Savannah River
NUCLEAR SOLUTIONS℠
FLUOR • NEWPORT NEWS NUCLEAR • HONEYWELL

Land Use Control Implementation Plan for the Wetland Area at Dunbarton Bay in Support of Steel Creek Integrator Operable Unit (U)

SEMS Number: 71

SRNS-RP-2018-00479

Revision 1

November 2018

SAVANNAH RIVER SITE • AIKEN, SOUTH CAROLINA

DISCLAIMER

This document was prepared in conjunction with work accomplished under Contract No. DE-AC09-08SR22470 with the U.S. Department of Energy.

This work was prepared under an agreement with and funded by the U.S. Government. Neither the U.S. Government or its employees, nor any of its contractors, subcontractors or their employees, makes any express or implied: 1) warranty or assumes any legal liability for the accuracy, completeness, or for the use or results of such use of any information, product, or process disclosed; or 2) representation that such use or results of such use would not infringe privately owned rights; or 3) endorsement or recommendation of any specifically identified commercial product, process, or service. Any views and opinions of authors expressed in this work do not necessarily state or reflect those of the United States Government, or its contractors, or subcontractors.

Printed in the United States of America

Prepared for
U.S. Department of Energy
and
Savannah River Nuclear Solutions, LLC
Aiken, South Carolina

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

This page was intentionally left blank.

LIST OF ABBREVIATIONS AND ACRONYMS

~	approximate, approximately
ac	acres
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CM	contaminant migration
EC&ACP	Environmental Compliance and Area Completion Projects
FFA	Federal Facility Agreement
ft	feet
ha	hectare
IOU	Integrator Operable Unit
km	kilometer
km^2	square kilometer
LUC	Land Use Control
LUCIP	Land Use Control Implementation Plan
LUCAP	Land Use Control Assurance Plan
m	meter
m^3	cubic meter
mi	mile
mi^2	square mile
PAB	P-Area Ash Basin
PCR/RACR	Post Construction Report/Remedial Action Completion Report
PTSM	principal threat source material
QA	Quality Assurance
RA	remedial action
RCOC	refined constituent of concern
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
SCDHEC	South Carolina Department of Health and Environmental Control
SDC	Site Development Control
SRNS	Savannah River Nuclear Solutions, LLC
SRS	Savannah River Site
USDOE	United States Department of Energy
USEPA	United States Environmental Protection Agency
WADB	Wetland Area at Dunbarton Bay
WSRC	Washington Savannah River Company, LLC
yd	yard
yd^3	cubic yard

This page was intentionally left blank.

1.0 INTRODUCTION

This Land Use Control Implementation Plan (LUCIP) has been prepared for the Wetland Area at Dunbarton Bay (WADB) at the Savannah River Site (SRS). The WADB covers approximately (~) 15.4 hectares (ha) (38 acres [ac]). Groundwater is not considered part of the scope of the WADB. The purpose of this LUCIP is to describe how the land use controls (LUCs) selected in the WADB Record of Decision (ROD) (SRNS 2018) will be implemented and maintained. The LUC objectives have been documented in the WADB ROD and are listed in Section 3.0.

The selected remedy leaves hazardous substances in place that pose a potential future risk and will require land use restrictions until the concentrations of hazardous substances in the ash/soil media are at levels that allow for unrestricted use. As agreed on March 30, 2000, among the United States Department of Energy (USDOE), the United States Environmental Protection Agency (USEPA), and the South Carolina Department of Health and Environmental Control (SCDHEC), SRS is implementing a Land Use Control Assurance Plan (LUCAP) (WSRC 1999) to ensure that the LUCs required by numerous remedial decisions at SRS are properly maintained and periodically verified. The requirements of that LUCAP also apply to the LUCs that were selected as part of the remedial action (RA) for WADB. This additional document, the WADB LUCIP, contains the detailed and specific measures required to implement and maintain the LUCs selected as part of this particular remedial decision. The LUCs shall be maintained until the WADB is suitable for unlimited exposure and unrestricted use. Approval by USEPA and SCDHEC is required for any modification or termination of the LUCs.

USDOE is responsible for implementing, maintaining, monitoring, reporting, and enforcing the LUCs in accordance with the approved LUCIP. Upon final approval, the LUCIP will be appended to the LUCAP and should be considered incorporated by reference into the WADB ROD, establishing implementation and maintenance requirements for the LUCs under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the SRS Federal Facility Agreement (FFA) (FFA 1993). The LUCIP will remain in effect unless and until modifications are approved by USEPA and SCDHEC as necessary for protection of human health and the environment. In accordance with Section 121(c) of CERCLA and National Oil and

Hazardous Substances Pollution Contingency Plan §300.430(f)(5)(iii)(c), a statutory review will be conducted within five years of initiation of the remedial action, and every five years thereafter, to ensure that the remedy continues to be protective of human health and the environment. Any approved LUCIP modification will be appropriately documented for incorporation by reference into the WADB ROD.

1.1 Format of LUCIP

The format of this LUCIP is consistent with the FFA protocol format approved by the USEPA and SCDHEC in March 2004.

2.0 OVERVIEW OF WADB REMEDIAL ACTION

2.1 General Description and History of the WADB

SRS occupies ~803 km^2 (310 mi^2) of land adjacent to the Savannah River, principally in Aiken and Barnwell counties of South Carolina (Figure 1). SRS is located ~40.2-km (25-mi) southeast of Augusta, Georgia, and 32-km (20-mi) south of Aiken, South Carolina.

The WADB is located southeast of the P-Area Ash Basin (PAB) within the Steel Creek Integrator Operable Unit (IOU) boundary near the headwaters of Meyers Branch and extends into Dunbarton Bay, which is located south of Powerline Road (also referred to Ash Flow Road). The dominant feature of the WADB is a Carolina bay called Dunbarton Bay (Figure 2).

