LUCIP for the
A-Area Burning/Rubble Pits, 731-A and -1A
and A-Area Rubble Pit, 731-2A

Appendix A of Post-Construction Report for the A-Area Burning/Rubble Pits, 731-A and –1A and A-Area Rubble Pit, 731-2A

WSRC-RP-2003-4019, Revision.1, July 2003

This page was intentionally left blank.

Appendix A

Significant Reference Document

Unit-Specific Land Use Control Implementation Plan

for the A-Area Burning/Rubble Pits (731-A/1A) and Rubble Pit (731-2A)

APPENDIX A

LUCIP

A-Area Burning/Rubble Pits and Rubble Pit

Land Use Control Implementation Plan (LUCIP)

The A-Area Burning/Rubble Pits and Rubble Pit (ABRP) LUCIP will be appended to the Savannah River Site (SRS) Land Use Control Assurance Plan (LUCAP) which has been approved by the USDOE, USEPA, and SCDHEC.

Remedy Selection

The ABRP is located in the northwest portion of SRS, approximately 2.4 kilometers (1.5 miles) south of the A/M Area operations and 4.8 kilometers (3 miles) east of the SRS boundary (Figure A-1). The ABRP is located in the Upper Three Runs Creek Watershed and is situated on the west side of Road C-1, a dirt road (Figure A-1). Due to the receipt of waste from A/M Area, the ABRP is being addressed in the SRS Resource Conservation and Recovery Act/Comprehensive Environmental Response, Compensation, and Liability Act (RCRA/CERCLA) program.

Between 1951 and 1973, Pits 731-A and 731-1A were used to burn paper, plastics, wood, rubber, rags, cardboard, oil, degreasers, and solvents. Combustible materials were burned monthly. Pit 731-2A was only used as a rubble pit. After burning was discontinued in 1973, Pits 731-A and 731-1A were also converted to rubble pits and used to dispose of concrete rubble, bricks, tile, asphalt, plastics, metal, wood products, and rubber. When the pits were filled to capacity, they were covered with compacted clay-rich native soils and vegetation was established. The actual closing date is not recorded. However, the

estimated time is 1978. After the last use of Pit 731-2A in 1983, the area was backfilled and seeded.

Ground penetrating radar data show the two Burning/Rubble Pits (731-A/1A) to be approximately 22 feet wide, 9 to 10 feet deep and 250 feet in length. The arial dimensions of the Rubble Pit (731-2A) are believed to be approximately 40 feet (width) by 650 feet (length); the depth is not known, but is suspected to be up to 20 feet. The Pits Area is defined as Pits 731-A, 731-1A, and 731-2A.

Two other areas within the operable unit (OU) were investigated. The first area (designated as the "Potential Pit") has been tentatively identified approximately 500 feet east of the Pits Area (Figure A-1). The Potential Pit was identified based on physical evidence (depression and subsidence) along the ground surface and interviews with SRS personnel. The second area (designated as the "Depressional Area" due to its lower elevation) is located approximately 300 feet east of the Potential Pit (Figure A-1). No specific disposal records or historical use information is available for the Potential Pit or the Depressional Area. The Land Use Controls (LUCs) do not apply to this Potential Pit and Depressional Area.

The IAPP was submitted in accordance with the Federal Facility Agreement (FFA) and the approved implementation schedule, and was approved by the United States Environmental Protection Agency (USEPA) and the South Carolina Department of Health and Environmental Control (SCDHEC) on December 6, 1999. The IROD documented the selected remedial action and was approved by USEPA on May 25, 2000 and SCDHEC on May 24, 2000.. In summary, the ABRP surface soils contaminated with benzo(a)pyrene will be covered with a one-foot soil cover. The groundwater will be treated using AS combined with passive/active soil vapor extraction.

