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Richland Operations Office

# memorandum

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REPLY TO  
ATTN OF: AMRP:ETG\15-AMRP-0216

SUBJECT: MISCELLANEOUS RESTORATION REPORT: REMOVAL OF MISCELLANEOUS ABOVE-GROUND UTILITY STRUCTURES AND COMPONENTS WITHIN THE RIVER CORRIDOR, MRD-2011-0002, REV. 0

TO: Memo to File

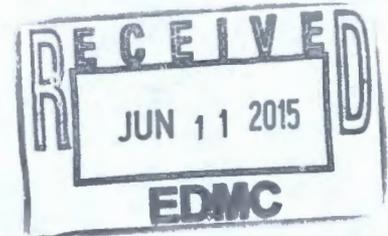
The purpose of this memo is to transmit the subject document to the Administrative Record. If you have any questions, please contact me at (509) 376-5828.



Ellwood T. Glossbrenner, Project Lead  
for the 100 Area Field Remediation

Attachment

cc w/attach:  
Administrative Record, H6-08



**Miscellaneous Restoration Report:  
Removal of Miscellaneous  
Above-Ground Utility Structures  
and Components within the  
River Corridor**

**Prepared for the U.S. Department of Energy  
by Washington Closure Hanford**

**July 2013**

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**STANDARD APPROVAL PAGE**

**Title:** Miscellaneous Restoration Report: Removal of Miscellaneous Above-Ground  
Utility Structures and Components within the River Corridor

**Author Name:** C. S. Cearlock, Mission Completion

**Approval:** J. A. Lerch, Mission Completion

Signature J. A. Lerch

Date 7/17/13

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## TABLE OF CONTENTS

1.0	INTRODUCTION.....	1
1.1	PURPOSE AND SCOPE.....	1
1.2	REMOVAL REQUIREMENTS.....	3
1.3	HISTORICAL ACTIVITIES.....	3
1.4	KEY TERMS AND DEFINITIONS.....	3
2.0	MISCELLANEOUS RESTORATION ACTIVITIES.....	4
2.1	POLE REMEDIATION.....	4
2.2	POLE AND COMPONENTS REMOVAL AND DISPOSAL.....	12
2.3	VERIFICATION OF REMOVAL.....	12
3.0	PROJECT COST SUMMARY.....	12
4.0	REFERENCES.....	13

### FIGURES

1.	Hanford Site Map.....	2
2.	Location of Abandoned Utilities Removed in the 100-B/C Area.....	5
3.	Location of Abandoned Utilities Removed in the 100-K Area.....	6
4.	Location of Abandoned Utilities Removed in the 100-N Area.....	7
5.	Location of Abandoned Utilities Removed in the 100-H Area.....	8
6.	Location of Abandoned Utilities Removed in the 100-F Area.....	9
7.	Electric Wire and Telecommunications Cable Removal.....	10
8.	Staged Telecommunications Wire.....	10
9.	Pulling Utility Pole.....	11
10.	Staging Utility Poles.....	11

### TABLES

1.	Utility Poles Removed.....	4
2.	Cost Summary for Removal and Treatment/Disposal of Miscellaneous Restoration Above-Ground Abandoned Utilities Performed at Reactor Areas 100-B/C, 100-F, 100-H, 100-K, and 100-N.....	13

## ACRONYMS AND ABBREVIATIONS

CERCLA	<i>Comprehensive Environmental Response, Compensation, and Liability Act of 1980</i>
DOE-RL	U.S. Department of Energy, Richland Operations Office
ERDF	Environmental Restoration Disposal Facility
MR	miscellaneous restoration
MSA	Mission Support Alliance
RCCC	River Corridor Closure Contract
WCH	Washington Closure Hanford

