0086769

OSR-2009-0001
Rev. 0

100-N Area Orphan Sites Evaluation Report

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

December 2009

RECEIVED
APR 19 2010
EDMC

Attached to: 0086770

DOCUMENT CONTROL 12/22/09 DD

OSR-2009-0001
Rev. 0

STANDARD APPROVAL PAGE

Title: 100-N Area Orphan Sites Evaluation-Report

Approval: E. T. Feist, Manager, Mission Completion Manager

E T Feist
Signature

12/17/09
Date

The approval signatures on this page indicate that this document has been authorized for information release to the public through appropriate channels. No other forms or signatures are required to document this information release.

6.1 INTEGRATION OF HISTORICAL REVIEW AND FIELD INVESTIGATION INFORMATION 6-1

6.2 INFORMATION BRIEFINGS 6-1

6.3 FINAL CATEGORIZATION 6-2

6.3.1 Orphan Sites 6-2
6.3.2 Miscellaneous Restoration 6-2
6.3.3 Stewardship Elements 6-36
6.3.4 WIDS 6-37

7.0 REFERENCES 7-1

APPENDIX

A. MAP ..... A-i

FIGURES

1-1. River Corridor Boundary and Location of Reactor/Operational Areas. 1-2
2-1. Process for Integration of Orphan Sites Evaluation Results with CERCLA Cleanup Actions. 2-3
5-1. Area Covered by the 100-N Field Investigation. 5-2

TABLES

2-1. Orphan Site Evaluation Subtask Summary 2-1
4-1. 100-N Historical Review Metrics. 4-1
6-1. 100-N Area Orphan Sites Evaluation Summary 6-3
6-2. 100-N Area Orphan Site Groupings 6-36

TABLE OF CONTENTS

1.0 INTRODUCTION 1-1

1.1 PURPOSE 1-1

1.2 SCOPE 1-1

1.3 KEY TERMS AND DEFINITIONS 1-3

2.0 ORPHAN SITES EVALUATION PROCESS OVERVIEW 2-1

2.1 WORK BREAKDOWN STRUCTURE 2-1

2.2 EXCLUSIONS 2-2

2.3 INTEGRATION WITH CERCLA CLEANUP ACTIONS 2-2

2.4 INTEGRATION WITH PROPERTY TRANSFER REQUIREMENTS 2-4

2.5 INFORMATION MANAGEMENT 2-5

3.0 100-N AREA OVERVIEW 3-1

4.0 100-N AREA HISTORICAL REVIEW 4-1

4.1 HISTORICAL INFORMATION RESOURCES 4-1

4.1.1 Documents 4-1
4.1.2 Construction Drawings 4-2
4.1.3 Photographs 4-2
4.1.4 GIS 4-2

4.2 HISTORICAL REVIEW SUMMARY 4-2

4.2.1 General Features 4-3
4.2.2 Pipelines 4-3

5.0 100-N AREA FIELD INVESTIGATION 5-1

5.1 FIELD INVESTIGATION DOCUMENTATION TOOLS AND APPROACH 5-1

5.2 FIELD INVESTIGATION SUMMARY 5-1

5.2.1 Geophysical Surveys 5-3
5.2.2 Physical Hazards 5-3

6.0 100-N AREA EVALUATION RESULTS 6-1

ACRONYMS AND ABBREVIATIONS

CERCLA	*Comprehensive Environmental Response, Compensation, and Liability Act of 1980*
DARTS	Documents and Record Tracking System
DDRS	Declassified Document Retrieval System
DOE	U.S. Department of Energy
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
FSB	fuel storage basin
GIS	Geographical Information System
GPS	global positioning system
IDMS	Integrated Document Management System
OU	operable unit
RCCC	River Corridor Closure Contract
RL	U.S. Department of Energy, Richland Operations Office
RMIS	Records Management Information System
ROD	record of decision
SIS	Stewardship Information System
Tri-Parties	DOE, Ecology, and EPA
Tri-Party Agreement	*Hanford Federal Facility Agreement and Consent Order*
WCH	Washington Closure Hanford
WIDS	Waste Information Data System

1.0 INTRODUCTION

This report summarizes the approach used and results obtained from the orphan sites evaluations of the Hanford Site 100-N Area that were conducted between August 2007 and March 2009. The orphan sites evaluation process is a systematic approach used to review land parcels and identify potential waste sites in the river corridor that are not currently listed in existing *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA) decision documents (records of decision [RODs]). Evaluations are performed within the baseline scope of the River Corridor Closure Contract (RCCC) and consist of comprehensive reviews of historical documentation including, but not limited to, documents, drawings, maps, photographs, field investigations, and geophysical surveys. Orphan sites evaluations have or will be conducted within each reactor/operational area in the river corridor and within the remaining nonoperational areas of the river corridor geographical area (referred to as the "inter-areas") as depicted in Figure 1-1. Evaluation results are reviewed with the U.S. Department of Energy (DOE), Richland Operations Office (RL), and the lead regulatory agency (either the U.S. Environmental Protection Agency [EPA] or the Washington State Department of Ecology [Ecology]), and subsequently summarized in an orphan sites evaluation report. New waste sites identified through the orphan sites evaluation process are typically added to one of the existing CERCLA decision documents through an explanation of significant differences or ROD amendment, characterized to determine whether or not cleanup is required, and addressed in accordance with the selected remedy. In addition, orphan sites and areas of concern are documented in the Hanford Site Waste Information Data System (WIDS), which is the official repository for documenting the life-cycle of waste management units and other areas of concern on the Hanford Site.

1.1 PURPOSE

The purpose of orphan sites evaluations is to increase confidence that waste disposal or releases requiring characterization and cleanup within a given land parcel of the Hanford Site river corridor have been identified. Information collected through conducting the evaluations also supports elements of the CERCLA 120 (h) (4) requirements for review and identification of uncontaminated property at federal facilities.

1.2 SCOPE

The scope of an orphan sites evaluation includes conducting a historical review, a field investigation, briefings with RL and the lead regulatory agency, and issuance of a summary report. Characterization, waste excavation, removal, disposal, and site closeout are excluded from the orphan sites evaluation scope of work. For orphan sites identified during the evaluation, it is anticipated that these activities will be performed by Washington Closure Hanford (WCH) following addition of the work scope to the RCCC.

The scope of the 100-N Area orphan sites evaluation included both the 100-NR-1 source operable unit (OU) and an area in the vicinity of the 100-N Fire Station. The total coverage area was approximately 762 hectares (1,882 acres).

Figure 1-1. River Corridor Boundary and Location of Reactor/Operational Areas.

1.3 KEY TERMS AND DEFINITIONS

Field Investigation: A subtask of the **orphan sites evaluation** process that involves a systematic visual inspection of manmade surface features, items, or activity areas within a defined area of the **river corridor** to identify **potential orphan sites** and capture **miscellaneous restoration** items and **stewardship elements** that are observed. The field investigation also includes **geophysical surveys** of selected areas based on field observations or information from the **historical review** subtask.

Geographical Information System (GIS) Database: A spatial database of points, lines, and polygons with descriptive attributes organized by themes (facilities, waste site boundaries, operable units, electrical lines, sewer lines, roadways, railways, groundwater wells, etc.).

Historical Review: A subtask of the **orphan sites evaluation** process that involves review of **historical documents** for building and land uses, potential releases, and current physical condition to identify **potential orphan sites** and focus areas for **field investigation** activities.

Inter-Areas: The portion of the river corridor that excludes the **reactor/operational areas**. The inter-areas consist of more than 49,410 hectares (122,000 acres).

Miscellaneous Restoration: An RCCC scope element that includes removing abandoned railroad lines, abandoned above-grade utilities, clean surface concrete debris, and abandoned fences that are not otherwise addressed by the CERCLA decision documents. All below-ground debris and structures are excluded from the miscellaneous restoration scope. Miscellaneous restoration also excludes general non-CERCLA debris (small scattered nonhazardous surface debris).

Orphan Site: Manmade features, items, or activity areas within the **river corridor** that (1) meet the *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement) (Ecology et al. 1989) TPA-MP-14 criteria for waste site identification (DOE-RL 2007), (2) are not identified for characterization or cleanup within the existing CERCLA decision documents (RODs), and (3) have been presented to and accepted by RL and the lead regulatory agency (EPA or Ecology) through the **orphan sites evaluation** process.

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 (RODs). 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 **miscellaneous restoration** 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.

Physical Hazard: A manmade feature that requires immediate attention (active subsidence, open wells/cisterns, open basement foundation, etc.) based on **field investigation** observations and best professional judgment. When identified, location and description are communicated to the Field Remediation Closure Project personnel to address.

Potential Orphan Site: Manmade features, items, or activity areas identified within the **river corridor** during the historical review or field investigation activities that are evaluated because they have the potential to meet the criteria for an **orphan site**.

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 Area, 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 hectares (17,000 acres).

River Corridor: A portion of the Hanford Site that is defined by the RCCC. The river corridor is more than 56,296 hectares (139,000 acres) in size and is bounded on one side by the Columbia River. For the purpose of conducting **orphan sites evaluations**, the river corridor is subdivided into **reactor/operational areas** and **inter-areas.**

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 (DOE-RL 2007), (2) are not part of **miscellaneous restoration** 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 (SIS): A relational database consisting of three components: waste sites, facilities, and **orphan sites evaluations**. The SIS is a primary resource to capture information gathered through the **orphan sites evaluations**.

TPA-MP-14 (Maintenance of the Waste Information Data System): A mechanism for documenting the life-cycle of waste management units and other areas of concern on the Hanford Site. The procedure establishes responsibilities and the process required to maintain and update waste site information contained in WIDS.

Waste Information Data System (WIDS): An electronic database of waste site information for the Hanford Site. The database identifies waste management units on the Hanford Site, describes the current status of each unit, and includes other descriptive information.

2.0 ORPHAN SITES EVALUATION PROCESS OVERVIEW

2.1 WORK BREAKDOWN STRUCTURE

This section presents a summary of standard orphan sites evaluation work breakdown structure and deliverables. For the purpose of executing the work scope, each orphan sites evaluation has been organized into the following subtasks:

- Historical Review
- Field Investigation
- Gap Analysis
- Integration
- Summary Report.

General scope of each subtask is summarized in Table 2-1.

Table 2-1. Orphan Site Evaluation Subtask Summary.

Subtask	Scope
Historical review	Review historical information (e.g., documents, photographs, drawings, geophysical surveys) associated with facilities, piping systems, operational processes, and waste sites to identify potential orphan sites and target areas for field investigation.
Field investigation	Conduct systematic foot-based land survey of operational area to document potential orphan sites (field-based observation), follow up on potential orphan sites identified from historical review, identify miscellaneous restoration items observed, and identify stewardship elements observed. Geophysical surveys also may be conducted in target areas as part of the field investigation.
Gap analysis	Identify and prioritize any information gaps after completion of historical review and field investigation subtasks. Conduct follow-up in identified areas to address information gaps to the extent possible. This subtask may include supplemental historical review and/or field investigation activities as needed.
Integration	Prepare draft lists of and initial grouping of potential orphan sites, miscellaneous restoration items, and stewardship elements. Conduct briefings of evaluation results with WCH field remediation project, RL, and the lead regulator. Establish final list of new orphan sites and complete write-up/database entry for orphan sites, miscellaneous restoration items, and stewardship elements. Complete the Discovery Site Checklists for identified sites.
Summary report	Develop report to summarize results from each orphan site evaluation conducted and issue to RL (RCCC contract deliverable C.2.10).

RCCC = River Corridor Closure Contract
RL = U.S. Department of Energy, Richland Operations Office
WCH = Washington Closure Hanford

2.2 EXCLUSIONS

The following exclusions apply to orphan sites evaluations conducted to support the RCCC.

- Characterization (other than geophysical surveys), waste excavation, removal, disposal, and site closeout are excluded in the orphan sites evaluation scope of work. For orphan sites identified during the evaluation, these activities will be performed following modifications to the RCCC to add the appropriate work scope.

- Known or existing waste sites are excluded from the evaluations. This includes waste sites that are scheduled for characterization or cleanup, waste sites that are undergoing cleanup during evaluation, waste sites where cleanup (excavation, backfill, and/or revegetation) has been completed prior to evaluation, and waste sites that have been reclassified as no action or rejected. Surface debris located on these known or existing waste site may be documented as part of this evaluation.

- Islands and the Columbia River (ordinary high-water mark) are excluded from the evaluations.

- General trash/garbage and small isolated pieces of debris are scattered throughout the Hanford Site and will not be recorded as part of the evaluations.

- Railroad lines and utility poles are excluded from consideration as an orphan site. These items will be addressed by the miscellaneous restoration requirement of the RCCC.

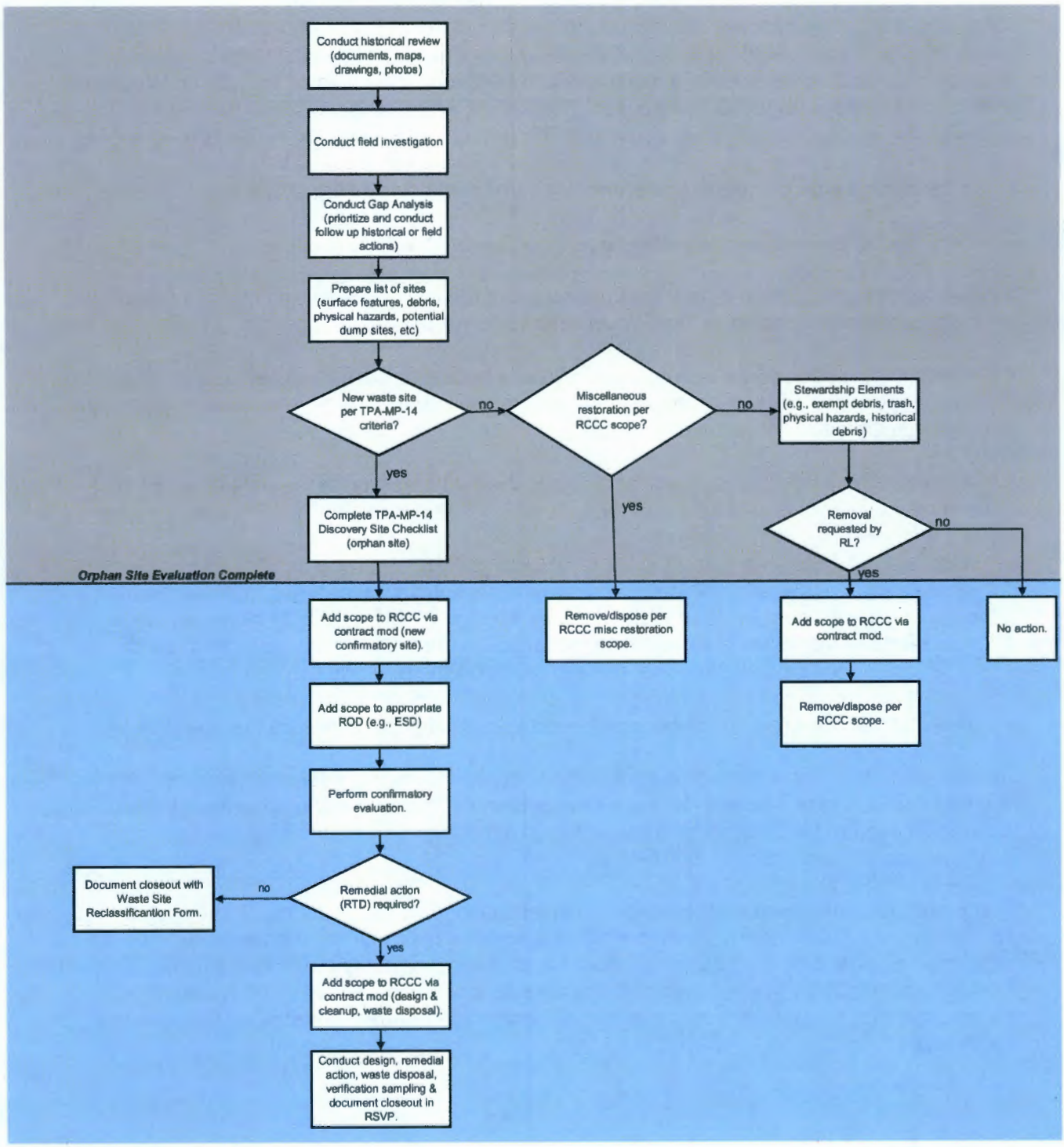
- Active temporary construction (e.g., remedial action construction trailers) is excluded from the evaluations.