The combination of alternatives for soil cover, groundwater remediation, and institutional controls is intended to be an interim action for the ABRP OU as a whole, to reduce risk to

human health and the environment. However, the selected alternative for the soils represents a final action because it will meet the final remedial action objective (RAO) and final remedial goal (RG) established in the IROD. An interim action for this OU was chosen because of the uncertainty of the groundwater remediation within the overall unit remediation strategy. The uncertainty in the groundwater remediation strategy is based on 1) possible discontinuities within the confining unit that separates the M-Area aquifer zone from the underlying uppermost confined aquifer (Lost Lake), and therefore the potential for contamination of the underlying Lost Lake aquifer; 2) a volatile organic compound (VOC) groundwater plume located upgradient from the ABRP. The groundwater plume is associated with the M-Area Hazardous Waste Management Facility (HWMF) (a facility closed under RCRA and undergoing corrective action for the contaminated groundwater associated with that unit). Since the plume is moving in the general direction of the ABRP, it is not clear whether it may represent a future VOC source relative to the ABRP groundwater. An interim action for the ABRP groundwater subunit will allow an early start for remedial activities while generating additional data on the nature and extent of the groundwater interactions between the ABRP and A&M Area. These data will assist in development of the final groundwater RGs. The rationale for the proposed groundwater interim action is centered on remediating the "hot spot" portion of the groundwater plume.

The vadose zone remediation was added to the interim groundwater remedial strategy due to the discovery of VOC contamination beneath the "trench/pit". Some uncertainty also exists with respect to the vadose zone remediation strategy. The uncertainty in the vadose zone remediation strategy is based on 1) the implementation of the new microblower technology which has limited performance data in this type of application and 2) the extent of contamination in the trench/pit area. Evaluation of a full range of alternatives for vadose zone and groundwater remediation will be included in the final CMS/FS.

According to the *Savannah River Site Future Use Report* (USDOE 1996), the ABRP OU is located in an area designated for future residential use. However, due to the proximity of the ABRP OU to the A-Area Ash Pile, the two Materials Storage Areas (temporarily stored petroleum-contaminated soil), and the A/M and B-Area industrial zones, future industrial land use is the most likely scenario. The ABRP will not meet unrestricted land use criteria for soils following the soil cover detailed in the Interim Corrective Measures Implementation/ Remedial Action Implementation Plan (ICMI/RAIP). Groundwater beneath the unit exceeds the maximum contaminant levels (MCLs). Although institutional controls are included in all of the alternatives, the United States Department of Energy (USDOE) has recommended that residential use of SRS land in the vicinity of ABRP be controlled; therefore, prohibition of future residential use and potential residential water usage and other controls will be taken to ensure long-term protectiveness in this area (USDOE 1996).

A post-construction conceptual site model (CSM) for the ABRP, which illustrates the broken pathways after implementation of the remedy, is included as Figure A-2.

Land Use Controls

Institutional controls are intended to be an alternative that maintains control of the area and that is protective of human health and the environment. Implementation of this alternative will require some near-term actions.

For the ABRP, the land use control (LUC) objective necessary to ensure protectiveness of the preferred alternative is:

- Prevent direct contact with BaP-contaminated surface soils, such that the constituents of concern (COCs) are not a continued significant risk to human health.

- Prevent direct contact with the vadose zone and groundwater during the groundwater interim remedial action.

The institutional controls required to prevent unauthorized exposure to the contaminated media at the ABRP include the following:

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

- Signs posted in the area to indicate that waste remains in the vicinity of the ABRP above levels allowing for unrestricted land use and to contact the waste unit custodian prior to entry, and

- Notification of residual hazardous waste to any future landowner through deed notification, as required under CERCLA Section 120(h).

Figure A-1 shows the location of the ABRP OU and the SRS coordinates of the ABRP OU.

In the long term, if the ABRP OU is transferred to non-federal ownership, the need for deed restriction will be evaluated and performed through an amended ROD with USEPA and SCDHEC approval and actions taken pursuant to CERCLA 120(h). The actions will include a deed notification disclosing former waste management and disposal activities, as well as any remedial actions taken at the waste unit. The deed notification will, in perpetuity, notify any potential purchaser that the property has been used for the management and disposal of waste and other materials, including hazardous substances. At this time, RCRA deed notification requirements are not required for this waste unit since this is an interim action. The deed, if necessary, would include restrictions precluding residential use of the property. The need for deed restrictions may be re-evaluated at the time of transfer in the event exposure assumptions differ and/or

contamination no longer poses an unacceptable risk under residential use. Proposed changes in deed restrictions will require USEPA and SCDHEC review and approval. The survey plat will be reviewed and updated, as necessary, at the time the site is transferred and will be recorded with the Aiken County recording agency. This proposal is consistent with USEPA guidance and is an effective use of risk management principles.

The elements of the institutional control corrective action, which consists of land restrictions without any engineering controls, are composed of deed notifications when the parcel is transferred from USDOE ownership, access controls that include posting of identification signs, and field walkdowns for general site conditions. These land use controls will be implemented in perpetuity for this OU.

