.) South 72°43'07" West, a distance of 103.56 feet to an iron pin found;

4.) South 82°55'39" West, a distance of 80.24 feet to an iron pin found;

5.) South 82°58'13" West, a distance of 120.59 feet to an iron pin found;

6.) South 01°37'13" East, a distance of 10.31 feet to an iron pin found;

7.) South 80°04'06" West, a distance of 45.82 feet to an iron pin found;

8.) North 04°41'32" East, a distance of 53.96 feet to an iron pin set;

9.) North 46°26'35" East, a distance of 201.86 feet to an iron pin set;

10.) North 01°39'10" West, a distance of 41.56 feet to an iron pin set;

11.) South 89°28'55" West, a distance of 397.71 feet to an iron pin set;

12.) South 83°13'43" West, a distance of 387.72 feet to an iron pin set;

13.) South 07°27'35" East, a distance of 227.31 feet to an iron pin set;

14.) South 05°28'40" East, a distance of 44.09 feet to an iron pin set;

15.) South 07°58'24" East, a distance of 93.66 feet to an iron pin set;

16.) North 75°54'00" East, a distance of 78.91 feet to an iron pin set;

17.) North 24°27'29" West, a distance of 99.13 feet to an iron pin set;

18.) North 79°49'02" East, a distance of 75.88 feet to an iron pin set;

19.) North 82°54'26" East, a distance of 197.88 feet to an iron pin set;

20.) South 57°54'36" East, a distance of 29.12 feet to an iron pin set;

21.) North 81°50'07" East, a distance of 28.32 feet to an iron pin set;

22.) North 09°29'45" East, a distance of 17.42 feet to an iron pin set;

23.) North 77°13'35" East, a distance of 89.22 feet to an iron pin set;

24.) North 69°49'16" East, a distance of 84.57 feet to an iron pin set;

25.) South 06°55'42" West, a distance of 33.94 feet to a surveyor's nail set;

26.) South 19°27'18" West, a distance of 13.71 feet to an iron pin set;

27.) South 57°23'02" West, a distance of 36.99 feet to an iron pin set;

28.) South 67°15'25" West, a distance of 240.29 feet to an iron pin set;

29.) South 54°03'57" West, a distance of 63.19 feet to an iron pin set;

30.) South 29°43'09" West, a distance of 122.02 feet to an iron pin set;

31.) South 63°02'39" West, a distance of 31.36 feet to an iron pin set;

32.) South 76°52'04" West, a distance of 79.92 feet to an iron pin set;

33.) South 83°59'02" West, a distance of 347.69 feet to an iron pin set in said 33.11 acre tract;

Thence South 79°29'02" West crossing said 33.11 acre tract, a distance of 98.70 feet to an iron pin set on the easterly right of way line of the Consolidated Rail Corporation tract;

Thence with the easterly right of way line of said Consolidated Rail Corporation tract and the westerly line of said 33.11 acre tract the following three (3) courses and distances:

1.) With a curve to the right having a radius of 3669.83 feet, a central angle of 11°37'50", a chord bearing of North 03°16'21" East, a chord length of 743.66 feet, and an arc length of 744.94 feet to an iron pin found;

2.) South 84°41'06" East, a distance of 150.25 feet to an iron pin found;

3.) With a curve to the right having a radius of 3519.79 feet, a central angle of 19°53'33", a chord bearing of North 19°11'28" East, a chord length of 1215.90 feet, and an arc length of 1222.03 feet to an iron pin found on the westerly line of said 87.28 acre tract;

Thence crossing said 87.28 acre tract with the following five (5) courses and distances:

1.) South 24°05'45" East, a distance of 127.68 feet to an iron pin found;

2.) North 65°39'33" East, a distance of 138.18 feet to an iron pin found;

3.) South 24°14'27" East, a distance of 125.11 feet to an iron pin found;

4.) North 65°36'51" East, a distance of 123.37 feet to an iron pin found;

5.) South 24°21'20" East, a distance of 205.80 feet to an iron pin found in said 33.11 acre tract;

Thence crossing back into said 87.28 acre tract with the following twelve (12) courses and distances:

1.) North 65°25'37" East, a distance of 514.16 feet to an iron pin set;

