

## Statement of Work

Project No. 23350

# Statement of Work for the Remedial Action of Contaminated Soil Sites at Waste Area Groups 1,3,4, and 5

Prepared for:  
U.S. Department of Energy  
Idaho Operations Office  
Idaho Falls, Idaho



**Statement of Work for the Remedial Action of  
Contaminated Soil Sites at Waste Area  
Groups 1,3,4, and 5**

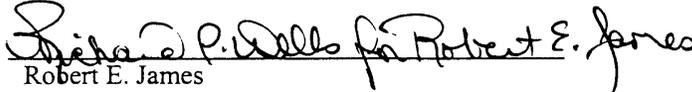
SOW-691  
Revision 1

June 2003

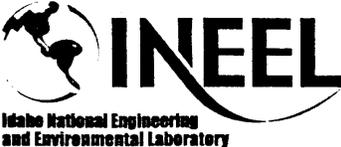
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## 1. SCOPE

### 1.1 Introduction

The Idaho National Engineering and Environmental Laboratory (INEEL) is a U.S. Department of Energy (DOE)-managed reservation that historically has been devoted to energy research and related activities. Facilities at the INEEL were dedicated to the development and testing of peaceful applications for nuclear power. Throughout the 50 years of INEEL operations, disposal practices have been implemented in compliance with state and federal regulations and policies established by DOE and its predecessors. Contaminated structures and environmental media, such as soil and water, are the legacy of some historical disposals. Occasional accidental releases have also occurred over time. In keeping with the contemporary emphasis on environmental issues, INEEL research is now focused on environmental restoration to address these contaminated media and waste management issues to minimize additional contamination from current and future operations.

This Statement of Work (SOW) defines the scope, requirements, and schedule for performing the remedial action of the contaminated soils at the INEEL in support of the Environmental Restoration (ER) mission (Figure 1). The Subcontractor will excavate, load, and transport the contaminated soils from the various sites to the INEEL Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Disposal Facility (ICDF) located outside the fence of the Idaho National Technology and Engineering Center (INTEC) at the INEEL. Soil volumes listed are estimates based upon the best available information. Actual volumes may vary depending on conditions encountered in the field.

The *Statement of Work for the ICDF Complex Implementation Project* (INEEL 2003a) defines the scope, requirements, and schedule to (1) record, track, treat, and place contaminated waste into the ICDF landfill; (2) transfer liquid waste and leachate into the evaporation pond and track, record, and manage the respective waste; (3) provide overall site maintenance, surveillance, and management; and (4) construct the second cell of the ICDF landfill.

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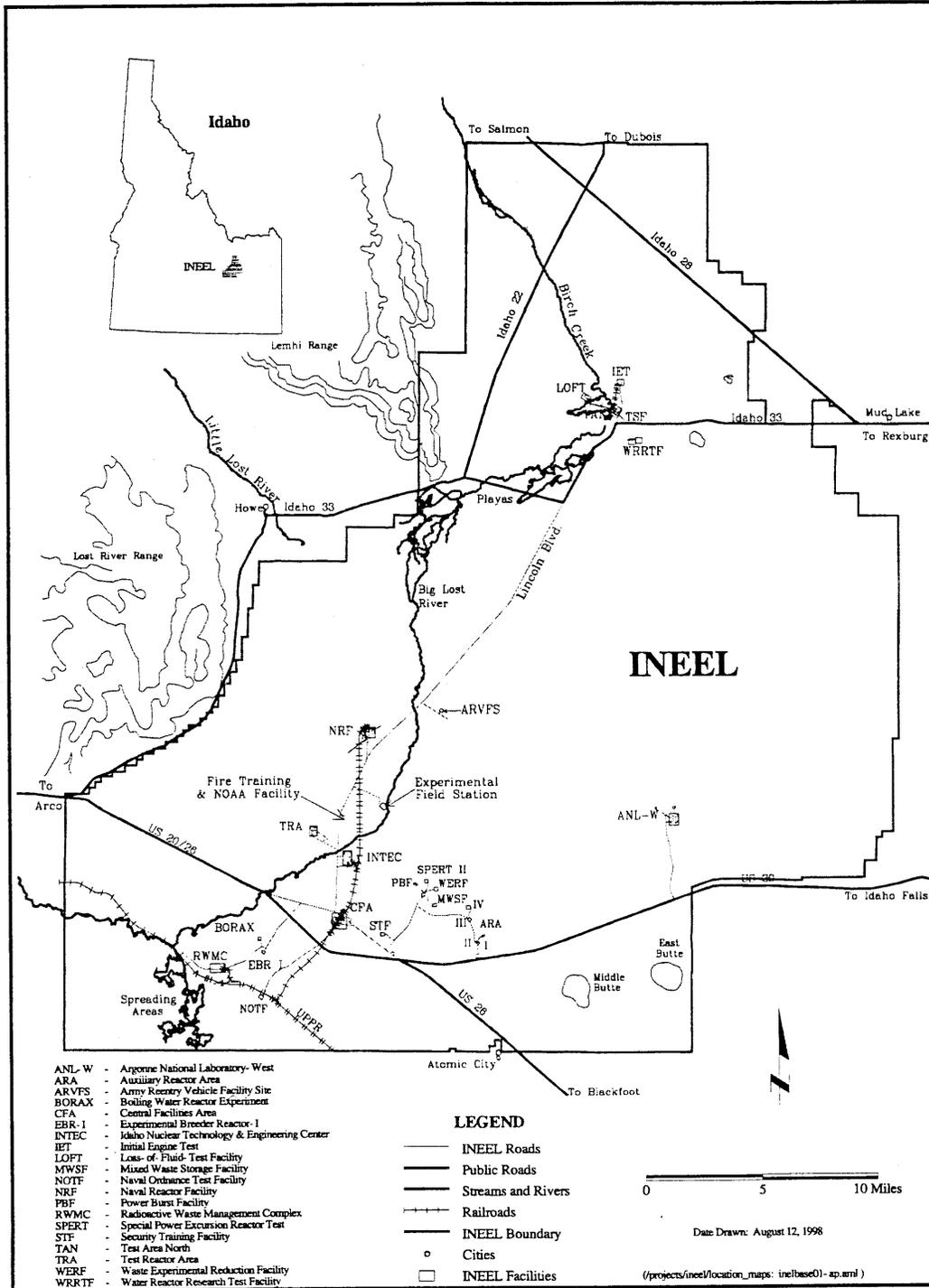


Figure 1. Idaho National Engineering and Environmental Laboratory.

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## 1.2 Work Included

### 1.2.1 Waste Area Group 1

Waste Area Group (WAG) 1 is comprised of Test Area North (TAN) and is located in the north-central portion of the INEEL. Under the current remediation management strategy outlined in the Federal Facilities Agreement and Consent Order (FFA/CO) (Department of Energy, Idaho Operations [DOE-ID] 1991), the location identified for the remedial action is designated WAG 1, Operable Unit (OU) 1-10 at the INEEL. The OU 1-10 remedial action, as part of the CERCLA process, will proceed in accordance with the *Final Record of Decision for Test Area North, Operable Unit 1-10* (DOE-ID 1999). The record of decision (ROD) (DOE-ID 1999) presents the selected remedies for 62 sites evaluated under the OU 1-10 remedial investigation/feasibility study (RI/FS) and evaluates institutional controls for all 94 identified release sites at WAG 1 where an unacceptable risk for unrestricted land use remains. Of these 94 sites, the ROD (DOE-ID 1999) provides information to support remedial actions for eight sites where contamination presents an unacceptable risk to human health and the environment. Of the eight sites requiring remedial action, two require the excavation of contaminated soils for transport to the ICDF for disposal. These sites are discussed below.

The design drawing in Appendix A and the specifications in Appendix B outline the details of the work to be conducted in support of the WAG 1 remedial action. The Subcontractor shall perform clearing and grubbing of the sites in accordance with Specification 02110, "Clearing and Grubbing." The Subcontractor shall implement runoff control measures according to the requirements delineated in Specification 02140, "Temporary Diversion and Control of Water During Construction." Grading and excavation, placement of fill materials, placement of contaminated materials, disposal of unsuitable materials, and reclamation of the borrow area shall be performed according to Specification 02200, "Earthwork." The Subcontractor shall perform surveying to ensure that the proper grades, lines, and levels are established as set forth in the specifications and design drawing, as required by Specification 02210, "Grades, Lines, and Levels." The Subcontractor shall comply with the requirements of Specification 02222, "Excavation, Trenching, and Backfilling" for the described activities during the remedial action. Following confirmation that the remedial action objectives have been achieved for a given site, the Subcontractor shall revegetate the site according to the requirements set forth in Specification 02930, "Reclamation Seeding and Mulching." The following subsections

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summarize the field activities that will take place at each of the individual WAG 1 contaminated soil sites.

**1.2.1.1 TSF-03: TSF Burn Pit**

Site TSF-03 consists of a pit used for open burning of construction debris and wastes generated from various areas at TAN. During the 1950s, the pit received refuse, construction debris, and combustible liquids that were incinerated each time materials were disposed in the pit. Although no records were kept of the types or volumes of waste disposed in the pit, process knowledge, limited historical information, and sampling activities indicate that Stoddard solvent, oily waste, glass, metallic objects, fiberglass, and charcoal may have been incinerated here. Use of the pit was discontinued in 1958, and it was eventually backfilled with clean soil and revegetated.

During 2000–2001, the site was resampled to identify and assess additional contaminants of concern that might have been present in the soil at the site. The results of this resampling effort indicate that lead levels exceed the EPA Region 9 preliminary remediation goal of 400 mg/kg, and that dioxin/furan levels exceed EPA’s target risk level of  $1 \times 10^{-4}$ . Therefore, excavation and disposal has been selected as the preferred remedial action option to ensure that no contaminants are left in place above risk-based levels and to alleviate the need for long-term maintenance or institutional controls. To this end, the Subcontractor shall excavate, package, and dispose of the contaminated soils at the ICDF. The Contractor will sample the excavated area to demonstrate that no residual contamination above the remediation goals remains at the site and that the cumulative risk from residual contamination is less than  $1 \times 10^{-4}$ . The Subcontractor shall backfill the excavation with clean soil and contour the excavation to natural grade followed by revegetation. The excavated materials are assumed to be nonhazardous, but are considered to contain various amounts of lead, dioxins/furans, PCBs, and chromium. It is estimated that 1,529 m<sup>3</sup> (2000 yd<sup>3</sup>) of soil will require excavation and disposal.

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### 1.2.1.2 TSF-06, Area B: Soil Contamination Area South of the Turntable

The Technical Support Facility (TSF)-06, Area B site is an open soil area bounding the TSF fence on the west, and facility roads and several adjacent structures on the east and south (Figure 2). This area is roughly triangular and measures approximately 206 m (675 ft) wide on the south by 130 m (425 ft) wide on the west.

Surface soils at this site were radioactively contaminated by windblown deposition of radioactive particles from contaminated soils at the Portable Medium Nuclear Power Plant, Camp Century, Greenland, Portable Field Power, Air-Transportable (PM-2A) Tanks site (TSF-26), located just south of TSF-06, Area B. Data from the 1997 RI/FS (DOE-ID 1997) reported that the primary contamination detected in the tanks included metals (antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, and silver); semivolatile organic compounds (bis [2-ethylhexyl] phthalate); polychlorinated biphenyls (PCBs); and radionuclides (Cs-137, Co-60, Eu-154, Sr-90, U-233/234, U-235, U-236, U-238, Pu-239/240, and Ni-63). Volatile organic compounds (VOCs) were not detected, although the detection levels were relatively high. However, based on the contaminant screening process for the PM-2A tanks, the only site contaminants of potential concern (COPCs) were Co-60 and Cs-137.

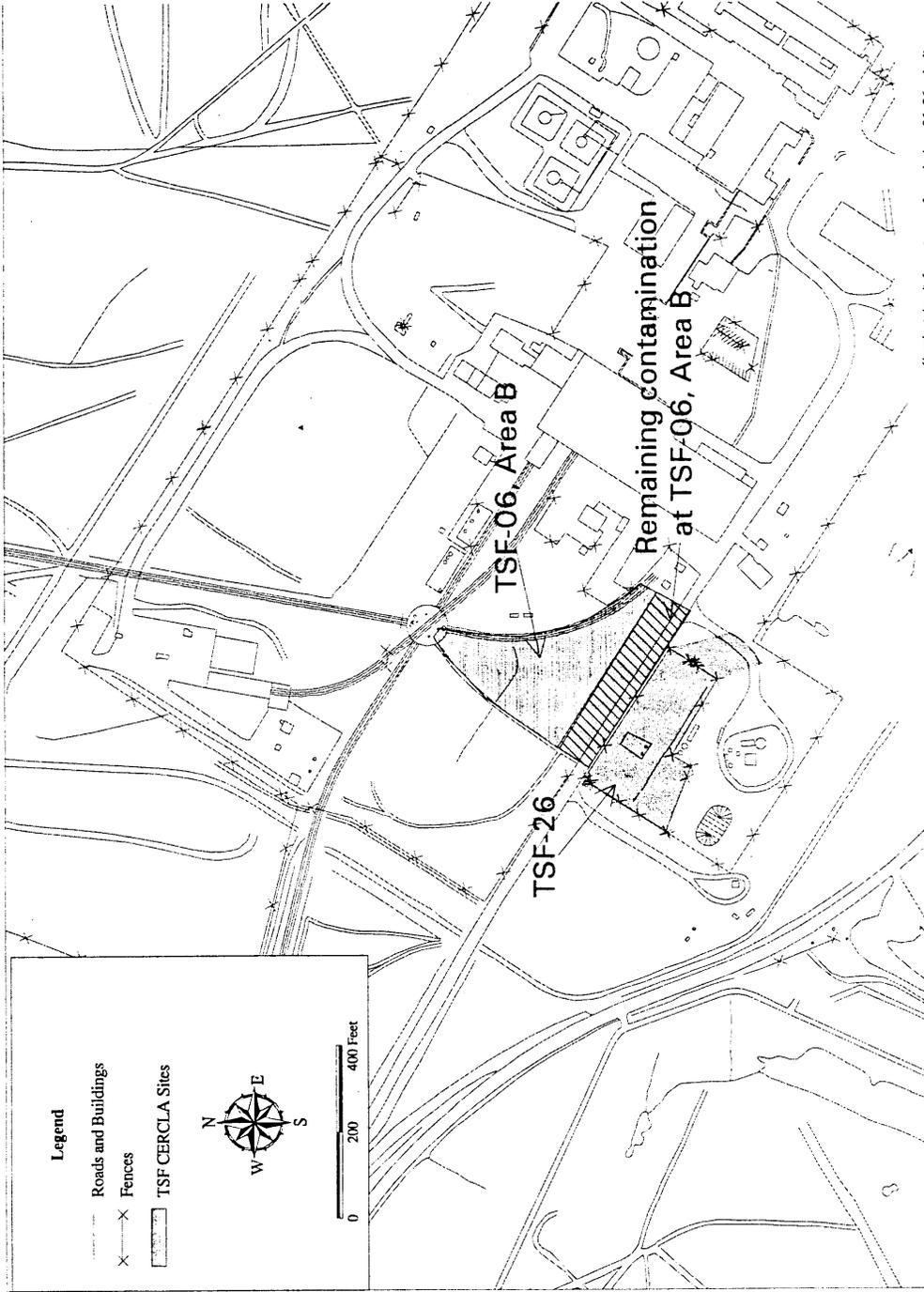
Sampling results following the Operable Unit 10-06 removal action (conducted in 1995 at TSF-06, Area B) revealed that radioactive contamination remained in a 152 × 30.5 m (500 × 100 ft) area, bordered by the asphalt-paved Snake Avenue and roadbed. It is not believed that contamination underlies the actual roadbed; therefore, excavation of Snake Avenue will not be required. This area is referred to as the “remaining contamination at TSF-06, Area B” in Figure 2. Approximately 0.3–0.6 m (1–2 ft) of clean fill material (overburden) was placed previously in this contaminated area to provide shielding from the contaminated soils. It was determined that the overburden became contaminated because of windblown spread of contamination from the PM-2A soil stockpiles that currently remain at the site.

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(inches/miles) of contour: tsf remaining (06 76 v1.a)h

Figure 2. Soil Contamination Area South of the Turntable (TSF-06, Area B) and PM-2A Tank Site (TSF-26).

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Sampling and some remediation were performed at TSF-06, Area B during calendar year 2000 as part of the post-ROD sampling activities. Activities included radiological field screening and sampling to support soil excavation of the contaminated overburden soil, subsequent removal and packaging of the contaminated overburden, and further field screening and sample analyses to support future remediation. The packaged soil was then shipped to the Radioactive Waste Management Complex (RWMC) for disposal.

Residential screening results in the RI/FS determined that the contaminant of concern for TSF-06, Area B is Cs-137. In addition, the possibility exists that other nonradionuclide contaminants associated with the PM-2A tanks (e.g., metals [barium, cadmium, chromium, lead, mercury, and silver], organics [trichloroethene, 1,1,1-trichloroethane, carbon tetrachloride, and acetone], and PCBs) may have migrated to the site via windblown spread of contamination. Based on process knowledge, the waste will be managed as Resource Conservation and Recovery Act (RCRA) listed (F001).

The Subcontractor shall excavate contaminated soil at TFS-06 to a maximum depth of 3 m (10 ft) or the depth at which contaminant concentrations are below the final remediation goal (FRG), whichever is less. The Subcontractor shall transport the contaminated soil to the ICDF for disposal. The Contractor will perform real-time in situ gamma surveys as the excavation and remediation progresses to determine when the FRG has been met. Once the in situ surveys demonstrate that the contaminant concentrations are below the FRG, the Contractor will collect samples to confirm that the remedial action meets the FRG. The Subcontractor shall backfill the excavation with clean native soil and seed the area to reestablish native vegetation. It is estimated that 2,124-m<sup>3</sup> (2,778-yd<sup>3</sup>) of soil will require excavation and disposal.

The Subcontractor shall grade all earthwork involving excavation and backfill to encourage drainage away from the excavation (refer to Specification 02200, "Earthwork" in Appendix B). The Subcontractor shall revegetate all areas that are disturbed by earthwork activities according to the project specifications. The Subcontractor shall employ

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standard dust control measures (e.g., water spray, stop work during high winds) during all earthwork.

### 1.2.1.3 TSF-26: PM-2A Tanks

The PM-2A Tank site (TSF-26) (Figure 2) consists of the contaminated soil area surrounding two abandoned underground storage tanks, designated as V-13 and V-14 (also known as TSF-709/710 or TSF-710 A&B). During operations, the soil above the PM-2A Tanks was contaminated by spills containing radionuclides and hazardous constituents. In 1982, the Decontamination and Decommission (D&D) program pumped most of the liquids from the PM-2A tanks into concrete containers, where the liquids were mixed with cement and shipped to the RWMC for burial. An absorbent was added to the tanks to stabilize any remaining free liquids. Two parallel 10-cm-diameter (4-in.-diameter feed lines routed through the TSF-06, Area B and under Snake Avenue into the PM-2A Tank area, were cut and capped during the D&D effort to prevent any additional effluent from entering the tanks.

During the 1982 D&D effort, the most contaminated surface soil within the PM-2A boundaries was removed and transported to the RWMC for burial. Buried sludge encountered during this activity was also removed and transported to the RWMC for burial. Following the removal of the soil and sludge in 1982, the PM-2A area was graded, and the surface was radiologically surveyed. Based upon the survey results, approximately 16,000 m<sup>3</sup> (20,000 yd<sup>3</sup>) of gravelly soil followed by 8,000 m<sup>3</sup> (10,000 yd<sup>3</sup>) of topsoil were emplaced over the area. The PM-2A area was fenced with a 1.8 m (6 ft) chain link fence with a 6-m-wide (20-ft-wide) gate installed along the east end of the area. Four concrete and brass markers were placed to designate the four corners of the concrete cradle in which the underground tanks reside. Manways to the tanks were covered to prevent the entrance of snow. Currently, a drainage ditch vegetated by sagebrush and planted crested wheat grass traverses the area in an east-west direction south of the PM-2A tanks.

In 1993, a Track 2 investigation was performed at the TSF-26 site. The Track 2 investigation included a

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high-resolution magnetic field survey to determine the location of buried metallic objects, including the underground storage tanks and the sandpoints. The sandpoints are small diameter, steel-cased monitoring points that extend into the bedding material for the tanks within the concrete cradle. Once found, the sandpoints were samples, and the samples analyzed as part of the Track 2 investigation. Shallow and deep soil borings were also completed and sampled as part of the Track 2 investigation.

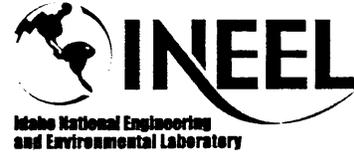
Based on the results of the Track 2 investigation, a nontime critical removal action was performed in 1995 during which contaminated soil above a 15 pCi/g field screening action level was removed from TSF-26. Three soil stockpiles were left at the TSF-26 site. Sampling following the removal action indicated an area 21.3 × 30.5 m (70 × 100 ft) to 5.2 m (17 ft) below ground surface (BGS) was contaminated with Cs-137 at levels that posed an unacceptable risk to human health and the environment.

During the same removal action, what appeared to be the top of a wooden box was discovered at the PM-2A Tank site. However, the box was not opened or investigated at that time. Also encountered in the TSF-26 area was scattered debris concentrated along the northern perimeter fence. The debris included concrete, a galvanized steel culvert, railroad ties, wooden pallets, plywood, steel conduit, and an old electric motor. The debris was left in place.

In calendar year 2000, sampling and remediation were performed at the TSF-26 site as part of post-ROD sampling activities. Activities included radiological field screening and sample analysis of the three soil stockpiles (and the wooden box). Additional activities included excavation and packaging of the stockpiles and wooden box into soft-sided soil bags. Following completion of the sampling and remediation activities, the packaged material was transported to the RWMC for disposal.

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In August 2000, the latest radiological sampling event for TSF-26 was performed to obtain data regarding the vertical nature and extent of contamination needed to support future remedial action. Based upon process knowledge, the waste will be managed as RCRA-listed (F001).

The Subcontractor shall excavate contaminated soil at the PM-2A Tanks sites to a maximum depth of 3 m (10 ft) or the depth at which contaminant concentrations are below the FRG, whichever is less. The Contractor will use radiological screening to segregate soil that is less than the FRG from soil that exceeds the FRG. The Subcontractor shall transport the contaminated soil to the ICDF for disposal. The Contractor will perform real-time in situ gamma surveys as the excavation and remediation progresses to determine when the FRG has been met. Once the in situ surveys demonstrate that the contaminant concentrations are below the FRG, the Contractor will collect samples to confirm that the remedial action meets the FRG. Where confirmation sampling of the excavated areas indicates that contamination greater than the FRG remains below 3 m (10 ft) from surrounding land surface elevation, the Subcontractor shall backfill these areas with 0.15 m (0.5 ft) of clean native fill, pending additional excavation or backfilling during a future remedial action involving the tanks themselves. The remainder of the PM-2A Tanks area will not be backfilled at this time. It is estimated that 5,947 m<sup>3</sup> (7,778 yd<sup>3</sup>) of soil will require excavation and disposal.

### 1.2.2 Waste Area Group 3

The INTEC is designated as WAG 3, which was subdivided into 13 OUs that were investigated for contaminant releases to environmental pathways. Within these 13 OUs, 101 release sites were identified. The *Final Record of Decision—Idaho Nuclear Technology and Engineering Center* (DOE-ID 1999) applies to 55 of the 101 sites, which, on the basis of the comprehensive RI/FS for WAG 3 (OU 3-13), were identified as posing a potential risk or threat to human health and/or the environment. The 55 release sites with identified risks greater than  $1 \times 10^{-4}$  or that pose a threat to human health and/or the environment require remedial action

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to mitigate these risks or threats. The 55 sites were divided into seven groups based on similar media, contaminants of concern, accessibility, or geographic proximity. The seven groups are

- Group 1: Tank Farm Soils
- Group 2: Soils Under Buildings and Structures
- Group 3: Other Surface Soils
- Group 4: Perched Water
- Group 5: Snake River Plain Aquifer
- Group 6: Buried Gas Cylinders
- Group 7: SFE-20 Hot Waste Tank System.

During the RI/FS and subsequent remedy development, data gaps were identified. In some cases, the missing data were important enough to prevent selection of final remedies. Because delays in restoration were undesirable, OU 3-14 was created. Where available information was insufficient to select a final remedy in OU 3-13, interim actions were developed for implementation in the OU 3-13 ROD with the final remedy relegated to OU 3-14. Specifically, Group 1, Tank Farm Soils, and Group 5, the Snake River Plain Aquifer (SRPA), are interim actions in the OU 3-13 ROD and are included in OU 3-14 for final remedy selection. For Group 2, Soils Under Buildings and Structures, the selected deferred action remedy is Institutional Controls and Containment. Two sites that were originally included in the Group 2 soils (CPP-41A and CPP-68) are included with the Group 3 soils for the purposes of remediation. At this time, the primary remediation of WAG 3 soils is associated with Group 3, Other Surface Soils. Groups 4–6 do not entail the remediation of contaminated soils. Group 7 will be covered separately.

The Other Surface Soils (Group 3) release sites are principal threat wastes because potential external exposure of workers or the public to radionuclide-contaminated soils. The purpose of the selected remedy is to prevent external exposure to radionuclides at these sites and to allow these sites to be released for unrestricted use in the future. The selected remedy for Other Surface Soils is removal and onsite disposal in the ICDF. Those Group 3 release sites that, before excavation, are identified as part of the footprint of another program's closure activity and that, to

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the Agencies' satisfaction, will be closed with equivalent protection to that afforded by the ICDF to groundwater and future users, will not be excavated but instead capped in place pursuant to the hazardous waste landfill closure substantive requirements of Idaho Administrative Procedures Act (IDAPA) 58.01.05.008 (40 Code of Federal Regulations [CFR] 264.310).

The Other Surface Soils consist of sites located in the following areas where the inadvertent release of contamination occurred:

- Building Chemical Processing Plan (CPP)-603  
(Sites CPP-01, -03, -04, -05, -08, -09, -10, -11, and -19)
- Building CPP-633  
(Sites CPP-36 and -91)
- Calcined Solids Storage Bins  
(Sites CPP-13, -35, and -93)
- Disposal Trenches  
(Site CPP-34)
- Old Sewage Treatment Plant (STP)  
(Site CPP-14)
- Grease Pit  
(Site CPP-44)
- Near temporary Building (TB)-1  
(Site CPP-55)
- Percolation Ponds that are situated south of the INTEC fence  
(Site CPP-67).

In addition, Group 3 also includes Sites CPP-37A, CPP-37B, CPP-37C, and CPP-48. Site CPP-37A is a former gravel pit located outside of the current INTEC security fence used to collect storm water runoff from the Tank Farm. Site CPP-37B is a former gravel pit located inside the current INTEC security fence that was previously used for disposal of wastewaters from the old STP and was then used for disposal of construction debris. Site CPP-37C consists of contamination that was discovered southeast of Site CPP-37B. Site CPP-48 is an excess chemical dump tank located south of the old Waste Calcine Facility (CPP-633) that was used as a French drain from 1975 to 1981. Figure 3

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shows the location of the Group 3 sites. These sites generally consist of soil contamination that resulted from inadvertent spills and leaks of radioactive waste, decontamination solutions, spent fuel storage water, storage of radionuclide-contaminated equipment, and other plant-generated wastewaters. Group 3 also includes Site CPP-92, which consists of 648 boxes of radionuclide-contaminated soils that were generated from a variety of INTEC activities. In addition, new sites similar to Group 3 (CPP-97, -98, and -99), consisting of soils and other materials, will be remediated as Group 3 soils.

The major component of the selected remedy for the contaminated soils includes removal of contaminated soil and debris from Group 3 sites using conventional excavation methods. The contaminated soils and debris above the  $1 \times 10^{-4}$  risk level, based on an assumed future residential use in the Year 2095 and beyond, will be removed and replaced with clean soil. From the surface to a depth of 3 m (10 ft), the land can then be released for future residential use. Contamination below 3 m (10 ft) may also be excavated at the direction of the Contractor, if determined to be more cost effective than maintaining necessary institutional controls, to prevent future drilling through deep contamination zones and transportation of contaminants to the underlying aquifer. In addition, excavation activities below the 3 m (10 ft) depth that could cause the movement of contaminants either to the surface or to the underlying aquifer will also be controlled. The excavated contaminated soils and debris will be disposed in the ICDF. Contamination left in place at depths below 3 m (10 ft) will be surveyed and recorded for future institutional controls by the Contractor, as necessary. The excavated soils will be replaced with clean backfill and regraded.