Additional exclusions may be identified during the course of performing work and interacting with RL and the regulators.

2.3 INTEGRATION WITH CERCLA CLEANUP ACTIONS

Source OU cleanup actions in the river corridor are performed in accordance with several RODs that provide a regulatory framework, establish cleanup objectives, and identify selected remedies. The process flow and approach for integrating the orphan sites evaluations results with CERCLA remedial actions in the river corridor is presented in Figure 2-1. Following completion of the orphan sites evaluation for a given area, it is anticipated that any new waste sites identified by the process will be added to an appropriate ROD for subsequent characterization and determination for additional remedial action. If one or more of the new waste sites do not meet the criteria to be added to an existing ROD, the Tri-Parties (DOE, EPA, and Ecology) will determine an approach to establish the regulatory framework for selection of cleanup actions under an appropriate decision document.

Figure 2-1. Process for Integration of Orphan Sites Evaluation Results with CERCLA Cleanup Actions.



2.4 INTEGRATION WITH PROPERTY TRANSFER REQUIREMENTS

Section C.2.11, Activity 11 of the RCCC requires development of a long-term stewardship plan containing a proposed finding of suitability to transfer in accordance with CERCLA 120(h) (WCH 2007). Section 120(h) (4) establishes requirements for identifying federal facilities property on which no hazardous substances and petroleum products or their derivatives were known to have been released or disposed. Review of the following types of information associated with current and previous uses of the property are identified in Section 120(h) (4):

- A detailed search of federal government records pertaining to the property
- Recorded chain of title documents regarding the real property
- Aerial photographs that may reflect prior uses of the real property and that are reasonably obtainable through state or local government agencies
- A visual inspection of the real property and any buildings, structures, equipment, pipe, pipeline, or other improvements on the real property, and a visual inspection of properties immediately adjacent to the real property
- A physical inspection of property adjacent to the real property, to the extent permitted by owners or operators of such property
- Reasonably obtainable federal, state, and local government records of each adjacent facility where there has been a release of any hazardous substance or any petroleum product or its derivatives, including aviation fuel and motor oil, and which is likely to cause or contribute to a release or threatened release of any hazardous substance or any petroleum product or its derivatives, including aviation fuel and motor oil, on the real property
- Interviews with current or former employees involved in operations on the real property.

Identification also can be based on sampling, if appropriate under the circumstances. For property that is part of a federal facility on the National Priorities List (such as the Hanford Site), the identification of uncontaminated properties is not complete until the EPA Administrator (or his designee) concurs with the results.

These requirements are consistent with the investigations conducted through the orphan sites evaluation process. Where indicators exist to suggest a potential for release or disposal of hazardous substances, a conservative decision is made to identify a new orphan site. Orphan sites are subsequently investigated and characterized through sampling conducted in accordance with a regulator-approved sample design to determine if remedial actions are warranted.

2.5 INFORMATION MANAGEMENT

The SIS database is an Oracle database that was created by WCH for the specific purpose of supporting transition from cleanup to long-term stewardship in the river corridor. Information generated during the process of conducting orphan sites evaluations is captured within facilities, waste sites, and orphan sites evaluation components of the SIS database. The GIS database contains spatial information (e.g., shape and point data) generated from the evaluations that integrates with the SIS database.

For sites identified as orphans, information is also provided to the current WIDS administrator for inclusion into the official Hanford Site database.

3.0 100-N AREA OVERVIEW

The 100-N Area is one of nine nuclear reactors located at six Hanford Site reactor areas located along the Columbia River. The 100-N Reactor differs from the other reactors at Hanford, not only because of its "closed-loop cooling system," but because it was designed as a dual-purpose reactor capable of producing both nuclear material and steam generation for electrical power. Although called a "closed-loop cooling system," it actually operated as a bleed-and-feed system where a portion of the cooling waters were constantly bled off and replaced with fresh demineralized water (DOE-RL 2002). The cooling effluent removed from the loop eventually made its way primarily to the 116-N-1 and 116-N-3 liquid waste disposal facilities.

The 100-N Reactor operated from December 1963 to January 1987. The Hanford Site Generating Plant was completed and started producing electrical power in April 1966. Both the reactor and generating plant operated continuously, except during periodic shutdowns for maintenance and repairs. The reactor building is currently undergoing the interim stabilization process under Tri-Party Agreement Milestone M-93-20 to "Complete 105-N Reactor Interim Safe Storage" by September 30, 2012 (Ecology et al. 1989). Placing a reactor in interim safe storage involves removing all ancillary and exterior structures at each reactor complex, leaving only the reactor core and its surrounding shield walls. During the interim stabilization process, the reactor is demolished to its radioactive core, sealed, and re-roofed to establish a safe configuration for radioactive decay to occur.

The 100-NR-1 OU includes sites contaminated as a result of discharge of contaminated liquid effluents to operational facilities such as cribs, basins, and french drains, unplanned releases or leaks from piping systems and storage tanks, and construction debris. The primary waste sources were the reactor cooling systems and the fuel storage basins.

Remedial action activities to perform environmental cleanup of waste sites associated with previous 100-N Area reactor operations began in 1999. As of 2009, the largest of the 100-N Area liquid waste sites have been remediated and backfilled with clean soil. Interim remedial actions at the 100-N Area are scheduled to be completed in 2012, in accordance with Tri-Party Agreement Milestone M-16-55 (Ecology et al. 1989).

4.0 100-N AREA HISTORICAL REVIEW

A comprehensive review of historical information was conducted to identify potential orphan sites for the 100-N Area of interest to be investigated further during the course of conducting the associated field investigation. Historical research generally focuses on identifying specific items or features that are typically associated with a waste site. The most common features associated with a waste site in reactor areas include drains, cribs, drywells/french drains, burial grounds, pipelines, above- and below-ground storage tanks, septic systems, drain fields, burn pits, trenches, ditches, pits, spills, sumps, vaults, ash pits, disposal areas, pumps, and buildings and facilities that contain chemicals and radiological contaminants. Historical review focused on features associated with these types of areas.

4.1 HISTORICAL INFORMATION RESOURCES

Information obtained and used in the historical review includes, but is not limited to, the following types of resource:

- Maps
- Construction and operations drawings
- Technical and operations documents
- Construction and operations photographs
- Aerial photographs
- Geophysical survey results
- Cleanup verification packages
- Sampling logbooks
- Building demolition and deactivation records
- Personnel interviews.

A summary of the key metrics associated with the 100-N Area historical review is presented in Table 4-1. Specific information associated with the review approach for selected resource types is summarized in the following subsections.

Table 4-1. 100-N Historical Review Metrics.

Resource Type	Item	Quantity
Documents	Documents retrieved from records holding area and screened	501
Drawings	Construction drawings collected, reviewed, and indexed	1,498
Photographs	Photographs obtained and reviewed	1,722

4.1.1 Documents

Historical documents were located by keyword searches of available databases, including the Records Management Information System (RMIS), Integrated Document Management System (IDMS), Declassified Document Retrieval System (DDRS), DocsOpen, Document and Record Tracking System (DARTS), DOE Reading Room, and Fixed RM. Information from additional

databases was accessed through WCH Records and Document Control and Hanford Site Central Files. Search results revealed approximately 500 historical documents for the 100-N Area. Of these, a total of 270 reference documents were collected, reviewed, and information extracted for use during this evaluation.

4.1.2 Construction Drawings

Construction drawings of interest were identified by reference in reviewed documents and database searches (e.g., Crystal®). A total of 20,000 drawings were identified and screened for relevant information. The screening process resulted in a subset of 1,498 drawings that were reviewed in detail. The detailed review of the construction drawings resulted in the identification of 30 new french drains, as well as 544 new pipe segments. All information was incorporated into the GIS database. Construction drawings were also reviewed as part of the waste site and building research. Information obtained was incorporated and referenced in the waste site and building write-ups, and subsequently used to update applicable components of the SIS database.

4.1.3 Photographs

There were 1,722 photographs collected for the 100-N Area from the RMIS (IDMS) database. The photographs included ground-based and aerial perspectives. These historical photographs depicted construction, operations, and demolition activities. The project team reviewed the photographs for indications of liquid spills, ground disturbances, open trenches or ditches, stressed vegetation, debris, and septic tanks.

4.1.4 GIS

New information from the review of construction drawings was added to the GIS database. This information included 532 drawings of which 107 were rectified. The images were rectified to determine if features of interest have been previously identified as existing WIDS sites, are identified in an existing GIS mapping layer, or were newly identified features. The resulting newly identified features were mapped into the GIS database. The other drawings were related reference drawings that did not require rectification. A total of 68 structures and 544 new pipeline segments were added to the database.

4.2 HISTORICAL REVIEW SUMMARY

The various resource types identified in Section 4.1 were used to review information related to facility and infrastructure construction, operations, process systems, releases, and demolition within the 100-N Area. Information suggesting the presence of a potential discovery site was reviewed against the existing baseline of waste sites for the 100-N Area. Where not previously identified as a waste site, further investigation was conducted to support a final determination. In some cases additional investigation included field verification and/or geophysical surveys as part of the field investigation summarized in Section 5.0. Integration of information from the historical review and field investigation activities is reflected in the results presented in Section 6.0.

® Crystal is a registered trademark of Crystal Certified Solutions, Inc.

4.2.1 General Features

Information from construction drawings and other resource types was reviewed for indications of potential use or storage of chemical products and waste disposal or release. Approximately 76 items were identified based on this potential and added to a punchlist for further investigation. New features or information that were identified from construction drawings and other resources (facilities, flumes, septic systems, etc.) were added to the GIS and SIS databases.

4.2.2 Pipelines

In the 100-N Area, construction drawings were reviewed for pipelines that had not been previously mapped. There were 544 new pipe segments (24.0 km [14.9 mi]) that were identified and subsequently mapped into the GIS database. These pipe segments were added to waste site 100-N-84, "Miscellaneous Pipelines."

5.0 100-N AREA FIELD INVESTIGATION

The field investigation builds on results from the historical review subtask to investigate potential orphan sites identified during the historical review and document observations from a systematic investigation of the 100-N Area. The field investigation consists of walking over an area of interest in a systematic manner and locating, documenting, and mapping observed items and features that could lead to the identification of orphan sites. During the course of conducting the field investigation, observed items and features that meet the definition of miscellaneous restoration items or stewardship elements also are documented and mapped.

5.1 FIELD INVESTIGATION DOCUMENTATION TOOLS AND APPROACH

The field investigation provides another level of assurance that all potential waste sites have been identified. Three primary tools provide the media to record the information observed in the field including hand-held Trimble GeoXT® global positioning system (GPS) units, digital cameras, and field logbooks. Geophysical survey instrumentation is used to supplement these tools for selected areas or features identified during the historical review or field investigation.

To ensure a systematic approach for area coverage, a standardized 30 by 30 m (98- by 98-ft) conceptual grid is established over the area to be investigated. The grid and existing known features in the area are loaded onto a hand-held GeoXT GPS unit that is used in the field to monitor progress and record information. Using the conceptual grid as a guideline, the investigation is conducted with approximately 15 m (49-ft) spacing between team members.

