Description of Current Conditions Report

for the

Bannister Federal Complex

May 2016
Executive Summary

This Description of Current Conditions Report (DCCR) summarizes environmental conditions for the Bannister Federal Complex (BFC) in Kansas City, Missouri. The BFC was originally constructed as an aircraft engine manufacturing facility in 1942 serving in similar capacities through the early 1960’s. The Atomic Energy Commission (AEC) moved on site in 1949 and successor agencies have maintained a continuous manufacturing mission at the BFC to this day. The General Services Administration (GSA) and several tenant agencies have also utilized the BFC for office and warehouse space.

During the early 1980’s initial site environmental investigation work was performed to begin characterization of known or suspected contaminant release sites. Extensive efforts were taken to interview longtime BFC employees, some of which worked at the facility in the plant’s early history. These interviews established the basis for initial site environmental investigations. In 1989, the DOE and the Environmental Protection Agency (EPA) entered into an Administrative Order on Consent pursuant to Section 3008(h) of the Resource Conservation and Recovery Act (RCRA) (Consent Order). The Consent Order outlined requirements and a schedule for completion of site environmental investigations and associated cleanup. The majority of the environmental investigations and cleanup activities were performed under the Consent Order. In 1999 the Consent Order was terminated with transfer of regulatory responsibility for clean-up to the Missouri Department of Natural Resources (MDNR) in the form of a Missouri Hazardous Waste Management Facility Permit (Permit).

In order to address concerns associated with DOE and GSA plans to move off-site and potential redevelopment of the BFC, the Permit was modified in 2012 to incorporate several new requirements. Areas of the BFC under GSA control were added to the definition of facility under the Permit and GSA added as a Permittee. Given the complexity of the BFC and the significant amount of pre-existing data, the revised Permit also required that a summary of site environmental conditions be prepared as a Description of Current Conditions Report.

This four volume DCCR provides a historical review of the BFC concentrating on activities (past and present) that had or have the potential to impact the environment through releases of hazardous waste or hazardous waste constituents.
The DCCR provides a discussion of site geologic conditions related to the subsurface material (soil and rock) at the BFC along with how the physical and chemical properties of this material influences the flow of water (and contamination) through it. In addition, local surface water background conditions are addressed. The nature and type of actual contamination found at the BFC is reviewed summarizing efforts to determine how this contamination behaves in the subsurface environment.

To understand the current conditions at the BFC one must understand the history of efforts performed to research, identify, investigate and, in some cases, remediate releases of hazardous waste and/or hazardous waste constituents to the environment from the site. The DCCR provides a review of selected historical environmental documents from the early to mid-1970’s that describe the types of activities performed, waste generated and environmental issues that were present at this time and, that in some cases, still exist today.

The DCCR also provides insight into the early efforts to define the environmental conditions at the site and the interplay between DOE and the EPA and MDNR regarding the historical north and south lagoons and how the existence of these units lead to the site being addressed under hazardous waste clean-up authorities.

A detailed review of the environmental activities performed under the Consent Order and Permit is provided including an extensive array of historical tables and figures to facilitate an effective evaluation of the work performed. In addition, a review of considerable environmental investigatory efforts by the GSA and the US Army Corps of Engineers (USACE), conducted outside the scope of the Permit, is provided along with a discussion of how these activities tie in to the corrective action work being performed today.

Detailed discussion of stormwater is provided including the nature of flows, description of surrounding receiving streams and the efforts to characterize and evaluate the impact from the BFC to these areas. Further, a detailed discussion of an extensive set of bioaccumulation studies performed at the BFC over the years is provided including a review of information found, trends noted and activities planned for the future.
Specific additional topics outlined in the Permit are also included in the DCCR. These include a discussion of the historical use of natural and depleted uranium as well as beryllium at the BFC including evidence indicating there were no releases outside of the manufacturing areas.

A risk screening study is provided that assimilates contaminant levels in environmental media at the BFC and compares it to various documented environmental screening levels for various actual and potential uses of the site.