Each element of the institutional controls corrective action is discussed below.

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 ABRP OU is unlikely. In the event the property is transferred, 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; and
- 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, and

- 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.

At this time, RCRA permit requirements are not applicable for this waste unit since this is an interim action.

Access Controls

On-Site Workers

In accordance with WSRC 1D, *Site Infrastructure and Services Manual*, Procedure 3.02, *Site Real Property Configuration Control*, 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 USDOE 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.

The SRS identifies all buildings and facilities on maps used in the Site Use/Site Clearance Program and includes a 200-foot buffer zone around each facility. This waste unit is identified on these maps as a CERCLA facility.

Any work proposed in these areas will be strictly controlled and workers will be appropriately trained and briefed about health and safety requirements if work is deemed necessary for maintenance. Any changes in the use or disturbance of the ABRP will be cleared with the USEPA and SCDHEC before disturbance occurs. To prevent unknowing entry and to ensure that unrestricted use of the waste unit does not occur while under ownership of the government, identification signs will be posted. The signs will be legible from a distance of at least 25 feet. See Figure A-1 for locations of the signs. The signs will read:

A-Area Burning/Rubble Pits (731-A/1A) and Rubble Pit (731-2A)

"Danger – Unauthorized Personnel Keep Out.

This unit contains hazardous substances. Do not dig or excavate.

Do not enter without contacting the waste site custodian."

Custodian: Manager, Post Closure Maintenance
Phone: (803) 952-6882

Site-specific controls (i.e., fences) are not required for ABRP OU since the exposure to the casual worker or trespasser does not warrant this level of protection.

Trespassers

Additionally, while under the ownership of the USDOE, 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.

Field Walkdowns and Maintenance for Institutional Controls

"Monitoring" will be performed to verify that LUCIP requirements are met. Semi-annual monitoring of the ABRP OU, 731-A/1A and 731-2A, will be conducted for items such as accuracy and legibility of signs, visible subsidence or erosion of the waste unit, proper vegetative growth, mowing, etc. Subsidence or erosion will be corrected by backfilling the affected area with clean soil and seeding the area to prevent further erosion. USEPA and SCDHEC will be notified of the results of any inspection, event, and/or action that could indicate some potential compromise of institutional controls within 30 days of identification and will be documented in the Federal Facility Agreement Annual Progress Report. All other routine maintenance activities (i.e., mowing, etc.) will be documented and maintained in files that are subject to USEPA and SCDHEC review and audit. A copy of the completed inspection form is maintained in the Environmental Restoration Division administrative record files.

Inspections at the ABRP will be performed to ensure that institutional controls remain protective and consistent with all remedial action objectives. Semi-annual inspections will be conducted. The A-Area Burning/Rubble Pits (731-A/1A) and Rubble Pit (731-2A) Inspection Sheet is included in Appendix A (Figure A–3).