Removal activities will be conducted in a phased approach with each grouping or set of release sites being its own separate phase. This approach will allow some less complex or higher risk removals to proceed earlier than actions that require additional planning or startup measures. Preremedial characterization will not be performed; the prioritization and work planning process will be based solely on the results of the remedial investigation. However, during excavation, the Contractor will use a statistical-based observational approach sampling method to refine and confirm the extent of excavation. Upon completion of the removal action, this and any necessary data will be used to confirm that, within a prescribed confidence level, the remedial action objectives have been met and that the remedial action has been completed.

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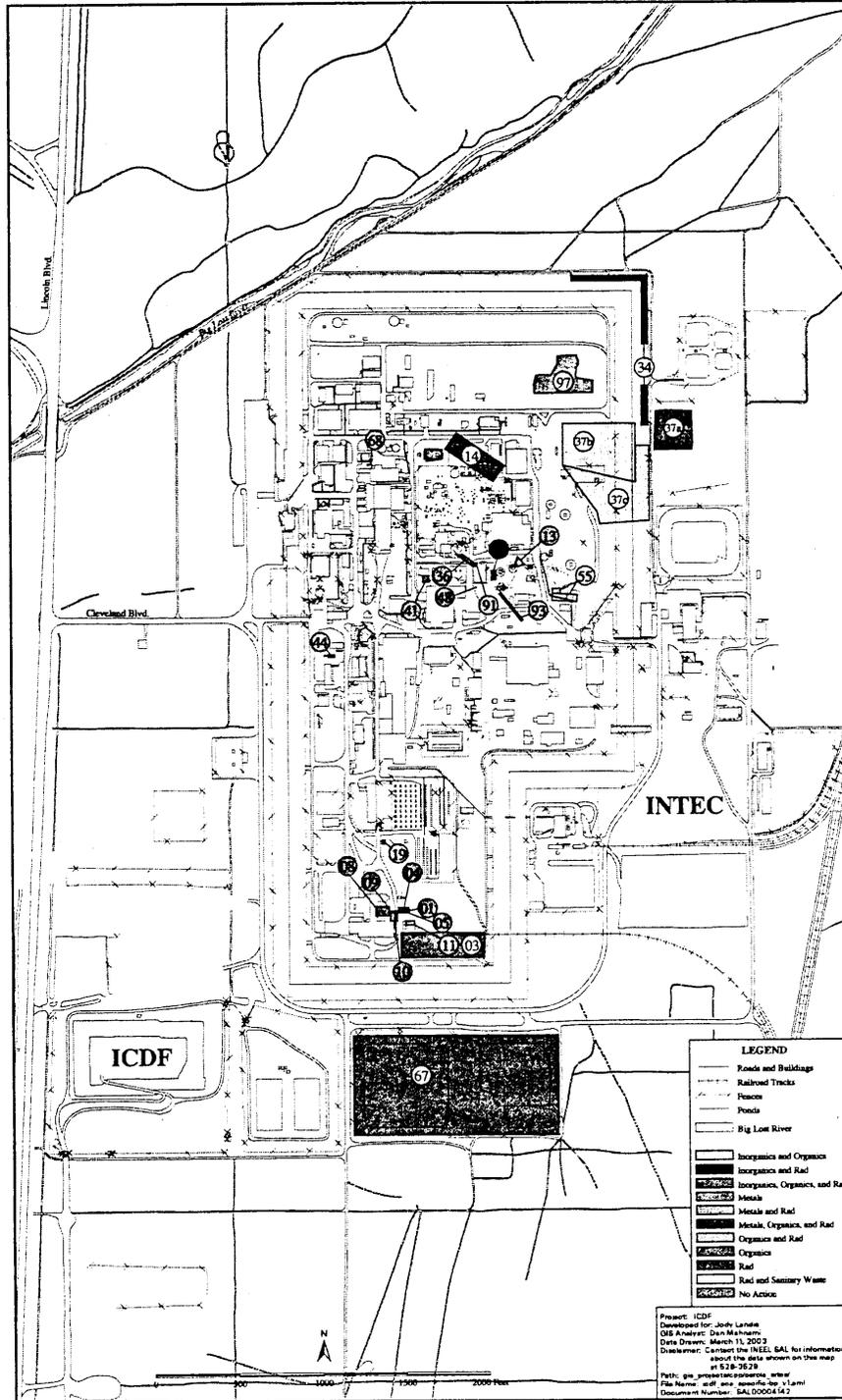


Figure 3. Group 3 soil sites at WAG 3.

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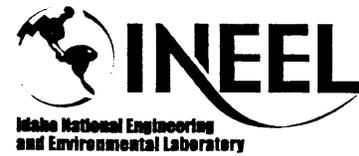


Based upon the prioritization criteria developed and presented in the *Operable Unit 3-13, Group 3, Other Surface Soils, Prioritization and Site Grouping Report* (DOE-ID 2002a), the following remediation sets were established:

- Remediation Set 1: Sites with Planned Use Potential Within 10 Years
  - CPP-97, Tank Farm Soil Stock Pile
  - CPP-92, Soil Boxes West of CPP-1617
  - CPP-99, Boxed Soil
  - CPP-98, Tank Farm Shoring Boxes
- Remediation Set 2; Sites with Planned Use Potential Beyond 10 Years
  - CPP-37B, Gravel Pit and Debris Landfill Inside INTEC Fence
  - CPP-37C, Contamination Discovered Southeast of CERCLA Site CPP-37B
- Remediation Set 3: Easily Accessible Sites with Moderate Environmental Risk Reduction
  - CPP-03, Temporary Storage Area Southeast of CPP-603
  - CPP-37A, Gravel Pit Outside INTEC Fence
  - CPP-67, Percolation Ponds 1 and 2
  - CPP-34A, Soil Storage Area (Disposal Trenches) in the Northeast Corner of INTEC
  - CPP-34B, Soil Storage Area (Disposal Trenches) in the Northeast Corner of INTEC

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- Remediation Set 4: Sites East of CPP-603 with Significant Environmental Risk Reduction
  - CPP-01, Concrete Settling Basins and Dry Wells East of CPP-603
  - CPP-04 & CPP-05, Contaminated Soil Area Around CPP-603 Settling Tank and Settling Basin
  - CPP-08, CPP-603 Basin Filter System Line Failure
  - CPP-09, Soil Contamination at Northeast Corner of CPP-603 South Basin
  - CPP-10, CPP-603 Plastic Pipeline Break
  - CPP-11, CPP-603 Sludge and Water Release
  - CPP-19, CPP-603 to CPP-604 Line Leak
- Remediation Set 5: Sites in the Waste Calcining Facility (WCF) Area with High Environmental Risk Reduction but Significant INTEC Coordination Issues
  - CPP-91, CPP-633 Blower Pit Drain
  - CPP-36, Transfer Line Leak from CPP-633
  - CPP-35, CPP-633 Decontamination Spill
  - CPP-48, French Drain South of CPP-633
  - CPP-93, Simulated Calcine Disposal Trench
  - CPP-13, Pressurization of Solid Storage Cyclone Northeast of CPP-633
- Remediation Set 6: Sites with No Planned Anticipated Use and Minimal Environmental Risk Reduction
  - CPP-14, Old Sewage Treatment Plant West of CPP-664
  - CPP-44, Grease Pit South of CPP-608
  - CPP-55, Mercury-Contaminated Area South of CPP T-15.

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It should be noted that land disposal restriction requirements apply to the soils that comprise Remediation Set 1. These soils may require stabilization before disposal in the ICDF. A characterization plan is being prepared as part of the Group 3 remedial design/remedial action work plan that will be completed by the end of the 2003 calendar year. The Contractor will perform additional characterization of the Remediation Set 1 soils resulting in the final decision as to which soils will require stabilization and which can be direct disposed in the ICDF.

The following sections provide a description of each of the WAG 3 Group 3 soil sites covered under this Subcontract. Specifically, descriptions are provided for Remediation Sets 1–3 and not for Remediation Sets 4–6, because remediation of these sites will occur after 2007. For a summary of the contaminants associated with each site, refer to the *INEEL CERCLA Disposal Facility Design Inventory* (INEEL 2002a). This document also provides information pertinent to the remediations sites for WAGs 1, 4, and 5.

#### **1.2.2.1 CPP-03: Temporary Storage Area Southeast of CPP-603**

Site CPP-03 is a temporary storage area southeast of CPP-603 that was used to store old and abandoned equipment, most of which was radioactively contaminated. The area was decommissioned in the late 1970s. All stored material was boxed and sent to the RWMC for disposal. Contaminated soil was removed, boxed, and sent to the RWMC, and the area was covered with 28 cm (11 in.) of “cold” soil. Then, 9,175 m<sup>3</sup> (12,000 yd<sup>3</sup>) of contaminated soil excavated from the Tank Farm was stockpiled at the site before burial in three trenches located at the northeast corner of INTEC.

Radiological field surveys in the area have indicated surface activity levels above background at various locations at the site. Three boreholes in the area were drilled to 3.0 m (10 ft) BGS in locations where high surface activities were observed. Samples were collected and submitted for radionuclide analysis. Summary sampling results statistics are provided in Table 5-12 of the ROD (DOE-ID 1999). The COPCs include Cs-137 and Sr-90, with Cs-137 being the primary contaminant of concern (COC) with contamination detected from the surface to about 1.2 m (4 ft) BGS. The aerial extent of contamination is estimated at 6,970 m<sup>2</sup>

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(75,000 ft<sup>2</sup>), and the estimated volume of contaminated soil is 8,364 m<sup>3</sup> (10,940 yd<sup>3</sup>).

**1.2.2.2 CPP-34 A/B: Soil Storage Area**

Site CPP-34 is a soil storage trench in the northeast corner of INTEC. The area is 4,366 m<sup>2</sup> (47,000 ft<sup>2</sup>). In 1984, radionuclide-contaminated soil at levels up to 30 mrem/hr was removed from a pile east of CPP-603 and disposed of in the trench. The soil was originally excavated from Site CPP-33. Contaminants consist of nitric acid and radionuclides, including Cs-137, U-234, U-238, Np-237, Sr-90, and Pu-238.

Table 5-14 of the ROD (DOE-ID 1999) provides summary sampling results statistics for CPP-34. Based on the investigative results, the primary COCs at this site are Cs-137 and Sr-90, with average concentrations of 396 pCi/g and 813 pCi/g, respectively. The zone of contamination assumed for this site is from 0 to 6.1 m (0 to 20 ft) with an estimated volume of 20,912 m<sup>3</sup> (27,352 yd<sup>3</sup>). An average width of the trench (10.7 m [35 ft]) was used to calculate soil volumes, as the width of the trench varied from 7.6 to 13.7 m (25 to 45 ft).

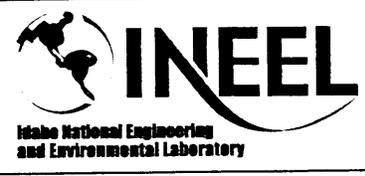
**1.2.2.3 CPP-37A: Gravel Pit #1**

Site CPP-37A (Pit #1) is located outside of the INTEC security fence and measures approximately 43 m (140 ft) in width, 64 m (210 ft) in length, and is 4.3 m (14 ft) in depth. No information is available on the date pit usage began; however, Pit #1 was used for decontamination of radionuclide-contaminated construction equipment during July and October 1983. In addition, during 1982 and 1983, the pit was used as a percolation pond for INTEC service wastewater while the injection well was being refitted. This pit currently receives stormwater runoff from INTEC.

Soil samples were collected from Pit #1 in 1991. Analytical results are summarized in Table 5-19 of the ROD (DOE-ID 1999). Based on the contaminant screening, COPCs identified for Pit #1 were arsenic, Co-60, Am-241, Cs-137, Np-237, Pu-238, Sr-90, U-235, and U-238. The Track 2 investigation for Site CPP-37 indicated that arsenic

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was detected above background in eight out of 14 samples collected. However, the maximum arsenic concentration was only 8.7 mg/kg relative to the background value for arsenic of 5.8 mg/kg.

Radionuclides detected above background in soil samples included Am-241, Cs-137, Pu-238, Sr-90, and U-238. Other radionuclides that do not have a background value were detected at low concentrations including (maximum concentrations in parentheses): Co-60 (0.55 pCi/g), Np-237 (1.07 pCi/g), and U-235 (0.05 pCi/g). No radionuclides were detected in the 0–0.3 m (0–0.5 ft) samples, except for Sr-90 at 0.69 pCi/g in the southwestern portion of the pit. Radionuclides were not detected above background in the deep borehole below 4.6 m (15 ft).

The contaminated zone at Pit #1 is assumed to extend from 0–3.0 m (0–10 ft). The area of Pit #1 is 2,731 m<sup>2</sup> (29,400 ft<sup>2</sup>). Other estimates provided in the Track 2 investigation documentation place the dimensions at 9,179 m<sup>2</sup> (98,800 ft<sup>2</sup>). The estimated volume requiring excavation and disposal is 8,325 m<sup>3</sup> (10,889 yd<sup>3</sup>).

#### **1.2.2.4 CPP-37B: Gravel Pit and Debris Disposal Pit #2**

Site CPP-37B is located inside the INTEC security fence. Before being backfilled, the site was approximately 79 m (260 ft) in width, 116 m (380 ft) in length, and was 7.9 m (26 ft) deep with an area of approximately 9,179 m<sup>2</sup> (98,800 ft<sup>2</sup>). The estimated volume requiring excavation from CPP-37B is 78,320 m<sup>3</sup> (102,439 yd<sup>3</sup>). It is assumed that one-half of the materials will exceed the remediation goals, therefore requiring disposal in the ICDF. The other half will be screened as being below the goals, thereby enabling placement back in the excavation. The Contractor will be responsible for performing the required screening analyses. Before 1982, this pit was often used for the disposal of waters released from the sludge dewatering pit of the old STP (CPP-715). After 1982, the pit was used to dispose of construction debris, some of which may have been radionuclide-contaminated. Anecdotal information suggests that the pit may also have been used for the disposal of chemical wastes. Additionally, the CPP-37B was open in 1964 when the release of radioactive steam

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associated with Site CPP-26 occurred. Radioactive steam containing Cs-137 was released from a decontamination header in the High-Level Liquid Waste Tank Farm. The year this pit was backfilled is unknown, but it is believed to have been backfilled to grade shortly after its use as a construction debris landfill was discontinued. Modeling and sampling of the site indicated the site is not a significant contributor to groundwater risk or surface exposure risk. However, since the pit was previously used as a landfill, characterization is considered insufficient to recommend “no further action” at the site. Table 5-20 in the ROD (DOE-ID 1999) provides summary sampling results statistics for soil samples from Site CPP-37B.

**1.2.2.5 CPP-37C: Contamination Southeast of CERCLA Site CPP-37B**

This site was discovered following excavation to install a culvert in a trench for the OU 3-13 Group 1 Tank Farm Interim Action drainage system between November 20 and 27, 2000. An area with radioactively-contaminated debris was discovered that had not been identified previously. The culvert was installed along the east perimeter road between the two INTEC perimeter fences. The contaminated materials were located just inside the outer fence and to the southeast of CPP-37B. At approximately the 1.5–1.8-m (5-6-ft) depth, debris was encountered consisting primarily of lava rock, gravel, and soil with minor quantities of concrete, plywood, pipe, and plastic. Only the excavation necessary to install the culvert was performed. The size of the excavation where the material was found was approximately 10.7 m (35 ft) wide by 110 m (360 ft) long. The materials extended from the 1.5–1.8-m (5–6-ft) depth down to below the bottom of the excavation (approximately 4.3 m [14 ft]), and appeared to be most prevalent on the west edge of the trench. While the extent of the debris is not definitively known, it is anticipated that it extends to the west because of the debris being observed on the westerly edge of the cut for the trench. The estimated volume requiring excavation from CPP-37C is 156,640 m<sup>3</sup> (204,877 yd<sup>3</sup>). It is assumed that one-half of the soils will exceed the remediation goals, therefore requiring disposal in the ICDF. The other half will be screened as being below the goals, thereby enabling placement back in the

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excavation. The Contractor will be responsible for performing the required screening analyses.

At the time of the excavation, there was no radiological contamination detected on the debris. However, on May 9, 2001, radiological contamination was found on some of the materials that had been removed from the excavation. This contamination ranged from 35,000 disintegrations per minute (dpm) fixed beta-gamma to a maximum of 100,000 dpm fixed beta-gamma contamination. The COPCs associated with this site include the radionuclides associated with the construction debris. This site is similar to CPP-37A and CPP-37B in that they were used to dispose of material generated during construction activities such as excess soil, concrete, basalt boulders, and piping that were removed during site preparation for INTEC infrastructure projects. The contaminants are expected to be similar to those found at CPP-37A and CPP-37B.

#### **1.2.2.6 CPP-67: CPP Percolation Ponds #1 and #2**

Site CPP-67 consists of two unlined service waste percolation ponds. The ponds receive service wastewater consisting primarily of cooling water and condensed steam generated by various INTEC operations. The INTEC wastewater that contains only traces of radioactivity (or none at all) passes through the service waste system. The waste consists primarily of cooling water and steam condensates. This waste activity is monitored before being discharged to either pond. There are three main service waste systems at INTEC: (1) the eastside system, (2) the westside system, and (3) the CPP-604 PEW process condensate monitor/shutdown system. Figure 3 shows the relative location of the ponds, which are fenced to exclude entry of large wildlife and unauthorized personnel. Table 5-13 in the ROD (DOE-ID 1999) provides summary sampling results statistics for CPP-67.

Pond #1, located outside the south INTEC security fence (southeast of CPP-603), was established in 1984. The pond is approximately 125.0 m (410 ft) long in the east-west direction, 146.3 m (480 ft) in the north-south direction, and 5.5 m (18 ft) deep. The pond was excavated in gravelly

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alluvium that is approximately 7.6–9.1 m (25–30 ft) thick and is underlain by basalt, which locally outcrops in the pond.

Pond #2 is located outside the south INTEC security fence, southeast of CPP-603. The pond was established in 1985 when it became apparent that the infiltration capacity of Pond #1 had decreased and water levels began to rise. The pond bottom is approximately 152.4 m (500 ft) square and 3–4 m (12–14 ft) deep. The pond was excavated in gravelly alluvium approximately 6–11 m (20–35 ft) thick, underlain with basalt. Basalt outcrops are found in the corner of the pond. The pond is designed to accommodate continuous disposal of approximately 11.4 M L (3 M gal) of water per day.

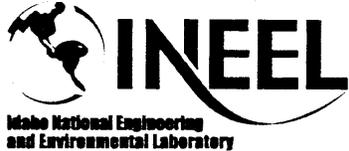
An RCRA clean-closure equivalency was achieved for metals contamination in Pond #1 in April 1994 and Pond #2 in May 1995; therefore, only radionuclide contamination was assessed as part of the WAG 3 remedial investigation/baseline risk assessment (RI/BRA). Site CPP 67 is considered to be a significant source of the perched water beneath the southern portion of the INTEC.

Based on the investigative results, the zone of contamination for Pond #1 is estimated to be about 1.8 m (6.0 ft) thick, and extends from the surface to 1.8 m (6.0 ft) BGS.

Based on the investigative results, the zone of contamination for Pond #2 is assumed to be 1.8 m (6.0 ft) thick, and extends from the surface to 1.8 m (6.0 ft) BGS. This depth is based on the decrease in radionuclide contaminants with depth and the low activities measured in deeper samples. Based on the dimensions of the two ponds, the volume of contaminated soil for the ponds was estimated to be 75,890 m<sup>3</sup> (99,260 yd<sup>3</sup>).

#### **1.2.2.7 CPP-92: Soil Boxes West of CPP-1617**

This site is a group of 648 boxes of soil located west of CPP-1617 that contain soil and debris with low levels of radioactive contamination. The 0.6 × 1.2 × 2.4 m (2 × 4 × 8 ft) and 1.2 × 1.2 × 2.4 m (4 × 4 × 8 ft) boxes are constructed of 1.9-cm (0.75-in.) plywood and are lined with

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a polyethylene membrane. The soils were generated during various INTEC activities, including the Tank Farm upgrade, CERCLA remediation projects, the CPP-603 cleanup, excavation for the fire exit from building CPP-604/605, and miscellaneous excavations at INTEC where soil contamination was encountered. Most of the boxes contain soil with such low levels of contamination that the RWMC will not accept the waste for disposal.

Boxed soil from the excavation for the fire exit from building CPP-604/605 was sampled and analyzed for inorganics, VOCs, and radionuclides. Analytical results for the soil generated are provided in Table 5-3 of the ROD (DOE-ID 1999). The COPCs identified from contaminant screening for the various excavation activities include arsenic, Am-241, Cs-134, Cs-137, Co-60, Eu-152, Eu-154, I-129, Np-237, Pu-238, Pu-239/240, Sr-90, Sb-125, U-234, and U-235. Volatile organics were not detected in the samples. The only inorganics detected above background were arsenic at 5.9 mg/kg and mercury at 10.4 mg/kg. Mercury was below the U.S. Environmental Protection Agency (EPA) Region III risk-based soil concentrations of 23 mg/kg residential, noncarcinogenic soil screening level. These contaminants are consistent with the types of contaminants contained in the service wastes and condensates from the PEW evaporator that have historically included nitric acid, mercury, plutonium, cesium-137, and strontium.

The soil and debris are contained in polyethylene-lined boxes that have not deteriorated. Therefore, it is assumed that significant amounts of contaminated soil have not leaked from the boxes and that lateral and vertical contaminant migration from the box staging area has not occurred. Assuming that the boxes are 80% full, there is a total of approximately 1,047 m<sup>3</sup> (1,370 yd<sup>3</sup>) of soil in the boxes.

#### **1.2.2.8 CPP-97: Tank Farm Soil Stockpiles**

The CPP-97 site is comprised of two stockpiles of soil located in the Northeast corner of INTEC. The southern boundary of the stockpile site is Palm Avenue, the northern boundary is Chestnut Avenue, and the eastern boundary is

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Lodge Pole Street. The site consists of two tarp-covered stockpiles of soil that originated in the Tank Farm area.

The stockpiles were generated during the High-Level Liquid Waste Tank Farm upgrade project during 1993–1995. The project excavated several areas of the Tank Farm. The soils were monitored for radionuclides during excavation. Based on the activity concentration, the soils were segregated into separate piles. The field instrument readings on the larger 1,090 m<sup>3</sup> (1,430 yd<sup>3</sup>) stockpile were 0-3 milliroentgen-equivalent man per hour (mrem/hr). The field instrument readings on the smaller 53 m<sup>3</sup> (70 yd<sup>3</sup>) stockpile were 3–50 mrem/hr. Additional 3–50 mrem/hr soils were placed in 0.6 × 1.2 × 2.4-m (2 × 4 × 8-ft) boxes and transported to the south side of CPP-1683 (Rub tent).

Potential contaminants contained in the stockpiled soils include radionuclides and suspected listed wastes. Contaminant concentrations are expected to be similar to those found in the CPP-89 and CPP-92 soils.

**1.2.2.9 CPP-98: Tank Farm Shoring Boxes**

The CPP-98 site is comprised of 138 1.2 × 1.2 × 2.4-m (4 × 4 × 8-ft) and 16 0.6 × 1.2 × 2.4-m (2 × 4 × 8-ft) wooden boxes, containing wood and metal shoring material that originated from the High-Level Liquid Waste Tank Farm upgrade project that was conducted during 1993–1995. The upgrade project generated and managed the boxes of shoring material as low-level radioactive waste. However, the Tank Farm area soil contains radioactive and potentially listed constituents. Therefore, the boxes of shoring material are assumed to contain radioactive and potentially listed constituents. Contaminant concentrations are expected to be less than those found in the CPP-89 and CPP-92 soils. The estimated volume of CPP-98 soils is 191 m<sup>3</sup> (250 yd<sup>3</sup>).

**1.2.2.10 CPP-99: Boxed Soil**

The CPP-99 site is comprised of 59 0.6 × 1.2 × 2.4-m (2 × 4 × 8-ft) wooden boxes of contaminated soil. The soils were generated during the High-Level Liquid Waste Tank Farm upgrade project that was conducted during 1993–1995. In addition, some boxes contain soils generated during the

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CPP-605 Egress Tunnel project. Several factors contributed to contamination of the boxes soils. Factors include the following:

- Accidental releases and leaks through INTEC process piping beneath CPP-605 and the Tank Farm
- Cross-contamination through Tank Farm operational and maintenance excavations
- Fallout from years of operating the INTEC main stack
- Migration of contamination from INTEC Tank Farm valve boxes and vault sumps, via vent tubes before 1970
- Windblown contamination from releases outside the Tank Farm.

The boxed soils were generated and managed as low-level radioactive waste from 1993 through 1995. However, the Tank Farm and CPP-604 facilities have listed waste codes associated with each area. Therefore, the 59 boxes of soil may contain radioactive and potentially listed constituents, and are managed as such. The estimated volume of CPP-99 boxed soils is 96 m<sup>3</sup> (126 yd<sup>3</sup>).

### 1.2.3 Waste Area Group 4

WAG 4 is comprised of the Central Facilities Area (CFA) and is located in the south-central portion of the INEEL. The CFA has been used since 1949 to house many of the support services for all operations at the INEEL including laboratories, security, fire protection, medical, communication systems, warehouses, a cafeteria, vehicle and equipment pools, bus system, and laundry facilities. Contaminated soils are located at the CFA-04 Pond which is located near the southern corner of the CFA (Figure 4).

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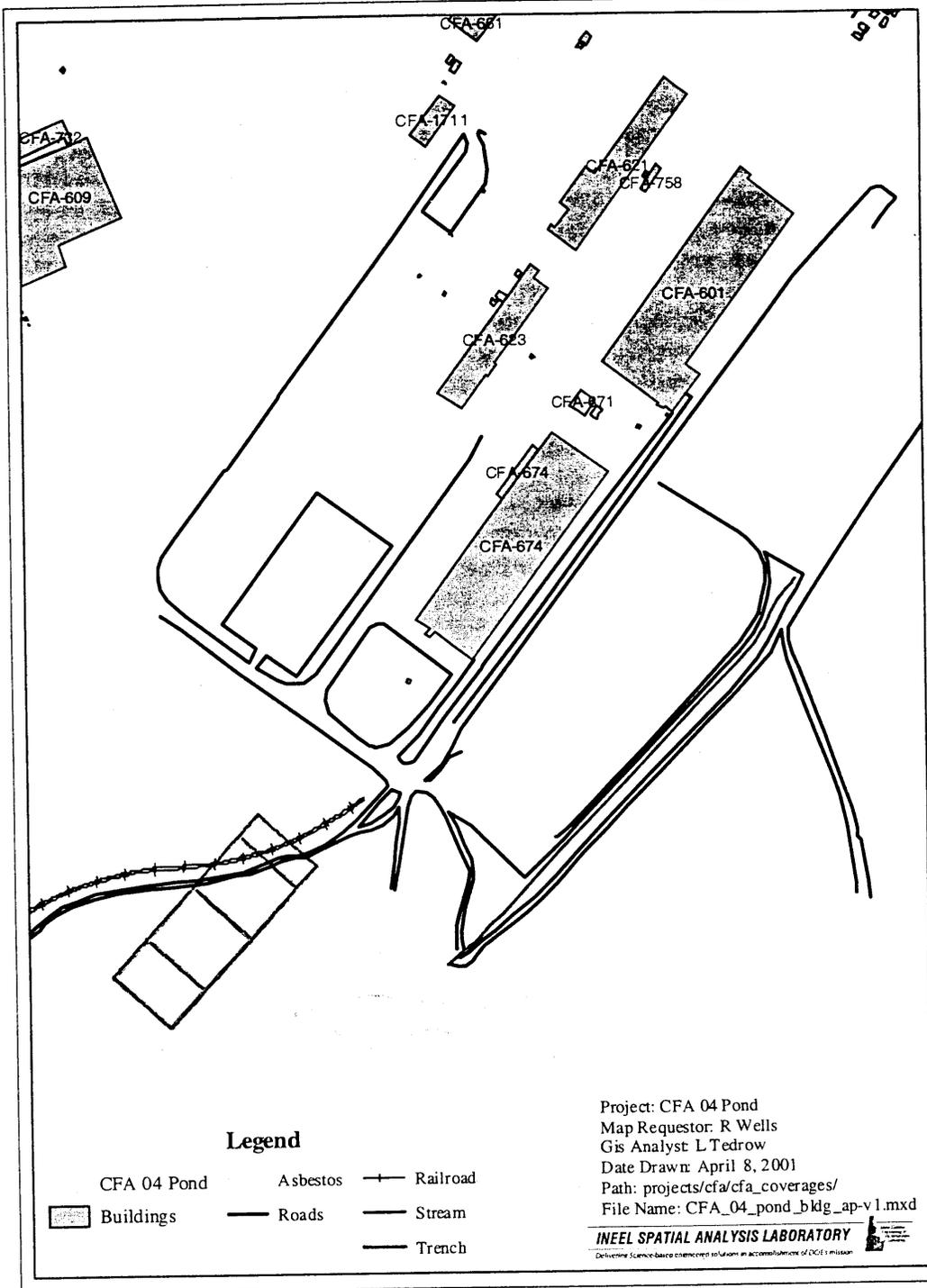


Figure 4. Central Facilities Area-04 Pond.