The effects of removing remaining contamination source areas is also included through the submission of a groundwater modeling study to determine the amount of contaminant mass reduction required to achieve site clean-up of groundwater, the physical and chemical impediments that affect the achievement of these goals and the time it will take to achieve.

Finally, through a review of information from this effort, gaps in analytical data and/or understanding of environmental or contaminant conditions at the facility were identified and presented.
Description of Current Conditions Report  
Bannister Federal Complex  

Table of Contents  

Section 1 History of the Bannister Federal Complex  
1.0 Introduction  
1.1 HISTORY OF THE BANNISTER FEDERAL COMPLEX  
1.1.1 The Pratt & Whitney Plant, Post WWII: October 1945 through June 1948...  
1.1.2 The Westinghouse Years: June 1948-December 1960...  
1.1.3 Nuclear Weapons Manufacturing Plant in Kansas City (1948-2010) ........  
1.1.4 Current Buildings and Ownership ................................  
1.2 DOE Organization and Mission ...................................  
1.3 GSA Organization and Mission ....................................  

Section 2 Bannister Federal Complex Regulatory History  
2.0 REGULATORY HISTORY ..........................................  
2.1 Environmental Programs of Significant Impact ....................  
2.1.1 Clean Air Act (CAA) .........................................  
2.1.2 Clean Water Act (CWA) .......................................  
2.1.3 Resource Conservations and Recovery Act (RCRA) ...............  
2.1.4 Other Regulations .............................................  
2.1.4.1 The Toxic Substances Control Act .........................  
2.1.4.2 Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) ........  
2.1.4.3 Federal Facilities Compliance Act (FFCA) ....................  
2.1.4.4 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) / Superfund Amendments and Reauthorization Act (SARA) ....  
2.1.4.5 National Environmental Policy Act (NEPA) ..................  
2.1.4.6 Migratory Bird Treaty Act ..................................  
2.1.4.7 Endangered Species Act (ESA) ..............................  
2.2 FLOODPLAIN / WETLAND STATUS ................................  
2.2.1 Wetland Status ...............................................  
2.3 Monitoring Program ...............................................  
2.3.1 Sanitary Sewer ................................................  
2.3.2 Industrial Wastewater .........................................  
2.3.3 Groundwater Treatment Facility (GTF) ............................  
2.4 NPDES Permit .....................................................  
2.5 Pesticides ........................................................  
2.5.1 Historical Review ...............................................
Section 3 Site Environmental Conditions

3.0 Introduction

3.1 Alluvial Hydrostratigraphy and Geology

3.2 Bedrock Stratigraphy and Geology

3.3 Groundwater Flow Systems

3.4 Impacts to Groundwater Flow

3.4.1 Building Footing Tile Drains

3.4.2 Cattail Area

3.5 Velocity of Groundwater at the BFC

3.5.1 BRGFS

3.5.2 ICGFS

3.6 BFC Hydrological Conceptual Model

3.7 BFC Contaminants

3.8 Chlorinated Solvents – Behavior in the BFC Subsurface Environment

3.8.1 TCE

3.8.1.1 History of TCE/Use at the BFC

3.8.2 Aromatic Compounds

3.9 Conceptual Site model Groundwater Contamination

3.9.1 Fit of the model to the KCP

3.10 Potential for Contaminant Migration in Bedrock KCPERA 236 fig4

3.11 Application of Natural Attenuation Protocol

3.12 Natural Attenuation at the Groundwater/Surface Water (Indian Creek/Blue River) Interface

3.12.1 Surface Water/ Groundwater Interaction

3.12.1.1 Contaminant Concentrations at the Aquifer/Surface Water Interface

3.12.2 Relevant Field Measurements at the BFC

3.13 Specific Conceptual Models for the Origin and Movement of Contamination in the BRGFS and ICGFS

3.13.1 BRGFS

3.13.2 ICGFS

3.14 Potential Co-solvent Effects

3.15 Conceptual Model of Contamination

3.16 Groundwater Use

3.17 Current Surface Water

Section 4 Pre Order Activities

4.0 Introduction

4.1 Pertinent Background Topics

4.1.1 Gas Wells

4.1.2 1974/77 Environmental Assessments

4.1.2.1 1974 Draft Environmental Assessment

4.1.2.2 1977 Environmental Assessment

4.2 Spill Reporting History
4.3 Early Environmental Activities at the BFC

4.3.1 BFEC Activities
4.3.1.1 1984 and 1986 Historical Survey
4.3.1.2 BFEC First Interim Report
4.3.1.3 BFEC Second Interim Report
4.3.1.4 BFEC Report on Modeling, Tank Farm and Geophysical Surveys
4.3.1.5 UNC Modeling, 002 Outfall and Other Investigations