5.2 FIELD INVESTIGATION SUMMARY

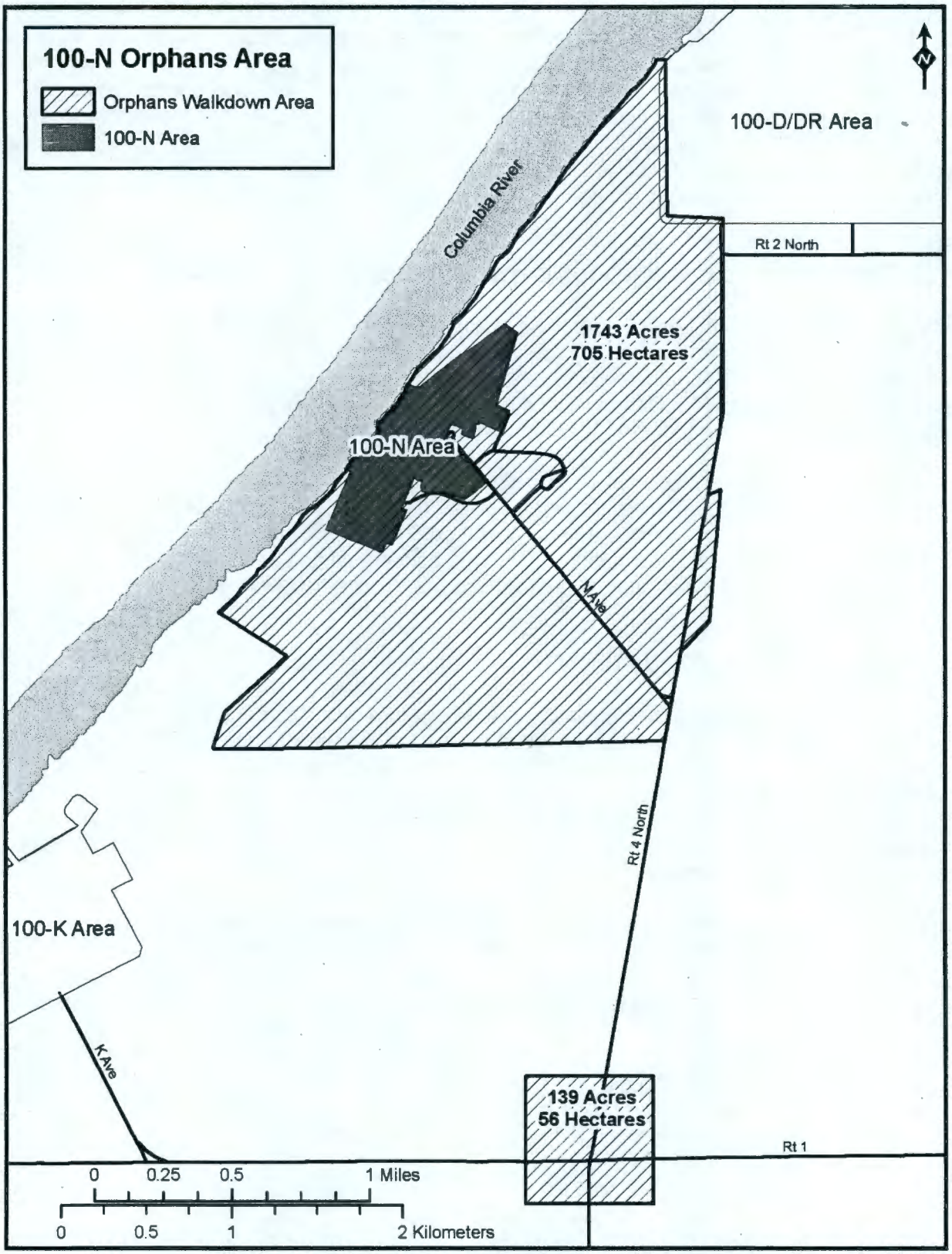
The 100-N Area field investigation covered an area of more than 762 hectares (1,882 acres) (Figure 5-1). Field investigation activities were conducted between March 20, 2008 and May 29, 2008. Items or features of interest that were observed during the investigation were recorded in state plane coordinates as a point, line, or area (polygon) using the GeoXT GPS unit. Attributes of each item or feature were recorded with the GeoXT from an imbedded data dictionary picklist structure created specifically for orphan sites evaluations. Features of interest were also photographed with a digital camera.

During the course of conducting the field investigation, approximately 225 features were recorded using the GeoXT GPS unit. Associated images of the recorded features were captured in approximately 272 digital photographs. Items and features of interest observed in the field were initially categorized into one of the following groups:

- Potential orphan sites
- Miscellaneous restoration items
- Stewardship elements.

® Trimble GeoXT is a registered trademark of Trimble Navigation Limited.

Figure 5-1. Area Covered by the 100-N Field Investigation.



Historical research, field walkdowns, GIS mapping, and geophysical surveys are complete for the 100-N Area orphan sites evaluation. A summary of the findings is presented below:

- 762 hectares (1,882 acres) were inspected during the field walkdown
- 23 waste sites were identified
- 31 miscellaneous restoration locations were recorded
- 162 stewardship locations were recorded
- 3 locations were investigated through geophysics
- 2 physical hazard locations were identified.

Integration of information from the historical review and field investigation activities, including final categorization of items and features, is reflected in the results presented in Section 6.0.

5.2.1 Geophysical Surveys

A total of three targeted geophysical surveys were conducted to support the 100-N Area field investigation. The surveys were conducted to follow up on information discovered during the historical review that identified five potential waste site locations. Examples included suspect underground tanks or piping systems identified on project drawings, conflicting information associated with location of subsurface features on project drawings, and disturbed surface areas with indication of potential buried debris. Combinations of electromagnetic induction (EM-61), vertical gradient magnetics, and ground-penetrating radar geophysical investigation methods were used in the surveys. Results from the surveys are summarized in geophysical site investigation summary reports and are identified in Section 6.0.

5.2.2 Physical Hazards

During the course of performing the field investigation, several physical hazards judged to merit notification (e.g., active subsidence, open wells/cisterns, open basement foundation) were observed and recorded using the GeoXT GPS units. A total of two physical hazards were recorded for the 100-N Area. Information associated with these physical hazards was communicated to a WCH safety representative. Based on the location and type of hazard, the safety representative and the appropriate remedial action field personnel determine if any mitigating actions (e.g., marking, removal) are needed. General surface debris presenting potential tripping hazards were present throughout the 100-N Area but were not specifically recorded as physical hazards as defined for the purpose of performing orphan sites evaluations. Unrecorded wells observed during the investigation were reported to the Groundwater Project.

6.0 100-N AREA EVALUATION RESULTS

A final step of the orphan sites evaluation process involves integrating information from the historical review and field investigation, categorizing documented items and features, conducting briefings with RL and the lead regulatory agency staff, and making any necessary changes or modifications to establish the final results. The final results are then documented in this summary report and reflected in updates to applicable components of the SIS and WIDS databases.

6.1 INTEGRATION OF HISTORICAL REVIEW AND FIELD INVESTIGATION INFORMATION

The orphan sites evaluation project team members reviewed information generated from the historical review and field investigation activities to refine the initial categorization of items and features into orphan sites, miscellaneous restoration items, and stewardship elements. Decisions regarding whether or not an item or feature of interest met the qualifications to be identified as an orphan site were made consistent with criteria established by the TPA-MP-14 process (DOE-RL 2007). This includes consideration of the following type of questions:

- Is it a solid waste management unit?
- Is it a waste disposal unit (e.g., pits, trenches, dumping areas, french drains)?
- Is it an unplanned release that represents a potential threat to human health and the environment?
- Is it an inactive contaminated structure?
- Does it require a *Resource Conservation and Recovery Act of 1976* permit to treat or store dangerous or mixed waste?
- Is it another type of storage unit (e.g., radioactive waste storage unit) that requires action?

The items identified during the orphan sites evaluation process that meet the criteria are typically unplanned releases, inactive structures, or waste disposal units. Inclusion of items or features in the category of miscellaneous restoration was based on the requirements of Section C.2.10 of the RCCC (WCH 2007).

6.2 INFORMATION BRIEFINGS

Briefings were conducted to share information and results from the 100-N Area orphan sites evaluation. Initial briefings were held with representatives from the WCH project organization responsible for implementing source OU remedial actions in the 100-NR-1 OU. Results of the 100-N Area orphan sites evaluation were subsequently presented to RL project staff (River Corridor Program) and Ecology staff during briefings conducted in February 2009.

The briefing included an overview of the orphan sites evaluation process, identification and review of proposed orphan sites, identification and review of miscellaneous restoration items, and identification and review of a representative group of items categorized as stewardship elements. A field visit was also conducted with RL and Ecology on March 4, 2009, at selected sites identified during the briefings to review categorization of several items. Complete table listings from each of the three categories were distributed at the briefings, and selected photographs were projected and discussed with attendees.

6.3 FINAL CATEGORIZATION

Final categorization of the items and features documented during the 100-N orphan sites evaluation is presented in the following subsections. Associated summary tables of the orphan sites, miscellaneous restoration items, and stewardship elements recorded during the 100-N Area evaluation are provided in Table 6-1. The table reflects the binning of items based on feedback and discussion from the information briefings summarized in Section 6.2. Locations of the new waste sites, miscellaneous restoration sites, and stewardship elements for 100-N Area are depicted in Appendix A, Figure A-1.

6.3.1 Orphan Sites

A total of 27 orphan items identified through the 100-N orphan sites evaluation were binned into orphan site categories. Waste site identification numbers and a brief description of attributes are presented in Table 6-2. Several of the individual orphan items were grouped into one orphan site (new discovery site) based on common attributes or features of interest (e.g., stain areas) considering past characterization results for similar features, or anticipated confirmatory sampling approaches. This resulted in a total of 23 new orphan sites presented in Table 6-2.

TPA-MP-14 discovery site evaluation checklists will be completed for each of the 23 orphan sites identified through the 100-N Area evaluation and assigned a corresponding Waste Information Data System (WIDS) identification number. It is anticipated that these new discovery sites will be "accepted" in accordance with the TPA-MP-14 processes and added to the RCCC scope for subsequent characterization and determination of any remedial actions (see Figure 2-1). Information associated with each new discovery site is stored in the waste site component of the SIS database including a site identification number, location, description, photographs, and status.

6.3.2 Miscellaneous Restoration

There were 31 groups of non-CERCLA debris that were consistent with the miscellaneous restoration criteria that were identified through the 100-N Area evaluation as reflected in Table 6-1. It is anticipated that these items will be removed or otherwise addressed in accordance with RCCC requirements. The groups of miscellaneous restoration items identified during the 100-N Area evaluation represent specific observations documented during the field investigation and do not necessarily include all of the items that will be addressed in the 100-N Area within the scope of the miscellaneous restoration contract requirement. Information associated with the miscellaneous restoration items is stored in the orphan sites evaluation component of the SIS database including tracking numbers, locations, summary descriptions, and photographs.

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-001	The site is an abandoned septic tank, drain field and associated piping.	571460.50	149206.70	The site has been re-graded, and there are no structures or debris visible present based on field visit.	These features are associated with "rejected" WIDS site 124-N-7 (100-N Sanitary Sewer System No. 7, 124-N-7 Septic Tank). The system was replaced by 124-N-10 in 1987 and serviced office buildings.	H-1-45007, sheets 12 and 13	WIDS	124-N-7
N-002	The site is the former location of the 1715-NA Diesel Oil Station containing three underground oil storage tanks located just north of the 182-N Building.	571069.00	149407.00	The site has been re-graded, covered with crushed rock, and there are no structures or debris present based on field visit.	These three fuel oil tanks were removed in March 1990 and closed per 40 CFR 280 and 281 (WHC-SP-0472, Implementation Plan Form Washington Administrative Code 173-360; Underground Storage Tank Regulations). Soil sample results confirm no hazardous materials remained (DSI R.C. Roos to R.G. Shuck, April 30, 1991, 182 Tank Sampling Assessment). Photographs exist showing the removal of the tanks.	Construction drawing H-1-38646	S	
N-003	The former location of three above-ground acid tanks located on the south side of the 108-N Building; one above-ground caustic storage tank located on the north side of the 108-N Building.	571253.59	149273.96		These aboveground tanks were removed sometime between October 1996 and June 2002 as evidenced by historical photographs. The tanks themselves were not carried as waste sites and the pads for these tanks were removed in September 2008.	Construction drawings H-1-38646, H-1-41353	S	
N-004	The site of the former self service gas station (1716-NA). Underlying soil contamination from the diesel and gas tanks may be present.	571396.50	149521.30		The tanks were removed in the early 1990s. The soil was contaminated to a depth greater than 11 m (36 ft) below grade (actual excavated depth); lateral extent was not documented.	WHC-SD-EN-TI-136	OS	100-N-85
N-005	The 107-N Building, which cooled, recirculated, and cleaned up cooling water from the 105-N irradiated fuel storage basin.	571104.00	149570.76		This facility is currently scheduled to commence demolition no later than 2009. Demolition will also include the removal of three nearby WIDS sites (100-N-36, 124-N-3, and partial removal of 100-N-72); however, the contaminated soils associated with these sites have been deferred to a later remediation (CCN 120515).	Construction drawing H-1-38646	S	

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-006	The former location of the 1313-N Liquid Waste Process Control and Change Room. This was used to control the transfer of liquid waste from the 107-N Recirculation Cooling Building to the 1310-N Chemical Waste Storage Facility or to rail tank cars for shipment.	571215.62	149716.55		Building and foundation removed in May 2006 with no indications of underlying soil contamination (D4-100N-0010, D4 Project Facility Completion Form for 1313-N).	Construction drawing H-1-38646	S	
N-007	The former location of the Hot Storage Yard used from 1963 to 1977 for bulk storage of large items.	571369.00	149731.00	In 1980 the 1723N warehouse was constructed over a portion of the former hot yard and stored noncontaminated material. This facility was demolished in 2006.	In 2006 an extensive, post-demolition beta/gamma GPERS was conducted over the entire site. Designation as a waste site was not warranted (CCN 12866, D4-100N-007, "Post Demolition Summary Report for the 1723N Warehouse, 1723NX Laydown Yard, and MO-913 Change Trailer").	Construction drawing H-1-38646	S	
N-008	The 1322-N Waste Disposal Valve Pit. Houses a drainage tank, valve pit, and contains the valving used to divert effluent waste from the reactor plant to the crib or the chemical waste tank.	571394.60	149674.30		This facility is suspected to contain contamination; however, no spills or leaks were identified (CCN 124147, Historical Site Assessment for 1322-N, 1322-NA, 1322-NB, and 1322-NC/100N). The building is currently scheduled for demolition and remediation no later than 2010.	Construction drawing H-1-38646	S	
N-009	The 1312-N Liquid Waste Disposal Basin was designed to retain reactor coolant and other contaminated water in the event of a loss of emergency coolant accident scenario.	571653.90	149584.30		This facility was never used for its designed purpose of holding contaminated liquids. Soil samples and beta/gamma LARADS conducted in 2007 after the liner was removed showed no contamination. Site was backfilled and clean closed in March 2008 (CCN 138232, Post Demolition Summary Report for 1312-N; D4-100-N-0011, Soil Completion Form for 1312-N).	Construction drawing H-1-38646	S	
N-010	Three diesel oil day-tanks associated with the 181-N Building.	571071.52	149406.52		These are the same three tanks dispositioned in OSE ID # N-002; obtained from a different source drawing and different researcher.	Construction drawing H-1-38646	S	

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-011	A 1963 "as built" drawing depicts three large underground concrete structures, entitled "Dummy Disposal Pits" approximately 200 m northeast of the 105-N Reactor Building. They were designed for the disposal of dummy spacers coming from the reactor core.	571297.50	149775.40		Aerial photograph analysis and review of construction drawings are inconclusive regarding whether this facility was ever built. GPR completed in June 2008 found no anomalies of subsurface disturbance or underground structures. Actual as-built site for the disposal of dummies was 1303-N, adjacent to the reactor building.	Construction drawing H-1-30506; GI # 0590307	S	
N-012	151-N Substation – 230 kV transformer and oil circuit breaker foundations.	571328.21 571328.21	149328.45 149328.45	The concrete pads will require removal prior to confirmatory sampling.	Site was where three former oil circuit breakers and a transformer were located. They were isolated in 1998 and removed between November 2001 and May 2002. Concrete pedestals for the transformer and oil circuit breaker pads remain. No visible stains are present.	7841-Photograph, 7372-Photograph, 27005-2	OS	100-N-86
N-013	116-N Ventilation Stack drain piping and associated french drain.	571229.90	149663.60		This stack was demolished in 2008. The interior surfaces of the stack drain piping and french drain contain small amounts of fission products.	Drawing 7211	OS	100-N-87
N-014	Buried 1-in. x 8-in. pressure treated boards placed 3 in. above buried electrical cable to protect the cable.	570964.07	149328.31		Pressure-treated boards.	H-1-46231, sheet1	S	
N-015	Two transformers north side of 182-N.	571079.24	149394.48		Oils were drained and transformers rinsed in 2006. Site is planned to be removed as part of D4 of the 182-N Facility in accordance with DOE/RL-2002-70, *Removal Action Work Plan for 100-N Area Ancillary Facilities.*	HW-69000, Volume II, pages 12.3-2 and 12.13-2, WCH-111	S	
N-016	A 3,785 L (1,000-gal) sulfuric acid regeneration waste spill by sump 1 north of 163-N in 1986.	571149.00	149362.00		The sulfuric acid was neutralized by addition of caustic and no further remediation was taken. This is a "not accepted" WIDS site UPR-100-N-41.	WIDS UPR-100-N-41	WIDS	UPR-100-N-41