2.) South 23°23'40" East, a distance of 349.34 feet to an iron pin found;

3.) South 15°42'36" West, a distance of 99.82 feet to an iron pin found;

4.) South 52°01'06" East, a distance of 45.16 feet to an iron pin set;

5.) South 88°48'49" East, a distance of 34.13 feet to an iron pin found;

6.) North 47°52'27" East, a distance of 162.00 feet to an iron pin found at a point of curvature;

7.) With a curve to the left having a radius of 349.79 feet, a central angle of 20°18'10", a chord bearing of North 37°43'22" East, a chord length of 123.30 feet, and an arc length of 123.95 feet to an iron pin found;

8.) North 27°34'17" East, a distance of 60.00 feet to an iron pin set;

9.) North 31°21'43" East, a distance of 64.96 feet to an iron pin set;

10.) North 37°32'43" East, a distance of 70.00 feet to an iron pin set at a point of curvature;

11.) With a curve to the right having a radius of 223.57 feet, a central angle of 42°00'18", a chord bearing of North 58°32'52" East, a chord length of 160.26 feet, and an arc length of 163.91 feet to an iron pin found;

12.) North 40°32'20" East, a distance of 86.52 feet to an iron pin set on the southerly line of said 14.288 acre tract;

Thence with the southerly line of said 14.288 acre tract the following six (6) courses and distances:

1.) South 83°55'13" East, a distance of 222.55 feet to an iron pin found;

2.) North 89°59'43" East, a distance of 173.01 feet to an iron pin found;

3.) North 63°47'11" East, a distance of 98.26 feet to an iron pin set;

4.) North 83°30'22" East, a distance of 97.43 feet to an iron pin found;

5.) North 51°47'30" East, a distance of 48.88 feet to an iron pin found;

6.) South 89°59'28" East, a distance of 72.24 feet to the **TRUE POINT OF BEGINNING,** containing 45.247 acres of land, more or less.

Subject however to all easements, restrictions and rights-of-way of record, if any.

Basis of Bearing is the section line between Sections 30 and 36 being North 05°16'47" East as determined by GPS measurements between Montgomery County Monuments 1057 and 1058 and the Ohio State Plane Coordinate System, South Zone. All iron pins Set are 5/8" solid iron pins 30" in length with an orange plastic cap stamped "Floyd Browne Group".

The above description is based on and referenced to an exhibit prepared by Floyd Browne Group dated 06-12-06, attached hereto and made a part hereof.