## 1.0 INTRODUCTION

### 1.1 PURPOSE AND SCOPE

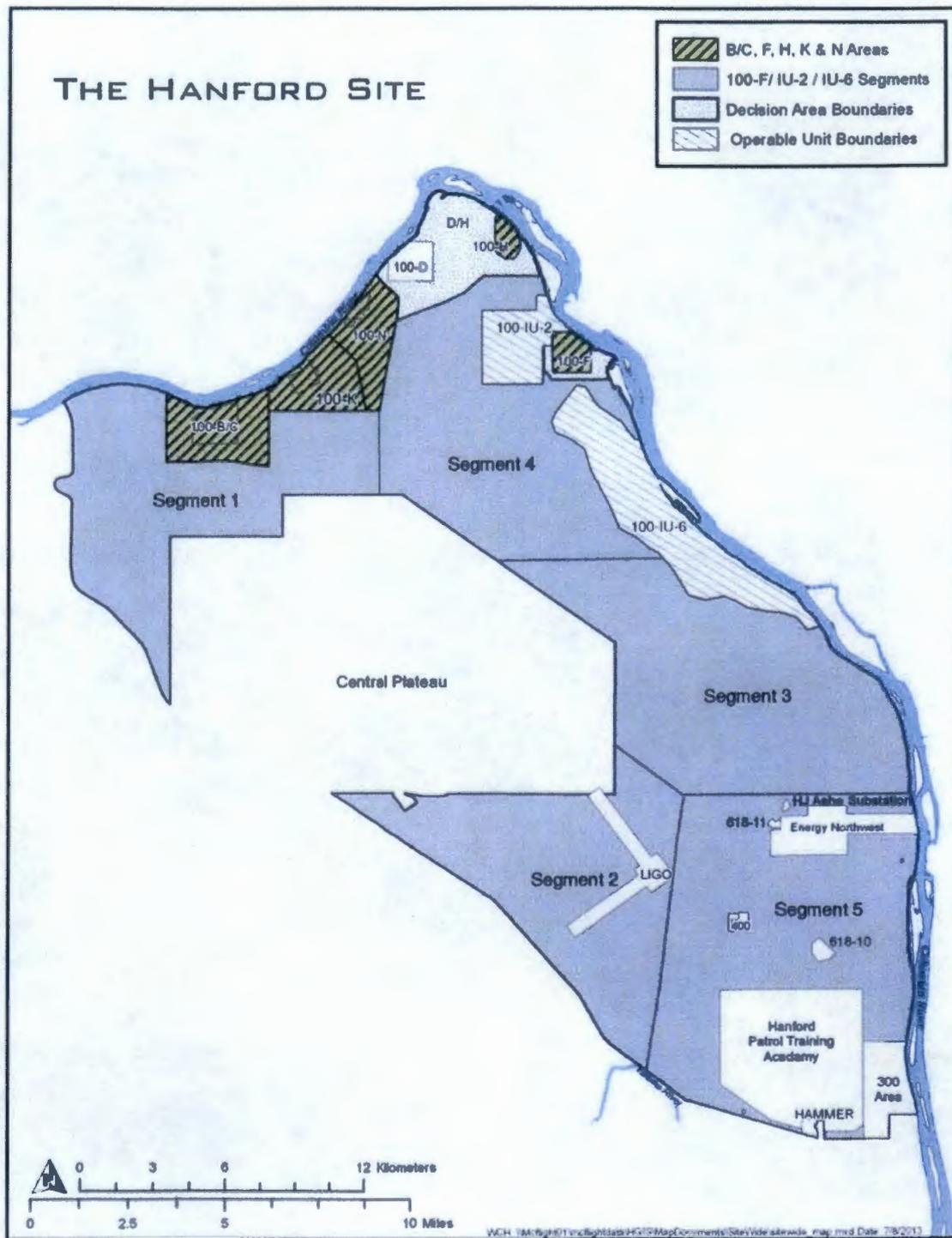
This document summarizes the miscellaneous restoration (MR) activity for removal of above-ground utility structures and components no longer in use within reactor and abandoned areas across the River Corridor. The scope was performed by Washington Closure Hanford (WCH) per the River Corridor Closure Contract (RCCC) statement of work, Section C.2.10 Activity 10: Miscellaneous Restoration.