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-017	Substation - 1100's mobile offices.	571575.96	149212.42	Changed to MR at request from RL.	Transformers were 10 ft above grade and were removed in 2006 with no records or observance of soil stains/spills. The panels are out of service. Poles, panels, and concrete structures will be removed as miscellaneous restoration.	H-1-45007, sheet 19; Photograph 8505059-12CN; Photograph 2008 April 9 DSCO1938	MR	
N-018	Substations - four separate units to south of 109-N.	571204.44 571155.19 571188.95 571140.84	149390.92 149411.72 149397.43 149417.70		The two remaining transformers have been drained and no information was found documenting leaks/spills. They will be removed by D4 in accordance with DOE/RL-97-22, *Engineering Evaluation/Cost Analysis for the 100-N Area Ancillary Facilities and Integration Plan.*	CCN 579174, H-1-45007, sheets 22 and 23, HW-69000, page 12.10-2	S	
N-019	Three french drains that received sulfuric acid from storage tank overflows, located south side of 108-N.	571249.30	149262.20		This is a "rejected" WIDS site 120-N-6. The french drains were removed in 1988 and soil sample analyses results allowed site to be rejected.	WIDS 120-N-6	WIDS	120-N-6
N-020	Hanford 100 Area Fire Station (Building 609) dry well that received liquids from the roof and floor drains.	572202.54	145349.19	Site is believed to still be in use, but has been paved over with an asphalt parking lot. Drain will require plugging prior to sampling/removal.	Potential to receive a number of vehicle operating fluids to have been discharged to the floor and subsequently to the dry well including engine oil, antifreeze, transmission and brake fluids, gasoline, etc.	H-6-302	OS	600-339
N-021	A 24- in. french drain located just outside the southeast corner of the 1143N Building. Photographs of the interior of the french drain show viscous substance coming from inlet pipe.	571395.90	149149.00		Personnel associated with walkdown of the building confirm french drain was hooked up to a sink that is no longer active and located just outside the portion of the building that contained a solvent wash station.	CCN128263, 1143-N HSA	OS	100-N-88

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-022	Eight french drains associated with the fuel oil load-out system, which received drippings from the fill nozzles.	571234.00	149706.10		The post-demolition summary report for the unloading facility (CCN 128258) states that sampling was originally planned for these french drains but never conducted. Because of the number of waste sites associated with the 166-N facilities, the soils including the eight french drains were deferred to field remediation (D4-100N-0004).	Post-Demolition Summary Report, CCN 128258	S	
N-023	Start point.	NA	NA	Start point for GPS tracking only.	Start point for GPS tracking. Information only.		NA	
N-024	The site consists of a 2 by 6 m (6- by 20-ft) area of decomposing pressure treated lumber next to Route 1.	572095.15	145175.74	The feature is located approximately 140 m west of the intersection of Route 1 and Route 4 N on the north side of Route 1.	This feature has been identified as Stewardship.		S	
N-025	The site consists of two 5-gal buckets with black unknown substance in a 1 m (3-ft-) diameter area. Approximately 1 L of residue remains in the buckets.	572092.49	145127.04	The feature is located approximately 72 m west of the intersection of Route 1 and Route 4 N, and 33 m south of Route 1.	Classified to be removed and disposed.		MR	
N-026	The identified feature is a concrete truck clean-out pile of approximately 2 m^3 (2.6 yd^3).	572105.29	145086.03	The feature is located approximately 92 m west of the intersection of Route 1 and Route 4 N and 73 m south of Route 1.	This feature has been identified as Stewardship.		S	
N-027	The site consists of two decomposing railroad ties that are 2 m apart.	572141.62	145082.23	The feature is located approximately 70 m southwest of the intersection of Route 1 and Route 4 N and 74 m south of Route 1.	This feature has been identified as Stewardship.		S	
N-028	The identified feature is a telephone junction box.	572115.59	145148.22		This feature has been identified as Stewardship.		S	
N-029	The identified items are 2 buried utility markers, approximately 6 m (19.6 ft) apart.	572115.22	145177.52		This feature has been identified as Stewardship.		S	
N-030	The site consists of two piles of asphalt/gravel debris approximately 2 m^3 (2.6 yd^3) total. They are approximately 5 m (16 ft) apart.	572128.16	145217.56	The feature is located approximately 76 m northwest of the intersection of Route 1 and Route 4 N and 47 m north of Route 1.	This feature has been identified as Stewardship.		S	

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-031	The site consists of suspected lead sheathing, lead conduit, and wood debris in a 4 m (13-ft-) diameter area.	572141.31	145605.61	This feature is located approximately 466 m north-northwest of the intersection of Route 1 and Route 4 N.	This feature is part of "no action" WIDS site 600-235. Only the exposed lead sheathing is classified to be removed and disposed. The remaining debris will be identified as stewardship.	N-031.jpg	MR	
N-032	The site consists of suspected lead conduit in a 2 by 10 m (6- by 33- ft) area.	572155.27	145405.76	This feature is located approximately 257 m north-northwest of the intersection of Route 1 and Route 4 N.	This feature is part of "no action" WIDS site 600-235.	N-032.jpg	WIDS	600-235
N-033	The site consists of a 10 m (33-ft-) diameter area with multiple stain spots. The stain is a white granular substance and there is no vegetation in the affected areas.	572161.02	145395.78	This feature is located 16 m west-northwest from the west corner of the 613 building at the 100-N fire station.	Discussions with Deputy Fire Chief Bill Hayes on April 15, 2008, indicated this location was used to store fire extinguishers that couldn't be placed into the 613 Building due to space availability. Potential leakage or spillage from fire extinguishers.	N-033.jpg	OS	600-340
N-034	The identified feature is a buried utility marker.	572168.12	145308.22		This feature has been identified as Stewardship.		S	
N-035	The identified feature is an export water line valve.	572166.68	145095.65		This feature has been identified as Stewardship.		S	
N-036	The identified feature is a concrete truck clean-out pile of approximately 2 m^3 (2.6 yd^3).	572188.25	145249.40	Feature is approximately 60 m south-southwest of the fire station and 58 m west of Route 4 N.	This feature has been identified as Stewardship.	n-037 map.jpg	S	
N-037	This site consists of a 41 cm (16-in.) carbon steel cover plate.	572172.82	145306.00		This feature appears to be associated with fire station septic tile field distribution box (H-6-302). This feature is part of "accepted" WIDS site 2607-FSM.	n-038 and -39 map.jpg	WIDS	2607-FSM
N-038	This site consists of a 41 cm (16-in.) carbon steel cover plate.	572177.79	145309.38		This feature appears to be associated with fire station septic tile field septic tank (H-6-302). This feature is part of "accepted" WIDS site 2607-FSM.	n-038 and -39 map.jpg	WIDS	2607-FSM
N-039	The identified items are a valve and hydrant. The hydrant is marked # 2 RW.	572186.01	145330.35		This feature has been identified as Stewardship.		S	
N-040	The site consists of decomposing railroad ties and wood debris in a 3 m (10-ft-) diameter area.	572191.45	145404.14	This site is located approximately 14 m northeast of the 613 Building.	This feature has been identified as Stewardship.		S	

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-041	The site consists of a 4 by 15 m (13- by 50-ft) pit that is approximately 1 m (3 ft) deep in the middle pit.	572217.51	145496.46		This feature is located within "accepted" WIDS site 628-2. It appears to have been excavated with a bulldozer on an east-west axis. The excavated soil is piled at the east end of the pit. There is no debris or staining on the surface.		WIDS	628-2
N-042	The site consists of a 45 m (150-ft-) diameter area of discolored soil, debris, and areas devoid of vegetation.	572213.75	145447.13	The site is on the south of side of WIDS 628-2 site.	This feature was identified due to stained soil, debris, and areas devoid of vegetation.		OS	600-340
N-043	The identified feature is a 3 by 5 m (10- by 16-ft) concrete vault with two manholes.	572213.17	145394.33		This is identified as a water storage vault on drawing H-7-1107. This feature has been identified as Stewardship.		S	
N-044	The identified feature is a buried utility marker.	572205.12	145203.15		This feature has been identified as Stewardship.		S	
N-045	The identified feature is an export water line valve.	572209.42	145176.12		This feature has been identified as Stewardship.		S	
N-046	The identified feature is a telephone junction box.	572220.27	144998.16		This feature has been identified as Stewardship.		S	
N-047	The identified feature is a concrete truck clean-out pile of approximately 0.5 m^3 (0.65 yd^3).	572254.62	144922.19		This feature has been identified as Stewardship.	n-048 map.jpg	S	
N-048	The identified items are two electrical plugs for emergency evacuation buses. They are approximately 5 m (16 ft) apart.	572248.35	145474.79		Classified to be removed and disposed.		MR	
N-049	The site consists of a 30 by 5 m (100- by 16- ft) concrete and grout truck clean-out pile.	572274.65	145566.35		This feature has been identified as Stewardship.	n-050 and -051.jpg	S	
N-050	The identified feature is a concrete truck clean-out pile of approximately 0.5 m^3 (6.5 yd^3).	572278.83	145512.96		This feature has been identified as Stewardship.	n-050 and -051.jpg	S	

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-051	The identified feature is a U.S. Army Corps of Engineers survey monument marked HS WB 018 1942.	572347.17	145143.16		This feature has been identified as Stewardship.		S	
N-052	The identified feature is a fiber optic buried cable marker.	572669.30	147662.26		This feature has been identified as Stewardship.		S	
N-053	The identified feature is a telephone junction box.	572544.27	147638.50		This feature has been identified as Stewardship.		S	
N-054	French drain at southwest corner of 117-NVH.	571189.68	149622.66		The french drain received discharge from back flushing an in-line screen on the 10 cm (4-in.) raw water supply line in the 117-NVH Valve House.	H-1-50092 and H-1-50093; CCN 127193	OS	100-N-89
N-055	Two pipes buried in earth berm on north side of 117-N for storage of control rods.	571210.73	149623.23		The rod cave was the temporary storage for used control rods from N Reactor. This will likely be removed during D4 of the 117-N structure.	DSC04517	OS	100-N-90
N-056	The identified feature is a 0.9 m (3-ft) section of exposed phone cable.	572059.15	147764.57	This feature is located 671 m west-southwest of the intersection of N Avenue and Route 4 N.	This feature has been classified as Stewardship.	N-056.jpg	S	
N-057	The identified feature is an abandoned base for a transmission tower.	572505.00	147754.37		This feature has been identified as Stewardship.		S	
N-058	The identified feature consists of a 75 m (250-ft-) diameter rock quarry.	571465.37	147883.26		This feature has been identified as Stewardship.		S	
N-059	Electrical substation (northeast substation).	571347.17	149468.06		Historical records found no evidence of spills or leaks. Transformer will be removed by D4 in accordance with DOE/RL-97-22, Rev. 1, *Engineering Evaluation/Cost Analysis for the 100-N Area Ancillary Facilities and Integration Plan.*	H-1-45007, sheet 35; HW-69000 Volume II, page 12.3-2	S	
N-060	Electrical substation D4-1-S11.	571408.24	149578.53		Historical records indicate there were no reported spills at this location. Transformers were drained and removed in 2006 by D4 in accordance with DOE/RL-97-22, Rev. 1, *Engineering Evaluation/Cost Analysis for the 100-N Area Ancillary Facilities and Integration Plan.*	H-1-45007, sheet 44	S	

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-061	Electrical substation (A and B) by 163-N/183-N.	571180.91	149359.46		The transformers were removed prior to June 2002. The transformer enclosure and pad were demolished during the demolition of the 163-N/183-N facilities completed in 2008 as documented in the post-demolition summary report (CCN 140560).	H-1-45007, sheet 22; HW-69000 Volume II, page 12.3-2; CCN 140560	S	
N-062	Electrical substation(s) at 153-N.	571288.84	149357.51		The transformers and associated above-grade structures were demolished and disposed at ERDF. Below-grade structures and soils within the footprint of the excavation were also removed and disposed at ERDF. Both activities occurred in 2006 and are documented in the post demolition summary report (CCN 130269).	H-1-45007, sheet 22; HW-69000 Volume II, page 12.3-2; CCN 130629	S	
N-063	The identified item is a 15 cm (6-in.) well casing that is uncapped and unmarked.	570949.51	148002.14		This previously unknown well will become well C7292 and has been identified as Stewardship.		S	
N-064	The site consists of a 3 m (9.8-ft-) diameter area of dumped rail road spikes.	570892.42	148079.74	This feature is located approximately 1,843 m west of the intersection of Route 4 N and the main access road to 100-N, and 123 m south-southeast of the railroad tracks.	This feature has been identified as Stewardship.		S	
N-065	The site consists of a debris pile with rebar, concrete, and galvanized metal in a 5 m (16-ft-) diameter area.	571960.46	148106.29	Spatial analysis indicates this feature is 796 m southwest of the intersection of Route 4 N and the main access road to 100-N and it is 28 m from a dirt road that runs next to a Pre-Hanford canal. Identified as physical hazard.	Classified to be removed and disposed.		MR	