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The CFA-04 pond is a shallow, unlined surface depression that was originally a borrow pit for construction activities at CFA. The pond is approximately  $46 \times 150$  m ( $150 \times 500$  ft) and roughly 2–2.4-m (7–8-ft) deep. Basalt outcrops are present within, and immediately adjacent to, the pond. It received laboratory wastes from the Chemical Engineering Laboratory (CEL) in Building CFA-674 between 1953 and 1969. The CEL was used to conduct calcine experiments on simulated nuclear wastes. The CEL experiments used mercury to dissolve simulated aluminum fuel cladding as well as radioisotope tracers in the calcining process. The primary waste streams discharged to the pond from the CEL included approximately  $76.5 \text{ m}^3$  ( $100 \text{ yd}^3$ ) of mercury-contaminated calcine that contained low-level radioactive wastes and liquid effluent from the laboratory experiments.

In addition, there is approximately  $382 \text{ m}^3$  ( $500 \text{ yd}^3$ ) of rubble consisting of laboratory bottles, asphalt and asbestos roofing materials, reinforced concrete, and construction and demolition debris. The pond received run-off from the CFA site periodically between 1953 and 1995. Based upon investigations conducted at the site, arsenic, mercury, Cs-137, U-234, U-235, and U-238 were identified as COPCs. These contaminants were evaluated during the baseline risk assessment resulting in the determination that mercury posed the only unacceptable risk to human health and the environment.

The design drawings in Appendix C and the specifications in Appendix D outline the details of the work to be conducted in support of the WAG 4 remedial action. The Subcontractor shall be responsible for surveying each site (see Specification 01051, "Construction Surveying and Staking") to establish the excavation boundaries under the direction of the Contractor. The Subcontractor shall mow vegetation as required, excavate and dispose of all materials encountered, perform backfilling and grading of all excavations (including those done by the Contractor,) compact all backfill, and perform finish grading and grading for surface drainage according to the requirements set forth in Specification 02200, "Earthwork." Following confirmation that the remedial action objectives have been achieved, the Subcontractor shall revegetate the site according to the requirements set forth in Specification 02486, "Revegetation." The following subsection summarizes the field activities that will take place at the CFA-04 contaminated soil site.

For CFA-04, the Subcontractor shall mow the area and then excavate mercury-contaminated soils above the FRG of 8.4 mg/kg that will be transported to and disposed at the ICDF. For the purposes of waste disposition at the ICDF, four categories of mercury-contaminated soils

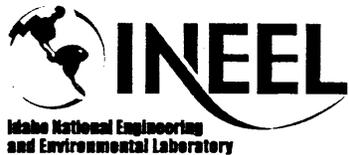
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will be excavated (volume estimates are in-place volumes based on prerediation sampling). The actual volumes could be larger, depending on the results of field sampling and analysis that will be performed during excavation. The low-level mercury contaminated soil volume may increase, depending on the results of pending radionuclide analyses of the soil to be removed by the Contractor and disposed at the CFA Landfill. The zones discussed below are delineated in Drawing 623389 Sheet C-1 provided in Appendix C. The two categories are as follows:

1. Low-level, mercury-contaminated soil: Soil with total mercury concentrations above 8.4 mg/kg and toxicity characteristic leaching procedure (TCLP) mercury concentrations less than 0.2 mg/L, and radionuclide concentrations exceeding the levels defined in the *Idaho National Engineering and Environmental Laboratory Waste Acceptance Criteria* (DOE-ID 2002b). Radioactive tracers (Cs-137, Sr-90, Ru-106, and unidentified uranium isotopes) were used in the calcine tests; therefore, the excavated soil may be considered low-level radioactive in addition to its mercury component (approximately 4,605 m<sup>3</sup> [6,024 yd<sup>3</sup>] from zones 5, 6, 7, and 8). The volume of soil in this category may increase pending radionuclide analyses of soil from zones 11, 12, 13, and 14. Zone 2A soil may also be included in this category pending waste soil characterization. The boundaries and volume of zone 2A soil may change pending field boundary characterization and waste soil characterization that will be performed by the Contractor.
2. Low-level TCLP mercury-contaminated soil: Soil with total mercury concentrations between 8.4 and 260 mg/kg and TCLP mercury concentrations greater than or equal to 0.2 mg/L with radionuclide concentrations exceeding the RRWAC (DOE-ID 2001) (approximately 642 m<sup>3</sup> [840 yd<sup>3</sup>] from zones 6A and 7A) or mercury-contaminated soil with a potential to exceed the TCLP limits for mercury based on historic sampling will be included in this waste stream, although the soil did not exceed these limits in prerediation sampling.

The Subcontractor shall excavate mercury-contaminated soils following the excavation plans and specifications provided in Appendixes C and D, respectively. The Subcontractor shall consolidate for treatment and disposal any calcine-filled bottles found during excavation that exceed 260 mg/kg mercury and 0.2 mg/L TCLP mercury. These consolidated materials will be turned over to the Contractor with the Contractor

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having responsibility for obtaining the required treatment and disposal services. Otherwise, the Subcontractor shall transport the bottles for treatment/disposal to the ICDF as appropriate for their waste characteristics. First, the Subcontractor shall excavate the low-level TCLP mercury-contaminated soil and haul it to the ICDF for storage in a pile until it can be stabilized and disposed. Second, the Subcontractor shall excavate the low-level mercury-contaminated soil that is on top of the basalt and haul it to the ICDF for disposal. Where contaminated soil extends to the soil/basalt interface, the Contractor will remove the contaminated soil to the extent practical from the basalt interface and in the basalt cracks/crevices using a high-powered vacuum. The Subcontractor shall provide containers that will be filled by the Contractor using the vacuum. The containers shall be the same as those the Subcontractor uses to transport contaminated soils to the ICDF. Once filled, the Subcontractor shall transport this soil to the ICDF at the direction of the Contractor. During the vacuuming activities, the Contractor will assume responsibility for the task site.

Soil removal at the CFA-04 Pond site will be directed primarily based on the results of preremediation sampling previously completed by the Contractor. The Contractor will perform sampling concurrent with the remedial action to determine whether the FRGs have been met and to direct any additional excavation of contaminated soils and materials. Upon excavation, the Contractor will perform field screening for residual mercury contamination. If the field screening shows mercury concentrations above the FRG, then the Subcontractor shall excavate an additional 15 cm (6 in.) from the area designated by the Contractor. Following the additional excavation, additional field screening samples will be collected to determine whether the FRG has been achieved. This iterative process of excavation followed by field screening will continue until the Contractor has determined that the remediation is complete. Once it has been determined that the FRG has been achieved, the Contractor will perform final confirmation sampling and analysis.

#### **1.2.4 Waste Area Group 5**

Waste Area Group 5 is in the south-central portion of the INEEL. The Auxiliary Reactor Area (ARA) consists of four separate operational areas designated as ARA-I, ARA-II, ARA-III, and ARA-IV (Figure 5). Activities conducted by the INEEL Deactivation, Decontamination, and Decommissioning (DD&D) organization have resulted in the removal of all structures at the ARA facilities with the exception of a few buildings and facilities remaining at ARA-IV. Contaminated soils are located at the ARA-I, ARA-II, and ARA-III facilities. These sites include ARA-01:

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ARA-I Chemical Evaporation Pond, ARA-12: ARA-III Radioactive Waste Leach Pond, and ARA-23: ARA-I and ARA-II Radionuclide Contaminated Soils.

The design drawings in Appendix E, and the specifications in Appendix F, outline the details of the work to be conducted in support of the WAG 5 remedial action. The Subcontractor shall be responsible for surveying each site (refer to Specification 01051, "Construction Surveying and Staking") to establish the excavation boundaries under the direction of the Contractor. The Subcontractor shall perform clearing and mowing, excavating, backfilling of excavations, compacting of backfill, and finish grading according to the requirements set forth in Specification 02200, "Earthwork." The excavating activities will commence along the southwest corner of each remedial action site and proceed in a northeasterly direction to mitigate the windblown spread of contamination over areas that have already been remediated. Following confirmation that the remedial action objectives have been achieved for a given site (or portion thereof), the Subcontractor shall revegetate the site according to the requirements set forth in Specification 02486, "Revegetation." The following subsections summarize the field activities that will take place at each of the individual WAG 5 contaminated soil sites.

The Subcontractor shall excavate the contaminated soils in the ARA-01 and ARA-12 soils in the beginning of the remedial action. Excavation of soils at the ARA-23 site may occur concurrently with those at the ARA-01 and ARA-12 sites. Following the initial excavation of the soils in the ARA-01 and ARA-12 areas, the Subcontractor shall proceed to concentrate its efforts on the ARA-23 soils. Following the initial excavation of the ARA-01 and ARA-12 soils, the Contractor will collect analytical survey samples to determine whether additional excavation is necessary. In accordance with Specification 01051, "Construction Surveying and Staking," provided in Appendix B, the Contractor will provide the survey coordinates to the Subcontractor if additional excavation is required. The Subcontractor shall survey in the new coordinates and perform the additional excavation at the direction of the Contractor. This excavation, sampling, analysis, and resurveying effort will continue until the Contractor determines through the collection and analysis of confirmation samples that the remedial action is complete. The following sections describe the physical attributes and contamination of each of the soil sites destined for remediation under the terms outlined in this SOW.

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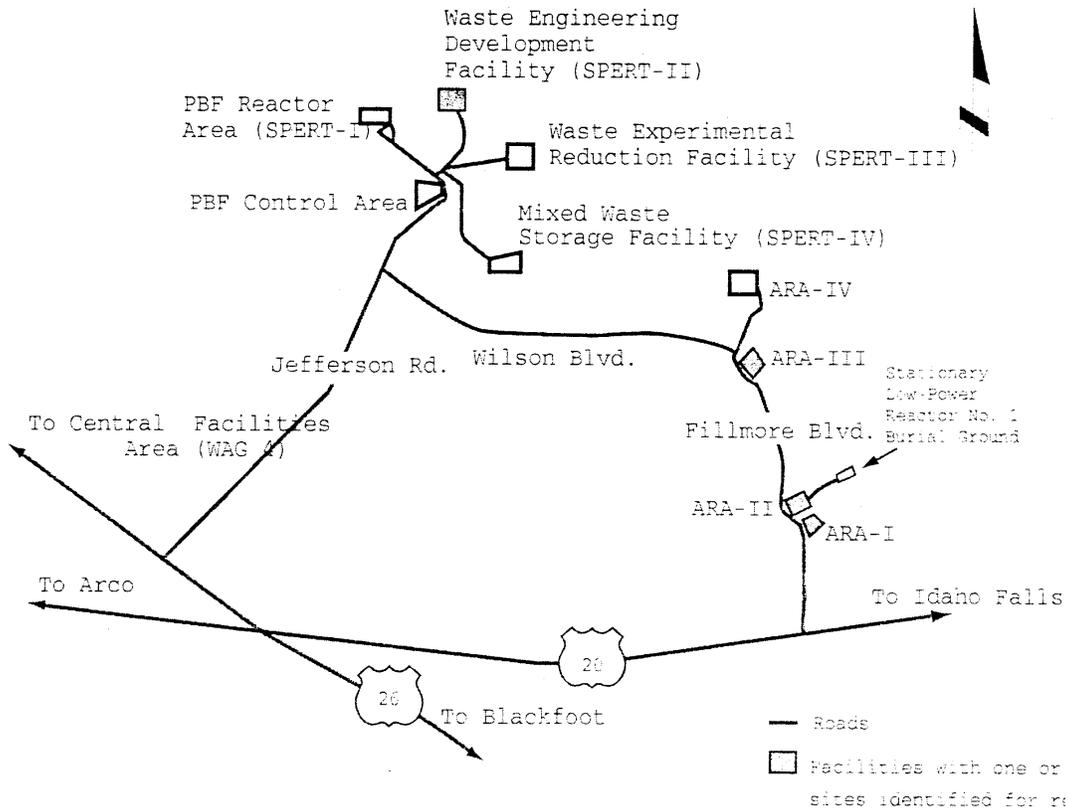


Figure 5. Waste Area Group 5.

It should be noted that the contamination surveys performed by the Contractor will be near real-time so as to not to impede the Subcontractor's progress. The Contractor will provide the results of the analytical surveys (radiological using in situ instrumentation, metals using on-Site instrumentation) within 24 hours. The Contractor will collect confirmation samples when it is fairly well-assured based upon the survey analytical results that the remediation goals have been achieved. The Contractor will submit the final confirmation samples to an approved laboratory; however, this activity will not impede the Subcontractor's ability to continue the excavation and transport of contaminated soils.

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#### 1.2.4.1 ARA-01: ARA-I Chemical Evaporation Pond

The ARA-01 site consists of an estimated 911 m<sup>3</sup> (1,191 yd<sup>3</sup>) of contaminated soils for which the primary COCs include arsenic, selenium, and thallium. The ARA-01 site (Figure 6) is a shallow, unlined surface impoundment, roughly 30 × 90 m (100 × 300 ft) that was used to dispose of laboratory wastewater from the ARA-I Shop and Maintenance Building (ARA-627). Located southeast of ARA-I, the pond was constructed in 1970 by excavating soil to create a shallow topographic depression. Basalt outcrops are present within and immediately adjacent to the pond. The subsurface immediately beneath the pond consists of fracture and rubble zones. No interbed was found within the first 36 m (118 ft) of the surface.

From 1970 to 1988, the pond received process discharges that contained small quantities of radioactive substances, acids, bases, and VOCs. Since 1988, the pond has been dry except during spring run-off and heavy precipitation. Based upon data collected during a 1982 sampling event, results of the ARA-01 baseline risk assessment, and additional sampling conducted as part of the RI/FS, a risk assessment was performed. As a result of the site screening, only selected metals and radionuclides were retained for further consideration in the baseline risk assessment. The human health risk assessment identified arsenic as a COC, based on human health risk estimates. In addition, the ecological risk assessment identified selenium and thallium as COCs, based on hazard quotients for ecological receptors.

For ARA-01, the Subcontractor shall excavate soil from within the defined remediation boundaries in approximately 7.6 cm (3 in.) lifts using conventional excavation equipment (e.g., motor graders, loaders) followed by shovel work if directed by the Contractor. The shallow lifts are desired because of the necessity to minimize the quantity of soils that do not exceed the remediation goals being disposed in the ICDF, thereby occupying space into which other waste could be placed. The Subcontractor shall load the excavated soil directly into containers for transport to the ICDF for disposal.

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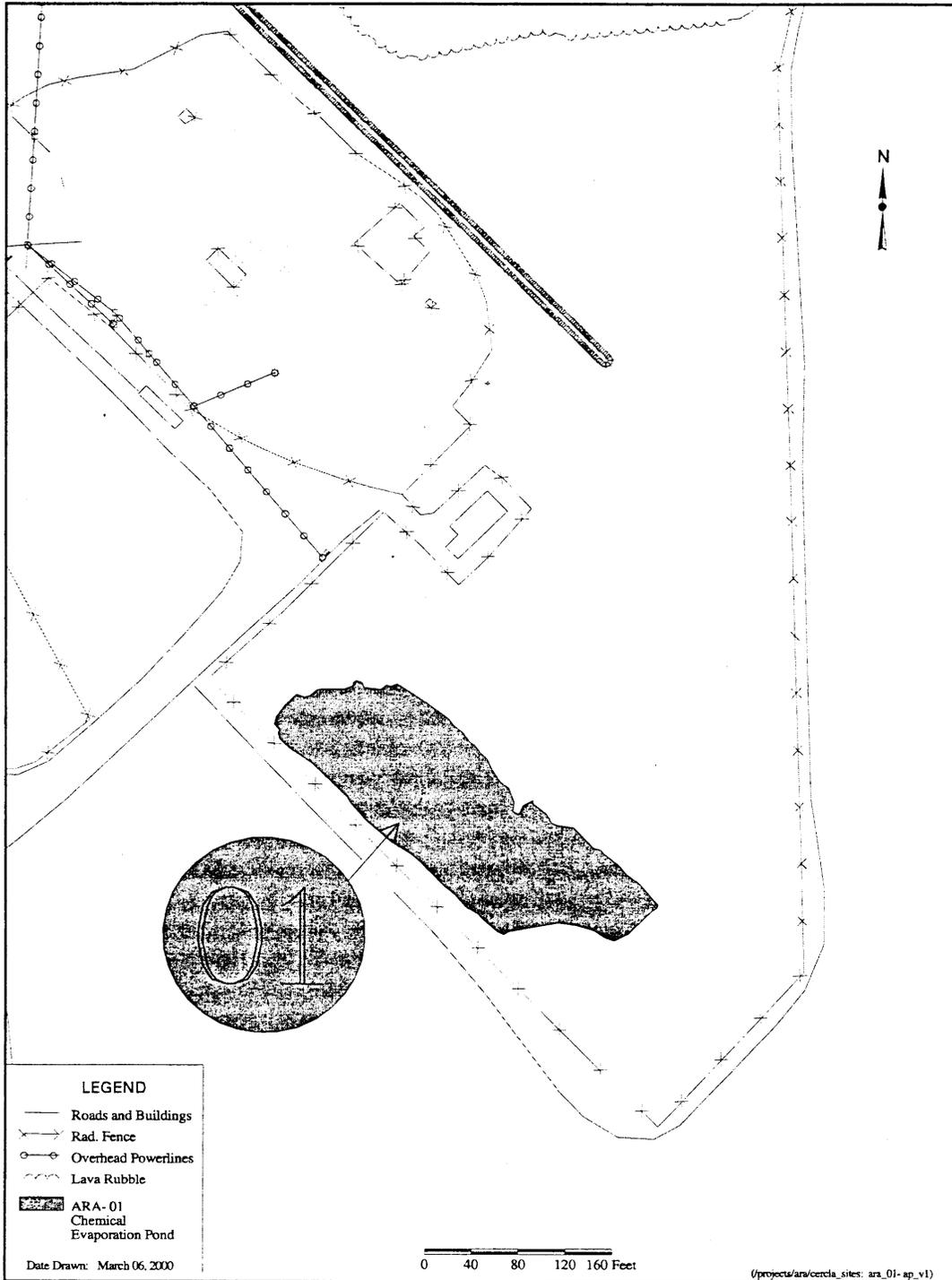


Figure 6. Auxiliary Reactor Area-01: ARA-I Chemical Evaporation Pond.

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In accordance with the ARARs, the Subcontractor shall implement appropriate dust suppression techniques during the remedial action to minimize the generation of fugitive dust and to mitigate the exposure of personnel and off-Site receptors to airborne radioactive contamination. The Contractor will survey the containers for radiological contamination.

The Contractor will perform sampling of the site using analytical screening techniques following each 7.6 cm (3 in.) lift to determine whether the remedial action goals have been met. If additional excavation is determined to be necessary, the Contractor will use the screening data to revise the remediation boundaries. The Subcontractor shall use the revised boundary data to delineate the zones where additional remediation will be required. Excavation, screening, and revising of the boundaries will continue until either the remedial action goals have been achieved or basalt is reached. At this point, the Contractor will perform confirmation sampling for final determination as to whether the goals have been achieved. Based on the results of the confirmation sampling, either excavation (mechanical or hand) may continue, or the excavation will be backfilled, compacted, and finish graded, followed by revegetation.

**1.2.4.2 ARA-12: ARA-III Radioactive Waste Leach Pond**

With Ag-108m, copper, mercury, and selenium identified as driving the remediation, the ARA-12 site is comprised of approximately 1,414 m<sup>3</sup> (1,849 yd<sup>3</sup>) of contaminated soil. The ARA-12 site (Figure 7) is an unlined surface impoundment with approximate dimensions of 50 × 115 m (150 × 370 ft). The pond was constructed in a natural depression west of ARA-III to dispose of low-level liquid waste from reactor research operations. Liquid waste was stored temporarily in tanks then transferred to the leach pond via an underground pipe. Effluent contained low-level radioactive material. Originating in an uncontaminated water storage tank, a second line discharged water to the pond. The pond also received facility run-off through a culvert.

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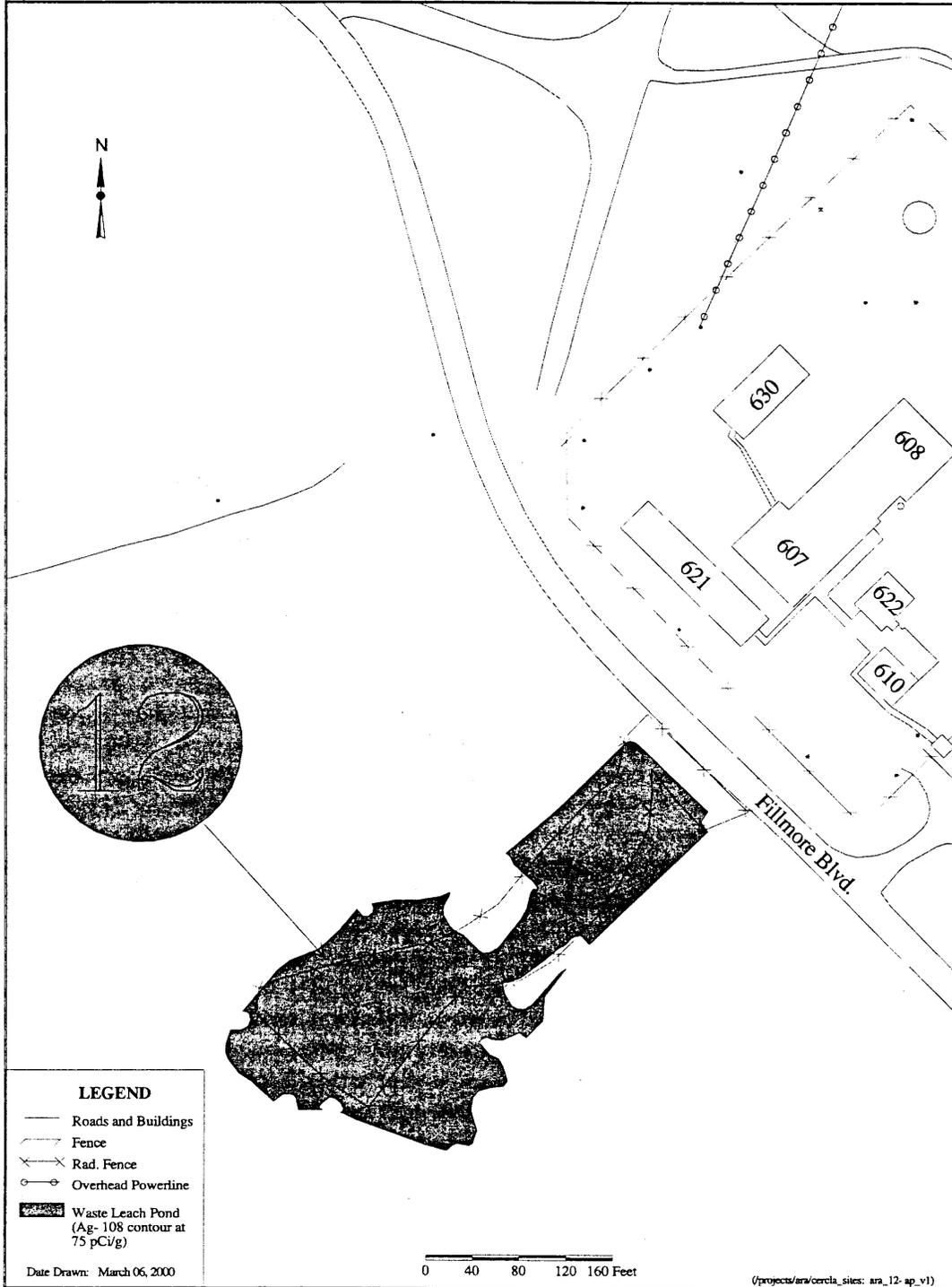


Figure 7. Auxiliary Reactor Area-12: ARA-III Radioactive Waste Leach Pond.

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The ARA-III facility was an active reactor research facility from about 1959 to 1965. From 1966 to 1987, activities at ARA-III were limited to component and instrumentation testing, instrumentation development and fabrication, and chemical research. Waste associated with these activities was not disposed of in the leach pond, and the only discharges to the pond during this period were from the water storage tank and facility run-off. The facility was shut down in 1987, leaving the pond dry except during spring run-off and heavy precipitation. In 1991, the culvert was plugged in preparation for DD&D operations at ARA-III, and in 1993, the tanks and waste lines to the leach pond were removed.

A Track 2 evaluation initiated in 1993 and completed in 1994 determined that a total risk of  $2 \times 10^{-3}$  was estimated for the 100-year future residential nonintrusion scenario, primarily because of direct exposure to Ag-108m, Cs-137, and U-238. As part of the RI/FS, a survey of the ARA-12 surface soil was conducted with the global positioning radiometric scanner (GPRS). The human health risk assessment identified Ag-108m as a COC for ARA-12 based on human health risk estimates. The ecological risk assessment determined that copper, mercury, and selenium were COCs based on hazard quotients for ecological receptors.

For ARA-12, the remedial action will follow the same approach as that for ARA-01. An exception is the presence and handling of a radiation controlled area fence (refer to Drawing C-1 in Appendix E). This fence lies within the boundary of the area to be remediated. As such, the Subcontractor shall remove this fence under the direction of the Contractor before the commencement of remedial activities at the site. Following completion of the remedial action, the fence may be rebuilt depending on the results of the confirmation sampling and the Contractor's RadCon site survey. Screening, confirmation sampling, backfilling, grading, and revegetating will follow suit as described for ARA-01. Figure 8 depicts the extent of the radiological contamination at the ARA-12 site. This provides a graphical representation of the gross gamma radiological concentrations as they exist within the remediation area.