Miscellaneous restoration activities involve removal and disposal of materials from the River Corridor lands that have the potential for contamination with *Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)* hazardous substances. Washington Closure Hanford has implemented the MR work scope within the RCCC in two distinct components: (1) large-scale features and (2) small, isolated, scattered debris. The large-scale features typically consist of engineered features that extend into multiple areas of the Hanford Site. These include abandoned railroad lines, abandoned above-grade utilities, and abandoned fencing. The small, isolated, scattered debris typically consist of potentially hazardous surface debris that is identified during orphan sites evaluations and includes items such as large concrete debris that stands out above the natural terrain, empty drums, large stockpile areas of wood and debris, transite piping, and isolated piping. Other non-CERCLA debris is documented and identified as stewardship elements as a part of the orphan sites evaluation processes. Stewardship elements include items such as glass, electrical components, metal, wiring, or wood. General trash/garbage and small, isolated pieces of debris are scattered throughout the Hanford Site and are not typically recorded as either MR or stewardship elements. Debris items subject to cleanup were removed and disposed to the Environmental Restoration Disposal Facility (ERDF).

Washington Closure Hanford has implemented this MR scope within the River Corridor to remove and dispose of abandoned above-ground utility structures and associated components. There were no abandoned above-ground utilities identified for removal in the 100-D, 300 and 400 Areas, and in Segments 2 through 5 except for two utility poles in Segment 1. Removal of the Segment 1 poles is discussed in Section 2.1 of this report. This report will focus on five reactor areas which include the 100-B/C, 100-F, 100-H, 100-K, and 100-N Areas as shown in Figure 1. All of the abandoned above-ground utilities and associated components that were removed were disposed to ERDF.

This report does not include other MR removal activities as described in the RCCC. Scattered utility poles, lying on the ground, identified during the Orphan Sites Evaluation process were categorized as Miscellaneous Restoration Debris. These poles and assorted power line components were not removed during this campaign.

Figure 1. Hanford Site Map.



## 1.2 REMOVAL REQUIREMENTS

Removal and disposal of miscellaneous items to support site completion was selected in DOE/RL-2010-22, *Action Memorandum for General Hanford Site Decommissioning Activities*, and is further described in Sections 2.5 and 2.6 of DOE/RL-2010-34, *Removal Action Work Plan for River Corridor General Decommissioning Activities*. As specified in DOE/RL-2010-34, debris will be removed from any given area using industry standard methods (e.g., front-end loaders, dump truck). Completion documentation for removal and disposal of miscellaneous debris is required to be documented in a report and to include a description of the work performed, quantity of material removed and disposed, and cost information.

## 1.3 HISTORICAL ACTIVITIES

The five reactor areas are located at the northern portion of the Hanford Site along the Columbia River. Beginning in 1943, an electrical power distribution system was constructed in support of the Hanford Engineer Work's plutonium production mission in the 100 Areas. This system included substations that distributed 13.8 kV electricity via above-ground wooden utility poles to the reactors and their associated support buildings. Reactor operations began to cease in 1964, and eventually ended in 1987. This ended the need for a full electrical distribution system in the 100 Areas, leaving most power lines and poles leading to facilities abandoned.

## 1.4 KEY TERMS AND DEFINITIONS

**Miscellaneous Restoration (MR):** An RCCC scope element that includes removing abandoned railroad lines, abandoned above-grade utilities, abandoned fences, and surface debris such as concrete that are not otherwise addressed by the CERCLA decision documents and that are considered contaminated or potentially contaminated with CERCLA hazardous waste. All below-ground debris and structures are excluded from the MR scope. Miscellaneous restoration also excludes de minimis volumes of non-CERCLA debris (small scattered nonhazardous surface debris).

**Orphan Sites Evaluation:** A systematic approach involving historical review and field investigation activities to identify new source unit waste sites within the **River Corridor** that are not identified for characterization or cleanup within the existing CERCLA decision documents (records of decision). Results of each orphan sites evaluation are presented in a summary report including a description of the process and a listing of identified orphan sites. Listings of **MR** items and stewardship elements that are captured during the course of the evaluation are also included in the summary report. Orphan sites evaluations are performed for the reactor/operational areas and for the inter-areas of the River Corridor.