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-066	The identified feature is a 500 ml (17-oz.) jar with a small amount of unknown black substance inside. The immediate area has scattered debris that appears to have come from a kitchen or cafeteria. The jar has no markings or label, but the contents and surrounding debris suggest that it is a food container.	571530.00	148111.14	This feature is located 532 m southwest of 100-N-47. Spatial analysis using photograph N47-1957r.tif indicates the jar is in the activity area of the former military camp south of 100-N.	Classified to be removed and disposed.		MR	
N-067	The identified feature is a truck tire located near the intersection of Route 4 North and N Avenue.	572672.16	147989.64	This feature is located 75 m north-northwest of the intersection of Route 4 N and the main access road to 100-N, and 54 m east of the access road to 100N.	This feature has been identified as Stewardship.		S	
N-068	The site consists of a 10 m (33-ft-) diameter asphalt/gravel pile. There is approximately 4 m^3 (5 yd^3) of material.	572487.14	148054.64	This feature is located 56 m west of the 10-N main access road.	This feature has been identified as Stewardship.		S	
N-069	The identified feature is a buried utility marker.	570649.19	148130.91		This feature has been identified as Stewardship.		S	
N-070	The site consists of a 0.6 m (2-ft-) diameter area of battery debris.	571144.73	148183.49	This feature is located 805 m southwest of 100-N-47.	Spatial analysis using photograph N47-1957r.tif indicates the batteries are in the activity area of the former military camp south of 100-N. The exterior of the dry cell batteries has degraded and the contents are mixed into the soil. There is no vegetation growing in the affected area.		OS	100-N-91
N-071	The site consists of a 30 m (100-ft-) diameter area of brick, metal siding, electrical cable, and an empty drum. The insulation on the cable appears to be rubber.	571480.93	148184.34	This feature is located 514 m southwest of 100-N-47 and consists of similar material. Field visit conducted on March 4, 2009 by RL representatives and requested this be changed to miscellaneous restoration.	Spatial analysis using photograph N47-1957r.tif indicates the debris is in the activity area of the former military camp south of 100-N. Only the drum is classified to be removed and disposed as miscellaneous restoration, other debris will be identified as stewardship.		MR	

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-072	The site appears to be an historic dump area with mostly metal cans and glass bottles. There is one 250 ml (8 oz.) jar with unknown yellow powder. The jar has no markings or label, but the contents and surrounding debris suggest that it is a food container.	571220.62	148233.06	This feature is located 713 m southwest of 100-N-47. Field visit conducted on March 4, 2009 by RL representatives. Classification will remain as stewardship.	Spatial analysis using photograph N47-1957r.tif indicates the debris is in the activity area of the former military camp south of 100-N. This feature has been identified as Stewardship.		S	
N-073	The identified features are two utility junction box 4 m (13 ft) apart.	570461.55	148245.78		This feature has been identified as Stewardship.		S	
N-074	The identified feature is a telephone junction box.	570508.20	148303.87		This feature has been identified as Stewardship.		S	
N-075	The identified items are four concrete ecology blocks totaling approximately 3 m^3 (4 yd^3).	570572.66	148305.21	This feature is 148 m southeast of the nearest road.	This feature has been identified as Stewardship.		S	
N-076	The identified feature is a partially disassembled transmission tower.	572117.05	148305.14	This feature is 176 m southwest of the main access road to 100-N.	Classified to be removed and disposed.		MR	
N-077	The site consists of a 30 m (100-ft-) diameter debris pile with wood, rubber tires, and metal debris.	570963.24	148338.44	This feature is located 68 m from railroad tracks that are located south-southwest of 100-N.	Classified to be removed and disposed.		MR	
N-078	The identified items are three telephone junction boxes in a 3 m (10-ft) diameter area.	570536.67	148336.13		This feature has been identified as Stewardship.		S	
N-079	The site consists of a 5 by 12 m (16- by 40-ft) concrete slab in a 5 m (16-ft) deep depression.	571559.13	148365.88	This feature is located 354 m southwest of 100-N-47.	Spatial analysis using photograph N47-1957r.tif indicates the debris is in the activity area of the former military camp south of 100-N.		S	
N-080	The site consists of a 3 m (10-ft-) diameter stain area with a white substance and two 4 L (1-gal) cans.	571851.38	148367.17	This feature is located 123 m southwest of 100-N-47.	Suspected to be dried paint. Spatial analysis using photograph N47-1957r.tif indicates the debris is in the activity area of the former military camp south of 100-N.		OS	100-N-92
N-081	The identified feature is an old section corner marker.	571239.23	148413.73		This feature has been identified as Stewardship.		S	

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-082	The identified feature is a bureau of reclamation section corner.	570430.83	148399.18		This feature has been identified as Stewardship.		S	
N-083	The site consists of a 50 m (165-ft-) diameter pit dumping area. It includes concrete, metal, and glass debris. There is also stained soil, suspected friable asbestos, garnet sand, and areas of stressed vegetation.	570631.68	148431.32	This feature is located 475 m southwest of the rail spurs entering the south end of 100-N, and 85 m southeast of the dirt access road between 100-N and 100-K.	This feature is located near "rejected" WIDS site 100-N-19. This has been identified as a new orphan site due to the materials observed during the field investigation.	N-083.jpg	OS	100-N-93
N-084	The site consists of a 5 m (16-ft-) diameter area with concrete blocks, metal, and decomposing wood debris.	571863.06	148421.37	This feature is located 68 m southwest of 100-N-47 and 373 m west of the main access road to 100-N.	Spatial analysis using photograph N47-1957r.tif indicates the debris is in the activity area of the former military camp south of 100-N. This feature has been identified as Stewardship.		S	
N-085	The items identified are two piles of concrete 6 m (20 ft) apart. The total volume is approximately 1 m^3 (1.3 yd^3).	572116.12	148404.94	This feature is located 148 m southeast of 100-N-47 and 152 m west of the main access road to 100-N.	Spatial analysis using photograph N47-1957r.tif indicates the debris is in the activity area of the former military camp south of 100-N. This feature has been classified as Stewardship.		S	
N-086	The identified feature is a valve on the export water line.	572866.77	148466.71		This feature has been identified as Stewardship.		S	
N-087	The identified feature is a telephone junction box.	570654.12	148479.11		This feature has been identified as Stewardship.		S	
N-088	The site consists of 3 m (10-ft-) diameter area of power cable debris and metal banding.	571043.11	148490.04	This feature is located 49 m west of the rail spurs entering the south side of 100-N.	This feature has been identified as Stewardship.		S	
N-089	The site consists of a wooden diversion structure in the Hanford Irrigation District canal and decomposing wood debris adjacent to the canal in a 15 m (50-ft-) diameter area.	572558.34	148514.84		This feature has been identified as Stewardship.		S	
N-090	The identified feature is a telephone junction box.	571721.88	148551.77		This feature has been identified as Stewardship.		S	

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-091	The site consists of a 75 m (250-ft-) diameter area of concrete and grout truck clean-out piles. This site covers a very large area and may include as much as 100 m^3 (130 yd^3) of material.	572810.93	148604.39	This feature is located 715 m north of the intersection of Route 4 N and the 100-N main access road, and 41 m west of Route 4 N.	This feature has been identified as Stewardship.		S	
N-092	The identified feature is a grout truck clean-out pile of approximately 0.5 m^3 (0.6 yd^3).	572883.03	148617.32	This feature is located 20 m east of Route 4 N and 741 m north-northeast of the intersection of Route 4 N and the 100-N main access road.	This feature has been identified as Stewardship.		S	
N-093	The site consists of approximately 50 vehicle oil filters in a 5 m (16-ft-) diameter area. The site is located adjacent to OSE Item N-091. Vegetation in the area is sparse, but it may have been affected by the adjacent concrete dumping.	572836.80	148625.14	Located 33 m northeast of N-091 and 20 m west of Route 4 N.	This feature has been identified as an Orphan Site.		OS	100-N-94
N-094	The identified item is a galvanized steel segment of a dismantled transmission tower. It is approximately 5 m (16 ft) long.	572078.71	148626.43	This feature is located 954 m northeast of the intersection of Route 4 N and the 100-N main access road, and 11 m west of the 100-N main access road.	This feature has been identified as Stewardship.		S	
N-095	The site has been identified as the run off area for 183 N/163 N water treatment building filter back flush process. It includes an area approximately 150 by 50 m (500 by 165 ft).	571628.67	148647.86		This site has previously been designated as "accepted" WIDS site 130-N-1.		WIDS	130-N-1
N-096	The identified feature is a telephone junction box.	571113.09	148639.69		This feature has been identified as Stewardship.		S	
N-097	The identified feature is a telephone junction box.	570947.79	148651.74		This feature has been identified as Stewardship.		S	

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-098	The items identified are three telephone junction boxes approximately 6 m (20 ft) apart.	570792.74	148645.68		This feature has been identified as Stewardship.		S	
N-099	The identified feature is a one m^3 (1.3-yd^3) concrete truck clean-out pile.	570699.23	148670.03	This feature is located 209 m south-southwest of 100-N-5 and 83 m northwest of the dirt access road between 100-N and 100-K.	This feature has been identified as Stewardship.		S	
N-100	The identified item is a galvanized steel segment of a dismantled transmission tower. It is approximately 3 m (10 ft) long.	572021.27	148701.84	This feature is just next to the main access road to 100-N, on the west side of the road.	This feature has been identified as Stewardship.		S	
N-101	The identified feature is a 2 m^3 (2.6-yd^3) concrete clean-out pile.	570742.87	148698.01	This feature is 224 m west-southwest of the BPA substation (south-southwest side of 100-N) and 87 m northwest of the dirt road access road between 100-N and 100-K.	This feature has been identified as Stewardship.		S	
N-102	The site consists of concrete and decomposing wood debris in a 4 m (13-ft-) diameter area.	570745.72	148733.42	This feature is 208 m west-southwest of the BPA substation (south-southwest side of 100-N) and 115 m northwest of the dirt road access road between 100-N and 100-K.	This feature has been identified as Stewardship.		S	
N-103	The identified feature a 30 m (100-ft-) long segment of transmission line cable.	570821.89	148738.59	This feature is 132 m west-southwest of the BPA substation (south-southwest side of 100-N) and 87 m northwest of the dirt road access road between 100-N and 100-K.	This feature has been identified as Stewardship.		S	
N-104	The site consists of concrete and wood debris in a 3 m (10-ft-) diameter area.	571307.32	148701.84		This feature has been identified as Stewardship.	N-104.jpg	S	
N-105	The identified item is a single dry cell battery 15 cm (6 in.) long.	572741.04	148721.19		Classified to be removed and disposed.	N-105.jpg	MR	
N-106	The identified feature is a valve on the export water line.	572914.03	148740.91		This feature has been identified as Stewardship.	N-106.jpg	S	

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-107	The identified feature is a potential historic site. It consists of cobbles arranged in a rectangular pattern 3 by 1.5 m (10 by 5 ft).	571825.59	148762.35	This site was visited on May 15, 2008 by Tom Marceau (WCH cultural resource specialist) and a Wanapum elder to examine the site. No definitive conclusions were made but this site is potentially of cultural significance.	This feature has been identified as Stewardship.		S	
N-108	The site consists of three large concrete blocks that were dumped in a pile. The total volume of concrete is approximately 2 m^3 (2.6 yd^3).	570652.70	148780.48	This feature is approximately 129 m southwest of the southwest corner of the Hanford Generating Plant disposal area. There are no nearby access roads to facilitate removal.	This feature has been identified as Stewardship.		S	
N-109	The site consists of a 20 m (65-ft-) diameter area of concrete debris mixed with boulders.	570711.76	148779.28	This feature is approximately 122 m south of the southwest corner of the Hanford Generating Plant disposal area. There are no nearby access roads to facilitate removal.	This feature has been identified as Stewardship.		S	
N-110	The site consists of a four m (13-ft-) diameter debris pile. The debris includes mostly rusted nails and cinders/ashes from burned wood.	570801.81	148788.25	Spatial analysis of this feature using a rectified 1964 aerial photograph indicates this feature is approximately 12 m west of a dirt road. This feature is also 60 m south-southwest of the Hanford Generating plant disposal area. Field visit conducted on March 4, 2009 with RL and Ecology representatives. Classification will remain as Stewardship.	This feature has been identified as Stewardship.		S	
N-111	The site consists of a 50 m (165-ft-) diameter concrete and grout truck clean-out pile.	570829.69	148792.61		This feature has been identified as Stewardship.		S	
N-112	The site consists of a 6 m (20-ft-) diameter truck clean-out pile containing concrete and metal construction debris.	571338.33	148791.66	This feature is approximately 250 m east of the Hanford Generating Plant disposal area.	Spatial analysis with a rectified 1964 photograph indicates it is located in an area of soil disturbance, apparently construction related. This site has been classified to be removed and disposed.	N-112.jpg	MR	

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-113	The identified feature is a telephone junction box.	571404.90	148779.59		This feature has been identified as Stewardship.		S	
N-114	The identified feature is an underground pipe line marker for 183-N/163-N backwash pond.	571474.19	148789.78		This feature has been identified as Stewardship.		S	
N-115	The identified feature is a sewer manhole adjacent to N Avenue.	571945.04	148822.04		This feature has been identified as Stewardship.		S	
N-116	The identified feature is a carbon tetrachloride fire extinguisher that is approximately 15 cm (6 in.) long. It has been crushed but not breached.	571917.71	148825.13	RL requested that this feature be changed to MR.	Classified to be removed and disposed.		MR	
N-117	The identified feature is a telephone junction box.	571701.22	148815.08		This feature has been identified as Stewardship.		S	
N-118	The site consists of 5 by 15 m (16- by 50-ft) area of concrete and metal debris.	570687.29	149047.45		This feature has been identified as Stewardship.		S	
N-119	The site consists of a 6 m (20-ft-) diameter area of concrete and metal pipe debris.	570704.99	148937.37	This feature is approximately 13 m west of the Hanford Generating Plant disposal area and 40 m northeast of a dirt road.	This feature has been identified as Stewardship.		S	
N-120	The identified feature is a 15 cm (6-in.-) diameter well casing that is unmarked and uncapped.	570719.82	149108.48		The item was identified as well 699-84-63D by the groundwater program. This feature has been identified as Stewardship.		S	
N-121	The identified items are two concrete blocks dumped to the ground. There is approximately 0.5 m^3 (0.6 yd^3) of material in total.	570767.87	148843.31	This feature is approximately 22 m southwest of the Hanford Generating Plant disposal area and near a dirt road.	This feature has been identified as Stewardship.		S	
N-122	The site consists of five manholes adjacent to the 181 NE pump house.	570867.25	149263.05		This feature has been identified as Stewardship. Spatial analysis indicates these are electrical manholes.	H-6-4004, sheet 1, Rev 2	S	

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-123	The identified feature is a 2.5 cm (1-in.-) diam. steel pipe projecting approx. 30 cm (12 in.) from the ground.	570895.70	149232.78		This feature appears to be associated with lawn irrigation and has been identified as Stewardship.	N1866579 7-27-1977.jpg	S	
N-124	The identified feature is a 0.6 m (2-ft-) diameter manhole and water valve.	571119.69	149086.79		This feature is associated with potable water and has been identified as Stewardship.	BPA drawing 206849A	S	
N-125	The site consists of a 15 m (50-ft-) diameter concrete truck clean-out area adjacent to the BPA substation.	571181.29	149037.08		This feature has been identified as Stewardship.	N-125 Map	S	
N-126	The identified feature is a telephone junction box that has been run over.	571220.92	149198.92		This feature has been identified as Stewardship.		S	
N-127	Two underground fuel oil storage tanks and associated piping adjacent to the 100-N Fire Station (609 Building).	572205.40 572208.86	145329.93 145356.60		Site contained four USTs: a 500-gal gas tank from the original 1960 construction; a 2,000-gal diesel fuel oil tank for the boiler; and two 500-gal gas tanks (unleaded and diesel) added in 1979. None of the USTs are still in service. The first orphan site is the original 500 gal tank that was removed in 1987 (CCN 141240); however, closure information was not found. Therefore, the underlying soils have been identified as an orphan site. Geophysics conducted for this tank show no features characteristic of a buried tank were found (GI # 0590306) confirming the tank was removed. The 2,000-gal diesel tank is still present based on field observations and has been identified as an orphan site. The two 500-gal fuel tanks added in 1979 (and associated pump island) were taken out of service September 18, 1991, and were permanently closed in April 1992 (Checklist for Underground Storage Tank Removals - Correspondence 9253459D) and are not considered to be orphan sites.	GI # 0590306; Correspond-ence 9253459D; CCN 141240	OS	600-348