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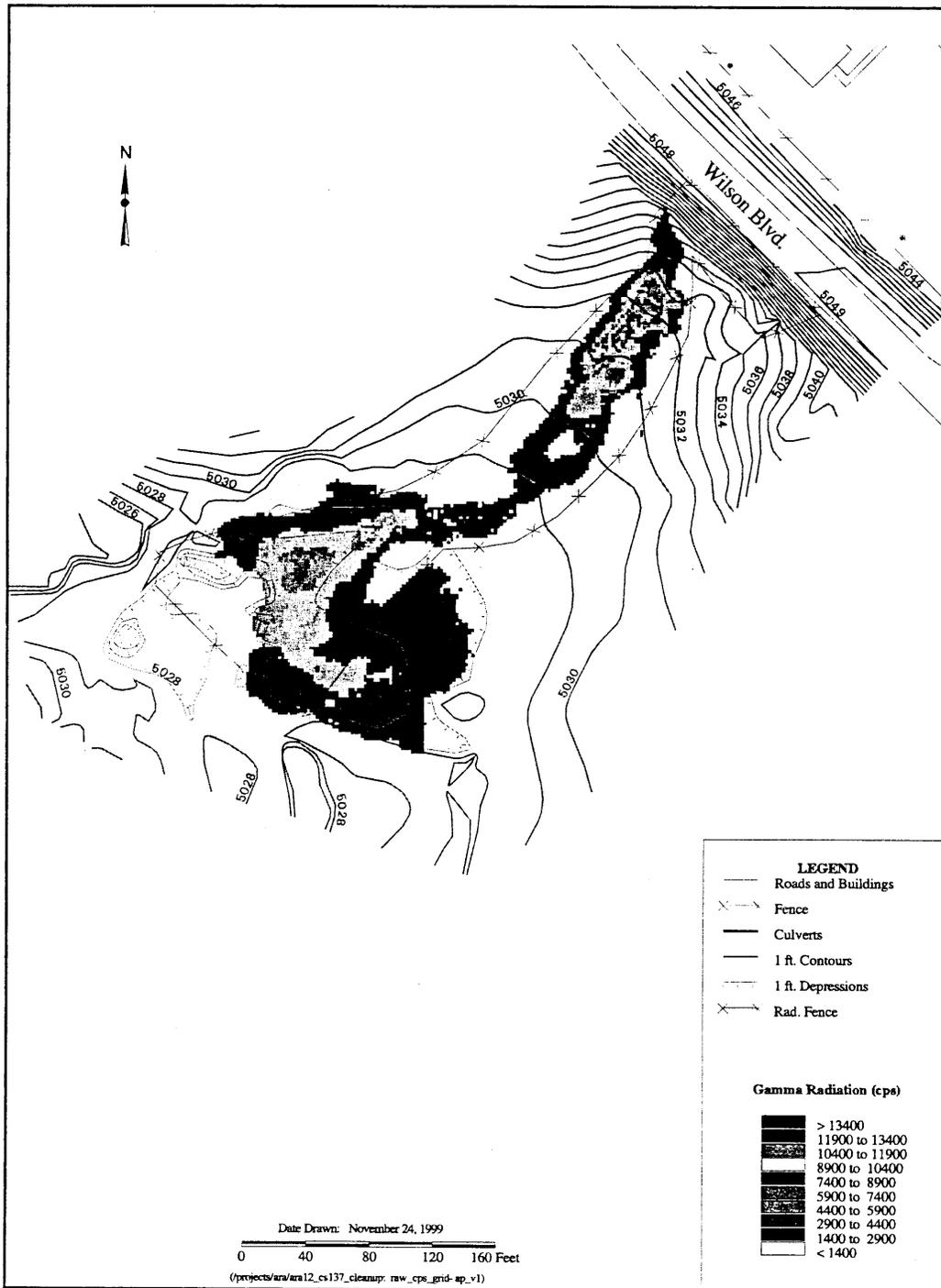


Figure 8. ARA-12 gross gamma radiological survey results.

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**1.2.4.3 ARA-23: ARA-I and ARA-II Radiologically-Contaminated Soils**

Forming the bulk of the soils requiring remediation, ARA-23 includes an estimated 33,652 m<sup>3</sup> (44,015 yd<sup>3</sup>), with cesium-137 being the driver. The ARA-23 site (Figure 9) is a 97-ha (240-acre) windblown contamination area including ARA-I and II. Of the 97 ha (240 acres), 17 ha (42 acres) exceed risk-based concentrations and require remediation. The site also contains subsurface structures remaining after DD&D activities within the ARA-I and ARA-II facilities. Soils were radiologically contaminated by the 1961 Stationary Low-Power Reactor-1 (SL-1) accident and subsequent cleanup. Minor amounts of contamination may have been added by other ARA operations. Over time, winds dispersed the contamination over an area roughly 100 ha (240 acres) in size, but soil concentrations over most of the area are significantly less than risk-based remediation goals. The long axis of the roughly oval-shaped site is consistent with the generally southwest-to-northeast winds common at the INEEL.

A Track 1 investigation was initiated for ARA-23 in 1993, but was not finalized because the site was reassigned to OU 10-06 for evaluation. The OU 10-06 evaluation, which excluded the areas within the ARA-I and ARA-II facility fences, was only partially completed before ARA-23 was reassigned to WAG 5 for final disposition. The data gaps identified comprised the horizontal and vertical extent of Cs-137 in the windblown soil area and the presence of other radionuclides. Based on the sampling and analytical results combined with the GPRS data obtained during the RI/FS, Cs-137 was identified as the primary contributor to the estimated total risk for all pathways. The ARA-23 site was screened for evaluation in the ecological risk assessment because the only contaminants above background levels are radionuclides. Residual contamination exists in surface soils surrounding the SL-1 burial ground. Those soils will also be remediated during the ARA-23 cleanup activities. For the remediation of the ARA-23 site, the Subcontractor shall subdivide the area into excavation zones.

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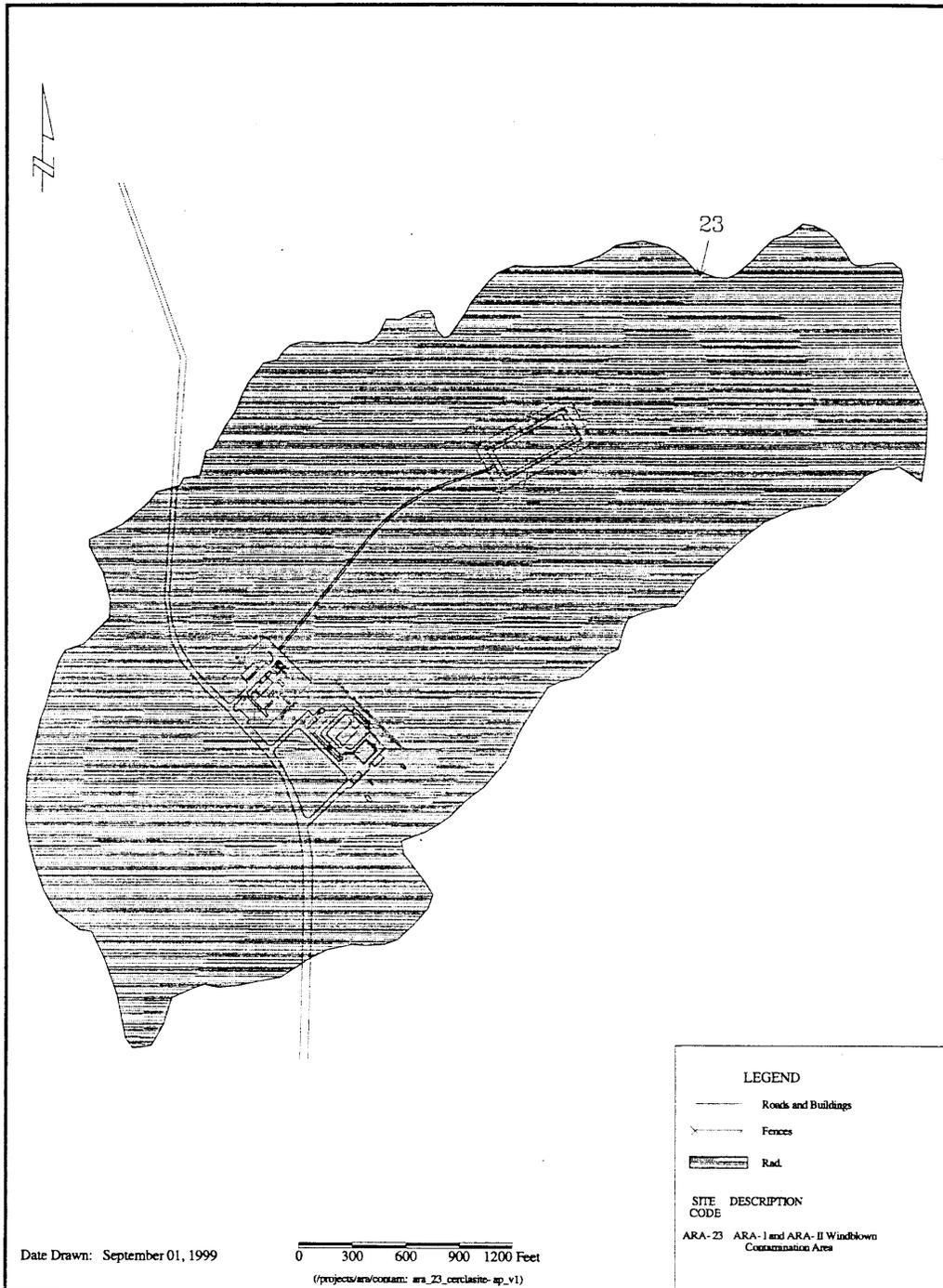


Figure 9. Auxiliary Reactor Area-23: ARA-I and ARA-II Radiologically-Contaminated Soils.

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This will allow the Subcontractor to be removing contaminated soils in one zone, while the Contractor performs in situ measurements of a previously excavated zone to determine whether additional excavation is required. As with ARA-01 and ARA-12, the Contractor provides survey coordinates to the Subcontractor if additional excavation is warranted with continuation of the excavation, in situ measurements, and resurveying for additional excavation at the direction of the Contractor.

Figure 10 shows the Cs-137 contamination at the ARA-23 site. The figure provides a two-dimensional representation of the contaminant concentrations as they exist throughout and beyond the remediation area. Figure 11 provides a three-dimensional representation of the Cs-137 concentrations enabling an individual to determine where the highest concentrations reside and hence the greater corresponding risk from a health and safety perspective. For ARA-23, the site has been divided into five sub-areas based upon the depositional mode of the contaminant. Those areas are as follows:

- Hot spots in the SL-1 Burial Ground
- Haul road leading to the SL-1 Burial Ground
- ARA-I and ARA-II facilities
- Soil areas A and C
- All other areas within ARA-23.

For the hot spots in the SL-1 Burial Ground, the exact depositional mode of the contamination is unknown, but is believed to be an artifact of the SL-1 cleanup activities conducted in 1961. The remedial action will follow the same approach as that for ARA-01, with the exception that the Subcontractor shall conduct the excavation in approximately 15.2-cm (6-in.) lifts rather than 7.6-cm (3-in.). As the excavation progresses, the Subcontractor shall perform lifts in 7.6 cm (3 in.) increments to minimize the quantity of soil to be disposed.

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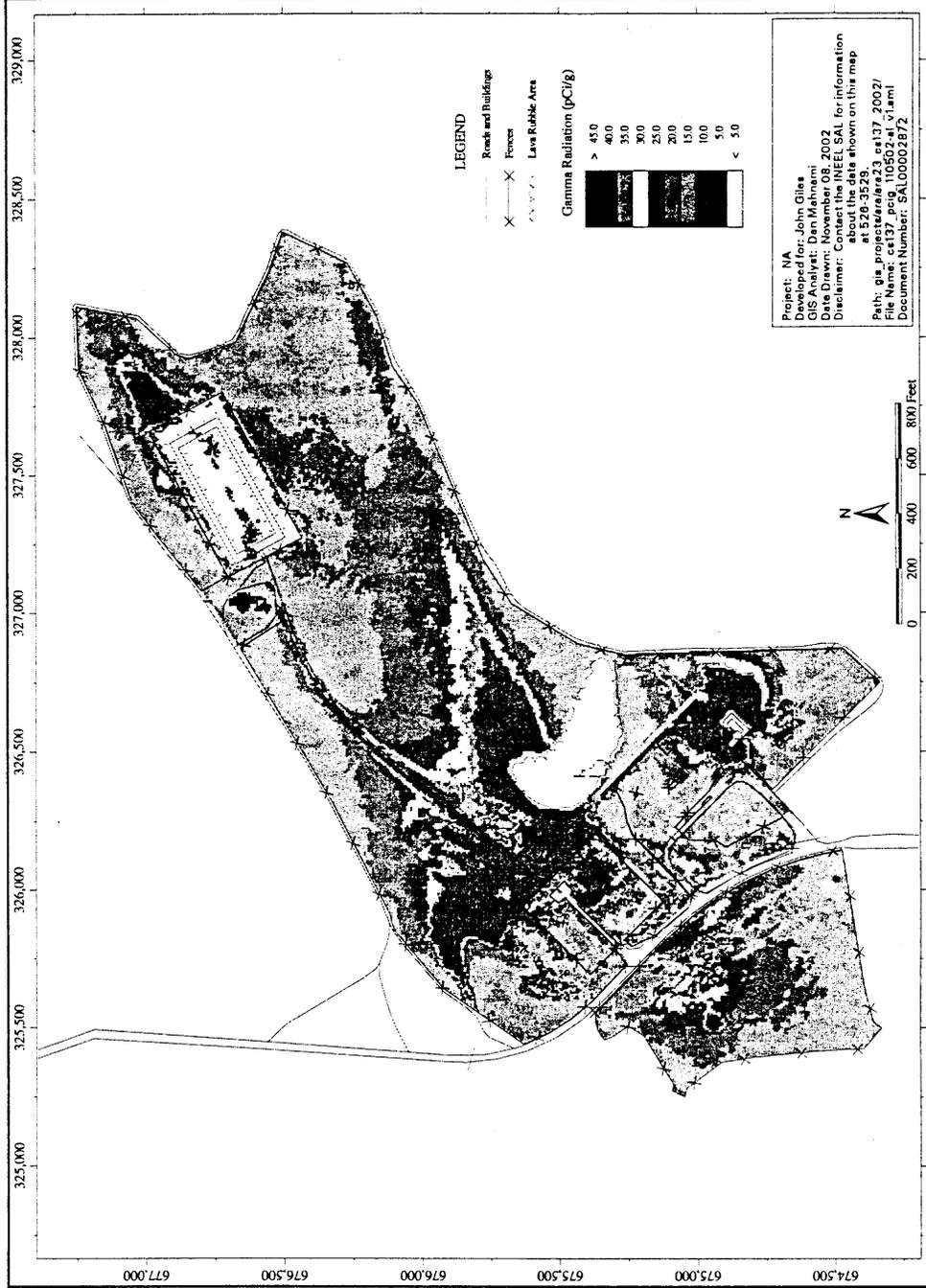


Figure 10. Two-dimensional graphical representation of Cs-137 concentrations at ARA-23.

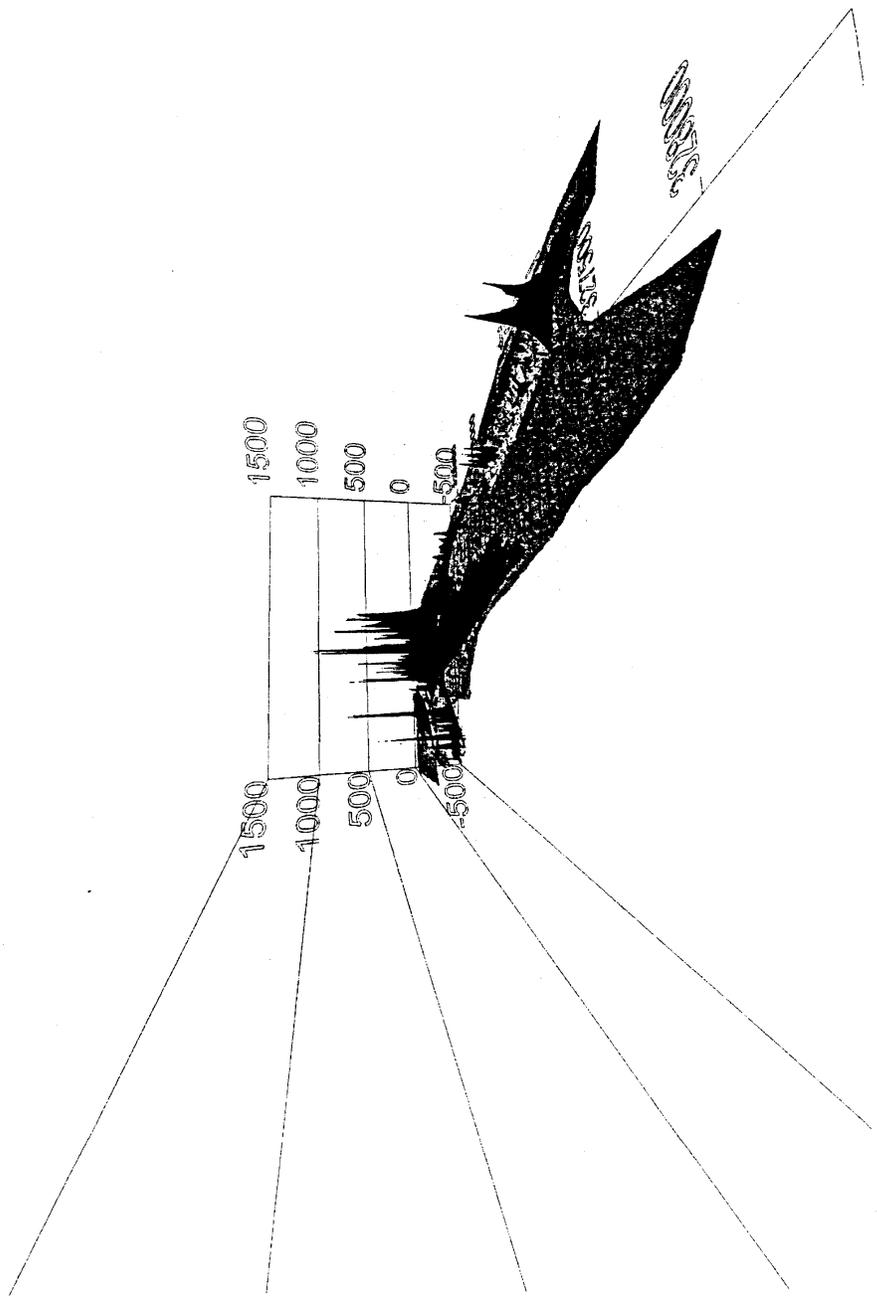


Figure 11. Three-dimensional graphical representation of Cs-137 concentrations looking south at ARA-23.

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Because the excavation area is relatively small, diligence must be maintained to ensure the existing covers at SL-1 are not disturbed and that waste within the trenches at SL-1 is not encountered. More specialized excavation techniques and extensive hand digging may be employed. Screening, confirmation sampling, backfilling, grading, and revegetating will follow suit as described for ARA-01.

For the haul road leading to the SL-1 Burial Ground, the contamination was deposited as a result of transporting and dragging contaminated materials from the SL-1 accident site to the burial trenches. Again, the remedial action approach will be identical to that for the ARA-01, with one exception: initially, the Subcontractor shall employ approximately 15.2-cm (6-in.) lifts rather than 7.6-cm (3-in.) lifts. As the excavation progresses, the Subcontractor shall perform lifts in either approximately 7.6-cm (3-in.) or 15.2-cm (6-in.) increments, depending on the field determination as to how much additional contaminated soil remains before the underlying contaminated soil is reached. The Contractor will direct the Subcontractor as to how deep subsequent lifts should be performed. Screening, confirmation sampling, backfilling, grading, and revegetating will follow suit as described for ARA-01.

The soil contamination at the ARA-I and ARA-II facilities is a result of the SL-1 incident with the primary mode of contamination being windblown deposition. The Subcontractor shall either remove or temporarily open various radiation-controlled area fencing for movement of excavation and hauling equipment at the direction of the Contractor. Depending on the results of the Contractor's confirmation sampling and RadCon surveys, these fences may or may not be replaced. The Subcontractor shall remove a fence surrounding the ARA-II facility for disposal at the ICDF. Within the ARA-I facility area, the exact excavation boundaries are yet to be defined because the proximity of sludge waste from the ARA-16 Radionuclide Tank that is being stored at the site is affecting background levels, making accurate definition of the boundaries difficult. Once the waste is moved by the Contractor allowing determination of the excavation boundaries, the Subcontractor shall perform the initial lifts within the ARA-I facility area in approximately 7.6-cm (3-in.)

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increments. Within the ARA-II facility, the Subcontractor shall perform the initial lifts in approximately 15.2-cm (6-in.) lifts. Screening, confirmation sampling, backfilling, grading, and revegetating will follow suit as described for ARA-01.

For soil areas A and C, the original source for the contamination was windblown deposition. The soil itself was actually stockpiled during the segmented gate system treatability study conducted in 1999. The soil was excavated using approximately 7.6-cm (3-in.) lifts, with the stockpiles requiring disposal with the other ARA-23 excavated soil. The soil underlying the stockpiles may require additional excavation, based upon the results of field screening following removal of the stockpiles. The Subcontractor shall following the same approach as that for all other areas in ARA-23 for excavation of this soil, as discussed in the following paragraph.

For the other areas within ARA-23 not specifically mentioned above, the depositional mode is varied including windblown, vehicle decontamination, and dismantlement of the SL-1 reactor facilities. The Subcontractor shall follow the same approach for remediation of these areas as that for ARA-01 with soil excavation proceeding in approximately 7.6 cm (3 in.) or less lifts. Two areas that deserve special consideration include (1) the asphalt within the ARA-I and ARA-II facility areas and (2) the lava rock rubble area located north-northeast of the ARA-I facility. The Subcontractor shall remove the asphalt and rocks and dispose of them along with the contaminated soil at the ICDF. Screening, confirmation sampling, backfilling, grading, and revegetating will follow suit as described for ARA-01. The Subcontractor is encouraged to minimize the depth of excavation in an effort to minimize volume.

Within the ARA-23 site, particularly within the confines of the ARA-II facility fenced area, the potential exists that underground utilities (e.g., piping) or structures (e.g., concrete foundation) may be encountered during the excavation of contaminated soils before the final remediation goal of 23 pCi/g for soil is met. If such obstacles are encountered, the Subcontractor shall remove the materials and package them separately for disposal at the

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ICDF. To keep the materials from puncturing the liner, contaminated soils may be placed in and around the materials during the packaging operation. To note, the potential exists that if the excavation within the ARA-II facility proceeds deeper than expected, the underground utilities or structures encountered may be highly radioactively contaminated exceeding the ICDF contact-handled definition of 500 mrem/hr. If this should occur, work will cease in the area immediately surrounding the highly-contaminated materials. The Contractor will erect barriers and the Subcontractor will continue to work in other areas.

## 2. APPLICABLE CODES, PROCEDURES, AND REFERENCES

The following DOE-related codes, standards, and documents will be used as the basis for the remediation of the ER contaminated soil sites.

### 2.1 DOE-Related Codes, Standards, and Documents

The following DOE-related codes, standards, and documents will be used as the basis for the remediation of the environmental restoration sites:

- DOE Order 231.1, “Environment, Safety, and Health Reporting”
- DOE Order 232.1A, “Occurrence Reporting and Processing of Operations Information”
- DOE Order 414.1A, “Quality Assurance”
- DOE Order 435.1, Chapter IV, “Radioactive Waste Management”
- DOE Order 440.1A, “Worker Protection Management for DOE Federal and Contractor Employees”
- DOE Order 470.1, “Safeguards and Security Program”
- DOE Order 5400.5, “Radiation Protection of the Public and the Environment”
- DOE Order 5480.4, “Environmental Protection, Safety, and Health Protection Standards”
- 10 CFR 20, “Standards for Protection Against Radiation”

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- 10 CFR 71, "Packaging and Transportation of Radioactive Material"
- 10 CFR 830 Subpart A, "Quality Assurance Requirements"
- 10 CFR 835, "Occupational Radiation Protection"
- 29 CFR 1910.120, "Hazardous Waste Operations and Emergency Response"
- 29 CFR 1910.1200, "Hazard Communication"
- 29 CFR 1926.65, "Hazardous Waste Operations and Emergency Response"
- 40 CFR 50, "National Primary and Secondary Ambient Air Quality Standards"
- 40 CFR 260, "Hazardous Waste Management System – General"
- 40 CFR 262, "Standards Applicable to Generators of Hazardous Waste"
- 40 CFR 263, "Standards Applicable to Transporters of Hazardous Waste"
- 40 CFR 266, "Standards for Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities"
- 40 CFR 355, "Emergency Planning and Notification"
- 49 CFR 171, "General Information, Regulations, and Definitions"
- 49 CFR 172, "Hazardous Materials Table, Special Provisions, Hazardous Materials Communications Requirements and Emergency Response Information"
- 49 CFR 178, "Specifications for Packagings"
- IDAPA 58.01.01, "Rules for the Control of Air Pollution in Idaho"
- IDAPA 58.01.05, "Hazardous Waste"
- IDAPA 58.02.27, "Idaho Radiation Control Regulations."

## **2.2 Engineering Standards**

Appendixes B, D, and F contain references to the latest engineering standards and the specifications to which they apply for WAGs 1, 4, and 5, respectively. Engineering standards will be developed for WAG 3 as the RD/RA work plan for the WAG 3 Group 3 soils is written.

## **2.3 Environmental and Safety**

The following sections list the potential chemical-specific and action-specific applicable or relevant and appropriate requirements for each of the projects.

### **2.3.1 Waste Area Group 1**

Action-specific ARARs:

- IDAPA 58.01.01.161, “Toxic Substances”
- IDAPA 58.01.01.585, “Toxic Air Pollutants Noncarcinogenic Increments”
- IDAPA 58.01.01.586, “Toxic Air Pollutants Carcinogenic Increments”
- IDAPA 58.01.01.650 and .651, “Fugitive Dust”
- IDAPA 58.01.01.500.02, “Registration Procedures and Requirements for Portable Equipment – Compliance with Rules and Regulations”
- 40 CFR 61.92, “National Emissions Standards for Hazardous Air Pollutants – Standard”
- 40 CFR 61.93, “National Emissions Standards for Hazardous Air Pollutants – Emission Monitoring and Test Procedures”
- 40 CFR 61.94(a), “National Emission Standards for Hazardous Air Pollutants – Compliance and Reporting”
- IDAPA 58.01.05.006 (40 CFR 262.11), “Hazardous Waste Determination”
- IDAPA 58.01.05.006 (40 CFR 262 Subpart B), “The Manifest”

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- IDAPA 58.01.05.006 (40 CFR 262.30 – 262.33), “Pretransport Requirements”
- IDAPA 58.01.05.008 (40 CFR 264.13[a][1-3]), “General Waste Analysis”
- IDAPA 58.01.05.008 (40 CFR 264.14), “Security”
- IDAPA 58.01.05.008 (40 CFR 264.15), “General Inspection Requirements”
- IDAPA 58.01.05.008 (40 CFR 264.16), “Personnel Training”
- IDAPA 58.01.05.008 (40 CFR 264 Subpart C), “Preparedness and Prevention”
- IDAPA 58.01.05.008 (40 CFR 264 Subpart D), “Contingency Plan and Emergency Procedures”
- IDAPA 58.01.05.008 (40 CFR 264.114), “Disposal or Decontamination of Equipment, Structures and Soils”
- IDAPA 58.01.05.008 (40 CFR 264.171 – 177), “Use and Management of Containers”
- IDAPA 58.01.05.011 (40 CFR 268.40[a][b][e]), “Applicability of Treatment Standards”
- IDAPA 58.01.05.011 (40 CFR 268.45[a][b][c][d]), “Treatment Standards for Hazardous Debris”
- IDAPA 58.01.05.011 (40 CFR 268.48[a]), “Universal Treatment Standards”
- IDAPA 58.01.05.011 (40 CFR 268.49), “Alternative LDR [land disposal restriction] Treatment Standards for Contaminated Soil.”
- 40 CFR 300.440, “Procedures for Planning and Implementing Off-Site Response Actions.”

To be considered:

- DOE Order 5400.5 Chapter II (1)(a,b)

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- Region 10 Final Policy on the Use of Institutional Controls at Federal Facilities.

ARARs applicable only to the TSF-26 site:

- IDAPA 58.01.05.008 (40 CFR 264.197[a]), “Closure and Post-Closure Care”
- IDAPA 58.01.05.008 (40 CFR 264 Subpart X [except 264.603]), “Miscellaneous Units” (only if treatment is required to meet LDRs).

### **2.3.2 Waste Area Group 3**

Action-specific ARARs:

- IDAPA 58.01.01.650 and 651, “Fugitive Dust”
- IDAPA 58.01.01.585, “Toxic Air Pollutants Noncarcinogenic Increments”
- IDAPA 58.01.01.586, “Toxic Air Pollutants Carcinogenic Increments”
- 40 CFR 61.92, “National Emissions Standards for Hazardous Air Pollutants – Standard”
- 40 CFR 61.93, “National Emissions Standards for Hazardous Air Pollutants – Emission Monitoring and Test Procedures”
- 40 CFR 122.26, “Stormwater Discharge Requirements”
- IDAPA 58.01.05.006 (40 CFR 262.11), “Hazardous Waste Determination”
- IDAPA 58.01.05.008 (40 CFR 264.553), “Temporary Units”
- IDAPA 58.01.05.008 (40 CFR 264.554), “Remediation Waste Staging Piles”
- IDAPA 58.01.05.011 (40 CFR 268), “Land Disposal Restrictions”

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- IDAPA 58.01.05.011 (40 CFR 268.49), “Alternative LDR Treatment Standards for Contaminated Soils.”

