LUCIP for the
D-Area Oil Seepage Basin, 631-G

Appendix B of *Corrective Measures Implementation/Remedial Design/Remedial Design Report/Remedial Action Workplan for the D-Area Oil Seepage Basin, 631-G*
(WSRC-RP-99-4006, Revision 1, August 1999)

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APPENDIX B LAND USE CONTROL IMPLEMENTATION PLAN (LUCIP)

LAND USE CONTROL IMPLEMENTATION PLAN (LUCIP)

The D-Area Oil Seepage Basin (D-Area OSB) LUCIP will be appended to the Savannah River Site (SRS) Land Use Control Assurance Plan (LUCAP).

Remedy Selection

The D-Area OSB was constructed in 1952 as a series of unlined trenches for disposal of waste oil products, from D Area and other areas at SRS, which were unacceptable for incineration in the 400-D powerhouse boilers. As the trenches filled, the waste oils along with general office and cafeteria waste, were occasionally ignited. The practice of open burning was a common practice at SRS until 1973 when it was stopped site-wide. In 1975 the basin was removed from service and was backfilled with soil.

The basin remained inactive and covered with natural vegetation, including bushes and grasses, until 1996, when an interim remedial action (IRA) was implemented. During the IRA, the trench area was excavated and drums and debris were removed along with any obviously contaminated soils. The surface soils were carefully removed and stockpiled so that these clean soils could be replaced on the surface at the end of the remedial action. Soil removed from the trenches that were not obviously contaminated was returned to the excavation, with the soil removed from the bottom of the trenches replaced first, and the remaining soils replaced as close to their original location as possible.

At the close of the IRA, the contractor installed two horizontally oriented, perforated pipes along the length of the former waste unit for technology testing (bioventing) purposes. These pipes were used to force fresh air, nutrients, and tracers into the soils at a depth of about 2.4 m (8 ft) in order to volatilize the constituents in the soil, enhance

the aerobic degradation of the constituents in the soil, and monitor the effectiveness of the treatment program (WSRC 1997b, c, d, e).

The selected remedy for shallow soil, surface water, and sediment is no action because no constituents of concern (COCs) in those media were identified in the RCRA Facility Investigation/Remedial Investigation (RFI/RI) Report and Baseline Risk Assessment. The selected remedy for the D-Area OSB deep soils is no further action since Remedial Action Objectives (RAOs) have been achieved by the IRA and biovent testing.

The selected remedy for D-Area OSB groundwater is Natural Attenuation/Groundwater Mixing Zone (GWMZ) with Institutional Controls. Under this alternative, natural attenuation mechanisms such as biodegradation, flushing, volatilization, adsorption, and hydrolysis would continue to reduce contaminant concentrations in the groundwater to acceptable levels. Results from the bioventing study, conducted as part of the IRA, indicate that the source of contaminated soils at the D-Area OSB has been removed and the soil will no longer contribute to any additional groundwater contamination. Evidence indicating that natural attenuation processes are occurring in the D-Area OSB groundwater was presented in the RFI/RI Report and Baseline Risk Assessment and included: (1) decreased dissolved oxygen levels in the groundwater, which indicates that microorganisms are utilizing a combination of the contaminants as carbon source and oxygen within the groundwater as an oxygen source to produce energy, (2) elevated chemical oxygen demand, chloride, and sulfate levels downgradient, (3) depressed pH levels in contaminated areas, and (4) presence of breakdown products.

The D-Area OSB is in an industrial use zone, as identified in Figure 3.3 of the SRS Federal Facility Agreement (FFA) Implementation Plan (WSRC 1996a), for both current and anticipated future land use. The D-Area OSB currently meets unrestricted land use criteria for soils, sediment, and surface water. Groundwater beneath the unit

exceeds the maximum contaminant levels (MCLs). Although institutional controls are included in all of the alternatives (except no-action alternative), the Department of Energy (US DOE) has recommended that residential use of SRS land in the vicinity of D Area be prohibited (US DOE 1996); therefore, future residential use and potential residential water usage in this area is unlikely. Modeling of groundwater transport processes as part of the evaluation of the remedial alternatives indicates that MCLs for the contaminants of concern will be achieved in all areas of the D-Area OSB groundwater after approximately 10 years. Once remediation is complete, institutional controls will no longer be needed.