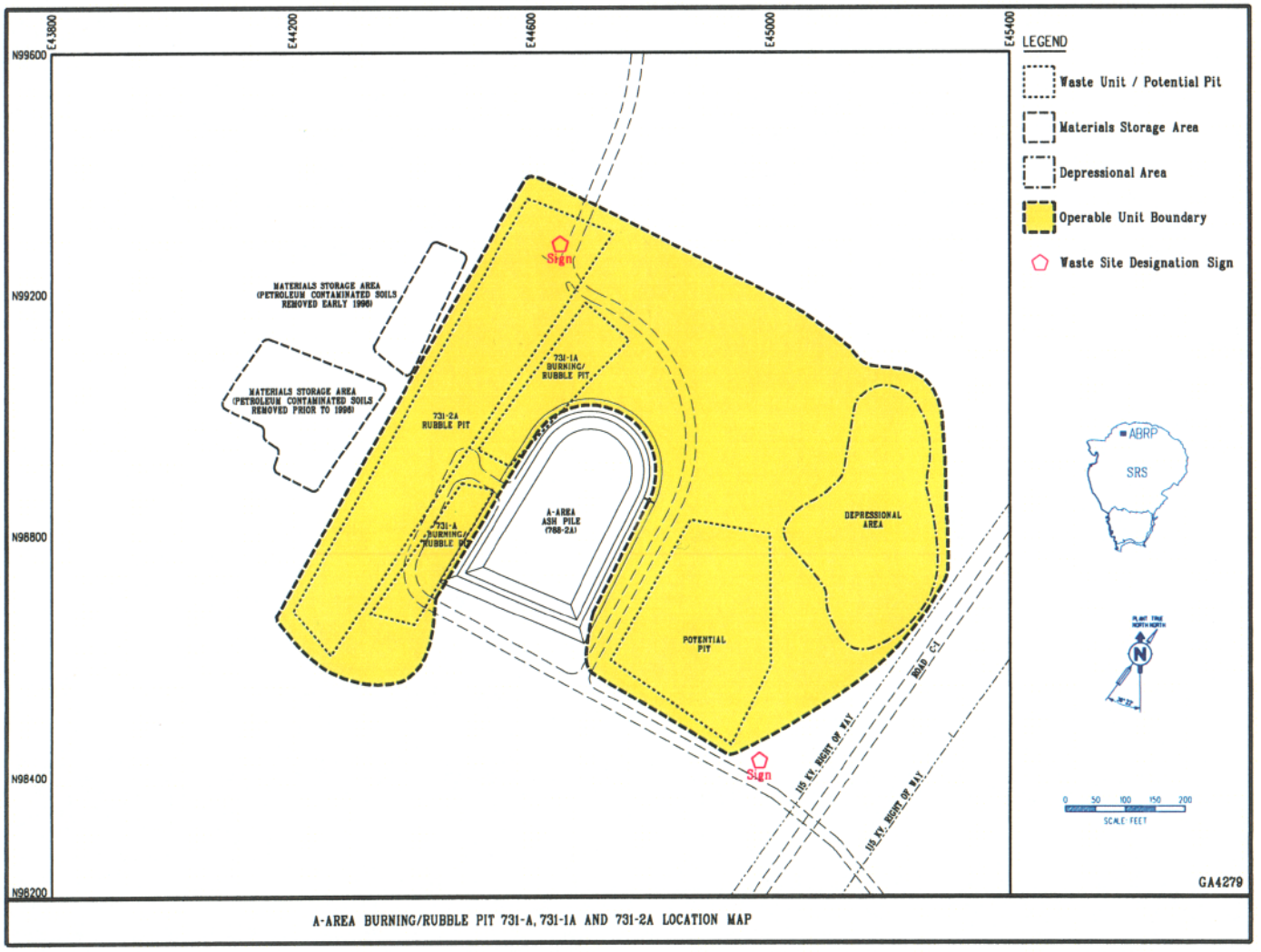


Figure A-1. The A-Area Burning/Rubble Pits (731-A/1A) and Rubble Pit (731-2A) Operable Unit