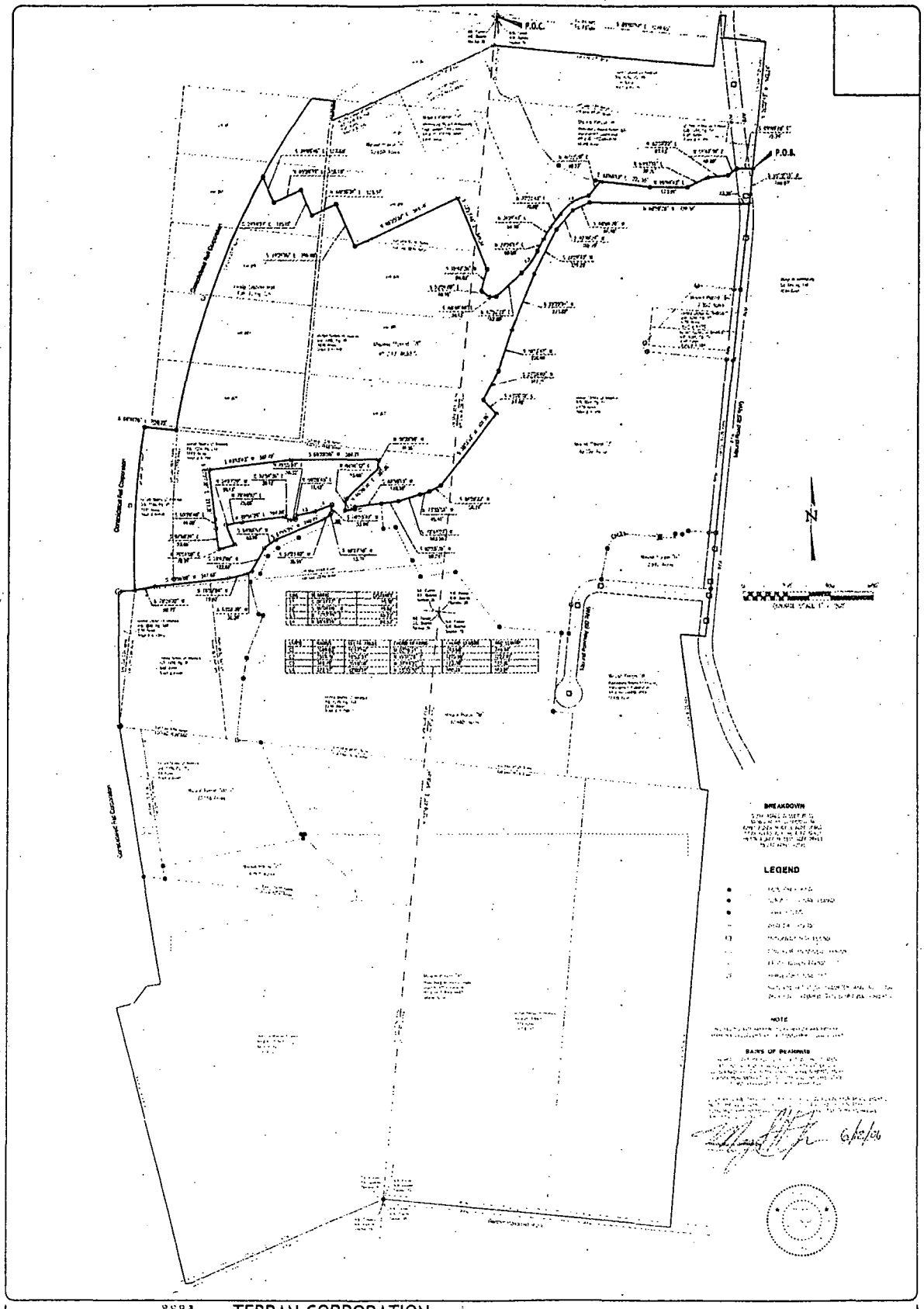
All references are to the records of the Recorder's Office, Montgomery County, Ohio.

6/12/06

Maynard H. Thompson P.S. Date
Professional Surveyor No. 7128

STATE OF OHIO
MAYNARD H. THOMPSON S-7128 REGISTERED PROFESSIONAL SURVEYOR

J:\Projects\TERRAN CORP\06-50304-010\SRVY\DWGS-DOCS\45_247ac.doc



1 of 1

Floyd Browne Group

TERRAN CORPORATION
BOUNDARY SURVEY
MOUND ROAD
MIAMISBURG, OHIO

45.247 ACRES

APPENDIX D - ARARs

ARARs for Parcels 6, 7, and 8

ARARs for Parcels 6, 7, 8

Chemical Specific ARARs

OAC 3745-81-11,	Maximum Contaminant Levels for Inorganic Chemicals
OAC 3745-81-12,	Maximum Contaminant Levels for Organic Chemicals
OAC 3745-81-13,	Maximum Contaminant Levels for Turbidity
OAC 3745-81-15,	Maximum Contaminant Levels for Radium 226, 228, Gross Alpha
OAC 3745-81-16,	Maximum Contaminant Levels for Beta Particle & Photon Radioactivity

Location Specific ARARs

ORC 6111.03,	Protection of Waters of the State
ORC 3734.20,	Description of OEPA Director's power for Protection of Public Health and the Environment
OAC 3745-66-15	Certification of Closure

Action Specific ARARs

ORC 317.08,	Criteria for County Recording of Deeds
ORC 5301.25(A),	Proper Recording of Land Encumbrances

APPENDIX E - Memorandum to File

MEMORANDUM

Date: 2/17/99
To: File
From: Randolph Tormey, Deputy Chief Counsel, Ohio Field Office, US DOE
Subject: Institutional Controls, Mound Facility, Miamisburg, Ohio