In the summer of 2010, an area of ash overflow was discovered during the removal activities at the PAB. The ash deposition area begins on the south side of the PAB and extends in a southerly direction for ~762 m (2,500 ft) into Dunbarton Bay. The depth of ash deposition is variable and ranges from 0.15 to 0.9 m (0.5 to 3 ft) in thickness. The area of ash deposition is ~15.4 ha (38 ac), which has a total volume of ~61,332 m^3 (80,220 yd^3) of ash. However, due to the proximity of the disposition area to the Dunbarton Bay, a 30-m (100-ft) buffer area has been established to protect the sensitive ecosystem of the Dunbarton Bay during execution of activities in support of the selected remedy.

2.2 Nature and Extent of Contamination in WADB

A detailed description of the nature and extent of contamination associated with the WADB can be found in the Focused Corrective Measures Study/Feasibility Study Report for the Wetland Area at Dunbarton Bay in Support of Steel Creek Integrator Operable Unit (U) (SRNS 2013). A summary of the results from the human health risk assessment, ecological risk assessment, principal threat source material (PTSM) evaluation, and contaminant migration (CM) evaluation is provided below:

Ash/Soil

The environmental setting precludes any residential (unrestricted) or industrial land use in the future. Therefore, the most likely receptor scenario is an onsite worker (i.e., a worker who is conducting research, collecting samples, performing maintenance, etc.). However, in order to support risk management decisions, the standard (i.e., default) unrestricted (i.e., residential) and industrial land use scenarios, as well as the site-specific IOU onsite worker and adolescent trespasser scenarios were evaluated in the risk assessment. The potential risk to the four human receptors evaluated exceeds 1.0E-06 for exposure to contaminants in the surface ash/soil interval of 0 to 0.3 m [0 to 1 ft] and are summarized below.

Arsenic, cesium-137 (+D), potassium-40, radium-226 (+D), and uranium-238 (+D) were identified as human health refined constituents of concern (RCOCs) for both the future resident scenario and the future industrial worker scenario. Arsenic, cesium-137 (+D), potassium-40, and radium-226 (+D) were identified as human health RCOCs for both the IOU onsite worker and the trespasser. No PTSM RCOCs were identified for the ash/soil media at Dunbarton Bay. No ecological RCOCs for either the ash/soil media were identified. No CM RCOCs were identified for the ash/soil media. Although groundwater is not part of the WADB scope, groundwater was evaluated to support the CM analysis for the ash/soil media. No RCOCs were identified for the groundwater. No constituents were identified as human health or ecological RCOCs for the surface water media.

Site-Specific Factors

A 30-m (100-ft) buffer was established around the Dunbarton Bay to be protective of the environment of the bay, thus preventing damage and destruction to its sensitive ecosystem during

remedial activities at the WADB. The selected remedy removes the contaminated media north of the 30-m buffer, but leaves approximately 10.1 ha (25 ac) in the buffer area and the protected Dunbarton Bay wetlands south of the buffer area unchanged and at elevated levels of contamination.

The selected remedy for the WADB leaves hazardous substances in place that pose a potential future risk and will require land use restrictions until such a time as it can be shown that concentrations of hazardous substances in the ash/soil media are at levels that allow for unrestricted use and exposure.

2.3 Remedial Action Selected

As stated in the ROD, the selected RA for the WADB includes the following elements:

The selected remedy for the WADB is excavation of 16,820 m^3 (22,000 yd^3) of ash and contaminated soil media from the boundary of the PAB to the edge of the 30-m (100-ft) buffer at Dunbarton Bay. Excavated waste will be transported to an approved containment facility located off-SRS property. The Three Rivers Solid Waste Authority Class Three Landfill (Three Rivers Landfill - Permit #024202-1101) is permitted to receive the material. The 30-m (100-ft) buffer is used to protect Dunbarton Bay's sensitive ecosystem from damage caused by construction activities. Additionally, the selected remedy includes LUCs for 10 ha (25 ac) which includes Dunbarton Bay and a 30-m (100-ft) buffer area. This area will remain undisturbed and not excavated, with all ash/soil constituents of concern remaining in place.

The post-RA conceptual site model (Figure 3) demonstrates that the exposure pathways to an IOU onsite worker are incomplete following implementation of the RA. According to the *Savannah River Site Future Use Project Report* (USDOE 1996), residential use of SRS land is prohibited.

3.0 LAND USE CONTROL OBJECTIVES

The following WADB LUC objectives, have been developed to ensure the protectiveness of the remedy described above:

- Prevent contact, removal or excavation of ash/contaminated soil media;
- Maintain the integrity of any current or future remedial system or monitoring system; and

- Prohibit the development and use of property for residential housing, elementary and secondary schools, child care facilities and playgrounds.

Current access controls and land transfer requirements needed to maintain the future land use are described in the following sections of this LUCIP.

4.0 IMPLEMENTATION OF LAND USE CONTROLS

This section describes the LUCs selected in the ROD to achieve the LUC objectives stated in Section 3.0. A summary of the types of LUCs controls is provided in Table 1. USDOE is responsible for implementing, maintaining, reporting on and enforcing the LUCs required for the WADB. The LUCIP will become enforceable and will be implemented when approved by USEPA and SCDHEC following the completion of the RAs prescribed by the WADB ROD. USDOE shall notify USEPA and SCDHEC 60 days in advance of any proposed land use changes that are inconsistent with LUC objectives or the selected remedy.

Unexcavated portions of the WADB will be maintained as an industrial use area by implementation of the property record notices and restrictions (Section 4.1) and the LUC boundary map (Section 4.2).