Chemical-specific ARARs:

- IDAPA 58.01.05.005 (40 CFR 261.20 through .24), “Hazardous Waste Characteristics Identification”
- 40 CFR 761.50(a)(5), “PCB Disposal Requirements”
- 40 CFR 761.50(b)(3), “PCB Remediation Waste”
- 40 CFR 761.50(b)(7), “PCB Radioactive Waste”
- 40 CFR 761.50(d)(4), “Disposal Requirements for PCBs”
- 40 CFR 761.50(b)(8), “Porous Surfaces.”

To be considered:

- DOE Order 435.1, “Radioactive Waste Management”
- DOE Order 5400.5, “Radiation Protection of the Public and the Environment.”

**2.3.3 Waste Area Group 4**

Action-specific ARARs:

- 40 CFR 61.92, “National Emissions Standards for Hazardous Air Pollutants – Standard”
- 40 CFR 61.93, “National Emissions Standards for Hazardous Air Pollutants – Emission Monitoring and Test Procedures”
- IDAPA 58.01.01.585, “Toxic Air Pollutants Noncarcinogenic Increments”
- IDAPA 58.01.01.586, “Toxic Air Pollutants Carcinogenic Increments”
- IDAPA 58.01.01.650 and 651, “Fugitive Dust”
- IDAPA 58.01.05.006, “Hazardous Waste Determination”

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- IDAPA 58.01.05.008 (40 CFR 264.553), “Temporary Units”
- IDAPA 58.01.05.008 (40 CFR 264.554), “Remediation Waste Staging Piles”
- IDAPA 58.01.05.011 (40 CFR 268), “Land Disposal Restrictions”
- IDAPA 58.01.05.011 (40 CFR 268.49), “Alternative LDR Treatment Standards for Contaminated Soils”
- 40 CFR 122.26, “Stormwater Discharge Requirements”
- 40 CFR 264.310 (a) (1-5), “Closure and Post Closure Care of Landfills.”

Chemical-specific ARARs:

- IDAPA 58.01.05.005 (40 CFR 261.20 through .24), “Hazardous Waste Characteristics Identification.”

Location-specific ARARs:

- 16 USC 4691.2, “Historic Properties Owned or Controlled by Federal Agencies”
- 25 USC 3002 (43 CFR 10.6), “Custody”
- 25 USC 3005 (43 CFR 10.10), “Repatriation”
- 36 CFR 800.4, “Identification of Historic Properties”
- 36 CFR 800.5, “Assessment of Adverse Effects.”

**2.3.4 Waste Area Group 5**

Action-specific ARARs:

- IDAPA 58.01.01.161, “Toxic Substances”
- IDAPA 58.01.01.585, “Toxic Air Pollutants Noncarcinogenic Increments”
- IDAPA 58.01.01.586, “Toxic Air Pollutants Carcinogenic Increments”

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- IDAPA 58.01.01.650 and .651, “Fugitive Dust”
- IDAPA 58.01.01.500.02, “Registration Procedures and Requirements for Portable Equipment – Compliance with Rules and Regulations”
- 40 CFR 61.92, “National Emission Standards for Hazardous Air Pollutants – Standard”
- 40 CFR 61.93, “National Emission Standards for Hazardous Air Pollutants – Emission Monitoring and Test Procedures”
- 40 CFR 61.94(a), “National Emission Standards for Hazardous Air Pollutants – Compliance and Reporting”
- IDAPA 58.01.05.008 [40 CFR 264.13(a)(1-3)], “General Waste Analysis”
- IDAPA 58.01.05.008 (40 CFR 264.15), “General Inspections”
- IDAPA 58.01.05.008 (40 CFR 264, Subpart C), “Preparedness and Prevention”
- IDAPA 58.01.05.008 (40 CFR 264, Subpart D), “Contingency Plan and Emergency Procedures”
- IDAPA 58.01.05.008 (40 CFR 264.114), “Equipment Decontamination”
- IDAPA 58.01.05.008 (40 CFR 264.171-177), “Use and Management of Containers”
- IDAPA 58.01.05.011 [40 CFR 268.40 (a)(b)(e)], “Applicability of Treatment Standards”
- IDAPA 58.01.05.011 [40 CFR 268.45 (a-d), “Treatment Standards for Hazardous Debris”
- IDAPA 58.01.05.011 [40 CFR 268.48 (a)], “Universal Treatment Standards”
- IDAPA 58.01.05.011 (40 CFR 268.49), “Alternative LDR Treatment Standards for Contaminated Soil.”

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Location-specific ARARs:

- 16 United States Code (USC) 470 h-2, "Historic Properties Owned or Controlled by Federal Agencies"
- 25 USC 3002 (43 CFR 10.6), "Custody"
- 25 USC 3005 (43 CFR 10.10), "Repatriation."
- 36 CFR 800.4, "Identification of Historic Properties"
- 36 CFR 800.5, "Assessment of Adverse Effects."

**2.4 INEEL Site-specific Documents**

The following sections list the INEEL site-specific documents will be used as the basis for the remediation of the sites presented herein.

**2.4.1 Waste Area Group 1**

- DOE-ID 1999, *Final Record of Decision for Test Area North, Operable Unit 1-10*
- DOE-ID 2000a, *Comprehensive Remedial Design/Remedial Action Work Plan for the Test Area North, Operable Unit 1-10, Group 1 Sites*
- DOE-ID 2003a, *Field Sampling Plan for Remedial Design/Remedial Action Sampling and Field Screening of Selected Sites at Waste Area Group 1, Operable Unit 1-10*
- INEEL 2003b, *Health and Safety Plan for the Remedial Action Sampling, Field Screening, Soil Excavation, Backfill, Packaging, and Shipment of TSF-06/26 Sites at Waste Area Group 1, Operable Unit 1-10.*

**2.4.2 Waste Area Group 3**

- DOE-ID 1999, *Final Record of Decision-Idaho Nuclear Technology and Engineering Center.*

**2.4.3 Waste Area Group 4**

- DOE-ID 2000b, *Final Comprehensive Record of Decision for Central Facilities Area, Operable Unit 4-13*

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- DOE-ID 2003b, *Waste Area Group 4 Remedial Design/Remedial Action Work Plan, CFA-04 Pond Mercury Contaminated Soils, Operable Unit 4-13*
- DOE-ID 2003c, *Field Sampling Plan for the Central Facilities Area-04 Pond Remedial Action*
- INEEL 2002b, *Health and Safety Plan for the CFA-04 Mercury Pond Sampling and Remedial Action.*

#### 2.4.4 Waste Area Group 5

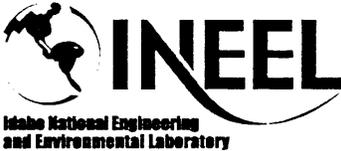
- DOE-ID 2000c, *Final Record of Decision for Power Burst Facility and Auxiliary Reactor Area, Operable Unit 5-12*
- DOE-ID 2003d, *Remedial Design/Remedial Action Work Plan, Phase II, for Waste Area Group 5*
- DOE-ID 2003e, *Field Sampling Plan for the Waste Area Group 5, Remedial Action, Phase II*
- INEEL 2003c, *Health and Safety Plan for Operable Unit 5-12 Remedial Design/Remedial Action Projects.*

#### 2.4.5 Other Applicable Documents

- DOE-ID 2002c, *Quality Assurance Project Plan for Waste Area Groups 1, 2, 3, 4, 5, 6, 7, 10, and Inactive Sites*
- DOE-ID 1991, *Federal Facility Agreement and Consent Order*
- INEEL 2003a, *SOW for the ICDF Complex Implementation Project.*

### 3. TECHNICAL AND FUNCTIONAL REQUIREMENTS

The following sections outline the technical and functional requirements for the ER contaminated soils remedial action, with the exclusion of WAG 3, for which the work plan and design elements have not yet been developed. Included is a description of the process flow for the remedial activities.

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### 3.1 Process Flow

Process flow for the remediation of the contaminated soils includes excavation of the soils within the area of contamination, transportation of the soils from the remedial action site to the disposal facility (i.e., ICDF for the majority of soils, CFA Landfill for some of the CFA-04 soils), and disposal of the soils at the specified disposal facility. The third part of the process flow (disposal of soils at the ICDF) is being provided as a point of information and is not to be construed as scope for which the Subcontractor is responsible under this SOW. A separate SOW has been written specific to the operational aspects of the ICDF.

The process flow presented in the following sections, and depicted in Figure 12, is provided as a concept for the Subcontractor. The Subcontractor may follow the proposed flow, but is encouraged to improve upon or present an alternative approach that may be more efficient. Because separate equipment would be used for each function, the process flow presented consists of three distinct functions, with the exception of the roll-off containers into which the contaminated soils will be placed. A fourth process flow involves the placement of backfill at the remediation site, compaction of remaining soils, and revegetation of the affected sites. The activities that make up the fourth process flow are adequately discussed elsewhere and are presented in the project specifications in Appendixes B, D, and F.

#### 3.1.1 Excavation of Soils

Excavation of contaminated soils shall comply with the requirements delineated in Specification 02200, "Earthwork" provided in Appendixes B, D, and F for the individual WAGs. The Subcontractor will pick up an empty container fitted with a liner from a staging area located near the remedial action site. A truck outfitted with a cable hoist is used to transport the container to the area where excavation occurs. The truck used within the digsite is dedicated to that activity to minimize the potential for transport of contamination outside the contamination zone. The container remaining on the truck is filled with contaminated soil, then transported to a station set up for sealing the liner, placing the tarp back over the roll-off container, screening the exterior of the container for contamination, and performing any necessary decontamination of the container. The Contractor will be responsible for performing the container screening for contamination. Exterior container surface would be verified to not have loose contamination, in accordance with applicable DOT and INEEL RadCon Manual requirements. Once these tasks have been performed, the truck carrying the container proceeds to a second staging area where the filled roll-off containers are placed awaiting transport to the ICDF.

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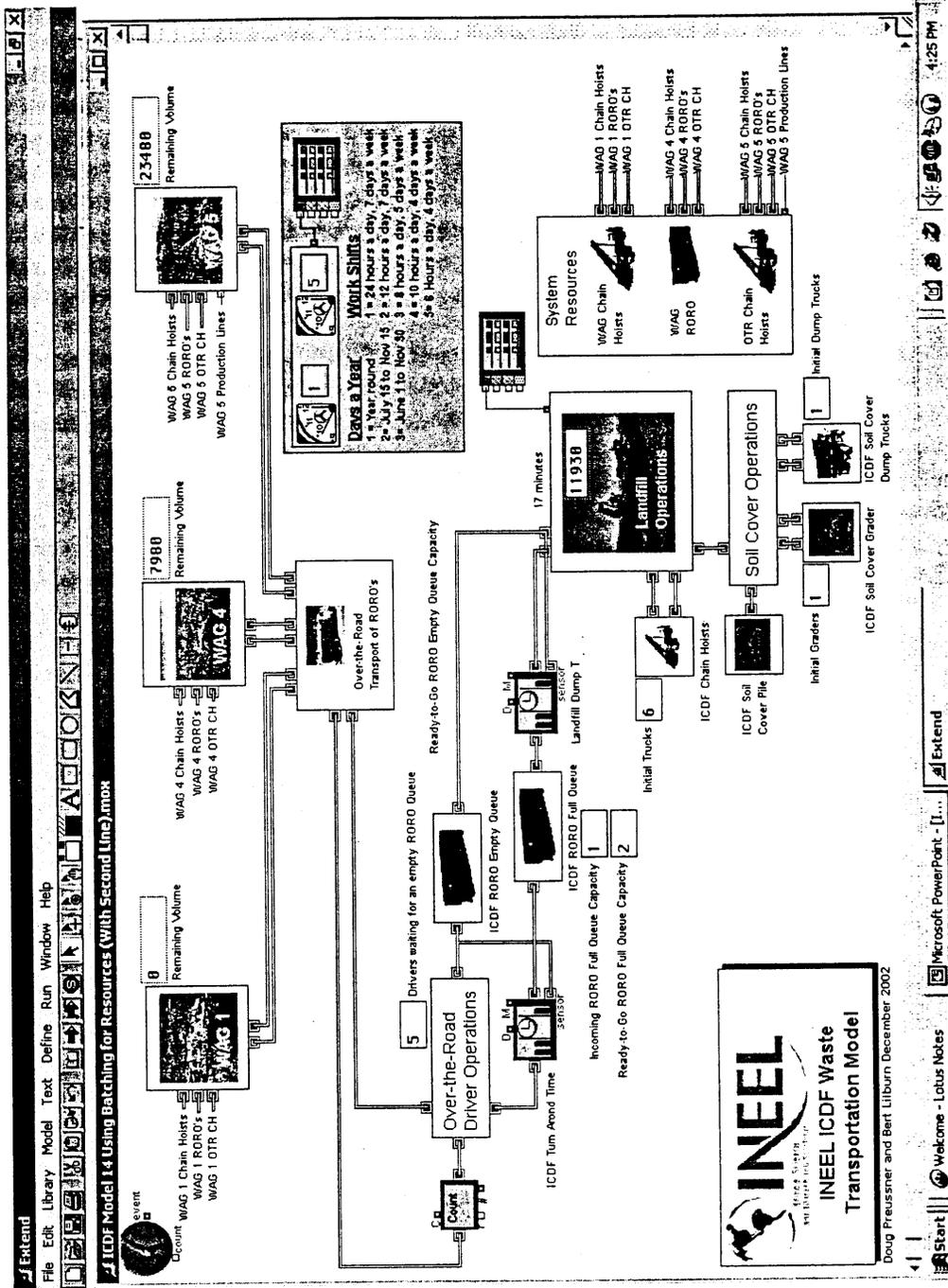


Figure 12. Excavation, transportation, and disposal model.

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### **3.1.2 Transportation of Contaminated Soils to the ICDF**

Transportation of contaminated soils from the remediation sites to the ICDF shall comply with the requirements delineated in Specification 02200, "Earthwork," provided in Appendixes B, D, and F for the individual WAGs. The appropriate paperwork for contaminated soil transport and disposal is provided to the Subcontractor's driver. A full roll-off container from the second staging area at the remediation site is picked up for transport to the ICDF. Following the specified route, the roll-off container is transported to the ICDF, where the truck is weighed with the roll-off container in place. With the acceptance of the container at the ICDF, the paperwork related to the loaded container is turned over to the ICDF personnel and the roll-off container is off-loaded in the full container ICDF staging area. The truck then proceeds to pick up an empty roll-off container from the appropriate staging area at the ICDF for the return trip to the remediation site. Once at the remediation site, the truck off-loads the empty roll-off container in the staging area designated for the empty containers where a new liner is placed in the container. The truck then proceeds to pick up another full roll-off container from the second staging area and repeats the entire process.

### **3.1.3 Disposal of Soils at the ICDF**

The Subcontractor will be responsible for all activities within the ICDF. This information is being provided to the Subcontractor to further the understanding of the entire process involved in the remediation, transport, and disposal of the contaminated soils.

Once the truck off-loads the roll-off container at the full container staging area at the ICDF, ICDF personnel inspect the container to ensure its integrity and to review the associated paperwork. Using a dedicated cable-hoist truck, ICDF personnel pick up the full container from the staging area and transport it to the landfill where the paperwork is given to the ICDF responsible person at the pit site. The tarp is removed from the container, the rear gate is opened, and the load (including the liner) is dumped into the landfill at a specified location. The rear gate is then closed, the tarp affixed, and the container surveyed for contamination. If external contamination is detected, the container is decontaminated. Once released from the survey and any related decontamination efforts, the container is transported to the empty container staging area at the ICDF for a final inspection. It remains in the empty container staging area until the Subcontractor picks it up for the return trip to the remediation site.

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### 3.2 Specific Requirements

The technical and functional requirements for the remedial activities are provided in the specifications presented in Appendixes B, D, and F. Additional requirements related to specific items are delineated in the following sections. In the event that a requirement specified in the following sections conflicts with a requirement provided in a specification, the requirement stipulated in the specification shall take precedence.

#### 3.2.1 Liners

Each container/truck shall have a new liner emplaced before loading contaminated soils at the remedial action site. The liners shall be 6-mil thick black polyethylene and comply with the specification requirements for 100 lot rolls, as delineated in American Society for Testing and Materials (ASTM) D 2103-97. The liners shall have formed corners, an auto ignition temperature of no less than 650°F, and a flash point no less than 600°F. The liners shall be thermally sealed to fully contain the waste before exiting from the remediation site.

#### 3.2.2 Survey Station

The Subcontractor shall fabricate a survey station at each remediation site, consisting of two platforms between which the cable hoist truck carrying a roll-off container, or end-dump, truck can drive. The survey station shall be located in the proximity of the full roll-off container staging area to enable the off-loading of the full containers immediately after the RadCon surveying and any associated decontamination. The survey station shall have a cover fabricated over it to offer personnel relief from the sun. The survey station platforms shall be of adequate height and length so as to allow personnel access to all exterior surfaces of the roll-off containers for performing the necessary activities (e.g., radiological screening, sampling of the contents, sealing of the liner, fastening of the tarp) without undue strain or endangerment to the personnel.

If decontamination of the container and/or truck is determined to be necessary, dry decontamination methods shall be used to the extent practicable. Inasmuch that the decontamination effort does not hamper operations, the dry decontamination may be performed at the survey station. If dry decontamination efforts are more involved, or if wet decontamination is required, a separate decontamination pad shall be established where such activities will occur.

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#### 4. ENVIRONMENTAL, SAFETY, HEALTH, AND QUALITY ASSURANCE REQUIREMENTS

The Subcontractor shall comply with the quality assurance requirements outlined in the following sections.

##### 4.1 Quality Assurance/Control

In accordance with the *Preliminary Hazard Assessment of OU 1-10 Remedial Action Sites: TSF-06 Area B, TSF-07, and WRRTF-13* (INEEL 2000a), the remedial action at TSF-06, Area B is classified “Other Industrial” facilities. Likewise for the TSF-26 soils, the *Preliminary Hazard Assessment of OU 1-10 Remedial Action Sites: TSF-26 Soils, TSF-03, and WRRTF-01* (INEEL 2000b), the remedial action of the TSF-26 soils is also classified “Other Industrial” facilities. For both of the WAG 1 sites, other hazards at the sites are determined as not requiring additional safety analysis. Based upon the preliminary hazard assessments, the remediation of soils at both sites is considered to be low safety consequence.

In accordance with the *Hazard Assessment Document for the CFA-04 Mercury Pond Remedial Action Hazard Classification* (INEEL 2003d), the remedial action at the CFA-04 Pond has been determined as not requiring additional safety analysis. Based upon this hazard categorization, the safety category designation is commercial grade.

In accordance with the *Hazard Classification for Remedial Activities at Eleven OU 5-12 Sites: ARA-01, ARA-02, ARA-07, ARA-08, ARA-12, ARA-13, ARA-16, ARA-21, ARA-23, ARA-25, and PBF-16* (INEEL 2000c), the remedial actions at the OU 5-12 contaminated soil sites (ARA-01, ARA-12, and ARA-23) have been determined to be less than hazard category 3. Based upon this hazard categorization, the safety category designation is consumer grade.

The Contractor will perform periodic surveillance inspections of the Subcontractor’s activities to ensure compliance with this SOW and all associated documents. As stipulated in the project-specific field sampling plans, all sampling performed by the Contractor will comply with the requirements delineated in the *Quality Assurance Project Plan for Waste Area Groups 1, 2, 3, 4, 5, 6, 7, 10, and Inactive Sites* (DOE-ID 2002c).

#### 5. RESPONSIBILITIES

The following sections discuss the roles and responsibilities for the Contractor and the Subcontractor, as required to complete the work. Specific information pertaining to WAGs 1, 4, and 5 is provided. Because the remedial design/remedial action work plan

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has not yet been completed for the WAG 3 Group 3 soils, requirements specific to the WAG 3 activities have not been included. A draft of the WAG 3 Group 3 soils work plan will be completed in August 2003. Following the completion of the WAG 3 Group 3 soils remedial design/remedial action work plan, this SOW will be amended to incorporate the requirements specific to those activities. It is anticipated that the requirements for the activities will be similar to those provided for WAGs 1, 4, and 5. Also, the final requirements for the TSF-03 soils are currently being established as the RD/RA Work Plan is being prepared. It is anticipated that this work plan will be completed by November 2003 and that the requirements will be the similar to, if not the same as, those provided for the TSF-06 and TSF-26 sites.

### 5.1 Premobilization

The Subcontractor shall provide the Contractor with all required submittals and work plans. The Subcontractor shall verify that all remedial activity personnel working under contract for the Subcontractor are familiar with the relevant provisions of the project health and safety plans (HASPs) (refer to Section 2.4). The Subcontractor shall provide the Contractor with documentation confirming that all project personnel working for or through the Subcontractor have received the necessary training and completed the medical examination requirements as stipulated by the project HASPs (refer to Section 2.4). The Subcontractor shall fulfill this requirement before the Subcontractor is allowed to mobilize. The submitted documentation shall demonstrate/certify that the Subcontractor can meet and satisfy the requirements of the applicable work plans and the project designs.

Before the start of the construction activities, the Subcontractor shall take steps to mitigate the spread of nuisance vegetation, including cheatgrass and halogeton, at the task sites. The Contractor may have taken preliminary steps to mitigate the spread of this vegetation through herbicide application in the spring of 2000 to control the cheatgrass. Under the direction of the Contractor, the Subcontractor shall apply herbicide in late summer for halogeton control. Any application of herbicide shall occur before any revegetation activities.

### 5.2 Mobilization

The Subcontractor shall mobilize all equipment, materials, and field operations site offices to the task site before the start of fieldwork. For WAG 5, the Subcontractor shall provide two field operations site offices. One shall be equipped to support the Subcontractor's own operations. A second shall be provided and equipped to support BBWI support personnel. This shall include space for BBWI RadCon personnel to set up instrumentation required for surveying equipment and site personnel, and space for storing necessary supplies, including personal protective equipment (PPE) as required by the project HASPs

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(refer to Section 2.4). If adequate space is available in the first trailer to support these activities, as agreed upon by the Contractor, the second trailer may be omitted. For WAGs 1 and 4, only the field operations site office shall be mobilized. Under the direction of the Contractor, the Subcontractor shall survey and mark the required excavation areas before or during mobilization.

The Subcontractor shall implement the required administrative, engineering, and health and safety controls. This activity shall include, but is not limited to, assembling the project work team and conducting prejob briefings specific to the remedial action tasks. Specific elements of the prejob briefing shall include identifying work to be performed, hazards associated with the tasks, and the steps taken to mitigate the hazards to enable safe completion of the work.

### **5.3 Task-Site Staging**

The Subcontractor shall establish laydown and stockpile areas at each site to stage equipment and materials close to the work. The Subcontractor shall locate the staging areas so that noncontaminated materials and equipment operate in work areas isolated from contaminated materials and equipment. The Subcontractor shall establish a temporary decontamination area for personnel and equipment at the control point for each area, in accordance with the decontamination requirements of the appropriate project HASP (refer to Section 2.4). The Subcontractor shall maintain spill prevention and control for the staging areas. The Contractor will designate those sites that will be acceptable for establishing the specified areas.

### **5.4 Site Preparation**

The Subcontractor shall prepare plot plans delineating the laydown and stockpile areas before commencing field activities. The following sections discuss site preparation activities specific to 5. There are not any specific site preparation activities associated with the WAG 1 or 4 remedial action.

#### **5.4.1 Waste Area Group 5**

For WAG 5, the Subcontractor shall remove the facility fencing surrounding the ARA-II facility and radiological control fencing at the direction of radiological control. The ARA-II facility fencing will be surveyed by the Contractor's RCT for disposal. If in good condition and as approved by the Contractor, the Subcontractor may retain the radiological control fencing for reuse. The method for hauling soil to the ICDF shall be demonstrated with clean soil and approved by the Contractor. Excavation boundaries shall be established in accordance

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with Specification 01051, "Construction Surveying and Staking," provided in Appendix F.

## **5.5 Mowing and Clearing the Site**

The following sections discuss the mowing and clearing activities for each of the WAGs.

### **5.5.1 Waste Area Group 1**

The Subcontractor shall clear the sites of shrubs, vegetation, fences, and other debris, as identified in the construction specifications. The Subcontractor shall minimize disturbance of underlying soils during all clearing and grubbing activities as performed in accordance with Specification 02110, "Clearing and Grubbing," provided in Appendix B.

The Subcontractor shall remove the temporary fencing from the TSF-06, Area B. The Contractor will survey the debris and signs for radiological contamination. If radiological contamination is detected, the Subcontractor shall decontaminate the materials under the direction of the Contractor. For materials that have been successfully decontaminated, the Subcontractor shall transport the waste to the CFA Landfill for disposal. If decontamination is not successful, the Subcontractor shall transport the waste to the ICDF for either direct disposal, or staging awaiting stabilization or other treatment.

### **5.5.2 Waste Area Group 4**

Although the vegetation is sparsely located throughout the pond, clearing of vegetation may be required to mitigate the potential fire hazard during task site operations. The Subcontractor shall limit mowing operations to the areas designated on the design drawings, those areas required for barrier construction, or as directed by the Contractor. The Subcontractor shall repair and reseed any areas outside the designated areas that are damaged or disturbed by field operations, in accordance with Specification 02486, "Revegetation" provided in Appendix D.

### **5.5.3 Waste Area Group 5**

The Subcontractor shall clear the task sites of shrubs, vegetation, fences, and other debris as identified in the project drawings presented in Appendix E. Disturbance of underlying soil shall be minimized during all mowing and clearing activities. The Subcontractor shall perform the

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clearing and mowing activities in accordance with Specification 02200, “Earthwork,” provided in Appendix F.

The Subcontractor shall confine clearing and mowing activities to the soil sites to be remediated, those areas required for barrier construction, or as directed by the Contractor. The Subcontractor shall repair and reseed any areas outside the designated areas that are damaged or disturbed by field operations in accordance with Specification 02486, “Revegetation,” provided in Appendix F.

**5.6 Soil Excavation and Consolidation at WAG 5**

The Subcontractor shall excavate and consolidate soil to the extent shown on the design drawings provided in Appendix E. The Subcontractor shall limit soil excavation to only that soil necessary to remediate each of the task sites. The Subcontractor shall consolidate excavated soil, as necessary, in a designated area immediately adjacent to the task site. All excavation and consolidation activities shall be performed in accordance with Specification 02200, “Earthwork,” provided in Appendix F.

The Subcontractor shall take the necessary precautions such as water spray, wind monitoring, soil fixatives, and visual observation to prevent the generation of fugitive dust. Air monitoring may be performed at the discretion of the Contractor’s radiological control technicians (RCTs), based on their evaluation of the effectiveness of dust suppression measures to control the spread of contamination through fugitive dust, and as required by resident procedures. The Contractor will conduct air monitoring as needed to ensure workers are protected from unnecessary radiological exposures and to keep any additional exposures as low as reasonably achievable. The Contractor may perform monitoring at those sites where the potential exists for exposure to chemical hazards. The Subcontractor shall perform industrial hygiene monitoring for protection of Subcontractor personnel at those sites where chemical hazards may be present. The Subcontractor shall use personal protective equipment, when required as specified in the project HASP (INEEL 2003c), and as determined by the Contractor’s RCT, Industrial Hygienist, or Subcontractor’s Industrial Hygienist present at the task site. To minimize the spread of contamination, the Subcontractor shall maintain all equipment necessary for the excavation, loading, and task site transportation of soils within the contamination control zones until completion of excavation activities.

**5.7 Earthwork**

The following sections address the earthwork to be performed at each of the WAGs.

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**5.7.1 Waste Area Group 1**

The earthwork on this project will be defined as the following:

- Excavation and transportation of radionuclide-contaminated soils from the TSF-06, Area B and TSF-26 sites to the ICDF
- Excavation, hauling, and placement of backfill material
- Grading and reclamation seeding of the former excavations.

All earthwork will be performed in accordance with the design drawing provided in Appendix A and Specification 02200, "Earthwork" provided in Appendix B. The Subcontractor shall confine construction operations to within the areas that require barrier construction, or to areas directed by the Contractor. Any areas outside the designated areas that are damaged or disturbed by the Subcontractor's operations shall be repaired and reseeded by the Subcontractor in accordance with Specification 02930, "Reclamation Seeding and Mulching," provided in Appendix B.

The Subcontractor shall excavate contaminated soils to the extent shown on the design drawings provided in Appendix A. The Subcontractor shall perform all excavation activities in accordance with Specification 02222, "Excavation, Trenching, and Backfilling," provided in Appendix B. The Subcontractor shall maintain equipment necessary for excavation of the contaminated soils within the contamination control zones until completion of the excavation activities. The Subcontractor shall not drive equipment used to haul excavated soil to the disposal site onto contaminated areas. This will minimize the spread of contamination and obviate the need to perform any additional decontamination.