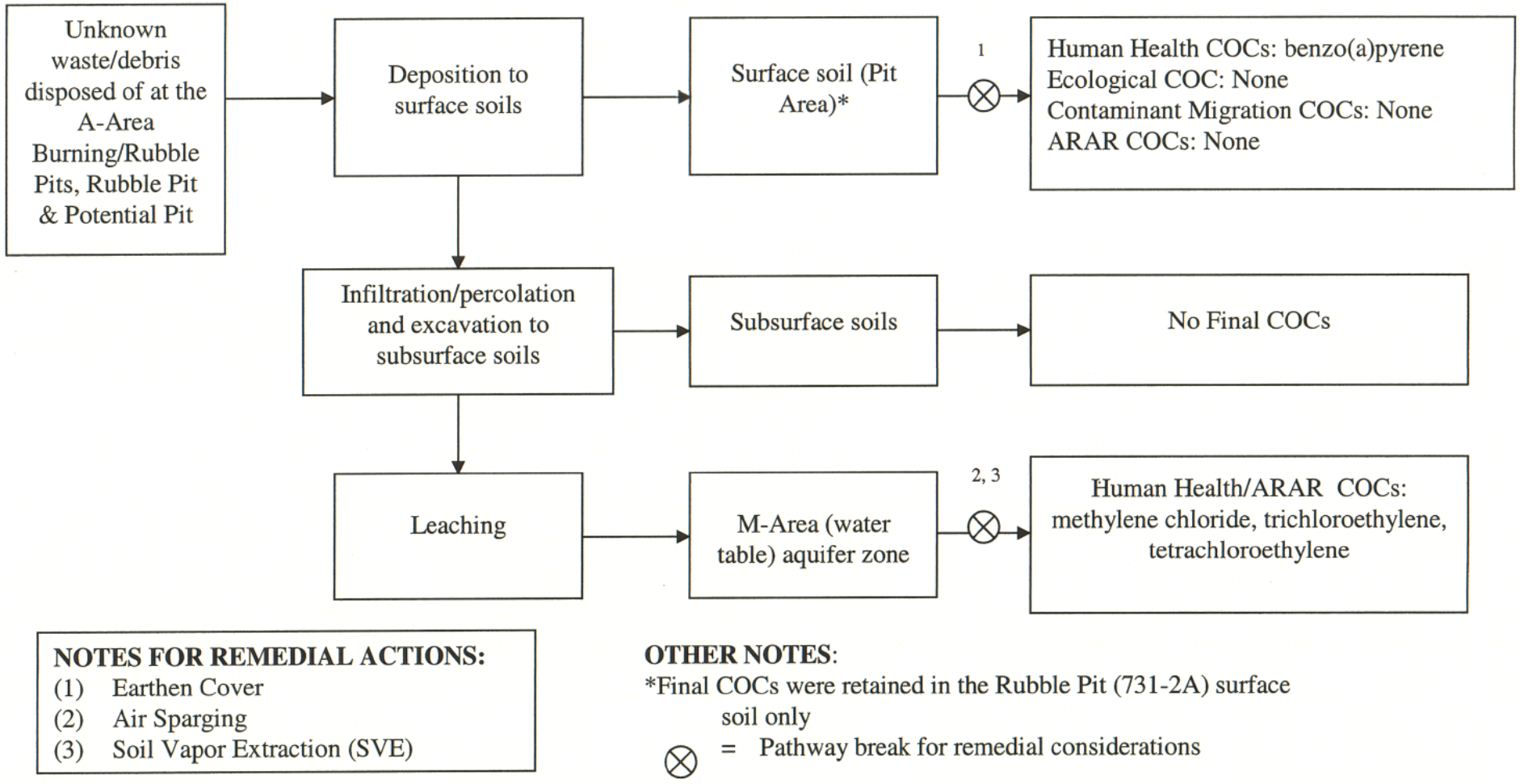


Figure A-2. Simplified Conceptual Site Model (CSM) for the A-Area Burning/Rubble Pits (713-A/1A) and Rubble Pit (731-2A) Operable Unit

ABRP (731-A/1A/2A) INSPECTION SHEET

A = Satisfactory X = Unsatisfactory (Explanation Required)	A or X	Observation or Corrective Action Taken
1. Verify that there is no excavating, digging or construction activity on the soil cover.		
2. Verify that there is no woody vegetation growing on the soil cover. Remove or identify as needed.		
3. Visual check vegetative cover for grass density, with no bare spots no more than 9 square feet in area. The height of the vegetation cover should not impair the visual inspection of the soil cover. This will be determined by the inspector.		
4. Verify the condition of the roads to the well sites and waste unit is adequate.		
5. Does unit show signs of erosion or subsidence?		
6. Are there any signs of burrowing animals (holes)?		
7. Verify condition of drainage ditches and sediment for presence of excessive erosion, sediment buildup, and any debris restricting water flow.		
8. Inspect general condition of site (housekeeping)		
9. Verify that the signs are correct and legible from a distance of at least 25 feet.		
10. Comments/Other		

CAUTION: The inspector shall notify the Post-Closure Manager and Environmental Compliance Authority **IMMEDIATELY** if there has been a breach or compromise of the institutional controls of this Waste Unit. Refer to Procedure SOP-019.

Inspected By:_____/_____Date:_____
(Print Name) (Signature)

Reviewed By:_____/_____Date:_____
Post-Closure Manager (Print Name) (Signature)