The Site Use Program (Section 4.3) will be implemented to prevent onsite worker exposure to contamination left in place at the WADB. Other existing measures (i.e. Site Clearance Program, worker training, health and safety requirements, work controls) will also be used to ensure worker safety at the WADB. Physical access controls (Section 4.4) are implemented at the SRS boundary to control and restrict public and trespasser access to the WADB.

Signs at the WADB will be maintained to alert onsite workers to the presence of hazardous substances. The signs will also convey the restrictions of unauthorized personnel. Access control warning signs will be placed and maintained around the WADB to prevent unknowing entry and unrestricted use.

4.1 Property Record Notices and Restrictions

In the long term, if the property, or any portion thereof, is ever transferred from the USDOE, the U.S. Government and/or USDOE will take those actions necessary pursuant to Section 120(h)(1) of CERCLA. Those actions will include in any contract, deed, or other transfer document, notice of the type and quantity of any hazardous substances that were known to have been stored (for more than one year), released, or disposed of on the property. The notice will also include the time at which the storage, release, or disposal took place to the extent such information is available.

In addition, if the property, or any portion thereof, is ever transferred by deed, the U.S. Government will also satisfy the requirements of CERCLA 120(h)(3). The requirements include: a description of the remedial action taken, a covenant, and an access class. These requirements are also consistent with the intent of the Resource Conservation and Recovery Act (RCRA) deed notification requirements at final closure of a RCRA facility if contamination will remain at the unit.

LUCs will be implemented through the following:

- The contract, deed, or other transfer document shall also include restrictions to prevent removal or excavation of ash/contaminated soil media, prevent future industrial uses that result in unacceptable exposure to contaminated media, and prohibit future residential housing, elementary and secondary schools, childcare facilities and playground uses of the property. The need for these restrictions may be reevaluated at the time of transfer in the event that exposure assumptions differ and/or the residual contamination no longer poses an unacceptable risk under residential use. Any reevaluation of the LUCs will be done through an amended ROD with USEPA and SCDHEC review and approval.

- In addition, if the site is ever transferred to nonfederal ownership, a survey plat of the WADB depicting the area subject to LUCs will be prepared, certified by a professional land surveyor, and recorded with the appropriate county recording agency.

In the event of a property lease or interagency agreement, the equivalent restrictions will be implemented as required by CERCLA Section 120(h).

USDOE shall notify the USEPA and SCDHEC at least six months prior to transfer or sale of the property subject to LUCs to ensure that USEPA and SCDHEC can be involved in discussions to ensure that appropriate provisions are included in the transfer documents to maintain effective LUCs. If it is not possible for the USDOE to notify the USEPA and SCDHEC at least six months prior to the transfer or sale, then the facility will notify the USEPA and SCDHEC as soon as possible but no later than 60 days prior to the transfer or sale of any property subject to LUCs. In addition to the land transfer notice and discussion provisions above, USDOE further agrees to provide the USEPA and SCDHEC with similar notice within the same time frames as to federal-to-federal transfer of property.

4.2 LUC Boundary Maps

Figure 4 of this LUCIP identifies the proposed area under land use restrictions for the WADB. Following field implementation of the remedial action, a final (as-built) survey plat is developed and certified by a professional land surveyor registered in the State of South Carolina. The final plat will include the boundary coordinates for the area subject to land use restrictions and general locations of access control warning signs. The final as-built survey plat will be submitted to USEPA and SCDHEC in the Post Construction Report /Remedial Action Completion Report (PCR/RACR).

In addition, if the site is ever transferred to non-federal ownership, a certified survey plat of the waste unit will be prepared at or near the time of conveyance to support the LUCIP required restrictive covenants on land use and will be recorded with the appropriate county recording agency.

4.3 Site Use Program

Under USDOE Order 430.1A, *Life Cycle Management* (USDOE 1998), SRS is required to implement an asset management program for the use, maintenance, and disposal of physical assets, including real estate. SRS complies with this USDOE Order through the Site Use Program which is administered by Site Development Control (SDC) in accordance with SRS Manual 1D, *Site Infrastructure and Services Manual*, Procedure 3.02, “Site Real Property Configuration Control" (SRS 2006). Use of all lands and waters on the SRS are coordinated via the Site Use Program.

No use of land (i.e., excavation or any other land use) shall be undertaken without prior approval by the USDOE and documented by a Site Use Permit.

SRS identifies all buildings, facilities, and FFA waste units on SRS site development maps that are maintained by SDC in accordance with SRS Manual 1D. If LUCs are required for an FFA waste unit, the unit-specific LUC boundaries are identified on the SRS site development maps. SDC must verify that any proposed work to be performed on a site is sanctioned by a Site Use Permit and verify that the proposed activity does not conflict with any previously approved land use.

In addition to the management of the use of SRS lands and waters through the Site Use Program, the SDC also administers the Site Clearance Program to control the construction, alteration, or demolition activities at SRS. Before any work that adds or modifies features or facilities portrayed on the SRS site development maps is conducted, a Site Clearance Permit is required. USDOE approval of the intended land via a Site Use Permit must be verified before a Site Clearance Permit is issued. If a Site Clearance request potentially impacts a FFA waste unit, the Site Clearance Request Form is sent to the appropriate FFA reviewer for approval. The FFA reviewer will evaluate the proposed activity to identify any conflicts with the waste unit and to verify that waste unit specific LUCs are not compromised. The roles and responsibilities of the individuals responsible for review and approval of Site Use and Site Clearance permits are detailed in SRS Manual 1D, Procedure 3.02. All employees, contractors, and visitors at SRS are required to adhere to the Site Use Program and the Site Clearance Program.