**Reactor/Operational Areas:** The primary activity areas within the **River Corridor** that supported the Hanford Manhattan Project and subsequent Hanford Cold War Era. An **orphan sites evaluation** is conducted for each identified reactor/operational area including the 100-B/C, 100-D, 100-F, 100-H, 100-K, 100-N, 100-IU-2, 100-IU-6, 300, and 400 Areas. Collectively, the reactor/operational areas consist of approximately 6,880 ha (17,000 ac).

**River Corridor:** A portion of the Hanford Site that is defined by the RCCC. The River Corridor is more than 56,296 ha (139,000 ac) in size and is bounded on one side by the Columbia River.

**Stewardship Elements:** Manmade features, items, or activity areas within the **River Corridor** that (1) do not meet the Tri-Party Agreement TPA-MP-14 criteria for waste site identification (RL-TPA-90-0001), (2) are not part of **MR** scope, and (3) are anticipated to remain after completion of the RCCC. Examples may include, but are not limited to, groundwater wells, building foundations, and physical hazards. Stewardship elements also include unsubstantiated historical research artifacts that were investigated.

**Stewardship Information System:** A WCH relational database consisting of four components: waste sites, facilities, MR items, and stewardship elements. The Stewardship Information System is a primary WCH resource for capturing information in support of closure for River Corridor waste sites, facilities, reactors, miscellaneous debris items, and stewardship elements.

## 2.0 MISCELLANEOUS RESTORATION ACTIVITIES

A list of abandoned above-ground utilities identified for removal was provided in correspondence from WCH to the U.S. Department of Energy, Richland Operations Office (DOE-RL) in Letter 164259 "Identification of Miscellaneous Restoration Abandoned Above-Ground Utilities and Components." Subsequent concurrence from DOE-RL was provided to WCH in Letter 166654 "Identification of Miscellaneous Restoration Abandoned Above-Ground Utilities and Components" which agreed with the removal scope. The following section describes the abandoned above-ground utility (power poles) and components removal activities performed for each reactor area. Remediation of above-ground utilities was performed via work order by Hanford contractor Mission Support Alliance (MSA).

### 2.1 POLE REMEDIATION

A total of 232 abandoned utility poles were removed between October 2010 and February 2013 within the five reactor areas as identified in Table 1. Figures 2 through 6 show overview maps of each of the five reactor areas with locations identified for each of the removed utilities.

**Table 1. Utility Poles Removed.**

Reactor Area	Number of Poles Removed
100-B/C	88
100-D	0
100-F	80
100-H	7
100-K	3
100-N	54
300 Area	0
400 Area	0
<b>Total</b>	<b>232</b>





Figure 4. Location of Abandoned Utilities Removed in the 100-N Area.



Figure 5. Location of Abandoned Utilities Removed in the 100-H Area.