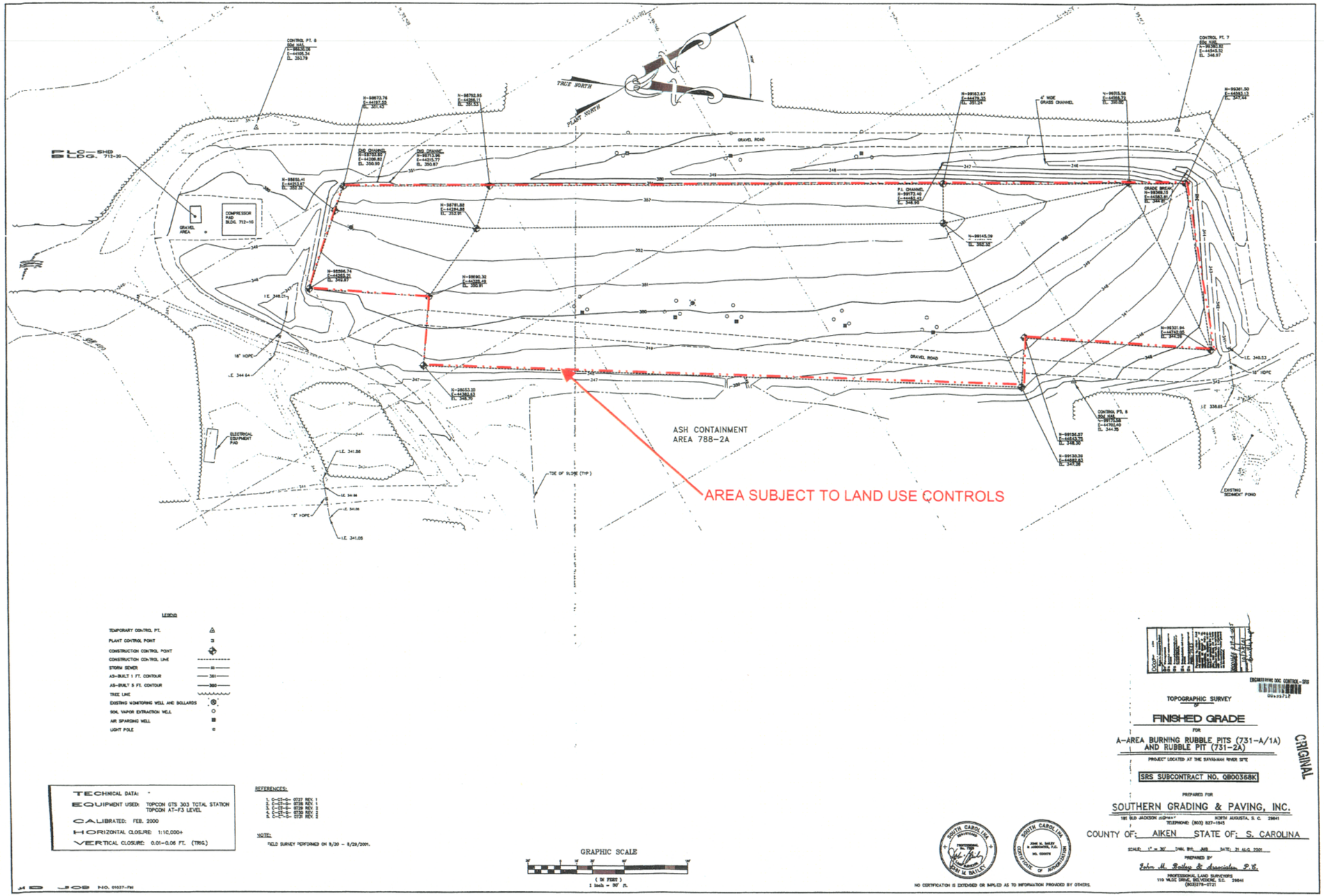
Figure A-3. Inspection Sheet

This page intentionally left blank

Attachment 1

Survey Plat

This page intentionally left blank


TRUE NORTH
PLANT NORTH
GRAVEL ROAD
ASH CONTAINMENT
AREA 788-2A
AREA SUBJECT TO LAND USE CONTROLS
TOPOGRAPHIC SURVEY
FINISHED GRADE
A-AREA BURNING RUBBLE PITS (731-A/1A)
AND RUBBLE PIT (731-2A)
SRS SUBCONTRACT NO. QB00368K
SOUTHERN GRADING & PAVING, INC.
COUNTY OF: AIKEN STATE OF: S. CAROLINA
ORIGINAL
GRAPHIC SCALE
TECHNICAL DATA:
EQUIPMENT USED: TOPCON GTS 303 TOTAL STATION
TOPCON AT-F3 LEVEL
CALIBRATED: FEB. 2000
HORIZONTAL CLOSURE: 1:10,000+
VERTICAL CLOSURE: 0.01-0.06 FT. (TRIG.)
REFERENCES:
NOTE:
FIELD SURVEY PERFORMED ON 8/20 - 8/29/2001.
NO CERTIFICATION IS EXTENDED OR IMPLIED AS TO INFORMATION PROVIDED BY OTHERS.