The USDOE will notify USEPA and SCDHEC in advance of any change to any internal procedure, including the Site Use Program, which would affect implementing or maintaining the LUCs. Approval by USEPA and SCDHEC is required for any modification or termination of the LUCs and implementation actions, and the USDOE must obtain prior approval from USEPA and SCDHEC before taking any anticipated action that may disrupt the effectiveness of the LUCs or alter or negate the need for LUCs. The Site Use Permit and site development maps must be amended when the geographic configuration or buffer zone used to establish the permit boundary changes or there is a change to the land use. The processes are controlled within the SRS Quality

Assurance (QA) Program in accordance with SRS 1Q Manual, *Quality Assurance* (SRS 2007). The SRS QA program governs all SRS activities.

4.4 Physical Access Controls

There are no physical access controls required at the WADB; however, physical access controls are provided at the SRS boundary as mentioned in Table 1, item 5.

4.5 Warning Signs

To prevent unknowing entry and to ensure that unrestricted use of the waste unit does not occur while the unit is under ownership of the USDOE, access control warning signs as shown in Appendix A will be posted at the unit. Installation of the access control warning signs will follow the WADB construction schedule as described in the Corrective Measures Implementation/ Remedial Action Implementation Plan.

Five proposed locations have been selected for the access control warning signs as shown in Figure 4. These locations range between 46-m and 61-m (15-ft and 200-ft) apart from each other and are positioned at likely ingress points. Access to this area is from either of two secondary roads, the Powerline Road (SRS Road 74-28) or an unpaved secondary road that intersects Road B (SRS Road 74-30). Signs along the Powerline Road ingress points will be oriented to the north and signs along SRS Road 74-30 will be oriented to the west. The final placement of the signage will be documented in the PCR/RACR. Waste unit warning signs for SRS are designed to be legible for a distance of at least 7.6 m (25 ft).

Custodial responsibilities for maintenance and inspection of the WADB will be maintained by the SRS Post-Closure Maintenance Group.

4.6 Other Access Controls and Security/Surveillance Measures

While under the ownership of USDOE, access control of the entire SRS will be maintained in accordance with the SRS RCRA Part B Permit Renewal Application, Volume I, Section F.1. This section describes the 24-hour surveillance system (R.61-79.264.14(b)(1)), artificial or natural barriers (R.61-79.264.14(b)(2)(I)), control entry systems (R.61-79.264.14(b)(2)(ii)), and access

control warning signs (R.61-79.264.14(c)) in place at the SRS boundary to comply with the security requirements for a RCRA-permitted facility.

4.7 Field Inspection and Maintenance for Land Use Controls

After remediation of the WADB, only inspection and maintenance activities will be required by this RA. Maintenance activities will be performed for items in Appendix B that are found to be in unsatisfactory condition.

The WADB will be inspected per the Field Inspection Checklist in Appendix B. Due to the low levels of contaminants and their presence within a wetland, field inspections will be performed every five years. Additional inspections may be necessary in the event of unusual weather (e.g., storms with significant wind force or ice storms that could result in tree damage to access control signs) or any other condition warranting inspection. For the WADB, inspections will be performed to ensure that access control signs are in place and are legible.

Any activity that is inconsistent with the LUC objectives or use restrictions, or any other action that may interfere with the effectiveness of the LUCs will be addressed by the USDOE as soon as practicable, but in no case, will the process be initiated later than 10 days after the USDOE becomes aware of the breach. The USDOE will notify USEPA and SCDHEC as soon as practicable but no longer than 10 days after discovery of any activity that is inconsistent with the LUC objectives or use restrictions, or any other action that may interfere with the effectiveness of the LUCs. The USDOE will notify USEPA and SCDHEC regarding how the USDOE has addressed or will address the breach within ten days of sending USEPA and SCDHEC notification of the breach.

The FFA Annual Progress Report, submitted to the regulatory agencies by USDOE, will provide the status of the LUCs and describe how any LUC deficiencies or inconsistent uses have been addressed. In the event of property transfer or lease, the Annual Report will cite findings on the following: whether the use restrictions and controls referenced above were communicated in the deed(s) or lease restrictions; whether property use conforms with the deed or lease restrictions and controls; and whether the owners and state/local agencies have been notified regarding the deed or

lease restrictions and controls. The FFA Annual Progress Report(s) will be used in the preparation of the Five-Year Remedy Review Report(s) to evaluate the effectiveness of the remedy.

All other routine maintenance activities will be documented and maintained in files subject to USEPA and SCDHEC review and audit. A copy of the completed inspection form is maintained in the Environmental Compliance and Area Completion Projects (EC&ACP) Document Control. The LUCs shall be maintained until the concentration of hazardous substances associated with the unit have been reduced to levels that allow for unlimited exposure and unrestricted use.

The waste unit inspectors are to be trained in Hazardous Waste Operations and Emergency Response, RCRA Well Inspections (EC&ACP-specific training), EC&ACP RCRA Waste Unit Inspections, Radiological Worker Training, etc., as applicable for the specific inspection. They will also be trained based on the individual requirements of the regulatory approved closure documents for each waste unit. In addition, the inspectors are to attend yearly refresher courses. Over the years, different personnel may conduct the inspections and maintenance activities.

This unit-specific LUCIP, including the checklist (Appendix B), will be appended to the SRS LUCAP upon final regulatory approval. After completion of the PCR/RACR, the preliminary checklist in the LUCAP will be replaced with the final approved checklist.

This page was intentionally left blank.