4.3.2 CEARP Activities
4.3.2.1 CEARP Assessment Report
4.3.2.2 Old landfill and Southeast Parking Lot Investigation
4.3.2.3 EPA Request for Information on Solid Waste Management Units
4.3.2.4 Headquarters Survey

4.3.3 ORNL/GJ Documents
4.3.3.1 ORNL Investigation of 002 Outfall, Abandoned Indian Creek Outfall, and TCE Still Area
4.3.3.2 Plant Water Balance and Mapping
4.3.3.3 Investigations Inside the Main Manufacturing Building
4.3.3.4 PCB Risk Analysis
4.3.3.5 1989 ORNL Investigations of D/95

4.4 Resource Conservation and Recovery Act and Environmental Clean-Up
4.4.1 Introduction
4.4.2 North Lagoon
4.4.3 South Lagoon
4.4.4 Underground Tank Farm

4.5 Post Closure Care

4.6 Authority for RCRA Corrective Action
Section 5 Post Order Activities

5.0 Introduction

5.1 Regulatory Mechanisms Compelling Environmental Clean-up

5.1.1 1989 RCRA 3008(h) Consent Order

5.1.2 Missouri Hazardous Waste Management Facility Permit

5.2 Abandoned Indian Creek Outfall (SWMU 14)

5.2.1 Regulatory Submittals/Approvals

5.2.2 Description of Unit

5.2.3 RCRA Facility Investigation (RFI)

5.2.4 Corrective Actions

5.3 Department 26 Inside (SWMU 31)

5.3.1 Previous Regulatory Submittals/Approvals

5.3.2 DESCRIPTION OF UNIT

5.3.3 RFI Field Investigation

5.3.4 Contamination Characterization

5.3.4.1 Groundwater Contamination

5.3.4.2 Soil Contamination

5.4 Plating Building (SWMUs 9, 10, 11, 12)

5.4.1 Previous Regulatory Submittals/Approvals

5.4.2 Description of Individual SWMUs and Areas of Concern

5.4.3 Building Description/Demolition

5.4.4 Contamination

5.4.5 Previous Investigations

5.4.6 RFI Contaminant Characterization

5.4.7 Additional Corrective Actions

5.4.7.1 Pipe Gallery Interim Measures

5.4.7.2 Q-Tunnel Leak Repairs

5.4.7.3 Camera Inspection, Cleaning And Repair Of Obstructed BQ51 Foundation Drains

5.4.7.4 Q-Tunnel Surface Drainage Improvements

5.4.8 Plating Building Waste Oil Tank

5.4.9 Substation 18 Removal

5.4.10 Waste Oil Tank Removal

5.5 95th Terrace (SWMU 42)

5.5.1 Previous Regulatory Submittals/Approvals

5.5.2 Description of Unit

5.5.3 RFI Field Investigation

5.5.4 Contamination Characterization

5.5.4.1 Groundwater Contamination

5.5.4.2 Soil Contamination

5.5.4.3 RFI Summary

5.5.5 Surface Water and Sediment Contamination

5.5.5.1 RFI Summary

5.5.5.2 Migration Pathways
5.12 Outfall 001 Groundwater Collection Sump

5.13 South Lagoon (SWMU 13)
5.13.1 Regulatory Submittals/Approvals
5.13.2 Work Performed
5.13.3 Soil Contamination

5.14 Former Landfill (SWMU 45)
5.14.1 Previous Investigations
5.14.2 Pertinent Field Investigations
5.14.3 1997 Remedial Investigation
5.14.3.1 Soil results
5.14.3.2 Groundwater Results
5.14.3.3 Summary
5.14.4 2007 Additional Investigation Report