**5.7.2 Waste Area Group 4**

The earthwork associated with this project includes, but is not limited to, the following:

- Mowing and clearing vegetation as required
- Controlling dust
- Excavating contaminated soil
- Backfilling and contouring as required
- Finishing grading and grading for surface drainage.

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The Subcontractor shall excavate the low-level mercury-contaminated soils and backfill, contour, and finish-grade the excavated areas. The Subcontractor shall perform all earthwork in accordance with Specification 02200, "Earthwork" provided in Appendix D. The project design drawings are provided in Appendix C.

Upon completion of soil excavation and verification and before reseeding, the Subcontractor will grade and/or backfill disturbed areas to prerediation grade with uncontaminated pit-run gravel and soil. The Subcontractor shall use surrounding soil to decrease the steepness of the grade and to provide a smooth transition from the higher surrounding grade.

### 5.7.3 Waste Area Group 5

The Subcontractor shall grade all affected areas and following backfill (not all areas will require backfill) to encourage drainage away from the excavation according to Specification 02200, "Earthwork," provided in Appendix F. The Subcontractor shall revegetate those areas that are disturbed by earthwork activities according to the requirements set forth in Section 5.12. The Subcontractor shall employ standard dust control measures (e.g., water spray, stop work during high winds at the direction of RadCon and Industrial Hygiene, and soil fixatives) during all earthwork.

The earthwork on this project will be defined as the following:

- Clearing vegetation as required
- Excavating all material encountered, of every description, for completion of the project as shown in the drawings provided in Appendix E and as specified in Specification 02200, "Earthwork," provided in Appendix F
- Managing dust control
- Delivering all contaminated material excavated for completion of the project to the ICDF
- Backfilling all excavations with native soil from approved borrow sources on the INEEL, as required
- Compacting all backfill
- Finishing grading and grading for surface drainage or revegetation.

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## **5.8 Borrow, Haul, and Stockpile**

The following sections discuss the activities associated with borrow, haul, and stockpile operations for WAGs 1 and 5. At this time, WAG 4 does not anticipate the need for any borrow materials at the CFA-04 Pond site, except pit-run gravel that will be supplied by CFA Landfill operations. The borrow materials for the projects are available from borrow sources located at the INEEL. All INEEL native soil borrow sources have been previously determined to be free of contamination.

### **5.8.1 Waste Area Group 1**

The Subcontractor shall perform borrow operations in accordance with Specification 02200, "Earthwork" provided in Appendix B. The Subcontractor shall set up an operation at the borrow area to gather and stockpile the material in preparation for hauling it to the project site, and a hauling operation to move the material from the borrow source to the project site where it will be placed.

The Subcontractor shall maintain equipment used for the hauling and stockpiling operations outside of radiation work areas. The Subcontractor shall maintain the site haul roads during operations and return the haul roads to their original conditions following completion of the operations. The Subcontractor shall prepare a traffic management plan, including documentation of the condition of the haul roads, before startup of operations.

### **5.8.2 Waste Area Group 5**

The Subcontractor shall perform borrow operations in accordance with Specification 02200, "Earthwork" provided in Appendix F. The Subcontractor shall set up an operation at the borrow area to gather and stockpile the material in preparation for hauling it to the project site, and a hauling operation to move the material from the borrow source to the project site where it will be placed.

The Subcontractor shall maintain equipment used for the haul and stockpile operations outside the contamination work areas. The Contractor will provide the necessary planning and coordination with other site operations and personnel to ensure safe and productive hauling across Site roads. The Subcontractor shall maintain the Site haul roads during operations and return haul roads to their original condition following the completion of activities. The Subcontractor shall prepare a

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traffic management plan, including documentation of the condition of the haul roads before operations.

## 5.9 Dust Suppression

The Subcontractor shall minimize dust generation during excavation, loading, hauling, and dumping by using water truck(s) and/or soil fixatives. The Subcontractor shall minimize overapplication of water resulting in free liquids to avoid additional requirements that will be imposed for handling liquid waste. A water-fill station is available at the CFA. Fire hydrants are available at other facilities (e.g., the Power Burst Facility, Test Area North). The Contractor will submit any necessary outage requests required for obtaining water from the different sources. If filling at a fire hydrant, the Subcontractor shall provide an attaching gate valve and fire hose that has been approved by the Contractor to ensure compatibility.

The Subcontractor shall restrict or suspend work if unacceptable amounts of dust are being generated as determined by the Contractor. The Subcontractor shall suspend all excavating, loading, hauling, and dumping operations when sustained windspeed reaches 25 miles per hour (mph) or gusts of 30 mph or greater is reported by the INEEL National Oceanic and Atmospheric Administration weather station. The Subcontractor shall spray those work areas that have the potential of generating dust with a water truck at the end of each workday and other occasions as deemed necessary the Contractor. The Subcontractor's certified industrial hygienist shall perform periodic air monitoring to ensure that personnel are not exposed to unsafe levels of contamination. Personal protective equipment, when required, will be used as specified in the appropriate project HASP (see Section 2.4) and as determined by the safety officer, certified industrial hygienist, or RadCon representative at the task site.

## 5.10 Contaminated Soil Hauling

The following sections address the soil hauling and disposal activities for each of the remediation sites.

### 5.10.1 Waste Area Groups 1 and 5

The Subcontractor shall haul contaminated soil to the ICDF. It is anticipated that any soil generated, ranging from 0.5 to 50 mrem/hr may be shipped as unpackaged (bulk), low specific activity material to be transported in exclusive-use closed-transport vehicles. Soil with activities  $< 0.002 \mu\text{Ci/g}$  and  $< 0.5 \text{ mrem/hr}$  are not considered to be regulated for transportation as a hazardous material (49 CFR 173.403[y]). It is the intent of the project to ship only soil meeting this requirement. However,

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if soil exceeding this requirement (either through field screening, process knowledge, or analytical data) is to be shipped, the Subcontractor shall package the soils to maintain the external radiation levels within the limits of 49 CFR 173.441(b). The Subcontractor shall place radioactive placards on the front, on the back, and on each side, with no leakage of radioactive materials from the vehicle. The Contractor will provide shipping papers with exclusive-use instructions.

The Subcontractor may haul soils concurrently from different locations, as determined by the Contractor, provided the buddy system remains in effect and the crew is large enough to support it. Each shipping container shall have a new 6-mil plastic liner installed for each load to mitigate contamination and provide a means of dust control during transportation and disposal at the ICDF. The Subcontractor shall cover each load with a tight fitting tarp to prevent loss of material during transport. The Contractor will evaluate and approve the covers before initial use. Periodic inspections of the tarps will be made to ensure their continued integrity.

After loading and before leaving the area, the Contractor's RCT will perform a radiological survey of the container as verification that the exterior is free from contamination. If soil radiation levels are high enough to preclude direct frisking, the RCT will be required to obtain swipe samples that will then be counted. In this case, the survey may take over an hour. Before leaving the area and under the direction of the Contractor, the Subcontractor shall remove any discovered external contamination. Before leaving the ICDF, the Subcontractor shall ensure that the container is properly covered with a tight-fitting tarp. Before leaving the ICDF, the Contractor will survey the container for radiological contamination to ensure the exterior is not contaminated.

#### **5.10.2 Waste Area Group 4**

The Subcontractor shall load all excavated materials into containers as is appropriate for the intended disposal facility. The Subcontractor shall haul the low-level, mercury-contaminated and TCLP mercury-contaminated soil to the ICDF.

Before loading and hauling materials to the ICDF, the containers shall have plastic liners emplaced to mitigate spread of contamination in the containers and to minimize the amount of decontamination wastes that will be generated. After placement of the soil in the lined containers, the Subcontractor shall fold the liner over the top of the load and seal it for transport to the ICDF. The Subcontractor shall cover each load with a

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tight fitting tarp to prevent loss of material during transport. The Contractor will evaluate and approve the covers before initial use. Periodic inspections of the tarps will be made to ensure their continued integrity.

## **5.11 Reclamation Seeding**

The following sections discuss the reclamation seeding requirements for each of the project areas.

### **5.11.1 Waste Area Group 1**

Upon completion of all earthwork activities, reclamation seeding will take place on the backfilled excavations, lay down areas, and on all areas affected by material borrowing, such as stockpiling. The Subcontractor shall perform seeding and mulching in accordance with the requirements identified in Specification 02930, "Reclamation Seeding and Mulching," provided in Appendix B.

### **5.11.2 Waste Area Group 4**

Upon completion of soil excavation, reclamation seeding will take place at all disturbed areas associated with the remediation of the CFA-04 Pond. Additionally, the Subcontractor shall reseed the CFA-674 trenches and other areas adjacent to the cap. The Subcontractor shall perform seeding, fertilizing, and mulching of these sites following the *Guidelines for Vegetation of Disturbed Sites at the Idaho National Engineering Laboratory* (DOE-ID 1989) in accordance with the requirements set forth in Specification 02486, "Revegetation" provided in Appendix D.

### **5.11.3 Waste Area Group 5**

Upon release by the Contractor, the Subcontractor shall perform reclamation seeding on the native soil covers, the areas adjacent to the barriers that have been disturbed during construction, lay-down areas, and all areas affected by remediation activities, such as material borrowing and stockpiling. The Subcontractor shall perform the seeding and mulching of these sites in accordance with the requirements set forth in Specification 02486, "Revegetation," provided in Appendix F.

## **5.12 Surface Water**

The following sections discuss surface water control specific to each of the task sites.

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**5.12.1 Waste Area Group 1**

The Subcontractor shall control surface water before and throughout the construction operations in accordance with Specification 02140, "Temporary Diversion & Control of Water During Construction," provided in Appendix B. Control measures implemented may include berms, swales, ditches, temporary pipes, portable pumps, silt fences, sediment traps, and any other measures approved by the Contractor.

**5.12.2 Waste Area Group 4**

The Subcontractor shall perform contouring and grading of the excavations in accordance with Specification 02200, "Earthwork," provided in Appendix D. To note, not all excavations will require backfilling, but the Subcontractor shall contour all areas for drainage and revegetate or otherwise stabilize. The Subcontractor shall revegetate the affected areas in accordance with Specification 02486, "Revegetation" provided in Appendix D.

**5.12.3 Waste Area Group 5**

The Subcontractor shall perform contouring and grading of backfilled excavations (refer to Specification 02200, "Earthwork," in Appendix F) to maintain existing surface water flow patterns at each of the task sites. To note, not all excavations will require backfilling, but the Subcontractor shall contour all areas for drainage and revegetate or otherwise stabilize. The Subcontractor shall revegetate the backfilled excavations (refer to Specification 02486, "Revegetation" in Appendix F) to control the growth of noxious weeds.

**5.13 Demobilization**

After the remedial activities have been satisfactorily completed and all equipment has been properly decontaminated, the Subcontractor shall demobilize and remove all equipment from the site. The Subcontractor shall remove and appropriately package or dispose the decontamination pads and temporary fencing erected in support of the remediation activities.

For WAG 5, the Subcontractor shall replace any fencing previously erected by the Contractor's RadCon organization to delineate radiological contamination areas that were removed to allow for the remediation activities to take place. The Subcontractor may use the fencing that was removed, so long as it is in good condition, as approved by the Contractor.

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## 6. DELIVERABLE SCHEDULE

Refer to Contract.

## 7. SUBMITTALS

Vendor data submittals shall comply with the requirements delineated in Appendixes B, D, and F, as well as with the requirements stipulated in the Special Conditions. Specific vendor data submittals shall include the following:

- Professional Land Surveyor Certification
- Topographical survey
- Redline drawings (as-built drawings)
- Construction work plan
- Quality assurance/quality control manual
- Traffic management plan
- Seed mix certification
- Soil analysis
- Results of soil fertilizer analysis
- Chemical inventory list: Form 432.21 (Quarterly Report)
- Chemical inventory list: Form 432.21 (Final Report)
- Chemical inventory list: Form 432.21, initial and resubmittals with supporting Material Safety Data Sheets
- List of diesel- and gasoline-fueled engines
- Field placement tests
- Field quality control tests
- Field records from surveying, layout, and field inspection activities
- Certifications of conformance to the specifications.

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## 8. REFERENCES

- ASTM D 2103-97, 1997, "Standard Specification for Polyethylene Film and Sheeting," American Society for Testing and Materials, April 10, 1997.
- 16 USC 4691.2, 1996, "Historic Properties Owned or Controlled by Federal Agencies," *United States Code*, May 21, 1996.
- 25 USC 3002, 2001, "Custody," *United States Code*, January 2, 2001.
- 25 USC 3005, 2001, "Repatriation," *United States Code*, January 2, 2001.
- 10 CFR 20, 2003, "Standards for Protection Against Radiation," *Code of Federal Regulations*, Office of the Federal Register, April 2003.
- 10 CFR 71, 2003, "Packaging and Transportation of Radioactive Material," *Code of Federal Regulations*, Office of the Federal Register, May 2003.
- 10 CFR 830 Subpart A, 2002, "Nuclear Safety Management," Subpart A, "Quality Assurance," *Code of Federal Regulations*, Office of the Federal Register, February 2002.
- 10 CFR 835, 2002, "Occupational Radiation Protection," *Code of Federal Regulations*, Office of the Federal Register, February 2002.
- 29 CFR 1910.120, 2003, "Occupational Safety and Health Standards," Subpart 120, "Hazardous Waste Operations and Emergency Response," *Code of Federal Regulations*, Office of the Federal Register, April 2003.
- 29 CFR 1910.1200, 2003, "Occupational Safety and Health Standards," Subpart 1200, "Hazard Communication," *Code of Federal Regulations*, Office of the Federal Register, April 2003.
- 29 CFR 1926.65, 2002, "Safety and Health Regulations for Construction," Subpart 65, "Hazardous Waste Operations and Emergency Response," *Code of Federal Regulations*, Office of the Federal Register, December 2002.
- 29 CFR 1926.1101, 2002, "Safety and Health Regulations for Construction," Subpart 1101, "Asbestos," *Code of Federal Regulations*, Office of the Federal Register, December 2002.
- 36 CFR 800.4, 2002, "Protection of Historic Properties," Subpart 4, "Identification of Historic Properties," *Code of Federal Regulations*, February 2002.

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--	---	---

- 36 CFR 800.5, 2002, "Protection of Historic Properties," Subpart 5, "Assessment of Adverse Effects," *Code of Federal Regulations*, Office of the Federal Register, February 2002.
- 40 CFR 50, 2002, "National Primary and Secondary Ambient Air Quality Standards," *Code of Federal Regulations*, Office of the Federal Register, March 2002.
- 40 CFR 61.92, 2003, "National Emissions Standards for Hazardous Air Pollutants," Subpart 92, "Standard," *Code of Federal Regulations*, Office of the Federal Register, May 2003.
- 40 CFR 61.93, 2003, "National Emissions Standards for Hazardous Air Pollutants," Subpart 93, "Emission Monitoring and Test Procedures," *Code of Federal Regulations*, Office of the Federal Register, May 2003.
- 40 CFR 61.94(a), 2003, "National Emissions Standards for Hazardous Air Pollutants," Subpart 94(a), "Compliance and Reporting," *Code of Federal Regulations*, Office of the Federal Register, May 2003.
- 40 CFR 122.26, 2003, "EPA Administered Permit Programs: the National Pollutant Discharge Elimination System," Subpart 26, "Storm Water Discharges," *Code of Federal Regulations*, Office of the Federal Register, April 2003.
- 40 CFR 260, 2002, "Hazardous Waste Management System: General," *Code of Federal Regulations*, Office of the Federal Register, April 2002.
- 40 CFR 261.20–24, 2003, "Identification and Listing of Hazardous Waste," Subparts 20–24, "Characteristics of Hazardous Waste," *Code of Federal Regulations*, Office of the Federal Register, April 2003.
- 40 CFR 262, 2002 "Standards Applicable to Generators of Hazardous Waste," *Code of Federal Regulations*, Office of the Federal Register, February 2002.
- 40 CFR 262.11, 2002, "Standards Applicable to Generators of Hazardous Waste," Subpart 11, "Hazardous Waste Determination," *Code of Federal Regulations*, Office of the Federal Register, February 2002.
- 40 CFR 262 Subpart B, "Standards Applicable to Generators of Hazardous Waste," Subpart B, "The Manifest," *Code of Federal Regulations*, Office of the Federal Register, February 2002.
- 40 CFR 262.30–33, 2002, "Standards Applicable to Generators of Hazardous Waste," Subparts 30–33, "Pretransport Requirements," *Code of Federal Regulations*, Office of the Federal Register, February 2002.

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- 40 CFR 263, 2002, "Standards Applicable to Transporters of Hazardous Waste," *Code of Federal Regulations*, Office of the Federal Register, February 2002.
- 40 CFR 264.13[a][1-3], 2002, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities" Subpart 13[a][1-3], "General Waste Analysis," *Code of Federal Regulations*, Office of the Federal Register, April 2002.
- 40 CFR 264.14, 2002, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," Subpart 14, "Security," *Code of Federal Regulations*, Office of the Federal Register, April 2002.
- 40 CFR 264.15, 2002, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," Subpart 15, "General Inspection Requirements," *Code of Federal Regulations*, Office of the Federal Register, April 2002.
- 40 CFR 264.16, 2002, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," Subpart 16, "Personnel Training," *Code of Federal Regulations*, Office of the Federal Register, April 2002.
- 40 CFR 264 Subpart C, 2002, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," Subpart C, "Preparedness and Prevention," *Code of Federal Regulations*, Office of the Federal Register, April 2002.
- 40 CFR 264 Subpart D, 2002, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," Subpart D, "Contingency Plan and Emergency Procedures," *Code of Federal Regulations*, Office of the Federal Register, April 2002.
- 40 CFR 264.114, 2002, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," Subpart 114, "Disposal or Decontamination of Equipment, Structures and Soils," *Code of Federal Regulations*, Office of the Federal Register, April 2002.
- 40 CFR 264.171-177, 2002, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," Subparts 171-177, "Use and Management of Containers," *Code of Federal Regulations*, Office of the Federal Register, April 2002.
- 40 CFR 264.197[a], 2002, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," Subpart 197[a], "Closure and Post-

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closure Care,” *Code of Federal Regulations*, Office of the Federal Register, April 2002.

- 40 CFR 264.310, 2002, “Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities,” Subpart 310, “Closure and Post-closure Care,” *Code of Federal Regulations*, Office of the Federal Register, April 2002
- 40 CFR 264.310(a)(1–5), 2002, “Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities,” Subpart 310(a)(1–5), “Closure and Post-closure,” *Code of Federal Regulations*, Office of the Federal Register, April 2002.
- 40 CFR 264.553, 2002, “Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities,” Subpart 553, “Temporary Units,” *Code of Federal Regulations*, Office of the Federal Register, April 2002.
- 40 CFR 264.554, 2002, “Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities,” Subpart 554, “Waste Staging Piles,” *Code of Federal Regulations*, Office of the Federal Register, April 2002.
- 40 CFR 264 Subpart X, 2002, “Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities,” Subpart X, “Miscellaneous Units,” *Code of Federal Regulations*, Office of the Federal Register, April 2002.
- 40 CFR 266, 2003, “Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities,” *Code of Federal Regulations*, Office of the Federal Register, January 2003.
- 40 CFR 268.40, 2003, “Land Disposal Restrictions,” Subpart 40, “Applicability of Treatment Standards,” *Code of Federal Regulations*, Office of the Federal Register, January 2003.
- 40 CFR 268.45, 2003, “Land Disposal Restrictions,” Subpart 45, “Treatment Standards for Hazardous Debris,” *Code of Federal Regulations*, Office of the Federal Register, January 2003.
- 40 CFR 268.48, 2003, “Land Disposal Restrictions,” Subpart 48, “Universal Treatment Standards,” *Code of Federal Regulations*, Office of the Federal Register, January 2003.
- 40 CFR 268.49, 2003, “Land Disposal Restrictions,” Subpart 49, “Alternative LDR Treatment Standards for Contaminated Soil,” *Code of Federal Regulations*, Office of the Federal Register, January 2003.

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- 40 CFR 300.440, 2003, "National Oil and Hazardous Substances Pollution Contingency Plan," Subpart 440, "Procedures for Planning and Implementing Off-Site Response Actions," *Code of Federal Regulations*, Office of the Federal Register, May 2003.
- 40 CFR 355, 2002, "Emergency Planning and Notification," *Code of Federal Regulations*, Office of the Federal Register, February 2002.
- 40 CFR 761.50(a)(5), 2003, "Polychlorinated Biphenyls (PCBS) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions," Subpart 50(a)(5), "PCB Disposal Requirements," *Code of Federal Regulations*, Office of the Federal Register, April 2003.
- 40 CFR 761.50(b)(3), 2003, "Polychlorinated Biphenyls (PCBS) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions," Subpart 50(b)(3), "PCB Remediation Waste," *Code of Federal Regulations*, Office of the Federal Register, April 2003.
- 40 CFR 761.50(b)(7), 2003, "Polychlorinated Biphenyls (PCBS) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions," Subpart 50(b)(7), "PCB/Radioactive Waste," *Code of Federal Regulations*, Office of the Federal Register, April 2003.
- 40 CFR 761.50(b)(8), 2003, "Polychlorinated Biphenyls (PCBS) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions," Subpart 50(b)(8), "Porous Surfaces," *Code of Federal Regulations*, Office of the Federal Register, April 2003.
- 40 CFR 761.50(d)(4), 2003, "Polychlorinated Biphenyls (PCBS) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions," Subpart 50(d)(4), "Chemical Waste Landfills," *Code of Federal Regulations*, Office of the Federal Register, April 2003.
- 43 CFR 10.6, 2003, "Native American Graves Protection and Repatriation Regulations," Subpart 6, "Custody," *Code of Federal Regulations*, Office of the Federal Register, May 2003.
- 43 CFR 10.10, 2003, "Native American Graves Protection and Repatriation Regulations," Subpart 10, "Repatriation," *Code of Federal Regulations*, Office of the Federal Register, May 2003.
- 49 CFR 171, 2003, "General Information, Regulations, and Definitions," *Code of Federal Regulations*, Office of the Federal Register, May 2003.

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- 49 CFR 172, 2003, "Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements," *Code of Federal Regulations*, Office of the Federal Register, April 2003.
- 49 CFR 173.403, 2003, "Shippers—General Requirements for Shipments and Packagings," Subpart 403, "Definitions." *Code of Federal Regulations*, Office of the Federal Register, May 2003.
- 49 CFR 173.441(b), 2003, "Shippers—General Requirements for Shipments and Packagings," Subpart 441, "Radiation Level Limitations," *Code of Federal Regulations*, Office of the Federal Register, May 2003.
- 49 CFR 178, 2003, "Specifications for Packagings," *Code of Federal Regulations*, Office of the Federal Register, April 2003.
- DOE O 231.1, 1996, "Environment, Safety and Health Reporting," U.S. Department of Energy, November 7, 1996.
- DOE O 232.1A, 1997, "Occurrence Reporting and Processing of Operations Information," U.S. Department of Energy, July 21, 1997.
- DOE O 414.1A, 2001, "Quality Assurance," U.S. Department of Energy, July 12, 2001.
- DOE O 435.1, 2001, "Radioactive Waste Management," Change 1, U.S. Department of Energy, August 28, 2001.
- DOE O 440.1A, 1998, "Worker Protection Management for DOE Federal and Contractor Employees," U.S. Department of Energy, March 27, 1998.
- DOE O 470.1, 1995, "Safeguards and Security Program," U.S. Department of Energy, September 28, 1995.
- DOE O 5400.5, 1993, "Radiation Protection of the Public and the Environment," U.S. Department of Energy, January 7, 1993.
- DOE O 5480.4, 1993, "Environmental Protection, Safety, and Health Protection Standards," U.S. Department of Energy, January 7, 1993.
- DOE-ID, 1989, *Guidelines for Vegetation of Disturbed Sites at the Idaho National Engineering Laboratory*, DOE/ID-12114, Rev. 0, U.S. Department of Energy Idaho Operations Office, June 1989.
- DOE-ID, 1991, *Federal Facility Agreement and Consent Order for the Idaho National Engineering Laboratory*, U.S. Department of Energy Idaho Operations Office,

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--	---	---

Idaho Department of Health and Welfare, and U.S. Environmental Protection Agency, December 1991.

- DOE-ID, 1997, *Comprehensive Remedial Investigation/Feasibility Study for the Test Area North, Operable Unit 1-10 at the Idaho National Engineering and Environmental Laboratory*, DOE/ID-10557, Revision 0, U.S. Department of Energy Idaho Operations Office, November 1997.
- DOE-ID, 1999a, *Final Record of Decision for Test Area North, Operable Unit 1-10*, DOE/ID-10682, Rev. 0, U.S. Department of Energy Idaho Operations Office, May 1999.
- DOE-ID, 1999b, *Final Record of Decision—Idaho Nuclear Technology and Engineering Center*, DOE/ID-10660, Rev. 0, U.S. Department of Energy Idaho Operations Office, October 1999.
- DOE-ID, 2000a, *Comprehensive Remedial Design/Remedial Action Work Plan for the Test Area North, Operable Unit 1-10, Group 1 Sites*, DOE/ID-10712, Rev. 0, U.S. Department of Energy Idaho Operations Office, August 2000.
- DOE-ID, 2000b, *Final Comprehensive Record of Decision for Central Facilities Area Operable Unit 4-13*, DOE/ID-10719, Rev. 2, U.S. Department of Energy Idaho Operations Office, July 2000.
- DOE-ID, 2000c, *Final Record of Decision for Power Burst Facility and Auxiliary Reactor Area, Operable Unit 5-12*, DOE/ID-10700, Rev. 0, U.S. Department of Energy Idaho Operations Office, January 2000.
- DOE-ID, 2002a, *Operable Unit 3-13, Group 3, Other Surface Soils, Prioritization and Site Grouping Report*, DOE/ID-10996, Rev. 0, U.S. Department of Energy Idaho Operations Office, September 2002.
- DOE-ID, 2002b, *Idaho National Engineering and Environmental Laboratory Waste Acceptance Criteria*, DOE/ID-01-10381, Rev. 16, U.S. Department of Energy Idaho Operations Office, December 2002.
- DOE-ID, 2002c, *Quality Assurance Project Plan for Waste Area Groups 1, 2, 3, 4, 5, 6, 7, 10, and Inactive Sites*, DOE/ID-10587, Rev. 7, U.S. Department of Energy Idaho Operations Office, September 2002.
- DOE-ID, 2003a, *Field Sampling Plan for Remedial Design/Remedial Action Sampling and Field Screening of Selected Sites at Waste Area Group 1, Operable Unit 1-10*, DOE/ID-10725, Rev. 1, Department of Energy Idaho Operations Office, February 2003.

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DOE-ID, 2003b, *Waste Area Group 4 Remedial Design/Remedial Action Work Plan, CFA-04 Pond Mercury Contaminated Soils, Operable Unit 4-13*, DOE/ID-11028, Rev. 0, U.S. Department of Energy Idaho Operations Office, February 2003.

DOE-ID, 2003c, *Field Sampling Plan for the Central Facilities Area-04 Pond Remedial Action*, DOE/ID-11024, Rev. 0, U.S. Department of Energy Idaho Operations Office, February 2003.

DOE-ID, 2003d, *Remedial Design/Remedial Action Work Plan, Phase II, for Waste Area Group 5*, DOE/ID-10798, Rev. 1, U.S. Department of Energy Idaho Operations Office, February 2003.

DOE-ID, 2003e, *Field Sampling Plan for the Waste Area Group 5, Remedial Action, Phase II*, DOE/ID-10808, Rev. 1, U.S. Department of Energy Idaho Operations Office, February 2003.

IDAPA 58.01.01.161, "Toxic Substances," Idaho Administrative Procedures Act, Idaho Department of Environmental Quality.

IDAPA 58.01.01.500.02, "Registration Procedures and Requirements for Portable Equipment – Compliance with Rules and Regulations," Idaho Administrative Procedures Act, Idaho Department of Environmental Quality.

IDAPA 58.01.01.585, "Toxic Air Pollutants Noncarcinogenic Increments," Idaho Administrative Procedures Act, Idaho Department of Environmental Quality.

IDAPA 58.01.01.586, "Toxic Air Pollutants Carcinogenic Increments," Idaho Administrative Procedures Act, Idaho Department of Environmental Quality.