5.0 REFERENCES

FFA, 1993. *Federal Facility Agreement for the Savannah River Site*, Administrative Docket No. 89-05-FF (Effective Date: August 16, 1993)

SRNS, 2013. *Focused Corrective Measures Study/Feasibility Study Report for the Wetland Area at Dunbarton Bay in Support of Steel Creek Integrator Operable Unit (U)*, SRNS-RP-2013-00252, Revision 1, Savannah River Nuclear Solutions, LLC, Savannah River Site, Aiken, SC

SRNS, 2018. *Record of Decision Remedial Alternative Selection for the Wetland Area at Dunbarton Bay in Support of Steel Creek Integrator Operable Unit (U)*, SRNS-RP-2013-00730, Revision 1, Savannah River Nuclear Solutions, LLC, Savannah River Site, Aiken, SC

SRS, 2006. SRS Procedure Manual 1D, *Site Infrastructure and Services Manual (U)*, Procedure 3.02, *Site Real Property Configuration Control*, Savannah River Site, Aiken, SC

SRS, 2007. SRS Procedure Manual 1Q, *Quality Assurance (U)*, Savannah River Site, Aiken, SC

USDOE, 1996. *Savannah River Site Future Use Project Report*, Stakeholder-Preferred Recommendations for SRS Land and Facilities, USDOE Savannah River Operations Office, January

USDOE, 1998. DOE Order 430.1A, *Life Cycle Management* (Approved October 14, 1998)

WSRC, 1999. *Land Use Control Assurance Plan for the Savannah River Site*, WSRC-RP-98-4125, Revision 1.1, August 1999, latest update, Savannah River Nuclear Solutions, LLC, Savannah River Site, Aiken, SC

This page was intentionally left blank.

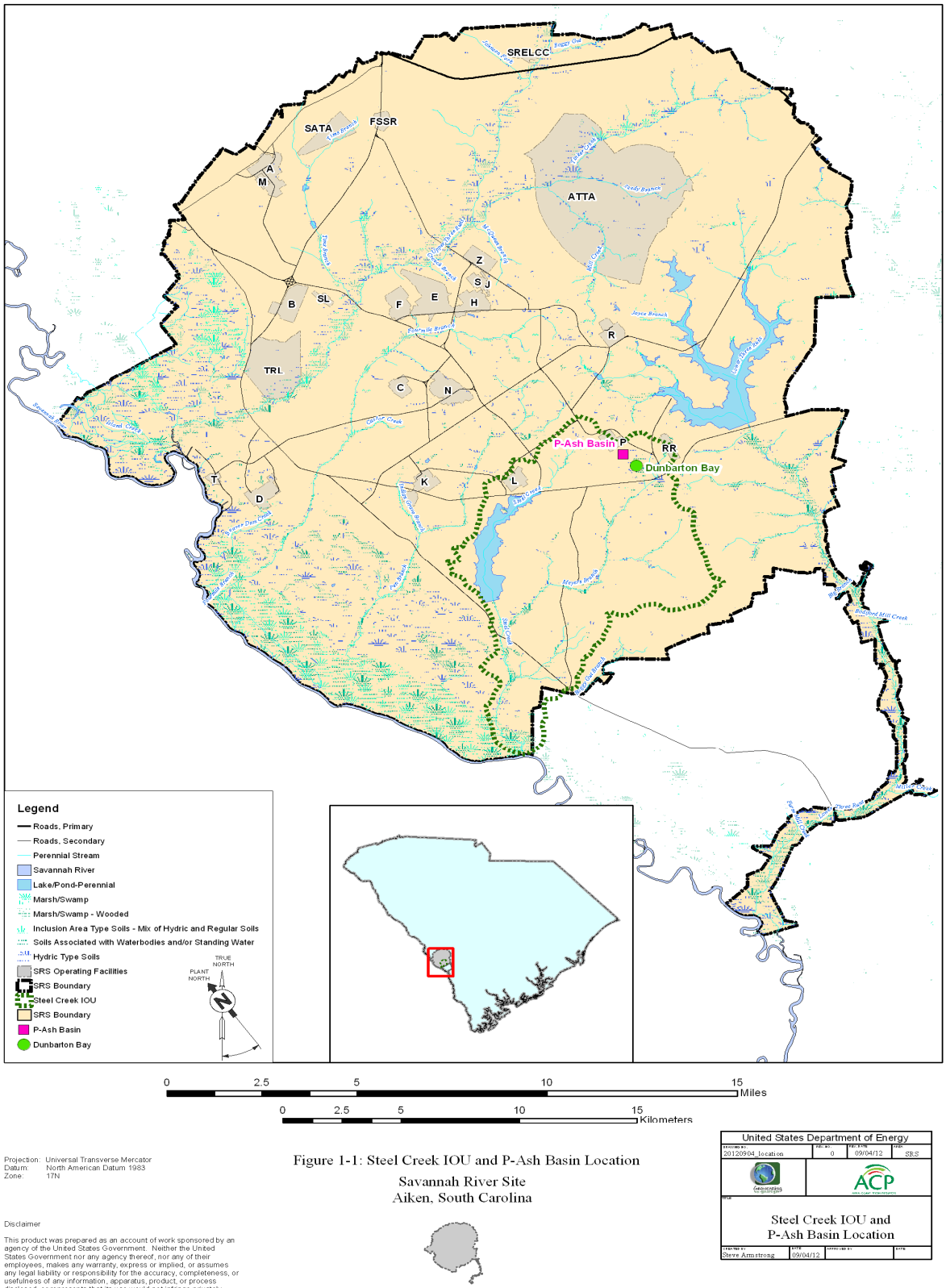


Figure 1-1: Steel Creek IOU and P-Ash Basin Location
Savannah River Site
Aiken, South Carolina