5.15 TCE Still Area (SWMUs 2, 4, 33, 40, 16, 3, 37 and 41)
5.15.1 Regulatory Submittals/Approvals
5.15.2 Description of Units
5.15.2.1 TCE Still
5.15.2.2 Oil House
5.15.2.3 Department 95
5.15.2.4 Sales Building
5.15.2.5 Aluminum Chip Handling Facility
5.15.2.6 Waste Transfer Spill Area
5.15.2.7 Buried Drum Site
5.15.2.8 Abandoned Sump
5.15.2.9 Classified waste burial trenches
5.15.3 TCE Still Area RFI
5.15.4 Summary and Recommendations
5.15.5 Additional Areas Addressed in RFI
5.15.5.1 Department 71
5.15.5.2 D/20 Sump
5.15.6 TCE Still Area Interim Measures
5.15.6.1 Work Accomplished
5.15.7 Abandoned Sump Interim Measures Resort

5.16 Building 50 (SWMU 45)
5.16.1 Other Structures in the Vicinity of Building 50
5.16.2 2001 DOE Building 50 Investigation
5.16.3 Kingston Building 50 investigation
5.16.4 Terracon Investigation October 2002
5.16.4.1 Soil sampling
5.16.4.2 Groundwater Sampling
5.16.5 TCE investigation Report Building 50 SCS Engineers ............................................
  5.16.5.1 Work performed........................................................................................................
5.17 GSA Preliminary Assessment Site Investigation (PASI) ..............................................
  5.17.1 Building 1: Stained Soil Along Former Railroad Tracks........................................
  5.17.2 Building 1: Utility Tunnel between Buildings 1 and 50............................................
  5.17.3 Building 1: Oil/Water Separators..............................................................................
  5.17.4 Building 4: Former Vehicle Maintenance..............................................................
  5.17.5 Hydraulic Probes Northeast of Building 50..............................................................
  5.17.6 Building 51: Former Unit Substation and High Voltage Line..............................
  5.17.7 Building 41 Underground Structure........................................................................
  5.17.8 Hydraulic Probes in the Vicinity of the Storm Sewer............................................
  5.17.9 Test Pits......................................................................................................................
  5.17.10 Building 50: Documented PCBs in the Storm Sewer ...........................................
  5.17.11 Building 1 Utility Tunnel.........................................................................................
5.18 Miscellaneous PCB Sites (SWMU 35)........................................................................
  5.18.1 Regulatory Submittals/Approvals .............................................................................
  5.18.2 Description of Units ................................................................................................
    5.18.2.1 East Boilerhouse/ Substation 23 ........................................................................
    5.18.2.2 Sanitary Sewer Lift Station ................................................................................
    5.18.2.3 Substation 23 ......................................................................................................
  5.18.3 Miscellaneous PCB Sites Interim Measures ...........................................................
    5.18.3.1 Work Accomplished .........................................................................................
5.19 Underground Storage Tank History/Status ................................................................
  5.19.1 Underground Storage Tank Farm (SWMU 1) UST #s 10-15 and 43-64..............
  5.19.2 Miscellaneous USTs Removed - UST #s 1, 3, 4, 5, 6, 7, 8, 9, 23, 24, 27, 28, 32, 33....
  5.19.3 Department 27 Outside (SWMU 30) UST #s 29, 30, and 42 ..................................
  5.19.4 Test Cell Tanks (SWMU 43) UST #s 35, 36, 37 and 66 ...........................................
  5.19.5 Plating Building Waste Oil Tank (SWMU 10) UST #34 ........................................
  5.19.6 GSA Controlled USTs - UST #s 70-81 (KCPERA 379) ....................................
    5.19.6.1 NARA Building - UST #70 ..............................................................................
    5.19.6.2 Building 50 - UST #s 71-76 ...........................................................................
    5.19.6.3 Building 4 UST #77 ......................................................................................
    5.19.6.4 Building 1 UST #78 ......................................................................................
    5.19.6.5 Building 7 UST #79 ......................................................................................
    5.19.6.6 Building 17 UST #80 .....................................................................................
5.20 Closure of Hazardous Waste Storage Lots ..............................................................
  5.20.1 Background ..............................................................................................................
  5.20.2 Summary of Closures .............................................................................................
5.21 Multiple Sites Corrective Measures Study ...............................................................
  5.21.1 Regulatory Submittals/Approvals ..........................................................................
  5.21.2 Corrective Measures Evaluation – Soil .................................................................
    5.21.2.1 Recommended Alternative - Soil ....................................................................
  5.21.3 Corrective Measures Evaluation - Groundwater ...................................................
  5.21.4 Summary and Conclusions of the Multi-Site CMS ............................................
  5.21.5 Multiple Sites CMS: Summary of EPA's Final Decision ......................................
5.22 Long Term Operations Maintenance and Monitoring Plan