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-128	The site consists of an engineered burn pit located approximately 47.6 m north-northeast of the 609 Building (Central Industrial Fire Station). The burn pit was 6 m (20 ft) by 3 m (10 ft) by 0.9 m (3 ft) deep (HWS-7412).	572244.99	145399.31		Engineered burn pit used by the Hanford Fire Department to dispose of miscellaneous waste streams.	HWS07412, H-6-289, sheet 1, Rev. 2, Letters from PNL to Rockwell September 1984	OS	600-347
N-129	The site consists of several concrete debris piles in a 30 m (100-ft-) diameter area.	571222.01	148844.97	Located approximately 26 m southeast of a road.	This feature is located within "rejected" waste site 100-N-19.		WIDS	100-N-19
N-130	The identified items are three segments of galvanized pipe in a 10 m (33-ft-) diameter area.	571279.89	148842.96		This feature is located within "rejected" WIDS site 100-N-19.	N-130 Map	WIDS	100-N-19
N-131	The identified feature is a telephone junction box.	572694.70	148917.75		This feature has been identified as Stewardship.		S	
N-132	The identified feature is dismantled transmission tower in a 30 m (100-ft-) diameter area.	571741.80	148873.68		Classified to be removed and disposed.	N-132 Map	MR	
N-133	The identified feature is an underground pipeline marker for the 183-N/163-N backwash pond.	571439.13	148875.64		This feature has been identified as Stewardship.		S	
N-134	The site consists of an asphalt/gravel pile with approximately 10 m^3 (13 yd^3) of material.	571326.00	148873.22	Located approximately 99 m southeast of a road.	This feature has been identified as Stewardship.		S	
N-135	The identified feature is a 0.3 m (1-ft-) diameter fiberglass pipe that is 2 m (6 ft) long.	571268.46	148887.16		This feature is located within "rejected" WIDS site 100-N-19.	N-135 Map	WIDS	100-N-19
N-136	The site consists of a debris dump including wood and metal in a 30 m (100-ft-) diameter area.	571189.50	148886.12		This feature is located within "rejected" WIDS site 100-N-19.	N-136 Map	WIDS	100-N-19

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-137	The site consists of concrete and wood debris in a 10 m (33-ft-) diameter area.	571159.08	148901.00		This feature has been identified as Stewardship.	N-137 Map	S	
N-138	The identified items are two concrete blocks dumped to the ground. The total volume is approximately 0.6 m^3 (0.8 yd^3).	571310.59	148915.32	Located approximately 64 m southeast of a road.	This feature is located within "rejected" WIDS site 100-N-19.		WIDS	100-N-19
N-139	The identified items are four railroad rails that are approximately 12 m (40 ft) long and two wooden planks 5 m (16 ft) long.	571731.49	148914.28		Classified to be removed and disposed.	N-139 Map	MR	
N-140	The identified feature is a discarded fire hose that is approximately 30 m (100 ft) long in a 5 m (16-ft-) diameter area.	571675.25	148937.60		This feature has been identified as Stewardship.	N-140 Map	S	
N-141	The site consists of 10 concrete blocks dumped to the ground. The total volume of material is approximately 1 m^3 (1.3 yd^3).	571263.56	148926.01		This feature is located within "rejected" WIDS site 100-N-19.	N-141 Map	WIDS	100-N-19
N-142	The site consists of an excavated pit approximately 5 m (16 ft) deep and 25 m (80 ft) in diameter. Sample location stakes are still visible in the bottom of the pit and T-posts are still present around the perimeter.	571218.98	148963.58		This feature is located within "rejected" WIDS site 100-N-19.	N-142 Map	WIDS	100-N-19
N-143	The site consists of a 10 m (33-ft-) diameter area asphalt/gravel dump. The identified feature is approximately 1 m^3 (1.3 yd^3) of material.	571259.19	148954.61		This feature is located within "rejected" WIDS site 100-N-19.	N-143 Map	WIDS	100-N-19

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-144	The identified items are two telephone junction boxes and a wooden panel.	571275.35	148960.52		This feature has been identified as Stewardship.		S	
N-145	The identified item is a suspected well casing pipe lying on the ground. It is approximately 25 cm (10 in.) in diameter and 5 m (16 ft) long.	572913.68	148982.49		Classified to be removed and disposed.		MR	
N-146	The identified feature is a telephone junction box.	572917.16	149003.87		This feature has been identified as Stewardship.		S	
N-147	The identified item is a discarded wire cable in a 15 m (50-ft-) diameter area.	571532.53	149009.59	Field visit conducted on March 4, 2009 by RL and Ecology representatives. Classification will remain as stewardship.	This feature has been identified as Stewardship.		S	
N-148	The site consists of concrete debris in a 10 m (33-ft-) diameter area.	571347.01	148995.98	It is located approximately 88 m from the closest road.	This feature has been identified as Stewardship.		S	
N-149	The site consists of a 10 m debris area including a truck tire, wire, cable, and wood.	571268.56	149002.71	Field visit conducted on March 4, 2009 by RL and Ecology representatives. Features will remain as stewardship.	This feature is located within "rejected" WIDS site 100-N-19.		WIDS	100-N-19
N-150	The identified feature is a 30 cm (12-in.-) diameter carbon steel pipe that has been capped off.	572679.91	151631.00	Geophysics was conducted in August 2008 at this site. The pipe was traced 42 m to the southeast and the radio frequency signal became broad and erratic, typical of secondary induction on other targets.	It is located approximately 12 m northwest of the northwest corner of the 100-D perimeter road. Document (D6966602) regarding the export water line project L-334 indicates this feature is a drain port for the export. This feature has been identified as Stewardship.	Accession D6966602; GI # 0590317	S	
N-151	The identified feature is a concrete truck clean-out of approximately 2 m^3 (2.6 yd^3).	572657.87	151669.65	It is located approximately 44 m northwest of the 100-D perimeter road and is next to the shoreline. This feature was also identified in the 100-D orphan walkdown.	This feature has been identified as Stewardship.		S	
N-152	The identified feature is a Bureau of Reclamation section corner.	572019.42	150816.23		This feature has been identified as Stewardship.		S	

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-153	The identified items are three segments of suspected nonfriable asbestos pipe totaling approximately 1 m (3 ft) in length.	572535.70	151417.04		Classified to be removed and disposed.	N-153.jpg	MR	
N-154	The site consists of approximately 12 fence posts with concrete bases still attached in a 10 m (33-ft-) diameter area. They were part of a dismantled chain link fence.	572652.08	151441.69		Classified to be removed and disposed.	N-154.jpg	MR	
N-155	The identified feature is a 0.6 m (2-ft-) long section of suspected nonfriable asbestos pipe.	572570.12	151397.31		Classified to be removed and disposed.	N-155.jpg	MR	
N-156	The site consists of a 15 m (50-ft-) diameter area of stockpiled power poles and related debris.	572699.99	151391.15	This feature was also identified in the 100-D orphan walkdown.	Classified to be removed and disposed.		MR	
N-157	The site consists of a 1.5 m^3 (2 yd^3) concrete truck clean-out pile.	572647.63	151354.66		This feature has been identified as Stewardship.	N-157.jpg	S	
N-158	The identified feature is a discarded length of utility cable in a 10 m (33-ft-) diameter area.	572529.90	151193.56		Classified to be removed and disposed.		MR	
N-159	The identified feature is a discarded length of utility cable in a 70 m (230-ft-) diameter area.	572360.05	150976.95	Field visit conducted on March 4, 2009 by RL and Ecology representatives. Classification was changed to miscellaneous restoration at request of RL.	Classified to be removed and disposed.	N-159.jpg	MR	
N-160	The identified feature is a water line valve.	572472.78	150839.66		This feature has been identified as Stewardship. See N-233, which is a water line to a military camp.		S	
N-161	The site consists of a suspected hand dug well approximately 5 m (16 ft) in diameter. The depth is unknown.	572151.59	150822.04		This feature has been identified as Stewardship.	N-161.jpg	S	

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-162	The site consists of an oil stain dump area approximately 3 m (10 ft) in diameter and three oil filters.	572632.95	150762.66	This feature is located approximately 56 m west of the southwest corner of the 100-D perimeter road.	This feature is a suspect stained area with debris.	N-162.jpg	OS	100-N-97
N-163	The identified feature is a water line valve on the ground surface.	572462.01	150776.18		This feature has been identified as Stewardship. See N-233, which is a water line to a military camp.		S	
N-164	The identified feature is a 2 by 2 m (6- by 6-ft) concrete slab foundation with embedded anchor bolts. It is suspected to have been the base of a tower.	572678.28	150733.11	This feature was also identified in the 100-D orphan walkdown.	This feature is "not accepted" WIDS site 100-D-36, a former monitoring station.		WIDS	100-D-36
N-165	The site is identified as a 2 by 15 m (6- by 50-ft) grout clean-out area adjacent to Route 4 N.	573016.05	150708.68		This feature has been identified as Stewardship.	N-165.jpg	S	
N-166	The identified feature is partially exposed 1 m by 2 m (3- by 6-ft) concrete slab.	572987.55	150669.00	Feature is about 33 m from the road partly buried with vegetation, beginning to cover the feature.	This feature has been identified as Stewardship.	N-166.jpg	S	
N-167	The identified feature is a 6 m (20-ft-) utility pole in ground that is not in service.	572543.44	150645.48	Pole is about 475 m from Route 4 N and 280 m from D Area perimeter fence road.	This feature has been identified as Stewardship. Suspected that birds use pole as a roost.	N-167.jpg	S	
N-168	The identified feature is a water line valve on the ground surface.	572427.52	150645.47		This feature has been identified as Stewardship. See N-233, which is a water line to a military camp.		S	
N-169	The identified feature is a suspect hand dug well that is approximately 6 m (20 ft) in diameter.	572776.24	150621.52	Located about 250 m from Route 4 N.	This feature has been identified as Stewardship.	N-169.jpg	S	
N-170	The identified feature is a telephone junction box.	573012.45	150584.36		This feature has been identified as Stewardship.	N-170.jpg	S	
N-171	The site consists of metal and cable debris in a 15 m (50-ft-) diameter area.	572578.93	150581.53	About 205 m from D Area perimeter road. Field visit conducted on March 4, 2009 by RL representative. Classification will remain as stewardship.	This feature has been identified as Stewardship.	N-171.jpg	S	

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-172	The identified feature is 1 m^3 (1.3 yd^3) concrete base and embedded brass cap construction bench mark that has been dug up and dumped at this location.	572846.09	150553.86	Item is located about 180 m from intersection of Routes 4 N and 2 N.	Classified to be removed and disposed.	N-172.jpg	MR	
N-173	The site consists of utility pole debris including decomposing wooden cross arms, ceramic insulators, and wire cable in a 30 m (100-ft) area.	572340.69	150439.09	Item is located about 200 m from the north end of 116-N-3 Trench. Field visit conducted on March 4, 2009 by RL representative. Classification will remain as stewardship due to location.	This feature has been identified as Stewardship.	N-173.jpg	S	
N-174	The site consists of power pole debris including decomposing wooden cross arms and metal cable in a 5 m (16-ft-) diameter area.	572293.16	150340.41	About 180 m from road at 116-N-3 trench.	This feature has been identified as Stewardship.	N-174.jpg	S	
N-175	The identified feature is a lead-encased phone cable with approximately 4 m (20 ft) of cable visible.	572459.80	150313.32	This feature is located approximately 197 m northeast of well 199-N-43.	This feature is part of "no action" WIDS site 600-235 and has been classified as stewardship.	N-175.jpg	WIDS	600-235
N-176	The identified feature is a water line valve on the ground surface.	572248.47	150246.04		This feature has been identified as Stewardship. See N-233, which is a water line to a military camp.		S	
N-177	The identified feature is a water line valve on the ground surface.	572236.65	150123.06		This feature has been identified as Stewardship. See N-233, which is a water line to a military camp.		S	
N-178	The site consists of an exposed phone cable. There is approximately 2 m (6.5 ft) of cable exposed on the ground surface.	572408.61	150120.27	This feature is located approximately 47 m east-southeast of well 199-N-43.	This feature is part of "no action" WIDS site 600-235 and has been classified as stewardship.	N-178.jpg	WIDS	600-235
N-179	Identified feature is an empty 113 L (30-gal) drum.	572605.23	150112.39	Located 110 m from 116-N-3 dirt road.	Classified to be removed and disposed.	N-179.jpg	MR	
N-180	Identified feature is an empty 113 L (30-gal) drum.	572946.25	150043.93	Located 75 m from Route 4 N.	Classified to be removed and disposed.	N-180.jpg	MR	
N-181	The site is a Bureau of Reclamation section corner.	572029.03	150049.00	Located 37 m east of well 199-N-49.	This feature has been identified as Stewardship.	N-181.jpg	S	

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-182	The site is a pair of brake shoes.	573006.73	150009.73	Located 15 m from Route 4 N.	This feature has been identified as Stewardship.	N-182.jpg	S	
N-183	The site consists of multiple stained spots approximately 1 m (3 ft) in diameter in a 50 m (165-ft-) diameter area. There are about 12 spots in the area and some contain rusted oil filters.	572705.63	151323.57		The spots are suspected to have been caused by motor oil being dumped to the ground. This feature is part of "accepted" WIDS site 100-D-81, which identifies similar features. Boundaries of 100-D-81 will be updated.		WIDS	100-D-81
N-184	The identified feature is a telephone junction box.	573012.21	149978.71		This feature has been identified as Stewardship.		S	
N-185	The site consists of decomposing wood and metal debris in a 15 m (50-ft-) diameter area.	572950.21	149941.15		Information will be incorporated into "accepted" WIDS site 600-35.		WIDS	600-235
N-186	The identified feature is a "T" handle water valve and vent pipe.	572948.06	149916.27		Information will be incorporated into "accepted" WIDS site 600-35.		WIDS	600-235
N-187	The identified feature is a wood-cased air vacuum valve.	572613.25	149874.28		This feature has been identified as Stewardship. It is part of the raw water export piping per H-1-48891, sheet 1, Rev. 1.		S	
N-188	The identified feature is a telephone junction box.	573013.89	149732.25		This feature has been identified as Stewardship.		S	
N-189	The identified feature is a metal auger 1 m (3.3 ft) in length.	571758.39	149736.02		This feature has been identified as Stewardship.		S	
N-190	The site consists of lead sheathed phone cable debris that is approximately 1 m (3.3 ft) long in a 5 m (16.4-ft-) diameter area.	572271.57	149533.94	This feature is located in a culturally sensitive area.	This feature is part of "no action" WIDS site 600-235. Stewardship for the cable and miscellaneous restoration for exposed wrap.	N-190.jpg	MR	
N-191	The identified feature is a telephone junction box.	573000.97	149471.53		This feature has been identified as Stewardship.		S	
N-192	The identified feature is a water line valve on the ground surface.	572172.21	149443.25		This feature has been identified as Stewardship. See N-233, which is a water line to a military camp.		S	