Figure 1. Location of the WADB within the Savannah River Site

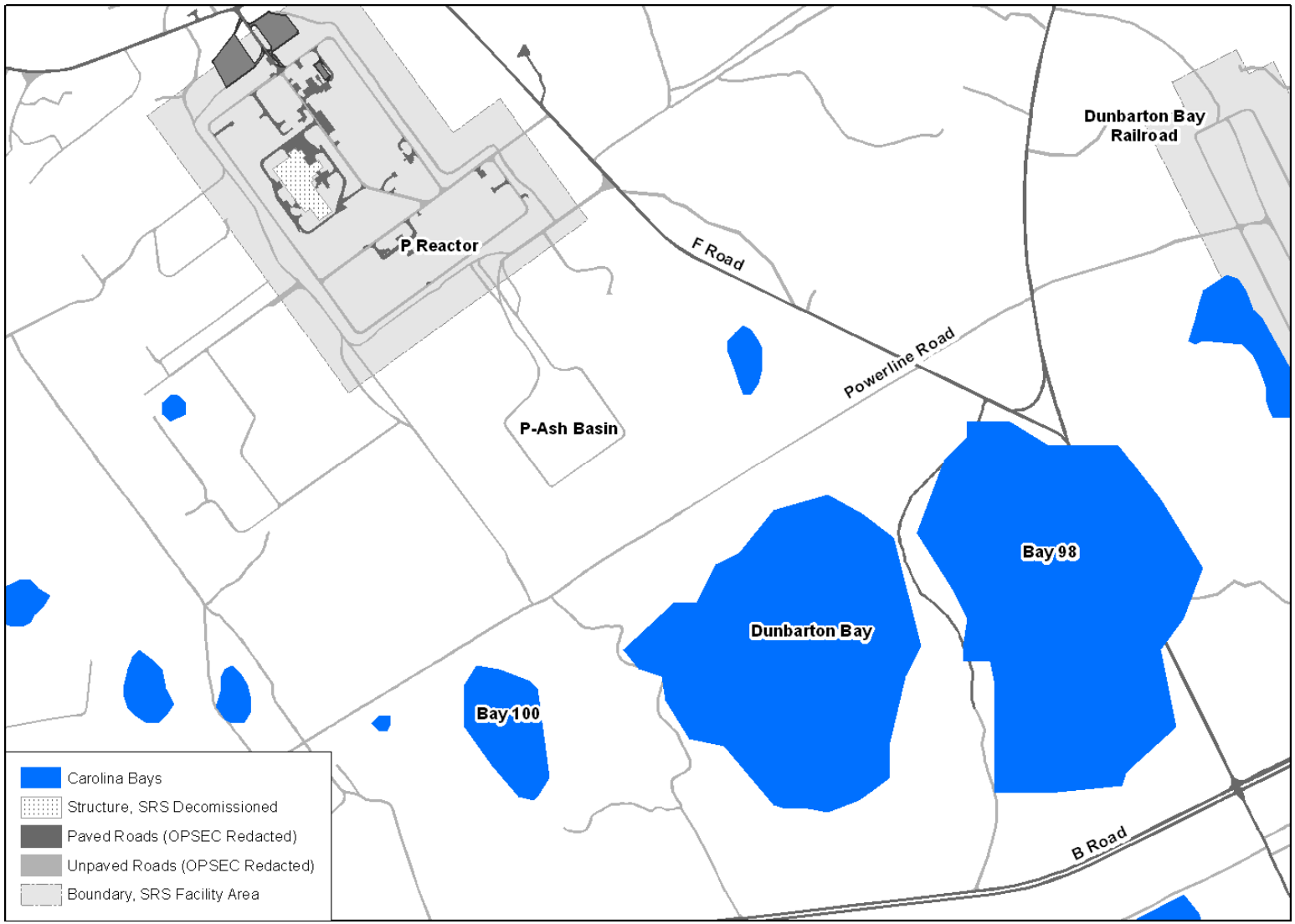
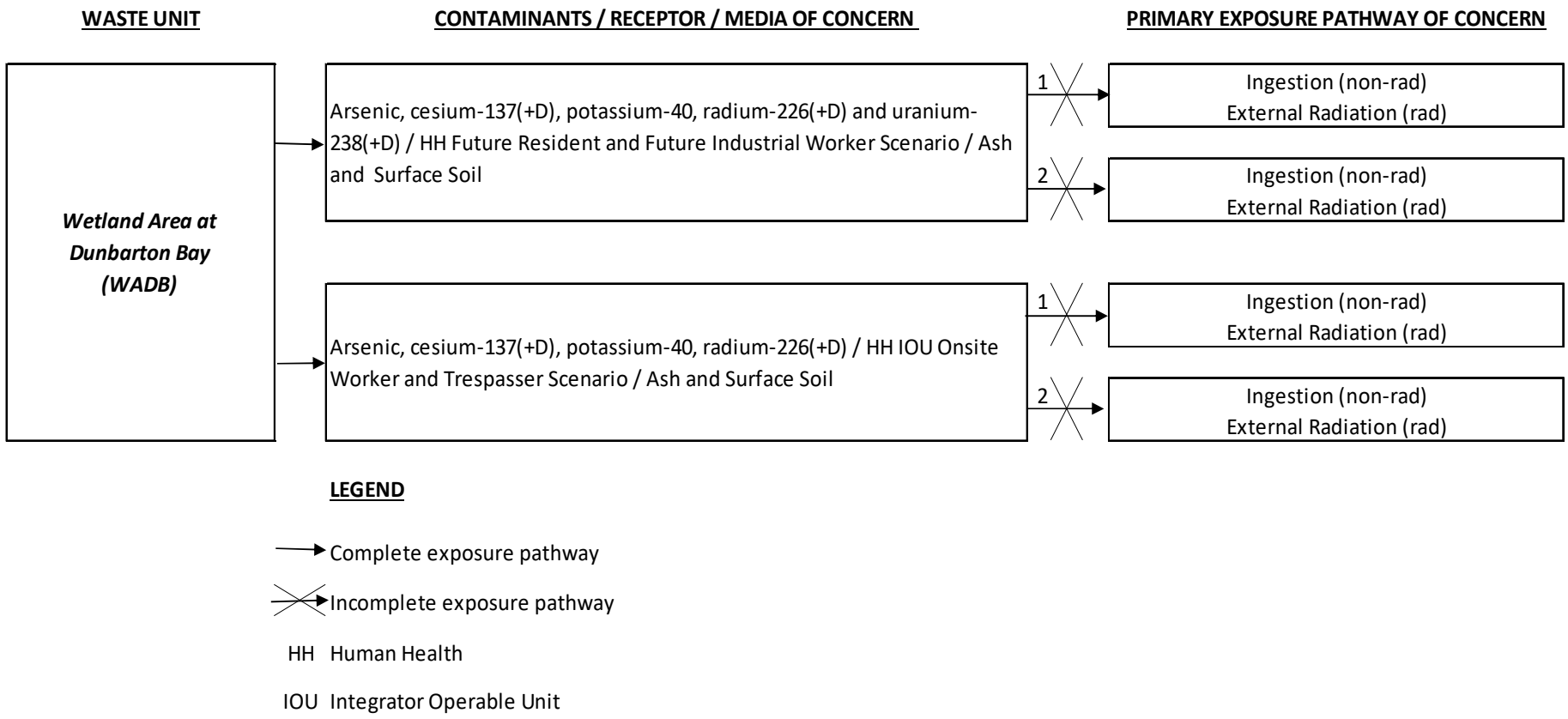