5.22.1 A Groundwater Treatment System Operations and Maintenance (O&M) plan
5.22.2 Excavated Soil Management Procedures
5.22.3 Sitewide Sampling and Analysis Plan
5.22.4 Site-wide Institutional Controls Plan

5.22.4.1 Procedural Controls
5.22.4.2 HAZWOPER Determination
5.22.4.3 Preliminary Hazard Analysis
5.22.4.4 Excavated Soil Management
5.22.4.5 Construction Waste Assessment
5.22.4.6 Design Review
5.22.4.7 Construction Safety Plan
5.22.4.8 Work Instruction
5.22.4.9 Excavation Permit

5.22.5 Deed Restrictions and Restrictive Covenants

5.22.5.1 Restrictions and Covenants related to the permit
5.22.5.2 Documents Previously Filed
5.22.5.3 Documents Yet to Be Filed
5.22.5.4 Permit Mandated Access Easement Components
5.22.5.5 Institutional Controls for Soil Not on KCP Property
Section 6 Surface Water

6.0 Surface Water ..............................................................................................................
Waste Water Treatment Plant Flow Impact .................................................................
6.1 Regulatory Status of Blue River and Indian Creek .....................................................
6.2 Bannister Federal Complex Storm Water .....................................................................
6.3 NPDES Permit chronology .........................................................................................
6.4 Storm Water / SWMU Impacts ....................................................................................
6.5 Surface Water Monitoring .........................................................................................
6.5.1 Outfalls / Receiving Streams ..................................................................................
VOCs .............................................................................................................................
  6.5.1.1 Outfall 001 ........................................................................................................
  6.5.1.2 Outfall 002 ........................................................................................................
  6.5.1.3 Outfall 003 ........................................................................................................
  6.5.1.4 Outfall 004 ........................................................................................................
6.6 PCBs ...........................................................................................................................
  6.6.1 Outfall 001 ...........................................................................................................
  6.6.2 Outfall 003 ...........................................................................................................
  6.6.3 Outfall 002 ...........................................................................................................
6.7 EPA Consent Order / RCRA Part B Corrective Actions ................................................
  6.7.2 SWMUs – Department 26 / Abandoned Indian Creek Outfall / 95th Terrace Site.
  6.7.3 Department 26 (SWMUs 12 and 31) ....................................................................
6.8 RFI investigations ........................................................................................................
  6.8.1 Abandoned Indian Creek Outfall (SWMU 14) ........................................................
  6.8.2 D/26 Inside - SWMU 31 ...................................................................................
  6.8.3 D/26 Outside - SWMU 12 .................................................................................
  6.8.4 95th Terrace (SWMU 42) ................................................................................
  6.8.5 Other Historic Investigations ..............................................................................
6.9 Corrective Actions ........................................................................................................
  6.9.1 Previous Remediation ...........................................................................................
  6.9.2 Abandoned Indian Creek Outfall (SWMU 14) ........................................................
  6.9.3 Department 26 (SWMUs 12 and 31) ....................................................................
  6.9.4 Outfall 002 Raceway ...........................................................................................
  6.9.5 Post Closure Permit Driven Actions ......................................................................
  6.9.6 Base Flow Diversion System ..............................................................................
  6.9.7 Outfall 002 Sediment ...........................................................................................
  6.9.8 Access Restriction Over Outfall 002 Raceway ......................................................
  6.9.9 Notification Signs ................................................................................................
  6.10 Outfall 002 Aqueous PCB Mass ..............................................................................
  6.11 PCB Sampling by Method 1668 ............................................................................... 
  6.12 Semi-Annual Surface Water / Outfall Sample Stations .............................................
  6.12.1 May 2012 1668 Sampling ...................................................................................
  6.13 Method 1668a Conclusions .....................................................................................
Section 7 Depleted Uranium and Beryllium Background