A question has arisen as to the validity and method of enforcement of restrictive covenants ("institutional controls") in deeds of conveyance for real property at the DOE Mound Facility, Miamisburg, Ohio. Currently in question are restrictive covenants to be placed upon a portion of the real property known as "Parcel D" as follows:

> "The parties hereto intend the following restrictions and covenants to run with the land and to be binding upon the Grantee and its successors, transferees, and assigns or any other person acquiring an interest in the Premises, for the benefit of Grantor, USEPA and the State of Ohio, acting by and through the Director of the Ohio EPA or ODH, their successors and assigns.
>
> Grantee covenants that any soil from the Premises shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book 1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11 of the Deed Records of Montgomery County, Ohio (and as illustrated in the CERCLA 120(h) Summary, Notices of Hazardous Substances Release Block D, Mound Plant, Miamisburg, Ohio dated January, 1999) without prior written approval from the Ohio Department of Health (ODH), or a successor agency.
>
> Grantee covenants not to use, or allow the use of, the Premises for any residential or farming activities, or any other activities which could result in the chronic exposure of children under eighteen years of age to soil or groundwater from the Premises. Restricted uses shall include, but not be limited to:
>
> (1) single or multifamily dwellings or rental units;
> (2) day care facilities;
> (3) schools or other educational facilities for children under eighteen years of age; and
> (4) community centers, playgrounds, or other recreational or religious facilities for children under eighteen years of age.
>
> Grantor shall be contacted to resolve any questions which may arise as to whether a particular activity would be considered a restricted use.
>
> Grantee covenants not to extract, consume, expose, or use in any way the groundwater underlying the premises without the prior written approval of the United States Environmental Protection Agency (Region V) and the Ohio Environmental Protection Agency."

Under Ohio law there is no uniform or standard manner to encumber property since there are as many valid reasons for restricting the use of property as there are means to effect those purposes. Recordation of the

restrictions with the county recorder for the county in which the land is situated is generally required for the restrictions to be enforced so as to provide knowledge of their existence. While all courts disfavor restrictions upon the free use of land, Ohio law provides that "courts must enforce a restriction where it is clearly and unambiguously found in a covenant." Brooks v. Orshoski, 1998 WL 484560 (Oh App. 6 Dist.) In general, the court will "construe the language of the restriction by giving it its common and ordinary meaning, and read the restrictive covenants as a whole to ascertain the intent of the creator." Id. This states the basic rule followed by courts in Ohio. It also seems that restrictive covenants are viewed more favorably when they serve some public purpose. The above covenants seem to be of this nature. Based upon the case law in Ohio, the above-stated restrictive covenants are in a form that is acceptable in Ohio and should be enforced by the courts in this state.

Ohio Revised Code (ORC) § 5301.25(A) provides "All ... instruments of writing properly executed for the conveyance or encumbrance of lands ... shall be recorded in the office of the county recorder of the county in which the premises are situated..." Further, Note 2 under this section mentions that "Proper recording of instrument serves as constructive notice of interest or encumbrance to all who claim through or under grantor by whom such deed was executed," citing Thames v. Asia's Janitorial Service, Inc., (Lucas 1992) 81 Oh App. 3d 579, 611 N.E. 2d 948, motion overruled 65 Ohio State 3d 1458. Furthermore, under ORC § 5301.48 to have "marketable record title" a landowner must have an unbroken chain of title of record for forty years or more. This places upon the buyer of property the need to search the record title for at least the past 40 years, which typically reveals any "cloud" on the title. Of course, the above-mentioned covenants would be such a cloud and would be noted by the subsequent buyer. In a subsequent sale that buyer would then place the covenants in the following deed thereby perpetuating this notice. It should be noted that the lack of a cloud for the forty-year period would normally eliminate the restriction, except under ORC § 5301.53(G) any right, title or interest of the United States may not be extinguished in this manner. This indicates that the restrictive covenants will run with the land and will be enforced against any property owner who takes the property through a deed in the chain of title from DOE.