Land Use Controls

Implementation of this alternative will require near-term institutional control measures. For D-Area OSB, the land use control (LUC) objective necessary to ensure protectiveness of the preferred alternative is to prevent unauthorized access to the D-Area OSB contaminated groundwater plume.

The institutional controls required to prevent unauthorized exposure to the contaminated groundwater at the D-Area OSB include the following:

- Controlled access to the D-Area OSB through existing SRS security gates and SRS perimeter fences and the site use/site clearance programs

- Site control of installation of groundwater wells through existing site procedures

This action is expected to remediate groundwater to below MCLs within 10 years. SRS does not expect any land transfer at this location prior to achievement of the RGOs. Consistent with the No Action and No Further Action decisions for the source unit, a certified survey plat of the source unit and deed restriction will not be required because the source unit meets unrestricted land use requirements, and there is no waste

left in place. A certified survey plat of the groundwater mixing zone boundary has been prepared by a registered land surveyor and is included in this document as Attachment B

If the D-Area OSB is transferred to non-federal ownership prior to remediation of the groundwater to the MCLs for the COCs, reevaluation of the need for deed restriction would be performed through an amended Record of Decision (ROD) with the U. S. Environmental Protection Agency (US EPA) and the South Carolina Department of Health and Environmental Control (SCDHEC) approval. These actions will also be evaluated to ensure compliance with CERCLA 120(h).

In the event that the D-Area OSB is transferred to non-Federal ownership after remediation of the groundwater to meet the MCLs for the COCs, deed notification requirements pursuant to CERCLA 120(h) will be completed. These actions will include a deed notification disclosing former waste management and disposal activities, as well as any remedial actions taken at the waste unit.

Deed Notification

A deed notification shall be filed in the appropriate county records in accordance with CERCLA 120(h), which requires the government to create a deed when land on which any hazardous substance was stored, released, or disposed is transferred to non-federal ownership. The transference of the D-Area OSB prior to the achievement of MCLs is unlikely. In the event the property is transferred prior to completion of the remedial action, a deed notification will be filed with Aiken County. Per CERCLA 120(h)(3)(A), the deed shall contain, to the extent practical, such information as is available based on the complete search of agency files, including the following:

- A notice of the type and quantity of such hazardous substances;

- Notice of the time at which such storage, release, or disposal took place;

- A description of the remedial action taken, if any.

Per CERCLA 120(h)(3)(B), the deed shall also contain a covenant warranting that:

- All remedial action necessary to protect human health and the environment with respect to any such substance remaining on the property has been taken before the date of such transfer;

- Any additional remedial action found to be necessary after the date of such transfer shall be conducted by the United States Government;

- A clause granting the United States Government access to the property in any case in which remedial action or corrective action is found to be necessary after the date of such transfer.

Access Controls

On-Site Workers

In accordance with WSRC 1D, *Site Infrastructure and Services Manual*, Procedure 3.02, *Site Real Property Configuration Control* (WSRC 1996b), use of all lands and waters on the SRS shall be coordinated via the Site Use Program. No use of land (i.e., excavation or any other land use) shall be undertaken without prior approval documented by a Site Use Permit. Also, in accordance with Procedure 3.02, all work at SRS that adds to or modifies features or facilities portrayed on the SRS development maps (i.e., plot plans of facilities/utilities at SRS) is authorized by a Site Clearance Permit before any excavation activities. All Site Clearance requests are reviewed to verify that either an approved Site Use Permit has been obtained or that an existing Site

Use Permit has sanctioned the request. Verification of US DOE approval for intended land use must be obtained before issuance of a Site Clearance Permit. The Site Use and Site Clearance processes are applicable to all activities and personnel on site (including subcontractors). The processes are controlled within the SRS Quality Assurance Program.

Trespassers

Additionally, while under the ownership of the US DOE, access control of the entire SRS will continue to be maintained in accordance with the 1992 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 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.