7.1 Uranium at the BFC KCP ..............................................................................................................
  7.1.1 History of Depleted Uranium (DU) at the Kansas City Plant ..............................................
  7.1.2 Current Use of DU at the KCP ................................................................................................
  7.1.3 Depleted Uranium Decontamination Projects at the KCP ................................................
  7.1.4 Detection of Uranium in KCP Groundwater ......................................................................
  7.1.5 CEARP Program Investigation ..............................................................................................
  7.1.6 MDNR Investigation ..............................................................................................................
  7.1.7 Fate and Transport of Buried DU ..........................................................................................
  7.1.8 Summary ................................................................................................................................

7.2 Beryllium at the BFC ....................................................................................................................
  7.2.1 Beryllium History and Use .....................................................................................................
  7.2.2 Concentrations in the Environment and Risks ....................................................................
  7.2.3 Use at the KCP/Sampling at the BFC ..................................................................................
  7.2.4 GSA Sampling for Beryllium ................................................................................................
  7.2.5 2009 Beryllium Exposure Assessment ...............................................................................
  7.2.6 Future Potential Releases ......................................................................................................

Section 8 Bioaccumulation Studies

8.0 BIOACCUMULATION STUDIES .................................................................................................
  8.1 DESCRIPTION OF STUDY SITE ............................................................................................... 
  8.2 SAMPLE COLLECTION ............................................................................................................... 
  8.3 DATA ANALYSIS ........................................................................................................................
RESULTS ...........................................................................................................................................
  FISH ................................................................................................................................................
  SEMIPERMEABLE MEMBRANE DEVICES (SPMDs) .................................................................
  8.4 DISCUSSION ..............................................................................................................................
  8.4.1 SPATIAL PATTERNS OF CONTAMINATION ................................................................
  8.5 ROLE OF THE BANNISTER FEDERAL COMPLEX AS A SOURCE ................................
  8.5.1 TEMPORAL TRENDS .......................................................................................................... 
  8.6 BFC PCB LEVELS IN PERSPECTIVE ......................................................................................
  8.7 CONCLUSIONS ........................................................................................................................

Section 9 Screening Level Risk Assessment
  Provided as a separate two volume set
Section 10 Source Reduction Modeling Study

1. INTRODUCTION

2. METHODOLOGY

3. CONCEPTUAL MODEL OF DNAPL MIGRATION AT THE BANNISTER FEDERAL COMPLEX

3.1 Conceptualized BFC DNAPL Migration and Fate

3.2 Characterization Limitations

4. SOURCE AREA MASS EVALUATION

4.1 Building 50

4.2 Department 26 and the Former Plating Building

4.3 Northeast Area

5. SOURCE AREA MASS EVALUATION

5.1 Building 50

5.2 Department 26 and the Former Plating Building

5.3 Northeast Area

5.4 Biodegradation Evaluation

5.5 Summary of Source Duration Evaluation

6. SOURCE AREA REMEDIATION EVALUATION

6.1 Building 50

6.2 Department 26 and the Former Plating Building

6.3 Northeast Area

6.4 Partial Source Remediation Evaluation without Extraction Well Operation

7. CONCLUSIONS

8. REFERENCES

Section 11 Data Gaps

11.0 Introduction

11.1 Sources of Data Gaps

11.2 Data Gaps at the BFC

11.2.1: Groundwater Contamination From an Unknown Source in Department 95

11.2.2: Quantification of PCB Loading to the Blue River and Indian Creek Associated with PCBs in Stormwater Discharges from the BFC