Enforcement of the restrictive covenants would be through an injunctive action which could be brought by any party for whose benefit the restrictions were put in place. Brooks v. Orshoski, 1998 WL 484560 (Ohio App. 6 Dist.), Meisse v. Family Recreation Club, Inc., 1998 WL 70503 (Ohio App. 2 Dist.). Obviously the governmental agencies mentioned in the draft deed for Parcel D would be such a party, however it is also conceivable that any other party intended as the beneficiary of the restrictive covenants could likewise bring an action for enforcement. In view of the public purposes served by the above-mentioned covenants this class of persons could be quite large. As the grantor creating the restrictive covenants, the United States would likely take the lead in their enforcement, probably through the Department of Justice or the local US Attorney's office.

Based upon the foregoing, I conclude that restrictive covenants (institutional controls) are enforced by the courts of Ohio, particularly when they serve a public purpose. The covenants suggested would run with the land and recordation would assure notice of their existence. They are typically enforced through an injunctive action by any party intended to be a beneficiary of the restrictions. In this case, most likely by the United States.

Randy Torney

APPENDIX F –Verification Data

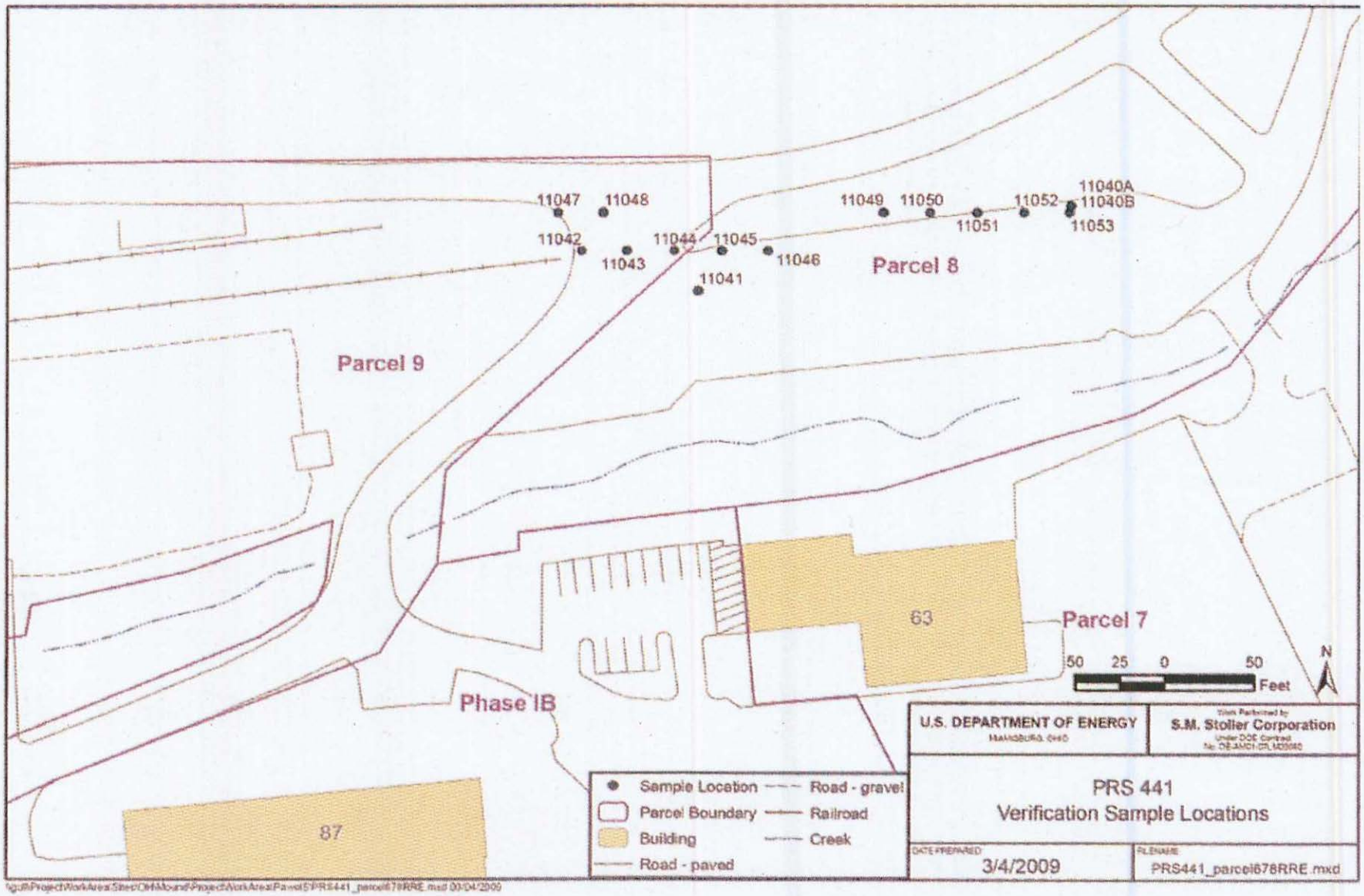
Soils verification data for excavation adjacent to PRS 441