IDAPA 58.01.01.650, "Rules for Control of Fugitive Dust," Idaho Administrative Procedures Act, Idaho Department of Environmental Quality.

IDAPA 58.01.01.651, "General Rules," Idaho Administrative Procedures Act, Idaho Department of Environmental Quality.

IDAPA 58.01.05, "Rules and Standards for Hazardous Waste," Idaho Administrative Procedures Act, Idaho Department of Environmental Quality.

IDAPA 58.01.05.005, "Identification and Listing of Hazardous Waste," Idaho Administrative Procedures Act, Idaho Department of Environmental Quality.

IDAPA 58.01.05.006, "Standards Applicable to Generators of Hazardous Waste," Idaho Administrative Procedures Act, Idaho Department of Environmental Quality.

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IDAPA 58.01.05.008, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," Idaho Administrative Procedures Act, Idaho Department of Environmental Quality.

IDAPA 58.01.05.011, "Land Disposal Restrictions," Idaho Administrative Procedures Act, Idaho Department of Environmental Quality.

IDAPA 58.02.27, "Idaho Radiation Control Regulations," Idaho Administrative Procedures Act, Idaho Department of Environmental Quality.

INEEL, 1996, *Background Dose Equivalent Rates and Surficial Soil Metal and Radionuclide Concentrations for the Idaho National Engineering Laboratory*, INEL-94/0250, Rev. 1, Idaho National Engineering and Environmental Laboratory, August 1996.

INEEL, 2000a, *Preliminary Hazard Assessment of OU 1-10 Remedial Action Sites: TSF-06 Area B, TSF-07, and WRRTF-13*, INEEL/EXT-2000-00035, Rev. 0, Idaho National Engineering and Environmental Laboratory, February 2000.

INEEL, 2000b, *Preliminary Hazard Assessment of OU 1-10 Remedial Action Sites: TSF-26 Soils, TSF-03, and WRRTF-01*, INEEL/EXT-2000-00255, Rev. 0, Idaho National Engineering and Environmental Laboratory, May 2000.

INEEL, 2000c, *Hazard Classification for Remedial Activities at Eleven OU 5-12 Sites: ARA-01, ARA-02, ARA-07, ARA-08, ARA-12, ARA-13, ARA-16, ARA-21, ARA-23, ARA-25, and PBF-16*, INEEL/EXT-2000-00532, Rev. 0, Idaho National Engineering and Environmental Laboratory, June 2000.

INEEL, 2002a, *INEEL CERCLA Disposal Facility Design Inventory*, EDF-ER-264, Rev. 1, Idaho National Engineering and Environmental Laboratory, December 2002.

INEEL, 2002b, *Health and Safety Plan for the CFA-04 Mercury Pond Sampling and Remedial Action*, INEEL/EXT-02-00528, Rev 0, Idaho National Engineering and Environmental Laboratory, June 2002.

INEEL, 2003a, *SOW for the ICDF Complex Implementation Project*, Idaho National Engineering and Environmental Laboratory, SOW-698, Rev. 0 Draft, May 2003

INEEL, 2003b, *Health and Safety Plan for the Remedial Action Sampling, Field Screening, Soil Excavation, Backfill, Packaging, and Shipment of TSF-06/26 Sites at Waste Area Group 1, Operable Unit 1-10*, INEEL/EXT-02-01399, Rev. 1, Idaho National Engineering and Environmental Laboratory, January 2003.

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INEEL, 2003c, *Health and Safety Plan for Operable Unit 5-12 Remedial Design/Remedial Action Projects*, INEEL/EXT-2000-00515, Rev. 2, Idaho National Engineering and Environmental Laboratory, February 2003.

INEEL, 2003d, *Hazard Assessment Document for the CFA-04 Mercury Pond Remedial Action Hazard Classification*, HAD-195, Rev. 0, Idaho National Engineering and Environmental Laboratory, July 2003.

## **9. ACCEPTANCE**

Refer to Contract.

## **10. APPENDIXES**

Appendix A, WAG 1 Drawings

Appendix B, WAG 1 Specifications

Appendix C, WAG 4 Drawings

Appendix D, WAG 4 Specifications

Appendix E, WAG 5 Drawings

Appendix F, WAG 5 Specifications

## **11. ATTACHMENTS**

None.



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## Appendix B

### WAG 1 Specifications

#### Specification Titles

Specification	Title
01000	Definitions
02110	Clearing and Grubbing
02140	Temporary Diversion and Control of Water During Construction
02200	Earthwork
02210	Grades, Lines, and Levels
02222	Excavation, Trenching, and Backfilling
02930	Reclamation Seeding and Mulching

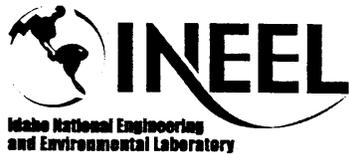
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**Appendix B**

**SECTION 01000**

**DEFINITIONS**

General Conditions	General Terms and Conditions for Construction Subcontractors on the Idaho National Engineering and Environmental Laboratory with Parsons Infrastructure & Technology Group, Inc. January 1996.
Operating Contractor	INEEL M&O Contractor
RD/RA Contractor	Defined RD/RA Contractor

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### SECTION 02110

#### CLEARING AND GRUBBING

##### **PART 1 GENERAL**

##### **1.1 SCOPE OF WORK**

##### **1.1.1 Work Included**

The subcontractor will furnish all materials, labor, tools, and equipment, and will perform clearing and grubbing during construction activities in accordance with this specification.

##### **1.1.2 Related Work Specified Elsewhere**

- (a) Temporary Diversion and Control of Water During Construction will be in accordance with Section 02140 of these specifications
- (b) Excavation, Trenching, and Backfilling will be in accordance with Section 02222 of these specifications
- (c) Earthwork will be in accordance with Section 02200 of these specifications
- (d) Reclamation Seeding and Mulching will be in accordance with Section 02930 of these specifications.

##### **1.1.3 Work to be Performed by Others**

The contractor will:

- (a) Review and approve data submittals as required by this specification
- (b) Designate items that require salvage, storage, reuse, and/or relocation
- (c) Perform final inspection and confirm acceptance of clearing and grubbing
- (d) In addition to inspection by the subcontractor, the contractor may inspect work for compliance with the requirements of this specification.

##### **1.2 REFERENCE DOCUMENTS**

- (a) Health and Safety Plan (HASP) for the Remedial Action of Waste Area Group 1, Operable Unit 1-10
- (b) M&O Contractor Hazards Prevention and Control Document PRD-24
- (c) Comprehensive Remedial Design/Remedial Action Work Plan for the Test Area North Operable Unit 1-10, Selected Sites.

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### 1.3 SUBMITTALS

#### 1.3.1 Procedures

The subcontractor will submit a description of materials and/or methods of clearing and grubbing in accordance with the requirements of this specification to the contractor for approval within eight work days after notice to proceed.

#### 1.3.2 Certifications

The subcontractor will submit a letter to the contractor verifying conformance to the requirements identified in this specification within four work days after completion of the work specified herein.

#### 1.3.3 Records

The subcontractor will submit all records of inspection to the contractor, within four work days after completion of the inspection.

### **PART 2 PRODUCTS**

#### 2.1 EQUIPMENT AND MATERIAL REQUIREMENTS

##### 2.1.1 Equipment

- (a) The subcontractor will ensure that all equipment used for clearing and grubbing work is fitted with appropriate safety devices that comply with all applicable federal laws and the Project Health and Safety Plan (HASp), and that will adequately protect the operator and minimize exposure of workers and others.
- (b) All equipment and tools used by the subcontractor to perform the work will be subject to inspection by the contractor before the work is started and will be maintained in satisfactory working condition at all times.
- (c) The subcontractor's equipment will have the capability to perform the indicated clearing and grubbing specified herein.

#### 2.2 ITEMS SALVAGED FOR REUSE, STORAGE, OR RELOCATION

The contractor will designate items that require reuse, storage, or relocation. The subcontractor will properly dispose of all signs in accordance with the contract General Conditions GC-16 and GC-17.

### **PART 3 EXECUTION**

#### 3.1 GENERAL

##### 3.1.1 Site Inspection

The subcontractor will inspect the site to determine the nature, location, size, and extent of vegetative material, debris, and obstructions to be removed or preserved, as specified herein.

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### 3.1.2 Protection and Safety

The subcontractor will provide all necessary protection measures per the standards established by INEEL PRD-24.

### 3.1.3 Traffic

The subcontractor will conduct clearing and grubbing operations to ensure minimum interference with roads, walks, and adjacent facilities. The subcontractor will not close or obstruct roads, walks, or adjacent operational facilities without written permission from the contractor.

### 3.1.4 Protection of Existing Structures and Facilities

The subcontractor will provide protection necessary to prevent damage to the existing structures and facilities which are to remain in place. The subcontractor will restore or replace damaged property to original condition, or to the satisfaction of the contractor. Items damaged in removal will be repaired and refinished, or replaced by the subcontractor with new matching items as required by the contractor.

### 3.1.5 Salvageable Items

Items damaged in removal will be repaired, refinished, or replaced by the subcontractor with new matching items as required by the contractor. The subcontractor will save and protect from construction damage all vegetative materials (trees, shrubs, grass, and other vegetation) beyond the limits of the required clearing and grubbing. The subcontractor will restore or replace damaged vegetative materials to the conditions as required by the contractor, in accordance with Section 02930 of these specifications.

### 3.1.6 Protection of Monuments and Other Pertinent Surface Features

The subcontractor will locate and mark existing monuments, monitoring wells, guard posts, and markers before construction operations commence and will protect such items during construction. The subcontractor will restore or replace damaged items to original condition as required by the contractor.

### 3.1.7 Dust Control

The subcontractor will at all times minimize the creation and emission of dust. The subcontractor will employ means such as water spray and visual observation to control and minimize dust. The source of water for dust suppression will be specified in the Request for Proposal, Special Conditions.

## 3.2 CLEARING AND GRUBBING

### 3.2.1 Clearing and Grubbing

The subcontractor will clear the site of shrubs, vegetation, and debris to the limits of the soil excavations. Stumps, roots exceeding 1-inch in diameter, and other debris exceeding 6-inches in diameter in the top 3-inches of the existing grade will be removed by hand or mechanical means. Removal methods will minimize the disturbance of soils below

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3-inches in depth. The subcontractor will follow the requirements of the HASP in determining the appropriate personal protective equipment (PPE) and material handling requirements of possible contaminated soils and vegetation.

### 3.2.2 Reclamation Seeding and Mulching

The subcontractor will seed and mulch disturbed areas in accordance with Section 02930 of these specifications.

### 3.3 INSPECTIONS DISPOSAL OF WASTE AND DEBRIS MATERIALS

#### 3.3.1 Organic Materials

Organic materials, including grass, shrubs, stumps, roots, and other organic debris removed due to clearing activities, will be transported by the subcontractor to an INEEL disposal site. Organic material removed from radiological controlled areas will be surveyed and released by the contractor prior to disposal. The subcontractor will construct stockpiles with surface water runoff controls, in accordance with Section 02140 of these specifications. The subcontractor will protect stockpiles to prevent excessive wind and water erosion.

#### 3.3.2 Disposal

The subcontractor will remove all materials not designated for relocation, reuse, or salvage. These materials will be disposed of as per the Special Conditions.

### 3.4 DAMAGED AREAS

The subcontractor will confine clearing and grubbing operations to within those areas required for construction of engineered barriers or native soil covers, borrow areas, or as directed by the contractor. Any areas outside the designated areas that are damaged or disturbed by the subcontractor's operations will be reclaimed by the subcontractor. Reclamation will be in accordance with Section 02930 of these specifications.

### 3.5 ACCEPTANCE

Clearing and grubbing not in accordance with the requirements of this specification will be repaired and/or replaced by the subcontractor at the subcontractor's expense. The subcontractor will submit a description of the repair and/or replacement methods to the contractor for approval before use. Acceptance criteria for repaired and/or replaced clearing and grubbing will be in accordance with the original requirements of this specification.

END OF SECTION

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### SECTION 02140

#### TEMPORARY DIVERSION AND CONTROL OF WATER DURING CONSTRUCTION

##### **PART 1 GENERAL**

##### **1.1 SCOPE OF WORK**

##### **1.1.1 Work Included**

The subcontractor will furnish all materials, labor, tools, and equipment for dewatering work areas and controlling surface water prior to and throughout construction operations. Control measures implemented may include berms, swales, ditches, temporary piles, portable pumps, silt fences, sediment traps, or any other measure approved by the contractor in accordance with this specification and as shown on the design drawings.

##### **1.1.2 Related Work Specified Elsewhere**

- (a) Earthwork will be in accordance with Section 02200 of these specifications
- (b) Reclamation Seeding and Mulching will be in accordance with Section 02930 of these specifications.

##### **1.1.3 Work to be Performed by Others**

The contractor will:

- (a) Review and approve data submittals as required by this specification
- (b) Inspect work for compliance with this specification, in addition to inspection by the subcontractor and with the design drawings. The contractor will review pre-placement conditions, placement of controls, and other job conditions during performance of the work.

The contractor will perform final inspection and acceptance of water diversion and control work.

##### **1.2 REFERENCE DOCUMENTS**

- (a) Health and Safety Plan (HASP) for the Remedial Action of Waste Area Group 1, Operable Unit 1-10
- (b) Comprehensive Remedial Design/Remedial Action Work Plan for the Test Area North, Operable Unit 1-10, Selected Sites.

##### **1.3 SUBMITTALS**

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### 1.3.1 Procedures

A Storm Water Pollution Prevention Plan (SWPPP) is not required for this specific project. However, this specification provides information necessary to ensure proper procedures are followed with regard to potential impacts due to precipitation effects.

### 1.3.2 Certifications

The subcontractor will submit a letter to the contractor verifying conformance to the requirements identified in this specification within four work days after completion of the work specified herein.

### 1.3.3 Records

The subcontractor will submit all records of inspection to the contractor, within four work days after completion of the inspection.

## **PART 2 PRODUCTS**

### 2.1 **EQUIPMENT AND MATERIAL REQUIREMENTS**

#### 2.1.1 Equipment

- (a) All equipment and tools will conform to the safety requirements of the Project Health and Safety Plan (HASP)
- (b) All equipment and tools used by the subcontractor to perform the work will be subject to inspection by the contractor before the work is started and will be maintained in satisfactory working condition at all times
- (c) The subcontractor's equipment will be adequate and capable of controlling water prior to and throughout construction as required by this specification and the design drawings.

#### 2.1.2 Materials

- (a) All materials will be furnished by the subcontractor and will be subject to approval by the contractor
- (b) Selection of materials used for controlling storm water are the responsibility of the subcontractor, but will follow the intent of the Storm Water Pollution Prevention Plan and be approved by the contractor.

## **PART 3 EXECUTION**

### 3.1 **GENERAL**

- 3.1.1 All standing water outside the construction boundary may be left to infiltrate the soil.
- 3.1.2 The subcontractor will perform all construction work in areas free of standing water. Suitable water control measures will be constructed at all locations where construction work may be affected by ponded storm water at the time of work.

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- 3.1.3 The subcontractor will divert surface water around the periphery of all construction areas by constructing temporary ditches, berms, or other appropriate means of control.
- 3.1.4 The subcontractor will be solely responsible for the protection of work against damage, delay, or environmental impact by water flow.
- 3.1.5 The subcontractor will direct and control water in a manner that protects adjacent structures and facilities.
- 3.1.6 The subcontractor will ensure that existing storm drainage is not impaired. The subcontractor will temporarily reroute existing storm drains affected by construction activities.
- 3.1.7 The subcontractor will at all times minimize the creation and emission of dust. The subcontractor will employ means such as water spray and visual observation to control and minimize dust. The source of water for dust suppression will be specified in the Request for Proposal, Special Conditions.
- 3.2 **WORK IN EXTREME WEATHER**
  - 3.2.1 In the event of extreme storm activity, the subcontractor will provide protective measures to prevent damage to the work by run-on and maintain control of the run-off from the constructed areas. During extreme storm events, the subcontractor will protect slopes by methods approved by the contractor. Promptly after an extreme storm event, the subcontractor will inspect and clean out all temporary control structures of debris and sediment buildup, and repair or replace any damaged areas either in the temporary control structures or in the permanent work areas as approved by the contractor.
- 3.3 **INSPECTIONS AND REPAIRS**
  - (a) The subcontractor will inspect temporary water control structures and materials on a daily basis and will record inspection findings in the daily work log. The inspection records will be submitted weekly to the contractor.
  - (b) The subcontractor will remove debris and sediment build-up from the temporary control structures as required to maintain the intended flow path.
  - (c) Should overflow or breach conditions be encountered or any other damage observed at the temporary structures, repair and/or replacement of the damaged area will be promptly performed by the subcontractor.
  - (d) Acceptance criteria for repaired and/or replaced temporary water control structures will be in accordance with the requirements of this specification.
- 3.4 **REMOVAL OF TEMPORARY CONTROL MEASURES**

Temporary storm water control measures will be removed once the work has been completed and as directed by the contractor. The materials removed will be properly disposed of by the subcontractor, as directed by the contractor. All areas where temporary control structures are removed will be regraded and revegetated in accordance with Sections 02200 and 02930 of these specifications.

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### 3.5 ACCEPTANCE

The subcontractor will submit a description of any repair or replacement work required to the contractor prior to implementation. Acceptance criteria for repaired or replaced water control measures will be in accordance with the original requirements of this specification.

END OF SECTION

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### SECTION 02200

### EARTHWORK

#### **PART 1 GENERAL**

#### **1.1 SCOPE OF WORK**

##### **1.1.1 Work Included**

The subcontractor will furnish all materials, labor, tools, and equipment for all types of earthwork to be performed in accordance with this specification and as shown on the design drawings. Earthwork includes grading and excavation; placement of fill materials; placement of contaminated materials; disposal of unsuitable materials; and reclamation of borrow area.

##### **1.1.2 Related Work Specified Elsewhere**

- (a) Temporary Diversion and Control of Water During Construction will be in accordance with Section 02140 of these specifications
- (b) Grades, Lines and Levels will be in accordance with Section 02210 of these specifications
- (c) Excavating, Trenching, and Backfilling will be in accordance with Section 02222 of these specifications
- (d) Reclamation Seeding and Mulching will be in accordance with Section 02930 of these specifications.

##### **1.1.3 Materials Procurement Notification**

The subcontractor will follow the requirements of the General Conditions GC-2 and Vendor Data Schedule (VDS).

##### **1.1.4 Work to be Performed by Others**

The contractor will:

- (a) Review and approve data submittals as required by this specification
- (b) Review and approve results of quality assurance tests and surveying performed for compliance with this specification
- (c) Document and monitor corrective actions
- (d) Identify the acceptable onsite borrow locations
- (e) Have the option to approve all soil compaction equipment prior to use

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- (f) Have the option to inspect and approve surface conditions prior to placement of each layer
- (g) Have the option to inspect and approve all materials prior to placement
- (h) Have the option to perform final inspection and confirm acceptance of earthwork.

### 1.2 REFERENCE DOCUMENTS

Occupational Safety and Health Administration (OSHA)

Code of Federal Regulations, Part 1926, Subparts P and G

INEEL Health, Safety and Hazards Prevention Documents

Health and Safety Plan (HASP) for the Remedial Action of Waste Area Group 1, Operable Unit 1-10

Hazards Prevention and Control Document, PRD-24

*Comprehensive Remedial Design/Remedial Action Work Plan for the Test Area North Operable Unit 1-10. Selected Sites.*

### 1.3 SUBMITTALS

#### 1.3.1 Test Reports

The subcontractor will submit test reports at the following frequencies:

- (a) Field Placement Tests – Field tests that provide immediate results will be recorded in the Daily Field Report and presented to the contractor by the end of the same day
- (b) Field Quality Control Tests – Field tests that provide immediate results will be recorded in the Daily Field Report and presented to the contractor by the end of the same day.

#### 1.3.2 Procedures

The subcontractor will submit a work plan describing the equipment, materials, and methods to be employed to meet the requirements of this specification to the contractor for approval 20 calendar days prior to commencement of work. The work plan will be formatted in accordance with the requirements outlined in the contract Special Condition titled Construction Work Plan.

#### 1.3.3 Certifications

Prior to final acceptance of the work specified herein, the subcontractor will submit a letter to the contractor verifying conformance to the requirements identified in this specification.

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### 1.3.4 Records

The subcontractor will submit to the contractor all field records from surveying, layout, and field inspection activities within four work days after completion of these activities.

### 1.4 QUALITY ASSURANCE

The subcontractor will comply with PLN-125 Quality Program Plan for the Environmental Restoration Program and submit within 10 work days after notice to proceed through the vendor data schedule a notice of intent to comply.

## **PART 2 PRODUCTS**

### 2.1 EQUIPMENT AND MATERIAL REQUIREMENTS

#### 2.1.1 Equipment

All equipment and tools will conform to the safety requirements of the Project Health and Safety Plan (HASP). All equipment and tools used by the subcontractor to perform the work will be subject to inspection by the contractor before the work is started and will be maintained in satisfactory working condition at all times. All soil compaction equipment will be inspected for acceptance by the contractor prior to the start of construction.

The subcontractor's equipment will be adequate and have the capability to perform the indicated earthwork specified herein.

All equipment brought to the site will be identified to the contractor prior to delivery and will be clean and free of grease and oil spots due to potential equipment contamination. Where applicable, tires will be in like-new condition, free of slits, and cracks. The contractor reserves the right to reject equipment not meeting these requirements.

#### 2.1.2 Fill Material

Fill material will be native soils from borrow locations as designated on the drawings and will be generally free of plant material, roots larger than one inch in diameter, rubble, litter, insect infestation, and other deleterious matter.

#### 2.1.3 Borrow Area Requirements

In situ topsoil will be removed and stockpiled at designated locations prior to the removal of borrow soils. Top soil will be obtained through the Operations and Maintenance contractor, as needed.

#### 2.1.4 Topsoil

Topsoil borrow will be obtained from the Borrow Area at Test Area North and will meet the following requirements:

- (a) Be free of rubble, litter, insect manifestation, and other deleterious matter
- (b) Be free of rocks larger than three inches in diameter.

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### **PART 3 EXECUTION**

#### **3.1 PROTECTION AND SAFETY**

- 3.1.1 The subcontractor will keep all roads and parking areas adjacent to or part of this project usable at all times. The subcontractor will provide all necessary barricades, temporary walkways, lights, signs, signals, etc., for the protection of the workers and the public, as per the standards established by PRD-24 in the *Hazards Prevention and Control Manual* and Occupational Safety and Health Administration (OSHA), Construction Safety and Health Regulation 29 CFR, Part 1926, Subpart G, Signs, Signals, and Barricades, whichever of the two is more stringent.
- 3.1.2 For excavations, trenching, and shoring, the subcontractor will comply with Section 02222, Excavation, Trenching, and Backfilling.
- 3.1.3 The subcontractor will provide the necessary protection to prevent damage to existing structures and facilities indicated in the drawings or indicated by the contractor to remain in place. The subcontractor will restore damaged property to original condition, and obtain written approval from the contractor.
- 3.1.4 The subcontractor will clearly mark and post all laydown areas.
- 3.1.5 The subcontractor will mark or otherwise indicate the location of existing monuments and markers, and protect these structures before construction operations commence. The subcontractor will be responsible for the marking and/or protection of all necessary objects.
- 3.1.6 During earthwork operations, a representative of the subcontractor will be present at all times to observe and identify any areas requiring investigation. The subcontractor will notify the contractor immediately upon discovery of any field deviations from the drawings or this specification.

#### **3.2 EXISTING UTILITIES**

- 3.2.1 There may be existing utilities within the limits of the construction area as shown on the design drawings. Utilities will be identified by the contractor and the utilities protected by the subcontractor. The contractor will be immediately notified of the discovery of utilities not shown on the design drawings. The subcontractor will follow the guidelines for protection of utilities in accordance with Section 02222 of these specifications.

#### **3.3 DUST CONTROL**

- 3.3.1 The subcontractor will at all times during the activities minimize the creation and emission of dust. The subcontractor will employ means such as water spray and visual observation to control and minimize dust. Source of water will be specified in the Request for Proposal, Special Conditions.
- 3.3.2 The subcontractor will ensure that unpaved and haul routes are wetted while in use.

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### 3.4 INSTALLATION OF FILL MATERIALS

#### 3.4.1 General Requirements

- (a) Stockpiling of clean imported material will be confined to the subcontractor's laydown and storage area as approved by the contractor. Stockpiled materials will have stable slopes and be evenly graded and self-draining. Materials will be stockpiled in such a way that precipitation runoff can be monitored and controlled, if necessary, to prevent escape from the stockpile area. The subcontractor will ensure that the stockpiling and handling of contaminated surface soils, if encountered, are confined within the limits of the work area.
- (b) The subcontractor will place all materials to the lines, grades and elevations as shown on the design drawings as specified in Section 02210 of these specifications.
- (c) The subcontractor will not begin placement of materials until after acceptance by the contractor of the subgrade and placement conditions for all underlying material layers.
- (d) The subcontractor will not place materials on frozen surfaces, in standing water, or when materials contain snow, ice or frozen material.
- (e) The subcontractor will slope temporary grades to direct water away from the construction area to reduce the potential for ponding water. The subcontractor will provide erosion protection as specified in Section 02140 of these specifications.

#### 3.4.2 Existing Grades

The existing grade will be prepared as required in Section 02110 of these specifications.

#### 3.4.3 Fill Material

- (a) The fill material will be placed in loose lifts to attain a maximum compacted lift thickness of six inches.
- (b) Top soil will be compacted with a minimum of three passes of a sheepsfoot roller.
- (c) Fill material other than top soil will be compacted with a minimum of five passes of a smooth steel drum roller. In the event that significant silt or other fine grain material are involved, the contractor may direct that a sheepsfoot roller be used at no additional cost.
- (d) Subsequent lifts will not be placed until acceptance by the contractor of the previous lift has been received.
- (e) The borrow areas will be graded to minimize erosion and sustain vegetation. Reclamation seeding and mulching of the borrow areas will be in accordance with Section 02930 of these specifications.

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### 3.4.4 Topsoil Layer

- (a) Place the topsoil with a moisture content that minimizes dust production
- (b) Place the topsoil in maximum eight-inch loose lifts
- (c) Place the topsoil layer with the minimal compaction obtained only from the normal passage of construction equipment that occurs during placement and grading operations.

### 3.4.5 Protection of Underlying Layers

- (a) The subcontractor will use placement methods which prevent undue disturbance and which maintain and ensure the integrity of the underlying materials. The subcontractor will submit, for written approval by the contractor, the construction method(s) proposed to ensure the protection of the underlying layers.
- (b) Previously installed layers or subgrades disturbed by subsequent construction operations by the subcontractor or adverse weather will be reworked to the required placement conditions specified herein and as otherwise approved by the contractor.

### 3.5 INSPECTION

- 3.5.1 The subcontractor will be responsible for preoperation, operation, and postoperation inspection during the performance of all work.
- 3.5.2 The contractor reserves the right to inspect all work for compliance with this specification.

### 3.6 ACCEPTANCE

The subcontractor will be responsible for documenting the number of compaction passes completed per lift. Placed materials not in accordance with the requirements of this specification will be repaired and/or replaced by the subcontractor. The subcontractor will submit a description of repair and/or replacement methods to the contractor for written approval before implementation. Acceptance criteria for repaired and/or replaced materials will be in accordance with the original requirements of this specification.

Areas that do not conform with the compaction specifications will be investigated by the subcontractor to determine the extent of the non-conformance. Areas that are of a different material type or that have failed the specifications after recompaction efforts will undergo additional testing regardless of the testing frequency guidelines.

Final acceptance will be explicitly detailed by survey locations, layer description, material type, and lift number or elevation. A final report to the contractor will be submitted by the subcontractor within 20 calendar days of the final acceptance detailing all field survey and quality control activities performed during the construction operations.

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### SECTION 02210

#### GRADES, LINES, AND LEVELS

##### **PART 1 GENERAL**

##### 1.1 SCOPE OF WORK

##### 1.1.1 Work Included

The subcontractor will furnish all materials, labor, tools, and equipment to perform surveying. The subcontractor will perform surveying to ensure that the proper grades, lines, and levels are established as set forth in these specifications and as shown on the design drawings. The construction survey will be completed by either the subcontractor or an independent firm, provided the work is completed under the supervision of a Registered Land Surveyor in the State of Idaho.