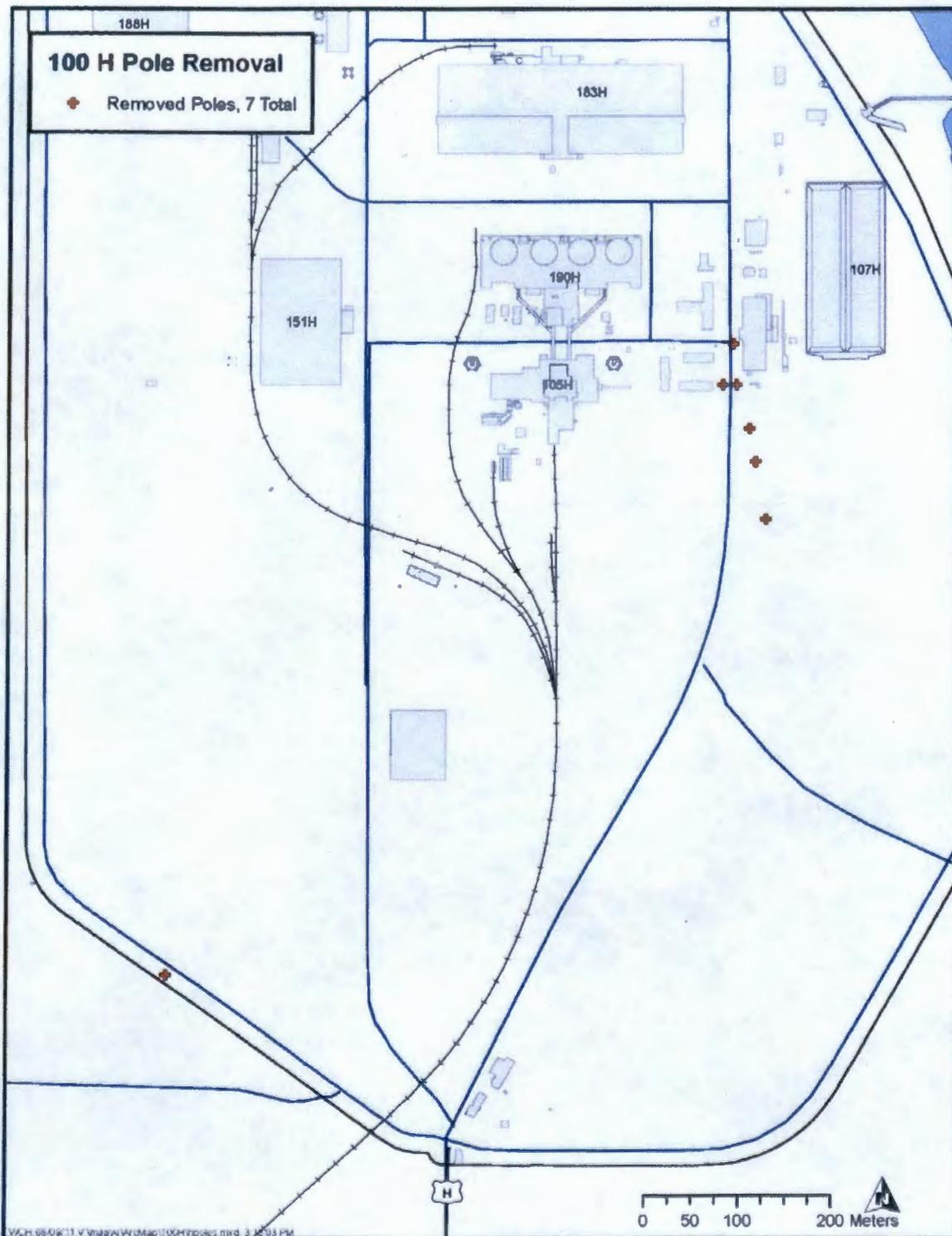
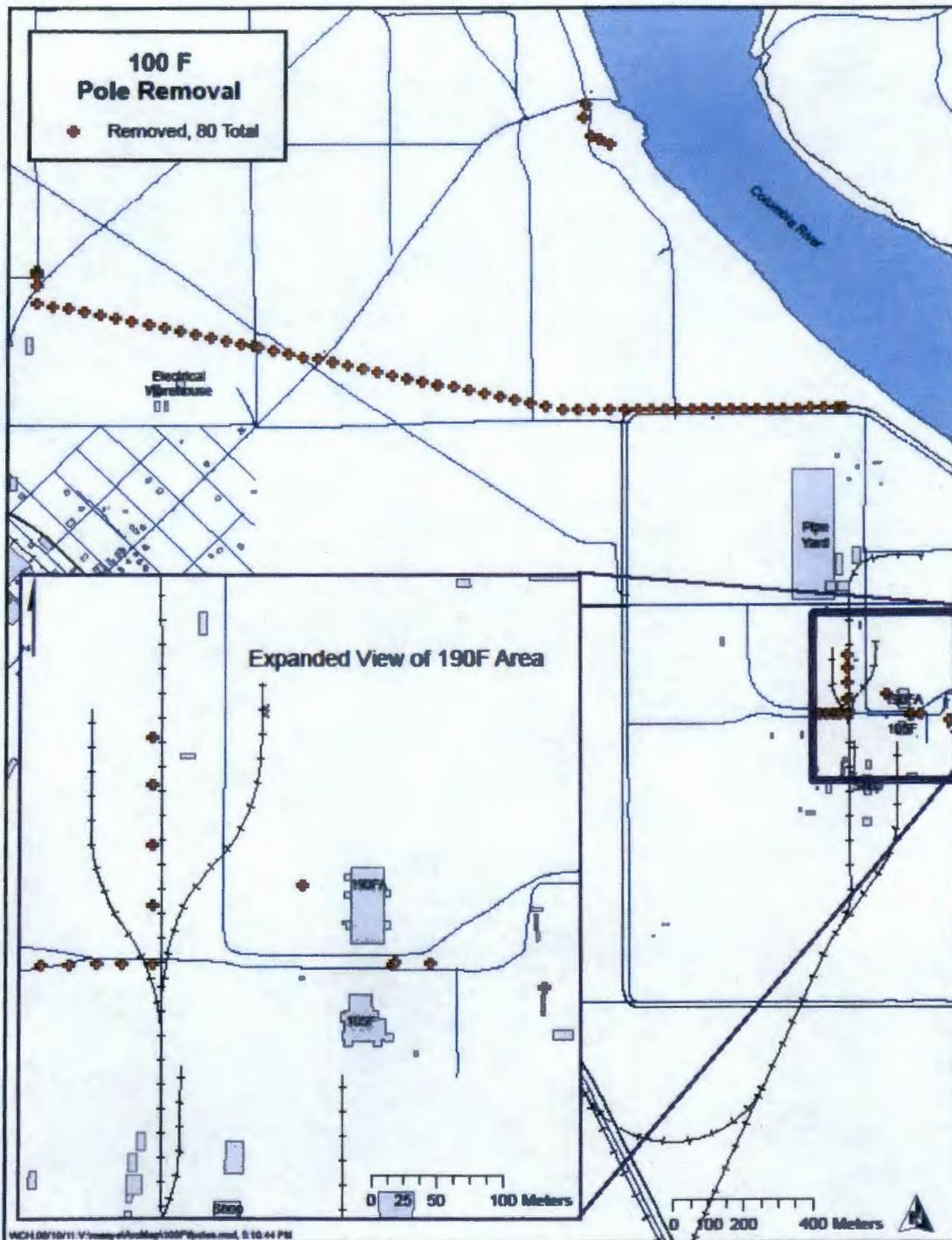