Figure 2. Location of the Carolina Bays Near WADB



1 - Excavation and Disposal of contaminated soil/ash up to 30-m (100-ft) wetland buffer area per the ROD (SRNS 2018a). No LUCs required (unrestricted land use).

2 - LUCs within Dunbarton Bay Wetland and 30-m (100-ft) buffer area per the ROD (SRNS 2018a).

Figure 3. Post-Remedial Action Conceptual Site Model for the WADB

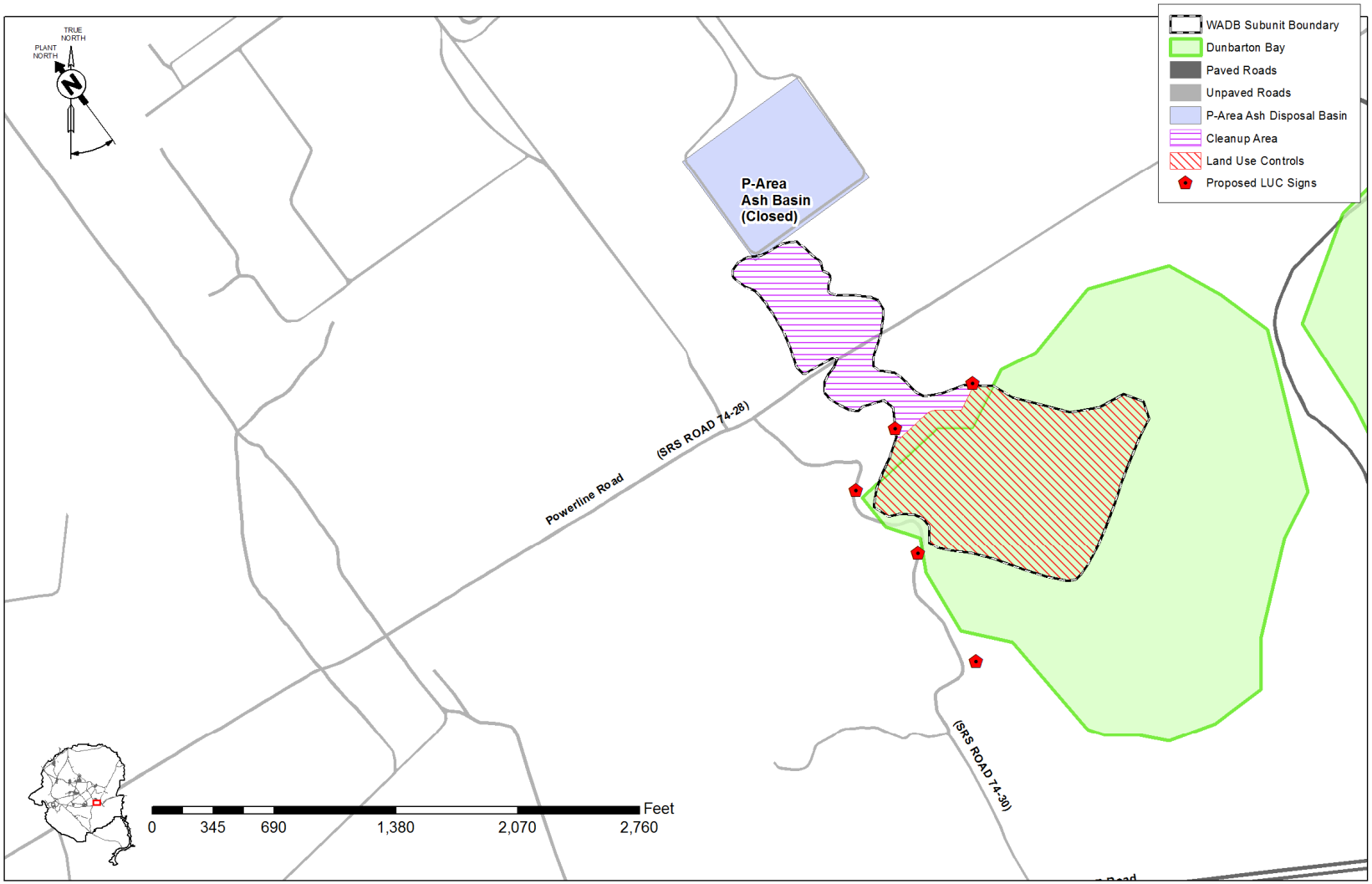


Figure 4. Land Use Control Boundary for the WADB

Table 1. Land Use Controls for the WADB

Type of Control	Purpose of Control	Duration	Implementation	Affected Areas[a]
1. Property Record Notices[b]	Provide notice to anyone searching records about the existence and location of contaminated areas.	Until the concentration of hazardous substances associated with the unit have been reduced to levels that allow for unlimited exposure and unrestricted use.	Notice recorded by USDOE in accordance with state laws at County Register of Deeds office if the property or any portion thereof is ever transferred to non-federal ownership.	Waste management areas under this LUCIP where hazardous substances are left in place at levels requiring land use restrictions.
2. Property record restrictions[c for]: A. Land Use B. Surface Water	Restrict use of property by imposing limitations.	Until the concentration of hazardous substances associated with the unit have been reduced to levels that allow for unlimited exposure and unrestricted use.	Drafted and implemented by USDOE upon any transfer of affected areas. Recorded by USDOE in accordance with state law at County Register of Deeds office.	Waste management areas under this LUCIP where hazardous substances are left in place at levels requiring land use restrictions.
3. Other Notices[d]	Provide notice to county/city about the existence and location of waste disposal and residual contamination areas for zoning/planning purposes.	Until the concentration of hazardous substances associated with the unit have been reduced to levels that allow for unlimited exposure and unrestricted use.	Notice recorded by USDOE in accordance with state laws at County Register of Deeds office if the property or any portion thereof is ever transferred to non-federal ownership.	Waste management areas under this LUCIP where hazardous substances are left in place at levels requiring land use restrictions.
4. Site Use Program[e]	Provide notice to worker/developer) i.e., permit requestor) on extent of contamination and prohibit or limit excavation/penetration activity.	As long as property remains under USDOE control.	Implemented by USDOE and site contractors. Initiated by permit request.	Waste management areas and remediation systems under this LUCIP where hazardous substances are left in place at levels requiring land restrictions.
5. Physical Access Controls[f] (e.g., fences, gates, portals)	Control and restrict access to workers and the public to prevent unauthorized.	Until the concentration of hazardous substances associated with the unit have been reduced to levels that allow for unlimited exposure and unrestricted use.	Controls maintained by USDOE	Security is provided at site boundaries in accordance with SRS procedures. Additional physical access controls, including fencing, is not required at the WADB.

Table 1. Land Use Controls for the WADB *(Continued/End)*

Type of Control	Purpose of Control	Duration	Implementation	Affected Areas[a]