11.2.3: Insufficient Characterization of the Nature and Extent of Contamination from the Old Landfill

11.2.4: Review, Assimilation and Reporting of Environmental Data Previously Collected In and Around Building 50

11.2.5: Contamination from an Unknown Source in Wells and Soil Borings from the Abandoned Fuel Line Investigation

11.2.6: Nature and Extent of Possible Metal and PAH Contamination in the Area of Building 4

11.3 Nature and Timing of Potential Contaminant Source Reduction Efforts

11.4 Risk Screening Document

Section 12 References
# ACRONYMS, INITIALISMS, AND ABBREVIATIONS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AICO</td>
<td>Abandoned Indian Creek Outfall</td>
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<tr>
<td>ACL</td>
<td>Alternate Concentration Limit</td>
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<tr>
<td>ASTM</td>
<td>American Society for Testing and Materials</td>
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<tr>
<td>AEC</td>
<td>Atomic Energy Commission</td>
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<tr>
<td>AOC</td>
<td>Administrative Order on Consent</td>
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<td>BFC</td>
<td>Bannister Federal Complex</td>
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<tr>
<td>BTEX</td>
<td>Benzene, Toluene, Ethyl-Benzene, Xylene</td>
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<td>Corrective Measures Implementation</td>
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DNAPL  --  Dense Non Aqueous Phase Liquid
DOD  --  U. S. Department of Defense
DOE  --  Department of Energy
EPA  --  U. S. Environmental Protection Agency
ER  --  Environmental Restoration
ERDA  --  Energy Research Development Agency
FAA  --  Federal Aviation Administration
ft  --  feet
gal  --  gallons
GSA  --  General Services Administration
GJ  --  Grand Junction
gpm  --  gallon per minute
GSA  --  General Services Administration
IRS  --  Internal Revenue Service
in.  --  inch
IM  --  Interim Measures
KCP  --  Kansas City Plant
kg  --  kilogram
L  --  liter
MCL  --  Maximum Contaminant Level
MCLG  --  Maximum Contaminant Level Goal
MHWMF  --  Missouri Hazardous Waste Management Facility
m  --  meter
µg  --  microgram
mg  --  milligrams
mgd  --  million gallons per-day
MDL  --  minimum detection limit
MDNR  --  Missouri Department of Natural Resources
min  --  minute
MMB  --  Main manufacturing building
MSB  --  Manufacturing Support Building
NARA  --  National Archives Records Administration
NNSA  --  National Nuclear Security Administration
NPDES  --  National Pollutant Discharge Elimination System
ORNL  --  Oak Ridge National Laboratory
PID  --  photoionization detector
pg/L  --  pico-gram per liter
PCBs  --  polychlorinated biphenyls
QA/QC  --  quality assurance / quality control
RCRA  --  Resource Conservation and Recovery Act
RFI  --  RCRA Facility Investigation
RFIWP  --  RFI Work Plan
s  --  seconds
SOPs  --  Standard Operating Procedures
SPMDs  --  Semi Permeable Membrane Devices
SWMU  --  Solid Waste Management Unit
T-66  --  Therminol 66
TCDD  --  2, 3, 7, 8 - dioxin
TPH  --  Total Petroleum Hydrocarbons
TEF  --  Toxic Equivalency Factor
TRC  --  Total Residual Chlorine
TSCA  --  Toxic Substances Control Act
1,1-TCA  --  1,1-Trichloroethane
TCE  --  Trichloroethylene
TCLP  --  Toxicity Characteristic Leaching Procedure
TPH  --  Total Petroleum Hydrocarbons
USACE  --  U.S. Army Corps of Engineers
USFWS  --  U.S. Fish and Wildlife Service
USGS  --  U.S. Geological Survey
UST  --  Underground Storage Tank
USMC  --  United States Marine Corp.
VOCs  --  volatile organic compounds
WHO  --  World Health Organization