Figure 6. Location of Abandoned Utilities Removed in the 100-F Area.



Prior to pole removal, the abandoned electric wires and telecommunications cables were removed and staged for disposal (Figures 7 and 8). The telecommunications cable contained elemental lead and was segregated from the electric wires. For disposal of the elemental lead at ERDF, the communications cable was treated by placement in concrete in accordance with 40 CFR 268.45 "macroencapsulation."

**Figure 7. Electric Wire and Telecommunications Cable Removal.**



**Figure 8. Staged Telecommunications Wire.**



The poles were pulled by mechanical means and staged in piles for later removal/disposal (Figures 9 and 10). Associated pole components (guy wires and/or down-guys) were removed at approximately ground level. These items were removed by use of portable electric saws.

**Figure 9. Pulling Utility Pole.**



**Figure 10. Staging Utility Poles.**



Two additional poles were cut near grade level and left on the adjacent ground as part of the 100-F/IU-2/IU-6 Area – Segment 1 MR removal activities and were not included as part of this report. Additional information regarding removal of these two poles is provided in *Miscellaneous Restoration Report for 100-F/IU-2/IU-6 Area - Segment 1 and Segment 2* (MRD-2011-0001).

## **2.2 POLE AND COMPONENTS REMOVAL AND DISPOSAL**

Removal/transportation of remediated utility poles and associated components for disposal at ERDF was performed by MSA. The total disposal weight to ERDF for the poles, components, and lead sheathed cable was approximately 222 US tons.

The utility poles and non-lead components were transported between May and June of 2011, with one additional shipment in March 2013. The transportation campaign resulted in a total of 19 shipments with a total weight of approximately 209 US tons for the 232 poles and components.

The lead sheathed cable was transported to ERDF in two shipments in August 2011 and was treated in September 2011 with a total weight of 12.6 US tons.