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-193	This site consists of multiple stained soil spots in a 30 m (98.4-ft-) diameter area located approximately 33 m northwest of 128-N-1.	572059.45	149229.36		This feature is a suspect stained area.		OS	100-N-98
N-194	The identified feature is a 3 m (9.9-ft-) diameter stained area with no vegetation.	572175.19	149200.18	This feature is located approximately 34 m northeast of 128-N-1.	This feature is a suspect stained area with no vegetation.		OS	100-N-98
N-195	This site is a 4 by 15 m (13- by 49-ft-) asphalt/gravel and concrete pile.	572159.98	149210.57	This feature is located approximately 62 m east of the nearest road.	This feature has been identified as Stewardship.		S	
N-196	This site is a suspected oil stain with two filters within a 4 m (13.1-ft-) diameter area.	572807.17	149170.57	This feature is located approximately 148 m west of Route 4 N.	This feature is a suspect stained area with debris.		OS	100-N-99
N-197	This site is a suspected oil change area with stained soil and two filters. This location is approximately 10 m (32.8 ft) in diameter.	572896.03	149137.38	This feature is located approximately 55 m west of Route 4 N.	This feature is a suspect stained area with debris.		OS	100-N-99
N-198	This site is a 5 m (16.4-ft-) diameter area with scattered metal debris.	571885.92	149107.59		This feature has been identified as Stewardship.		S	
N-199	This site consists of two PVC pipes approximately 5 m (16.4 ft) in length.	571764.61	149074.88		This feature has been identified as Stewardship.		S	
N-200	This site consists of metal and concrete debris scattered in a 5 m (16.4-ft-) diameter area.	571532.50	150092.38	Field visit conducted on March 4, 2009 with RL and Ecology. Classification remains stewardship but identified as a physical hazard.	This feature has been identified as Stewardship.		S	
N-201	This location appears to be an oil stain. There are four oil filters and stain soil within a 4 m (13.1-ft-) diameter area observed.	571544.09	150010.77		This feature is a suspect stained area with debris.	N-201.jpg	OS	100-N-100
N-202	The identified feature is a 3 m (9.9-ft-) long angle iron debris.	571465.66	149985.46		This feature has been identified as Stewardship.		S	

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-203	The Identified feature is metal flex tubing 3 m (9.9 ft) in length.	571528.21	149973.47		This feature has been identified as Stewardship.		S	
N-204	This site consists of concrete, cable, and transite pipe debris in a 6 m (19.6-ft-) diameter area.	571410.44	149893.51		Classified to be removed and disposed.		MR	
N-205	This site is 12 railroad ties in a 15 m (49.2-ft-) diameter area.	571310.58	149838.57		Classified to be removed and disposed.		MR	
N-206	The identified features are three power poles 15 m (49.2 ft) in length.	571285.54	149822.35		Classified to be removed and disposed.		MR	
N-207	This site is a grout clean-out in an approximate 2 m (6.6-ft-) diameter area.	571790.20	149565.58		This feature has been identified as Stewardship.		S	
N-208	This site is concrete bases of a removed fence approximately 200 m (656.3 ft) in length. A line was walked and recorded on the Geo-XT marking the fence line.	571623.46	149529.79		This feature has been identified as Stewardship.		S	
N-209	This location is a debris area with wood and metal in a 20 m (65.6-ft-) diameter area. A poly was walked around this location.	571664.24	149477.11		This feature has been identified as Stewardship.		S	
N-210	This location is a dump site over a bank with rubber hose, concrete, and wood in a 10 m (32.8-ft-) diameter area.	571580.29	149446.48	Field visit conducted on March 4, 2009 with RL and Ecology. Classification remains stewardship.	This feature has been identified as Stewardship.		S	
N-211	The identified features are two utility poles 12 m (39.3 ft) in length.	571635.18	149393.49		Classified to be removed and disposed.		MR	
N-212	This site consists of multiple stained soil spots over a 10 m (33-ft-) diameter area.	571718.65	149379.82	This feature is located approximately 13 m southwest of 100-N-13.	This feature is a suspect stained area.		OS	100-N-101

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-213	The identified feature is possible valve pit. It is approximately 3 m (10 ft) in diameter and is labeled as a confined space on the access lid.	571199.64	149685.32		The feature was identified as a filter water line valve box based on construction drawing H-1-45007, sheet 58. This feature will be incorporated as part of WIDS site 100-N-84.	N-213.jpg, H-1-45007	WIDS	100-N-84
N-214	The identified feature is utility vault approximately 3 m (10 ft) in diameter and is labeled as a confined space.	571015.14	149443.80		The feature has been identified as a utility vault based on 181-N Utility Vault Construction drawing H-1-45007, sheet 2, and has been identified as Stewardship.	N-214.jpg, H-1-45007	S	
N-215	The identified feature is a 1 m (3-ft-) diameter manhole and is labeled as a confined space.	571006.82	149425.67		This feature is a raw water supply manhole based on drawing H-1-45007, sheet 58. This feature will be incorporated as part of WIDS site 100-N-84.	N-215.jpg	WIDS	100-N-84
N-216	The identified feature is a 2 m (6-ft-) diameter valve pit. It is labeled as a confined space. Inside the pit are four pipes coming in from the west. From these four pipes are six pipes with valves heading south. Some of the pipes have identifying placards hanging from the pipes. The pipes appear to be approximately 3 m (9.9 ft) down inside the pit.	571065.50	149400.74		Feature identified as utility box for control air supply and has been identified as Stewardship.	N-216.jpg	S	
N-217	The identified feature is a 2 m (6.6-ft-) diameter valve pit. It is labeled as a confined space.	571021.91	149370.85		This feature is a raw water supply valve pit based on drawing H-1-45007, sheet 16. This feature will be incorporated as part of WIDS site 100-N-84.	N-217.jpg	WIDS	100-N-84

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-218	The identified feature is a 1 m (3.3-ft-) diameter manhole in the sidewalk adjacent to the 1112-N guard house. The manhole is approximately 1 m (3.3 ft) deep. There is a galvanized flex tube approximately 1.9 cm (0.75 in.) attached to a larger steel pipe approximately 6.4 cm (2.5 in.) in diameter. The larger pipe appears to be heading south and the flex pipe goes down.	571325.13	149441.14		The manhole appears to be related to the 109-N Building and a 14-in. miscellaneous chemical drain terminates at the manhole near the 1112-N Building based on current GIS piping layers and construction drawing H-1-45007, sheet 29. This feature will be incorporated as part of WIDS site 100-N-84.	N-218.jpg	WIDS	100-N-84
N-219	The site consists of a manhole 1.5 m (4.9 ft) in diameter. Inside the manhole is a regulator valve and an isolation valve connected to a small line approximately 2.5 cm (1 in.) in diameter. The small pipe is going in a westerly direction and appears to be a steel pipe. The line is approximately 1 m (3.3 ft) down from the surface.	571369.71	149440.37		Spatial analysis of the manhole indicates no contaminants of concern issues, but it is still unknown as to its function. Utilities close to this feature are telephone, power, low-pressure steam, and a condensate line connected to the french drain. The french drain portion of this feature is being dispositioned with OSE ID N-226. The manhole feature has been identified as stewardship.	N-219.jpg	S	
N-220	The site consists of a 30 m (100-ft-) diameter area of garnet sand. It is recorded as a poly area.	571551.61	149512.81		This feature is part "discovery" WIDS site 100-N-81.		WIDS	100-N-81
N-221	This site is a 13 m (42.6-ft-) long angle iron scrap.	571331.88	149026.67		This feature has been identified as Stewardship.		S	
N-222	The identified feature is 5 m (16.4-ft-) long steel cable.	571495.40	149037.01		This feature has been identified as Stewardship.		S	

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-223	This site is a dismantled transmission tower.	571579.03	149064.84		Classified to be removed and disposed.		MR	
N-224	The identified feature is a 3 m^3 (4 yd^3) asphalt/gravel pile.	571408.40	149063.97		Classified to be removed and disposed.		MR	
N-225	Compilation of three french drains and dry wells discovered during historical evaluation that are potentially contaminated.	Multiple	Multiple		Potentially contaminated french drains and dry wells.		OS	100-N-102
N-226	Compilation of twevle french drains and dry wells discovered during historical evaluation that received steam condensate.	Multiple	Multiple		French drains and dry wells that received steam condensate.		OS	100-N-103
N-227	Aerial photograph shows a dark area within a circular cleared area.	571723.44	149401.44	WIDS site 100-N-13 is located in the vicinity.	The spot was located at approximately the same location as "accepted" WIDS site 100-N-13, which interpreted the dark area as a potential "burn pit." An oblique photograph from 1965 (1965 Sept 8 40403-2) shows a pile of dirt/gravel at the location.	40403-2	S	
N-228	Equipment and material storage area, triangular shaped, approximately 80 m by 38 m in swale east of the Kaiser shop area.	571601.69	149464.04		This site was used as a material storage area beginning in 1982. An access road entered the site from the southeast corner and made a loop through the site. The northwest corner of the site was graded during remediation of the 1312-N Facility in 2007 to make the contours match the surrounding area. There is no evidence of spills or stains.	93081256-2CN	S	
N-229	Two dark areas in 1996 aerial photograph (R032c25).	571830.37	148317.63	The smaller area is not present in the 1996 aerial photographs.	The larger area is "accepted" WIDS site 100-N-33 (Coal Ash Pit) which had the wrong coordinates in WIDS (new coordinates 571874.54E, 148396.17N). The smaller area was suspected to be the same material. A field visit and the 2008 aerial photographs showed no evidence of coal or ash in the second area and has been classified as stewardship.	r032c25	S	

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-230	Potential underground diesel fuel tank located at the 676 Microwave Tower near the 100 Area Fire Station.	572236.77	145365.53		Site visit identified evidence of an above-grade diesel fuel storage tank at the northeast corner of the building. Cut-off bolts and penetration into the building where the fuel tank and line would have been present were visible. There was no evidence of a buried tank (i.e., fill ports, vents, depressions) or other ground disturbances. This information along with the two drawings listed below is sufficient information to say there was no UST associated with the building. Drawings H-2-75563, sheet 2, and H-6-1417 indicate a diesel fuel tank in the 676 Building. Drawing H-6-1417, Rev. 1, dated 1984 indicates an above-ground tank (solid line).	H-2-75563, sheet 2, H-6-1417 and Photograph 07282008-100-1367	S	
N-231	Equipment storage area at the southeast corner of the junction of Turbine Lane with N Avenue.	571712.56	14993.32		Area was used to store equipment and to perform equipment maintenance. The area is currently still in use and will be appropriately closed when no longer needed.	n-231 arcview.jpg	S	
N-232	Site is a linear feature trending southwest and south from the southwest corner of 100-D Area past the east side of the 100-N Military Camp where it turns southeast and crosses Route 4 N. After crossing Route 4 N, it turns south-southwest to the intersection of Routes 4 N and 1. GPS coordinates are where the feature turns southeast before crossing Route 4 N.	572219.04	147466.01		Feature identified on 1957 aerial photograph. Geophysics was conducted and showed no evidence of buried features (GI # 0590316).	1957_951-1.jpg, GI # 0590316	S	

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-233	Linear running from 100-D Area to military camp site.	572927.53	149752.98		GIS comparison of field walkdown points (N-160, N-163, N-168, N-176, N-177, and N-192), rectified aerial photographs (1957_951 and N 1964r), and drawings H-1-48891 and 18-02-34 July 1954 identify the linear feature as a water line to the military camp.	N-233.jpg	S	
N-234	Linear feature running from 100-D Area to military camp site.	572408.61	150120.27	The linear feature is the lead-sheathed communications cable that ran from 100-D Area to the Army camp site.	GIS comparison of field walkdown points (168 and 171), rectified aerial photograph (1957_951), and drawings H-1-48891 and 18-02-36 identified linear feature as the lead-sheathed cables (WIDS 600-235).	N-234.jpg	WIDS	600-235
N-235	Site was a trench/bermed area that appears to have been used as a burn pit. It abuts the 128-N-1 Burn Pit and may be an extension of this trench/bermed area.	572110.34	149151.87	The site is visible in the rectified 1964 vertical aerial photograph. Oblique aerial photographs 30868-21, 30868-22, and 37457-1CN show smoke that appears to be coming out of the trench/bermed area.	Identified as part of WIDS site 128-N-1.	30868-22	WIDS	128-N-1
N-236	A 1963 aerial photograph showed an excavated area that was later filled in with piles of dirt in a 1964 aerial.	571255.57	148884.14		GIS data showed the area identified was previously included in rejected WIDS site 100-N-19. Remaining features identified during walkdown are miscellaneous restoration or stewardship items.	2008 Labeled.jpg	WIDS	100-N-19
N-237	The identified feature is a sewer manhole 0.61 m (2 ft) in diameter.	571571.09	149108.47	Manhole was not opened.	Spatial analysis indicates this is associated with a sanitary sewer line 100-N-84 (H-1-49464, sheet 6, r1).		WIDS	100-N-84
N-238	The identified feature is a sewer manhole 0.61 m (2 ft) in diameter.	571403.40	149225.68	The sewer manhole is in service and was not opened.	Spatial analysis indicates this is associated with a sanitary sewer line 100-N-84 (H-1-45007, sheet 13, r2).		WIDS	100-N-84
N-239	The identified feature is a manhole 0.61 m (2 ft) in diameter.	571388.30	149396.94	Manhole was not opened.	Spatial analysis indicates this is associated with an abandoned steam line (H-1-45007, sheet 28, r1).		S	
N-240	The identified feature is a manhole 0.61 m (2 ft) in diameter.	571347.32	149407.10	Manhole was not opened.	Spatial analysis indicates this is associated with low pressure steam, potable water or a fire alarm system (H-1-45007, sheet 28, r1). No apparent sewer systems are in the vicinity.		S	