6. Warning Signs[g]	Provide notice or warning to prevent unauthorized uses	Until the concentration of hazardous substances associated with the unit have been reduced to levels that allow for unlimited exposure and unrestricted use.	Signage maintained by USDOE	Warning signs will be posted in accordance with applicable site procedures and will be placed in appropriate areas at the WADB.
7. Security Surveillance Measures	Control and monitor access by workers/public	Until the concentration of hazardous substances associated with the unit have been reduced to levels that allow for unlimited exposure and unrestricted use.	Established and maintained by USDOE. Necessity of patrols evaluated upon completion remedial actions or property transfer.	Patrol of waste management areas under this LUCIP, as necessary.

[a]Affected areas – Specific locations identified in the-specific LUCIP or subsequent post-ROD documents.

[b]Property Record Notices – Refers to any non-enforceable, purely informational document recorded along with the original property acquisition records of USDOE and its predecessor agencies that alerts anyone searching property records to important information about residual contamination; waste disposal areas in the property.

[c]Property Record Restrictions – Includes conditions and/or covenants that restrict or prohibit certain uses of real property and are recorded along with original property acquisition records of USDOE and its predecessor agencies.

[d]Other Notices – Includes information on the location of waste disposal areas and residual contamination depicted on as survey plat, which is provided to a zoning authority (i.e., city planning commission) for consideration in appropriate zoning decisions for non-USDOE property.

[e]Site Use Program – Refers to the internal USDOE/USDOE contractor administrative program(s) that requires the permit requestor to obtain authorization, usually in the form of a permit, before beginning any excavation/penetration activity (e.g., well drilling) for the purpose of ensuring that the proposed activity will not affect underground utilities/structures, or in the case contaminated soil or groundwater, will not disturb the affected areas without the appropriate precautions and safeguards.

[f]Physical Access Controls – Physical barriers or restrictions to entry.

[g]Signs – Posted command, warning or direction.

APPENDIX A

ACCESS CONTROL WARNING SIGNS

Figure A-1. Access Control Warning Sign

This page was intentionally left blank.

APPENDIX B

FIELD INSPECTION CHECKLIST FOR WADB

☐ **SCHEDULED** ☐ **UNSCHEDULED**

A= Satisfactory **X**= Unsatisfactory (Explanation required)	**A** or **X**	Observation of Corrective Action Taken
1. Verify that the roads are accessible.		
2. Verify that the waste unit signs [five signs] are in acceptable condition, have the correct information, and are legible from a distance of 25 feet.		
3. Verify that there are no excavation, digging, or construction activities in the area.		

Inspected by:

_____/_____ Date:_____
(Print Name) (Signature)

Post-Closure Manager:

_____/_____ Date:_____
(Print Name) (Signature)

CAUTION: The inspector shall notify the Post-Closure Manager and Environmental Compliance Authority **IMMEDIATELY** if there has been a breach or compromise of the land use controls of this waste unit. The notification shall be in accordance with SRS post-closure inspection procedures.

This page was intentionally left blank.