## **2.3 VERIFICATION OF REMOVAL**

Upon completion of the removal and disposal of the utility pole debris, field walk downs were performed to verify removal of the poles and associated components. Walk downs were performed in each of the five reactor areas where pole removal activities occurred. The U.S. Department of Energy, Richland Operations Office (RL) area representative accompanied the WCH project manager into the field and observed that pole removal had been completed. Concurrence was documented by two separate emails to the RL representative (CCNs 162070 and 162394). CCN 162070 documented the utility pole removal walk down at 100-F and 100-H, and CCN 162394 documented removal walk down at 100-B/C, 100-K, and 100-N.

## **3.0 PROJECT COST SUMMARY**

This section presents a summary of the project costs associated with the removal of abandoned above-ground utilities and treatment/disposal activities performed in the 100-B/C, 100-F, 100-H, 100-K, and 100-N Reactor areas. The total combined cost of work performed for these MR activities was approximately \$145,400. As shown in Table 2, the average unit rate for work performed was approximately \$655/US ton.

The cost data represent the fully burdened labor, equipment and materials cost for the work performed, including all applicable direct charges and MSA services. Data presented in this summary include project costs for removal and load out, waste transportation, and treatment/disposal at ERDF. The cost data do not include costs associated with removal action work plan document development, detailed designs, or work package development.

**Table 2. Cost Summary for Removal and Treatment/Disposal of Miscellaneous Restoration Above-Ground Abandoned Utilities Performed at Reactor Areas 100-B/C, 100-F, 100-H, 100-K, and 100-N.**

Debris Area	Waste Quantity (US tons)	Removal (\$K)	Macroencapsulation (US tons)	Waste Treatment/ Disposal (\$K)	Total (\$K)	Average Cost (\$/US ton)
100-B/C, 100-F, 100-H, 100-K, 100-N	222	141	12.6	4.4	145.4	655

Details for the ERDF treatment/disposal costs, provided in Table 2, are based on an average unit rate of \$11.89/US ton (fiscal year 2011 disposal rate) and \$142.73/US ton (fiscal year 2011 macroencapsulation rate) for the telecommunications cable. Transportation costs to ERDF are included in the removal costs.

#### 4.0 REFERENCES

- 40 CFR 268.45 – Macroencapsulation, *Alternative Treatment Standards for Hazardous Debris*
- Comprehensive Environmental Response, Compensation, and Liability Act of 1980*,  
42 U.S.C. 9601, et seq.
- DOE/RL-2010-22, 2010, *Action Memorandum for General Hanford Site Decommissioning Activities*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2010-34, 2013, *Removal Action Work Plan for River Corridor General Decommissioning Activities*, Rev. 2, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Letter 162070, 2011, "Utility Pole removal 100F & 100H," email to E. T. Glossbrenner, U.S. Department of Energy, Richland Operations Office, from J. D. Fancher, Washington Closure Hanford, Richland, Washington, October 18.
- Letter 162394, 2011, "Utility Pole Removal Walk Down," email to E. T. Glossbrenner, U.S. Department of Energy, Richland Operations Office, from J. D. Fancher, Washington Closure Hanford, Richland, Washington, November 2.
- Letter 164259, 2012, "Identification of Miscellaneous Restoration Abandoned Above Ground Utilities and Components," external letter to J. J. Short, U.S. Department of Energy, Richland Operations Office, from S. L. Feaster, Washington Closure Hanford, Richland Washington, February 22.

Letter 166654, 2012, "Identification of Miscellaneous Restoration Abandoned Above Ground Utilities and Components" external letter to C. A. Johnson, Washington Closure Hanford, from J. J. Short, U.S. Department of Energy, Richland Operations Office, Richland, Washington, July 10.

MRD-2011-0001, 2011, *Miscellaneous Restoration Report for 100-F/IU-2/IU-6 Area – Segment 1 and Segment 2*, Rev. 0, Washington Closure Hanford, Richland, Washington.

RL-TPA-90-0001, 1990, *Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) Handbook*, U.S. department of Energy, Richland Operations Office, Richland, Washington.

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