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
N-241	The identified feature is a 0.6 m (2 ft) in diameter french drain.	571272.88	149239.61		This feature is located approximately 4 m southwest of 120-N-7 (108-N Acid Unloading Facility French Drain). From the description of 120-N-7, this feature is the same site.		WIDS	120-N-7
N-242	This site is a 1 m (3.2 ft) manhole with an approximate 46 cm (18-in.) pipe inside. The pipe is running north to south and in approximately 1 m (3.3 ft) down in the hole.	571137.26	149296.63		Spatial analysis indicates this is associated with fire water piping (H-1-45007, sheet 28, r1). The 163-N (120-N-5) pipe trench is located 1.8 m northeast of the valve pit and contains sulfuric acid and sodium hydroxide piping.		S	
N-243	The identified location is suspected valve pit 2 m (6.6 ft) in diameter.	571292.70	149349.85	The lid was not opened.	Spatial analysis indicates this is associated with raw water (H-1-4500, sheet 21, r4). All other nearby piping have no suspected sources of contamination.		S	
N-244	This site is a manhole 1 m (3.3 ft) in diameter. Inside the manhole are a valve and a pipe approximate 7.6 cm (3 in.) running east to west. The pipe is approximately 1.2 m (4 ft) down inside the pit.	571230.54	149350.37		Spatial analysis indicates this is associated with potable water (H-1-45007, sheet 21, r4). All other nearby piping has no suspected sources of contamination.		S	
N-245	Site consists of three suspect disposal pits identified from a 1957 rectified aerial photograph (1957_951) that were associated with the military camp.	571499.54 571541.51 571665.12	148236.94 148072.11 148095.77	Coordinates shown in SUE table are for each of the three pits.	Recent aerial photographs show the heavy equipment blade marks where the suspect disposal pits were backfilled.		OS	100-N-96
N-246	This feature is a 2 m by 6 m (estimated length and width) septic tank that supplied influent to 100-N-4 (HGP tile field).	570970.96	149292.48	Coordinates are for center of the septic tank and dimensions were estimated based on H-6-4004, sheet 1, Rev. 2.	Waste site 100-N-4-SWMU 5 is interim closed. However, there was no discussion of the septic tank in the WIDS report or the CVP.	H-6-4004, sheet1, Rev. 2, H-6-4025, sheet 1, Rev. 1	OS	100-N-95

Table 6-1. 100-N Area Orphan Sites Evaluation Summary. (33 Pages)

OSE ID #	Site Description	GPS Easting	GPS Northing	Notes	Disposition	Reference	Final Classification [a] (WIDS, OS, MR, or S)	WIDS Number
NA	Start point.	NA	NA	Start point for GPS tracking only.	Start point for GPS tracking. Information only.		NA	

[a] MR = miscellaneous restoration
OS = orphan site
S = stewardship
WIDS = Waste Information Data System

BPA = Bonneville Power Administration
CVP = cleanup verification package
D4 = Deactivation, Decontamination, Decommissioning, and Demolition
Ecology = Washington State Department of Ecology
ERDF = Environmental Restoration Disposal Facility
GIS = Geographical Information System
GPERS = global positioning environmental radiation survey
GPR = ground penetrating radar
GPS = global positioning system
NA = not applicable
OSE = orphan site evaluation
PVC = polyvinyl chloride
RL = U.S. Department of Energy, Richland Operations Office
UST = underground storage tank

CCN 120515, 2005, *107-N Basin Recirculation Building Deferral of Underlying Soils and WIDS Sites 03/31/2005*, Miscellaneous Information, Washington Closure Hanford, Richland, Washington.

CCN 124147, 2006, *Historical Site Assessment for 1322-N, 1322-NA, 1322-NB, 1322-NC/100N*, Interoffice Memorandum from D.B. Encke to C.R. Watson dated March 6, 2006, Washington Closure Hanford, Richland, Washington.

CCN 127193, 2006, *Historical Site Assessment (HAS) for the 117-NVH*, Interoffice Memorandum from D.B. Encke to C.R. Watson dated May 16, 2006, Washington Closure Hanford, Richland, Washington.

CCN 128258, 2006, *Post-Demolition Summary Report for the 166-N Fuel Oil Pumphouse, 166-N Fuel Oil Unloading Station, and 1715-N Fuel Oil Storage Tanks 1-5*, Interoffice Memorandum from D.B. Encke to R.R. Nielson dated July 17, 2006, Washington Closure Hanford, Richland, Washington.

CCB 130269, 2006, *Building Retention Evaluation*, Letter from S.L. Feaster to S.L. Sedgwick dated October 17, 2006, Washington Closure Hanford, Richland, Washington.

CCN 138232, 2008, *Post Demolition Summary Report for the 1312-N Liquid Effluent Retention Basin*, Interoffice Memorandum from J.W. Crocker to M.E. Allen dated February 28, 2008, Washington Closure Hanford, Richland, Washington.

CCN 140560, 2008, *Post Demolition Summary Report for the 163-N Water Demineralization Plant, 183-N Water Treatment Plant, 183-N Water Treatment Plant, 183-NA Pump House, 183-NB Clearwell, and the 183-NC Filter Backwash Sump*, Interoffice Memo from A.M. Hood to M.E. Allen dated August 6, 2008, Washington Closure Hanford, Richland, Washington.

CCN 141240, 1998, *Additional Information to the DRD UST Update*, Internal Memo from Yau-Ming Chien to S.K. Omberg dated November 10, 1998, Westinghouse Hanford Company, Richland, Washington.

CCN 579174, 2007, *GPS Survey Data Report for for the 109N Building Pre Demo*, Global Positioning System Survey, Washington Closure Hanford, Richland, Washington.

DOE/RL-97-22, 1998, *Engineering Evaluation/Cost Analysis for the 100-N Area Ancillary Facilities and Integration Plan*, U.S. Department of Energy Richland Operations Office, Richland, Washington.

DOE/RL-2002-70, 2008, *Removal Action Work Plan for the 100-N Area Ancillary Facilities*, U.S. Department of Energy Richland Operations Office, Richland, Washington.

HW-69000, 2007, *100N Technical Manual Sys Descriptions Vol 2 [Declassified]*, Hanford Atomic Products Operation, Richland, Washington.

WCH-111, 2006, *Demolition Plan for the 182-N High Lift Pump House*, G.G. Balint, Washington Closure Hanford, Richland, Washington.

WHC-SD-EN-TI-136, 2008, *100N Area Underground Storage Tank Closures*, Westinghouse Hanford Company, Richland, Washington.

WHC-SP-0472, 2008, *Implementation Plan for WAC 173-360 Underground Storage Tank Regulations*, L.M. Douglas, Westinghouse Hanford Company, Richland, Washington.

Table 6-2. 100-N Area Orphan Site Groupings.

WIDS Number	General Description	Corresponding Orphan Site Item Number(s)
100-N-85	1716-N Gas Station Fuel Tanks	N-004
100-N-86	151-N Substation Transformer and Oil Circuit Breakers	N-012
100-N-87	116-N Ventilation Stack Piping and French Drain	N-013
600-339	100 Area Fire Station Dry Well	N-020
100-N-88	1143-N French Drain	N-021
600-340	100 Area Fire Station Stain Areas	N-033, N-042
100-N-89	117-NVH French Drain	N-054
100-N-90	100-N Reactor Rod Caves	N-055
100-N-91	100-N Battery Debris	N-070
100-N-92	100-N Stain Area #1	N-080
100-N-93	100-N Stain Area #2	N-083
100-N-94	100-N Oil Filters #1	N-093
600-348	100 Area Fire Station Underground Storage Tanks	N-127
600-347	100 Area Fire Station Burn Pit	N-128
100-N-97	100-N Oil Filters #2	N-162
100-N-98	100-N Stain Area #3	N-193, N-194
100-N-99	100-N Oil Filters #3	N-196, N-197
100-N-100	100-N Oil Filters #4	N-201
100-N-101	100-N Stain Area #4	N-212
100-N-102	100-N Potentially Contaminated French Drains	N-225
100-N-103	100-N Steam Condensate French Drains	N-226
100-N-96	100-N Military Camp Disposal Pits	N-245
100-N-95	Hanford Generating Plant (185-N) Septic Tank	N-246

WIDS = Waste Information Data System

6.3.3 Stewardship Elements

Approximately 162 items categorized as stewardship elements were documented as part of the 100-N orphan sites evaluation. These stewardship elements include both items and features that were investigated based on potential or unresolved questions and then determined through additional research and/or field verification not to meet the criteria for identification as an orphan site. They also include items or features that were observed during the field investigation and documented to acknowledge their presence based on the likelihood that they would remain in the 100-N Area following completion of the RCCC scope. Although stewardship elements do not meet the criteria for the orphan sites or miscellaneous restoration categories and are not within the RCCC cleanup scope, it is possible that some may be removed because they ultimately lie within the excavation footprint or other impacted areas (e.g., staging pile areas, container queues) associated with CERCLA remedial actions. Information associated with the stewardship items is stored in the orphan sites evaluation component of the SIS database and includes tracking numbers, locations, summary descriptions, and photographs.

6.3.4 WIDS

The WIDS classifications identified in Table 6-1 are used to update accepted waste site writeups in the WIDS and SIS databases. Additional information gathered during the orphan site evaluation investigation such as safety hazards, boundaries, or other applicable information are recorded and documented.

7.0 REFERENCES

Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. 9601 et seq.

DOE-RL, 2002, *100-NR-1 Treatment, Storage, and Disposal Units Corrective Measures Study/Closure Plan*, DOE/RL-96-39, Rev. 1, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE-RL, 2007, *Tri-Party Agreement Handbook Management Procedures*, RL-TPA-90-0001, Guideline Number TPA-MP-14, "Maintenance of the Waste Information Data System (WIDS)," Rev. 1, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

Ecology, EPA, and DOE, 1989, *Hanford Federal Facility Agreement and Consent Order*, as amended, Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Olympia, Washington.

Resource Conservation and Recovery Act of 1976, 42 U.S.C. 6901, et seq.

WCH, 2007, *Project Management Plan*, WCH-2, Rev. 3, Washington Closure Hanford, Richland, Washington.

APPENDIX A

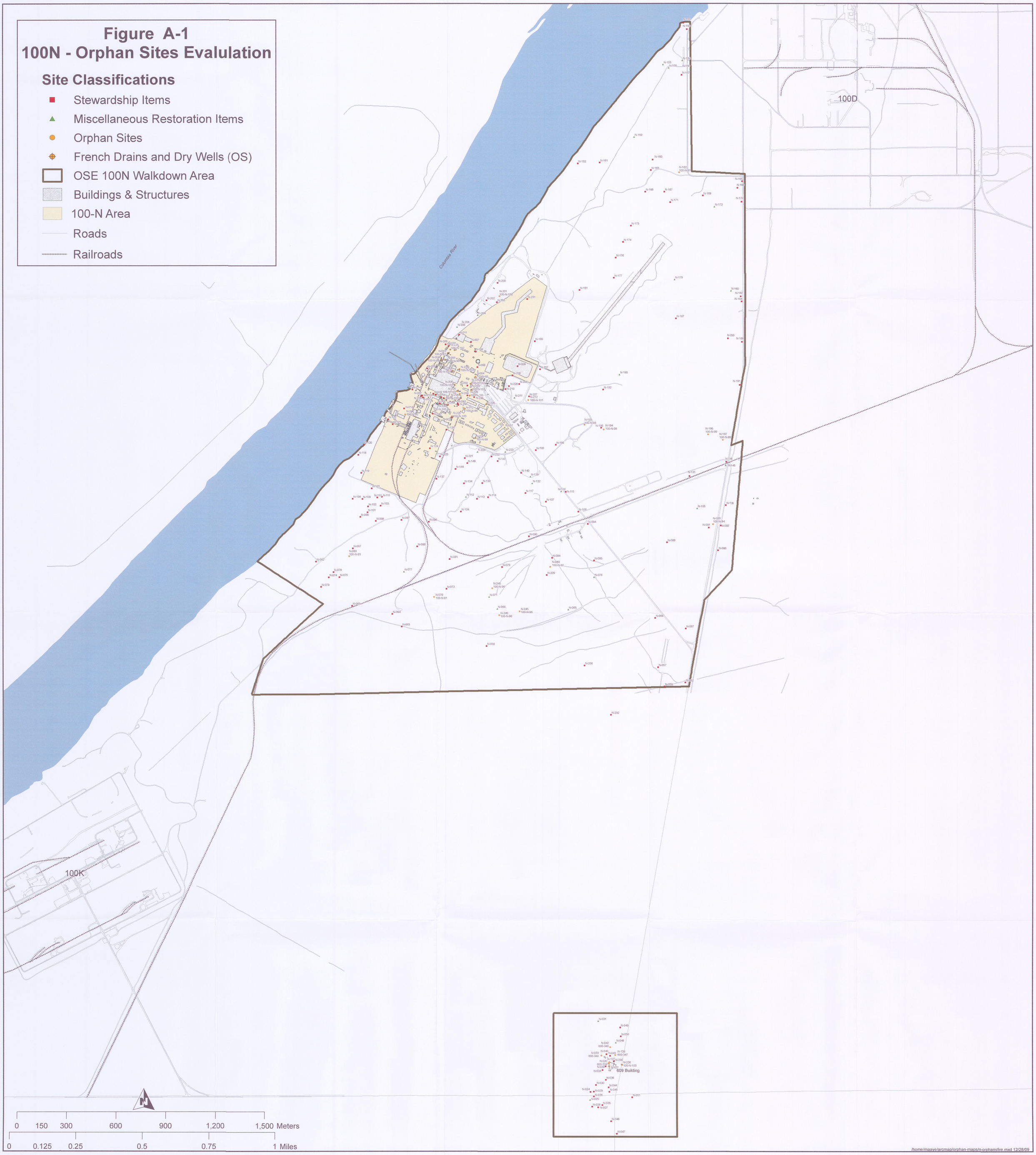
MAPS

Figure A-1. 100-N Area Orphan Site Evaluation Map.

Figure A-1
100N - Orphan Sites Evalulation

Site Classifications

- Stewardship Items
- Miscellaneous Restoration Items
- Orphan Sites
- French Drains and Dry Wells (OS)
- OSE 100N Walkdown Area
- Buildings & Structures
- 100-N Area
- Roads
- Railroads



DISTRIBUTION

U.S. Department of Energy
Richland Operations Office

J. C. Chance	A3-04
M. S. French	A3-04
J. Zeisloft (6)	A3-04

Washington Closure Hanford

R. A. Carlson	N3-30
C. S. Cearlock (3)	H4-22
E. T. Feist	H4-22
J. A. Lerch	H4-22
M. L. Proctor	H4-22

Document Control	H4-11
DOE-RL Public Reading Room	H2-53
Hanford Technical Library	P8-55