ID	SAMPLE DATE	RADIONUCLIDE	RESULT	UNITS	FLAGS	MDC
11040A	1/6/2009	Uranium 235	0.012	pCi/g	U	0.058
11040A	1/6/2009	Uranium 238	0.67	pCi/g		0.04
11040A	1/6/2009	Uranium 233/234	0.75	pCi/g		0.04
11040A	1/6/2009	Thorium 228	0.66	pCi/g		0.07
11040A	1/6/2009	Thorium 230	0.9	pCi/g		0.05
11040A	1/6/2009	Thorium 232	0.71	pCi/g		0.02
11040B	1/6/2009	Uranium 235	0.042	pCi/g	J	0.028
11040B	1/6/2009	Uranium 238	0.73	pCi/g		0.04
11040B	1/6/2009	Uranium 233/234	0.89	pCi/g		0.06
11040B	1/6/2009	Thorium 228	0.88	pCi/g		0.08
11040B	1/6/2009	Thorium 230	0.68	pCi/g		0.07
11040B	1/6/2009	Thorium 232	0.86	pCi/g		0.06
11041	12/10/2008	Uranium 235	0.007	pCi/g	U	0.042
11041	12/10/2008	Uranium 238	0.75	pCi/g		0.06
11041	12/10/2008	Uranium 233/234	0.6	pCi/g		0.06
11041	12/10/2008	Thorium 228	1.13	pCi/g		0.08
11041	12/10/2008	Thorium 230	1.01	pCi/g		0.07
11041	12/10/2008	Thorium 232	1.14	pCi/g		0.05
11042	12/10/2008	Uranium 235	0.009	pCi/g	U	0.058
11042	12/10/2008	Uranium 238	0.35	pCi/g		0.06
11042	12/10/2008	Uranium 233/234	0.37	pCi/g		0.04
11042	12/10/2008	Thorium 228	0.187	pCi/g	J	0.084
11042	12/10/2008	Thorium 230	0.45	pCi/g		0.06
11042	12/10/2008	Thorium 232	0.092	pCi/g	J	0.048
11043	12/10/2008	Uranium 235	0.053	pCi/g	J	0.024
11043	12/10/2008	Uranium 238	0.98	pCi/g		0.04
11043	12/10/2008	Uranium 233/234	0.77	pCi/g		0.04
11043	12/10/2008	Thorium 228	0.96	pCi/g		0.07
11043	12/10/2008	Thorium 230	1.2	pCi/g		0.05
11043	12/10/2008	Thorium 232	0.98	pCi/g		0.05
11044	12/10/2008	Uranium 235	0.036	pCi/g	J	0.024
11044	12/10/2008	Uranium 238	0.73	pCi/g		0.03
11044	12/10/2008	Uranium 233/234	0.66	pCi/g		0.05
11044	12/10/2008	Thorium 228	0.63	pCi/g		0.06
11044	12/10/2008	Thorium 230	0.95	pCi/g		0.03
11044	12/10/2008	Thorium 232	0.61	pCi/g		0.02
11045	12/10/2008	Uranium 235	0.028	pCi/g	U	0.06

ID	SAMPLE DATE	RADIONUCLIDE	RESULT	UNITS	FLAGS	MDC
11045	12/10/2008	Uranium 238	0.64	pCi/g		0.05
11045	12/10/2008	Uranium 233/234	0.45	pCi/g		0.06
11045	12/10/2008	Thorium 228	0.52	pCi/g		0.07
11045	12/10/2008	Thorium 230	0.86	pCi/g		0.05
11045	12/10/2008	Thorium 232	0.48	pCi/g		0.04
11046	12/10/2008	Uranium 235	0.017	pCi/g	U	0.044
11046	12/10/2008	Uranium 238	0.75	pCi/g		0.02
11046	12/10/2008	Uranium 233/234	0.75	pCi/g		0.05
11046	12/10/2008	Thorium 228	0.55	pCi/g		0.07
11046	12/10/2008	Thorium 230	0.84	pCi/g		0.02
11046	12/10/2008	Thorium 232	0.52	pCi/g		0.05
11047	12/15/2008	Uranium 235	0.025	pCi/g	J	0.022
11047	12/15/2008	Uranium 238	0.74	pCi/g		0.02
11047	12/15/2008	Uranium 233/234	0.75	pCi/g		0.02
11047	12/15/2008	Thorium 228	1.28	pCi/g		0.06
11047	12/15/2008	Thorium 230	1.15	pCi/g		0.03
11047	12/15/2008	Thorium 232	1.18	pCi/g		0.03
11048	12/10/2008	Uranium 235	0.054	pCi/g	J	0.043
11048	12/10/2008	Uranium 238	0.79	pCi/g		0.04
11048	12/10/2008	Uranium 233/234	0.67	pCi/g		0.05
11048	12/10/2008	Thorium 228	1.29	pCi/g		0.08
11048	12/10/2008	Thorium 230	0.87	pCi/g		0.06
11048	12/10/2008	Thorium 232	1.1	pCi/g		0.05
11049	12/10/2008	Uranium 235	0.021	pCi/g	U	0.056
11049	12/10/2008	Uranium 238	0.76	pCi/g		0.05
11049	12/10/2008	Uranium 233/234	0.89	pCi/g		0.03
11049	12/10/2008	Thorium 228	1.18	pCi/g		0.06
11049	12/10/2008	Thorium 230	1.01	pCi/g		0.06
11049	12/10/2008	Thorium 232	1.06	pCi/g		0.05
11050	12/10/2008	Uranium 235	0.022	pCi/g	U	0.056
11050	12/10/2008	Uranium 238	0.88	pCi/g		0.04
11050	12/10/2008	Uranium 233/234	0.94	pCi/g		0.04
11050	12/10/2008	Thorium 228	1.25	pCi/g		0.04
11050	12/10/2008	Thorium 230	1.34	pCi/g		0.05
11050	12/10/2008	Thorium 232	1.21	pCi/g		0.05
11051	12/15/2008	Uranium 235	0.019	pCi/g	U	0.025
11051	12/15/2008	Uranium 238	0.81	pCi/g		0.04
11051	12/15/2008	Uranium 233/234	0.86	pCi/g		0.06

ID	SAMPLE DATE	RADIONUCLIDE	RESULT	UNITS	FLAGS	MDC
11051	12/15/2008	Thorium 228	1.28	pCi/g		0.06
11051	12/15/2008	Thorium 230	1.08	pCi/g		0.04
11051	12/15/2008	Thorium 232	1.18	pCi/g		0.02
11052	12/15/2008	Uranium 235	0.045	pCi/g	J	0.024
11052	12/15/2008	Uranium 238	0.56	pCi/g		0.03
11052	12/15/2008	Uranium 233/234	0.5	pCi/g		0.05
11052	12/15/2008	Thorium 228	0.7	pCi/g		0.06
11052	12/15/2008	Thorium 230	0.95	pCi/g		0.04
11052	12/15/2008	Thorium 232	0.61	pCi/g		0.04
11053	12/15/2008	Uranium 235	0.04	pCi/g	U	0.047
11053	12/15/2008	Uranium 238	0.7	pCi/g		0.03
11053	12/15/2008	Uranium 233/234	0.59	pCi/g		0.03
11053	12/15/2008	Thorium 228	1.02	pCi/g		0.08
11053	12/15/2008	Thorium 230	1.34	pCi/g		0.06
11053	12/15/2008	Thorium 232	1.04	pCi/g		0.05

U - Calculated activity less than or equal to sample minimum detection limit

J - The associated numerical value is an estimated quantity

Sample Locations PRS 441 Verification