##### 1.1.2 Related Work Specified Elsewhere

- (a) Earthwork will be performed in accordance with Section 02200 of these specifications
- (b) Excavation, Trenching, and Backfilling will be performed in accordance with Section 02222 of these specifications
- (c) Reclamation Seeding and Mulching will be in accordance with Section 02930 of these specifications.

##### 1.1.3 Work to be Performed by Others

The contractor will:

- (a) Review and approve data submittals as required by this specification
- (b) Provide INEEL survey grid information
- (c) Provide benchmarks, strategically located, as shown on design drawings
- (d) Inspect work for compliance with the requirements of this specification in addition to inspection by the subcontractor
- (e) Perform final inspection and confirm acceptance of surveying work.

##### 1.2 REFERENCE DOCUMENTS

INEEL Site Grid

*Comprehensive Remedial Design/Remedial Action Work Plan for the Test Area North Operable Unit 1-10, Selected Sites.*

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### 1.3 SUBMITTALS

#### 1.3.1 Procedures

- (a) The subcontractor will submit within eight work days after notice to proceed, a plan for the work, including descriptions of survey equipment, procedures used to establish temporary or permanent benchmarks or measurements, field notes, calculations, reductions, closures, and documentation for any benchmarks or monuments to the contractor for approval.
- (b) Data will be reduced and plotted by the subcontractor in a form acceptable to the contractor. Legible notes, drawings, and reproducible documentation will be submitted to the contractor for approval. Contour intervals will be 0.5 feet. In addition to the above notes submittals, all plans will also be submitted in electronic format.

#### 1.3.2 Certifications

- (a) Prior to grading or placing fill at each respective site, the subcontractor will perform a survey of the existing subgrade, if necessary, to confirm to his satisfaction, the adequacy of the existing topo as shown on the drawings, and will submit a letter to the contractor stating acceptance of the accuracy of the existing topo shown on the contract drawings, or will otherwise advise of discrepancies or omissions for further resolution. Construction work in each respective area will not begin until agreement is reached on the adequacy of the existing topo information.
- (b) The subcontractor will submit a letter to the contractor within four work days after completion of each respective stage of the work specified herein, verifying conformance to the requirements identified in this specification. The letter will be prepared and executed by a Professional Land Surveyor registered in the State of Idaho.

#### 1.3.3 Records

The subcontractor will submit to the contractor for information, all field notes from surveying and layout activities within four work days after completion of each stage of these activities at each respective site.

### 1.4 QUALITY ASSURANCE

The subcontractor will be responsible for protecting and maintaining all horizontal and vertical control points during construction.

The subcontractor will provide an independent survey firm, registered in the State of Idaho, to verify the construction survey.

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### 1.4.1 Accuracy

Optical survey, tape measurements, and electronic measurements will have a minimum accuracy of  $\pm 0.1$  feet in horizontal locations and elevations, or as superseded by criteria set forth in other sections of these specifications.

Calibration records will be submitted to the contractor eight work days prior to use. Calibrations will be performed by an INEEL approved calibration laboratory.

### 1.4.2 Tolerances

Unless superseded by other sections of these specifications, the subcontractor will survey all existing or placed materials to ensure that they are within the tolerances specified below:

<u>Description</u>	<u>Tolerances</u>
Final Grade	-0.0 to +0.1 feet (elevation)

## **PART 2 PRODUCTS**

None.

## **PART 3 EXECUTION**

### 3.1 GENERAL

3.1.1 All surveying will be performed based upon the project coordinate system for this specific project. Conversion and recording in the INEEL Site coordinate system will be performed by the contractor.

3.1.2 The surveying will be performed by a professional Land Surveyor licensed by the State of Idaho.

3.1.3 The subcontractor will check and verify that as-built thicknesses and elevations match those shown on the design drawings based on the benchmarks, and provide complete as-built information by topographic plats and by marking up prints of the design drawings.

3.1.4 The subcontractor is responsible for controlling lift thickness to ensure conformance to the required dimensions. The subcontractor will be responsible for establishing, recording, protecting, and maintaining all permanent and temporary horizontal and vertical control benchmarks.

### 3.2 SURVEY MEASUREMENTS

3.2.1 Prior to commencement of construction work, the subcontractor will establish survey control points inside the work areas.

3.2.2 Survey control points will be established so that any point within the job site can be accurately reestablished and elevations be obtained to the required tolerances at any time during the construction. The subcontractor will verify all baselines, and horizontal and vertical control benchmarks stipulated in the information provided by the contractor.

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### 3.3 ACCEPTANCE

- 1) Surveying work not in accordance with the requirements of this specification will be corrected, repeated, or replaced by the subcontractor. The subcontractor will submit a description of the corrective action methods to the contractor for approval before use. Acceptance criteria for corrected actions will be in accordance with the original requirements of this specification.
- 2) In the event of a survey discrepancy, the area in question will be resurveyed and verified at no cost to the contractor.

END OF SECTION

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### SECTION 02222

#### EXCAVATION, TRENCHING, AND BACKFILLING

##### **PART 1 GENERAL**

##### 1.1 SCOPE OF WORK

##### 1.1.1 Work Included

The subcontractor will furnish all materials, labor, tools, and equipment to complete excavation, trenching, and backfilling necessary during the construction activities, including excavation, trenching, and backfilling for constructing ditches, swales, and test pits.

##### 1.1.2 Related Work Specified Elsewhere

- (a) Temporary Diversion and Control of Water During Construction will be in accordance with Section 02140 of these specifications
- (b) Earthwork will be performed in accordance with Section 02200 of these specifications
- (c) Reclamation Seeding and Mulching will be in accordance with Section 02930 of these specifications.

##### 1.1.3 Work to be Performed by Others

The contractor will:

- (a) Review and approve data submittals as required by this specification
- (b) Have the option to perform final inspection and acceptance of excavations, trenches, and backfilling.

##### 1.2 REFERENCE DOCUMENTS

##### Occupational Safety and Health Administration (OSHA)

29 CFR, Part 1926, Subpart G, Signs, Signals, and Barricades  
29 CFR, Part 1926, Subpart P, Excavation, Trenching, and Shoring  
Pamphlet 2226, Excavation and Trenching Operations.

##### INEEL Health, Safety and Hazards Prevention Documents

Health and Safety Plan (HASP) for the Remedial Action of Waste Area Group 1, Operable Unit 1-10.

Hazards Prevention and Control Document, PRD-24.

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*Comprehensive RD/RA Work Plan for the Test Area North OU 1-10, Selected Sites.*

### 1.3 SUBMITTALS

#### 1.3.1 Certifications

The subcontractor will submit a letter to the contractor verifying conformance to the requirements identified in this specification within four work days after completion of the work specified herein.

#### 1.3.2 Records

The subcontractor will submit to the contractor for information, all field notes from excavation, trenching, and backfilling activities within four work days after completion of each stage of these activities at each respective site.

### 1.4 QUALITY ASSURANCE

The subcontractor will prepare, maintain, and use a contractor-approved, written Quality Assurance/Quality Control Manual for the work performed. The Quality Assurance/Quality Control Manual will be submitted within eight work days after notice to proceed, and will include the requirements to ensure application of the latest design documents and the incorporation of the approved changes. As a minimum, the subcontractor will develop and maintain appropriate records that verify the quality and acceptance of materials, the application of approved procedures, the test and inspection records, and the appropriate approval signatures for acceptance of work performed.

## **PART 2 PRODUCTS**

### 2.1 EQUIPMENT AND MATERIAL REQUIREMENTS

#### 2.1.1 Backfill Material

Backfill material may be any type of clean fill material that is accessible at Test Area North.

#### 2.1.2 Excavated Material

The subcontractor will excavate and handle excavated material regardless of its type, characteristic, composition, or depth condition. All material excavated from trenching operations will be stockpiled in designated areas for eventual reuse.

## **PART 3 EXECUTION**

### 3.1 PROTECTION, SAFETY AND HAZARDS PREVENTION

3.1.1 The subcontractor will comply with the rules and regulations of OSHA Construction Safety and Health Regulations 29 Code of Federal Regulation (CFR), Part 1926, Subpart P, Excavation, Trenching, and Shoring, and the HASP. The subcontractor will refer to OSHA Pamphlet 2226, Excavation and Trenching Operations, as an additional aid. The

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subcontractor will comply with the rules and regulations of OSHA Construction Safety and Health Regulations 29 CFR, Part 1926, Subpart G, Signs, Signals, and Barricades.

3.1.2 During excavation and trenching operations, a representative of the subcontractor will be present at all times to observe the activities and identify any areas requiring investigation. Areas where undefined pipes, utilities, or any soils of peculiar nature are encountered during excavation and trenching will be brought to the immediate attention of the contractor.

3.1.3 The subcontractor will comply with Hazards Prevention and Control Document, PRD-24.

### 3.2 EXISTING UTILITIES

3.2.1 There are existing utilities within the limits of or nearby the construction area, as shown on the design drawings. The subcontractor will excavate in accordance with the General Conditions.

If excavation is within a minimum distance specified by the contractor of any existing high voltage or high hazard electrical power utility (whether underground, overhead, or at the side of the excavation), Lockout/Tagout or proper preparation will be required. The Subcontractor will provide at least four-work day notice to the contractor so that the contractor can arrange for and perform Lockout/Tagout procedures.

3.2.2 The subcontractor will immediately notify the contractor of any existing utilities encountered during excavation that are not indicated on the design drawings.

3.2.3 The subcontractor will obtain written approval from the contractor before backfilling for existing pipes to be removed or for other existing utilities.

### 3.3 GENERAL REQUIREMENTS FOR EXCAVATION

3.3.1 The subcontractor will be solely responsible for the safety of temporary cuts and fills.

3.3.2 The subcontractor will contain excavation operations within the designated limits as indicated on the design drawings. If conditions encountered warrant modification to the designated limits, the contractor will be notified prior to proceeding.

3.3.3 The subcontractor will backfill temporary excavations as soon as practical.

3.3.4 Work in inclement weather will be performed at the subcontractor's risk. The subcontractor will replace and rework any materials that become unsuitable as the result of work performed during inclement weather.

3.3.5 The subcontractor will perform excavation and fill operations in a manner that maintains drainage and control at all times, in accordance with Section 02140, Temporary Diversion and Control of Water During Construction.

(a) The subcontractor will excavate in a manner so that the site and immediately surrounding areas will be continually drained away from the excavation. Surface water run-on will not be permitted to accumulate in the excavations.

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- (b) When ruts of two inches or more in depth are formed, the surface will be reworked with discs, and rerolled, returned to grade, and retested by the subcontractor at the direction of the contractor. In no case will the subcontractor place any fill materials on an unstable muddy surface.

### 3.4 TRENCH EXCAVATION

During excavation to remove and/or plug existing pipes, materials and equipment will be handled in a manner that prevents overloading trench banks, slides, or cave-ins.

### 3.5 BACKFILLING

The subcontractor will not commence backfilling until the excavation work has been approved by the contractor. The subcontractor will place backfill in maximum six-inch compacted lifts. If the subcontractor cannot attain the compaction densities required, the material will be reworked to obtain the required compaction density.

### 3.6 TESTING

#### 3.6.1 General

The subcontractor will be responsible for the performance of all testing. The subcontractor will submit all test records to the contractor. The degree of compaction will be expressed as a percentage of the maximum dry density obtained in accordance with American Society for Testing and Materials (ASTM) D 698.

#### 3.6.2 Compaction Requirements

In-Place densities will be determined in accordance with ASTM D 2922.

The subcontractor will compact backfill to 95 percent of maximum dry density for all trench areas crossing under access roads or areas expected to receive vehicular traffic.

The subcontractor will compact backfill to 90 percent the maximum dry density for all other areas.

The subcontractor will perform a minimum of one field compaction test for each trench for alternate lifts. More frequent compaction tests may be required initially or upon a change in material in order to establish the compaction method and materials.

### 3.7 INSPECTION

- 3.7.1 The subcontractor will be responsible for in-process inspection during performance of all work.

- 3.7.2 In addition to inspection by the subcontractor, the contractor reserves the right to inspect all work for compliance with the requirements of this specification.

### 3.8 ACCEPTANCE

Excavation, trenching, and backfilling not in accordance with the requirements of this specification will be repaired or replaced by the subcontractor. The subcontractor will

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submit a description of the repair and/or replacement methods for work not in compliance with this specification to the contractor for written approval before use. Acceptance criteria for repaired and/or replaced excavations, and backfilling will be in accordance with the original requirements of this specification.

END OF SECTION

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### SECTION 02930

#### RECLAMATION SEEDING AND MULCHING

##### **PART 1 GENERAL**

##### **1.1 SCOPE OF WORK**

##### **1.1.1 Work Included**

The subcontractor will furnish all labor, materials, labor, tools, and equipment, and place seed and mulch in accordance with this specification and as indicated on the design drawings. This section describes the subcontractor's requirements to provide a final vegetated surface in those areas designated herein or as shown on the drawings. These designated areas will be seeded and mulched as set forth in this section and on the design drawings.

##### **1.1.2 Related Work Specified Elsewhere**

- (a) Temporary Diversion and Control of Water During Construction will be in accordance with Section 02140 of these specifications
- (b) Earthwork will be performed in accordance with Section 02200 of these specifications
- (c) Excavation, Trenching, and Backfilling will be in accordance with Section 02222 of these specifications.

##### **1.1.3 Work to be Performed by Others**

The contractor will:

- (a) Review and approve data submittals as required by this specification
- (b) Have the option to inspect equipment, work, and materials for compliance with the requirements of this specification, in addition to inspection by the subcontractor
- (c) Have the option to review preseeding conditions and other related job conditions during performance of the work
- (d) Have the option to perform inspection and acceptance of the final vegetated surfaces.

##### **1.2 REFERENCE DOCUMENTS**

United States Department of Agriculture (USDA)  
Federal Seed Act

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### State of Idaho

### Idaho Pure Seed Law, Chapter 4, Title 22, Idaho Code

*Comprehensive RD/RA Work Plan for the Test Area North OU 1-10, Selected Sites.*

#### 1.3 SUBMITTALS

##### 1.3.1 Procedures

The subcontractor will submit a Seeding and Mulching Plan to the contractor for written approval within eight work days after notice to proceed. The plan will describe the methods of placement and the equipment to be used during operations.

##### 1.3.2 Certifications

- (a) The subcontractor will submit eight work days prior to use, the seed vendor's certified statement for the seed mixture required, stating scientific and common names, percentages by weight, and percentages of purity and germination. The subcontractor will submit a signed statement certifying that the seed is from a lot that has been tested by a recognized laboratory for seed testing within six months prior to the date of delivery to the construction site.
- (b) The subcontractor will submit a letter to the contractor verifying conformance to the requirements identified in this specification within four work days after completion of the work specified herein.

##### 1.3.2 Records

The subcontractor will submit records of inspection to the contractor within four work days after completion of the inspection.

### **PART 2 PRODUCTS**

#### 2.1 GENERAL

Seed, fertilizer, mulch, and equipment will be inspected upon arrival at the job site by the contractor for conformity to type and quality in accordance with these requirements. Unacceptable materials will be removed from the job site by the subcontractor.

#### 2.2 EQUIPMENT AND MATERIAL REQUIREMENTS

##### 2.2.1 Seed Mix

Seed will be labeled in accordance with United States Department of Agriculture rules and regulations under the Federal Seed Act and Idaho Pure Seed Law. Seed will be furnished in sealed bags or containers clearly labeled to show the name and address of the supplier, the seed name, the lot number, net weight, origin, the percentage weed seed content, the guaranteed percentage of purity and germination, pounds of live seed (PLS) of each seed species, the total pounds of live seed in the container, and the date the of the last germination test that will be within a period of six months prior to commencement of

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planting operations. Seed will be from a current or previous year's crop. Each variety of seed will meet the requirements of the Idaho Pure Seed Law.

The following seed mixture will be used:

<u>Species</u>	<u>(lb/acre purer live seed)</u>
Streambank wheatgrass	5
Needle and Thread	5
Lewis flax	1
Milkvetch	0.5
False Alfalfa	0.5
Wyoming big sage brush	0.25
Winterfat	0.25

### 2.2.2 Fertilizer

A starter fertilizer containing nitrogen, phosphorous, potassium, and sulfur will be used. A 20-48-10 or contractor approved equal will be acceptable.

### 2.2.3 Mulch

The subcontractor will furnish all labor, materials, tools, and equipment to place a grain straw (wheat, oats, or barley) mulch on the reclaimed areas.

### 2.2.4 Equipment

The subcontractor will provide appropriate types of equipment for the performance of drill seeding and mulch spreading. Seeding of the grass species will be done with a rangeland grass drill equipped with multiple seed bins, depth bands, and press wheels. Drills should have agitators to prevent the seed from segregating and lodging in the seed box. The depth bands should be suitable for placing the seed at a depth that does not exceed ½ inch.

Mulch crimping equipment will properly crimp straw without cutting the straw. Discing equipment is not acceptable.

## 2.3 PRODUCT DELIVERY, STORAGE, AND HANDLING

### 2.3.1 Delivery

The subcontractor will deliver seed to the site in the original, unopened containers bearing the container labels or tags stating the producer's guaranteed statement of analysis.

### 2.3.2 Storage

Material will be stored in areas designated by the contractor. Seed will be stored in cool, dry locations away from contaminants and in accordance with manufacturer's recommendations. Storage times will not exceed manufacturer's recommendations.

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### 2.3.3 Handling

Except for bulk deliveries, the subcontractor will not drop or dump materials from vehicles.

## PART 3 EXECUTION

### 3.1 APPLICATION PROCEDURES

#### 3.1.1 Topsoil Preparation

Prior to seeding, the subcontractor will till the top three inches of the surface into an even and loose seed bed, free of clods in excess of four inches in diameter, and brought to the desired line and grade. The areas to be planted will be free of rills and gullies. All roots larger than one in diameter, litter, and other foreign material will be removed from the area and disposed by the subcontractor.

#### 3.1.2 Seeding

- (a) The subcontractor will seed remediation areas, laydown areas, borrow areas, and other locations impacted by construction activities.
- (b) The subcontractor will apply the seed mix uniformly to the prepared surface by means of drill seeding at the minimum rate specified in Part 2.2.1 of this section.
- (c) Seed will be uniformly drilled to a maximum depth of ½ inch using equipment specified in Part 2.2.4 of this section.
- (d) The subcontractor will seed in a pattern perpendicular to the slope, working from the top of the slope down and using row markers to indicated seeded areas.
- (e) The subcontractor will seed the grass mixture in either the Spring or the Fall. Where feasible, seeding should be done between October 15 and November 15 for optimum results. Spring seeding will be done after the chances of freezing temperatures have passed. Fall seeding will be done before the ground is frozen or covered with snow and before the time that temperatures would be too low for germination.
- (f) The stand of grass resulting from the seeding will not be considered satisfactory until accepted by the contractor. Subcontractor will provide a one year warranty to assure the stand of grass from the seeding. If areas are determined to be unacceptable, the unacceptable areas will be reseeded in accordance with these specifications.

#### 3.1.3 Fertilizer

Fertilizer will be applied at the rate of 30 pounds per acre.

#### 3.1.4 Mulch

Mulch will be straw spread uniformly at a rate of two tons per acre immediately following seeding. Mulch will be anchored into the soil to a depth of at least two inches

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with no more than one pass of the crimping equipment. Mulching will not be performed when wind interferes with placement.

### 3.2 MAINTENANCE

#### 3.2.1 General

- (a) Maintenance during all construction operations will be provided by the subcontractor
- (b) Areas damaged by man-made or natural causes, will be restored to the original conditions of this specification by the subcontractor.

#### 3.2.2 Inspections

- (a) The subcontractor will perform daily inspections of previously seeded areas during the reclamation activities. The inspection records will be submitted weekly to the contractor.
- (b) All inspection findings will be submitted to the contractor in writing including, but not limited to, conditions observed, repairs recommended, and materials recommended. The subcontractor is required to submit a repair report documenting the repairs made and material used.

#### 3.2.3 Warranty

The warranty period will be the Contract Documents. Areas of erosion will be immediately repaired and reseeded by the subcontractor throughout the warranty period or until an acceptable grass stand is established and accepted by the contractor.

### 3.3 ACCEPTANCE

Seeding and mulching not in accordance with the requirements of this specification will be repaired and/or replaced by the subcontractor. The subcontractor will submit a description of the repair and/or replacement methods to the contractor for written approval before use. Acceptance criteria for repaired and/or replaced seeding or mulching will be in accordance with the original requirements of this specification.

END OF SECTION

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Appendix C

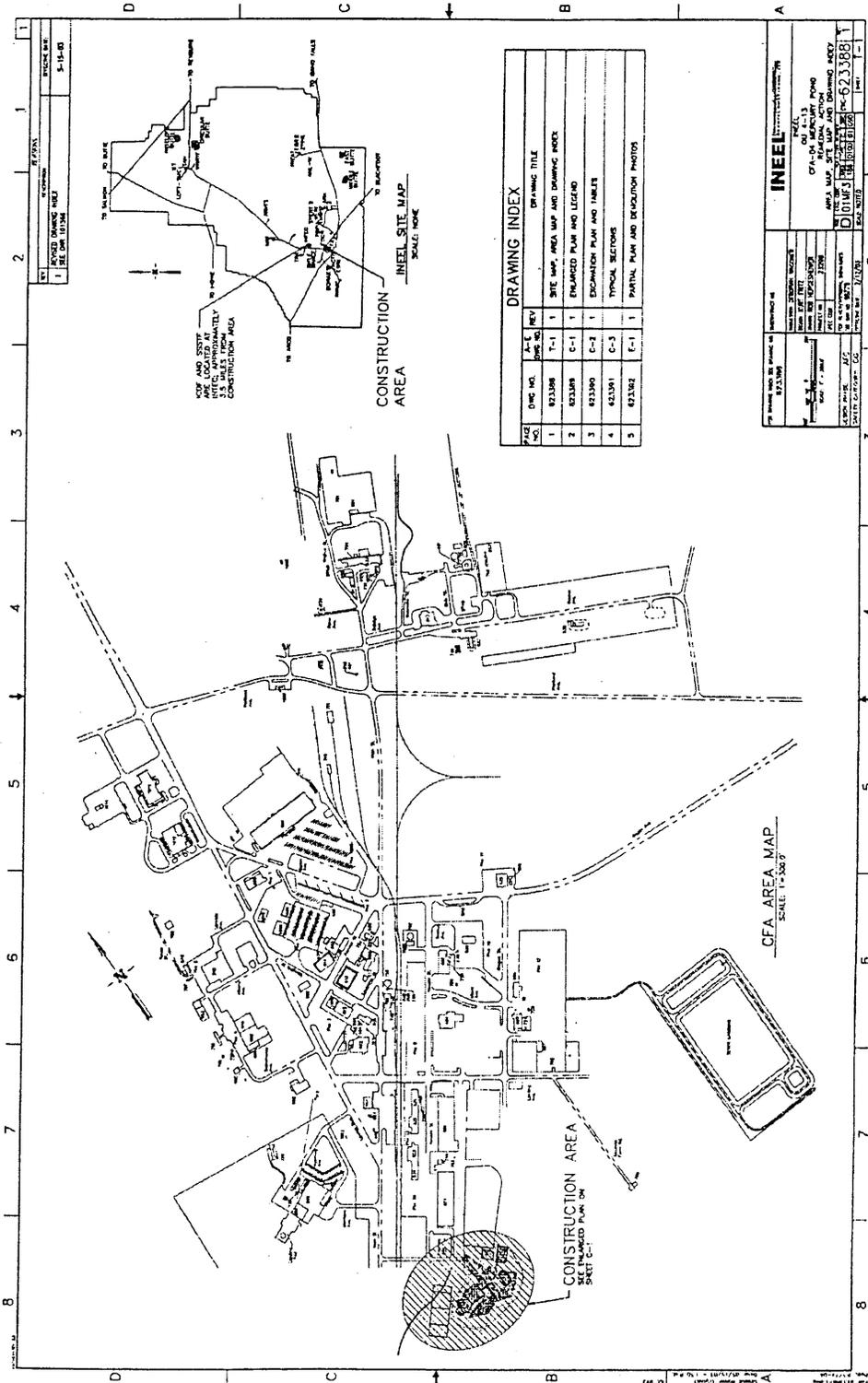
**WAG 4 Drawings**

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APPENDIX C  
 WAG 4 Drawings

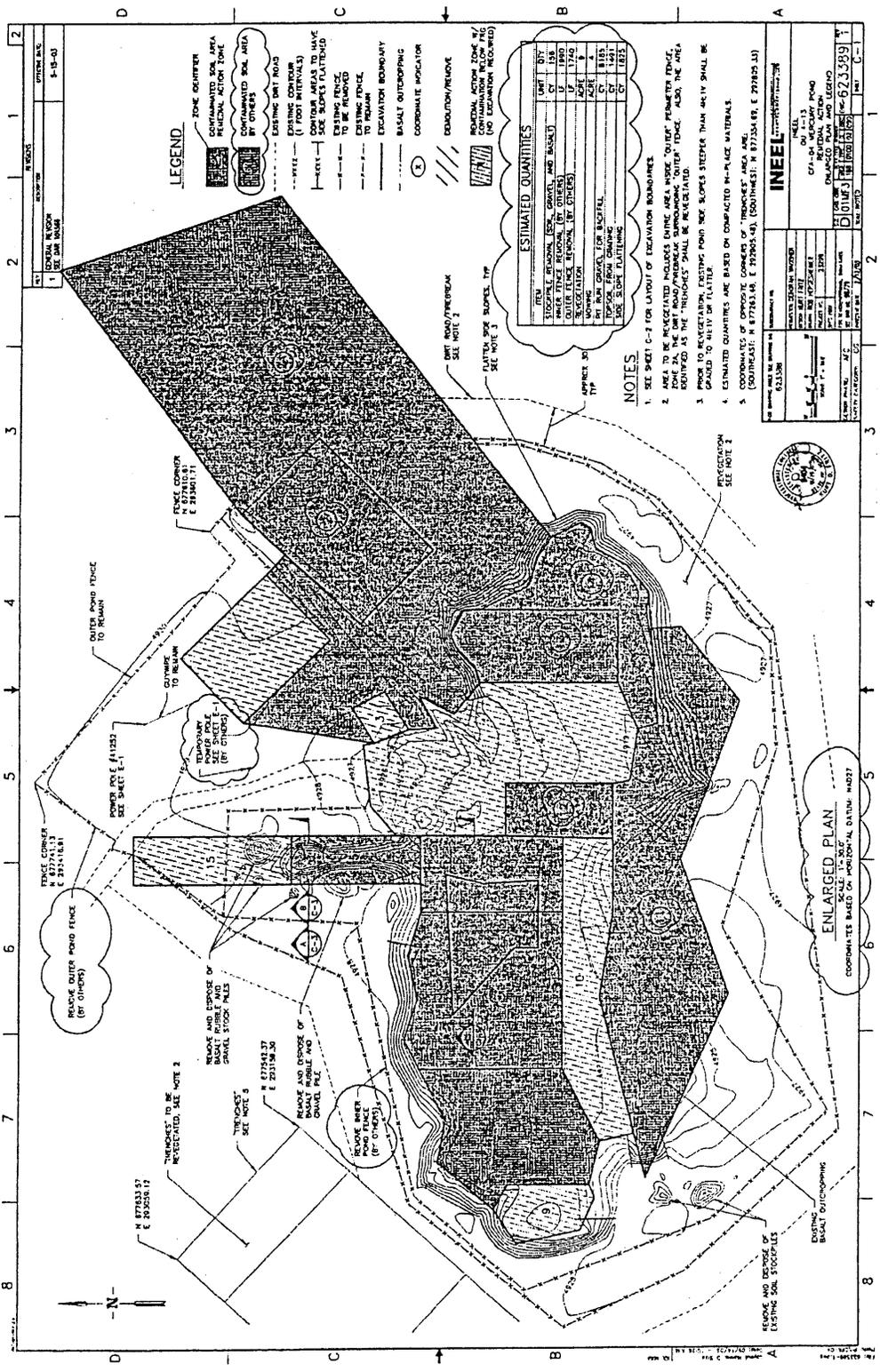




**STATEMENT OF WORK  
REMEDIAL ACTION OF  
CONTAMINATED SOIL SITES AT  
WASTE AREA GROUPS 1,3,4  
AND 5**

Identifier: SOW-691  
Revision: 1  
Page: C2 of C5

**APPENDIX C**

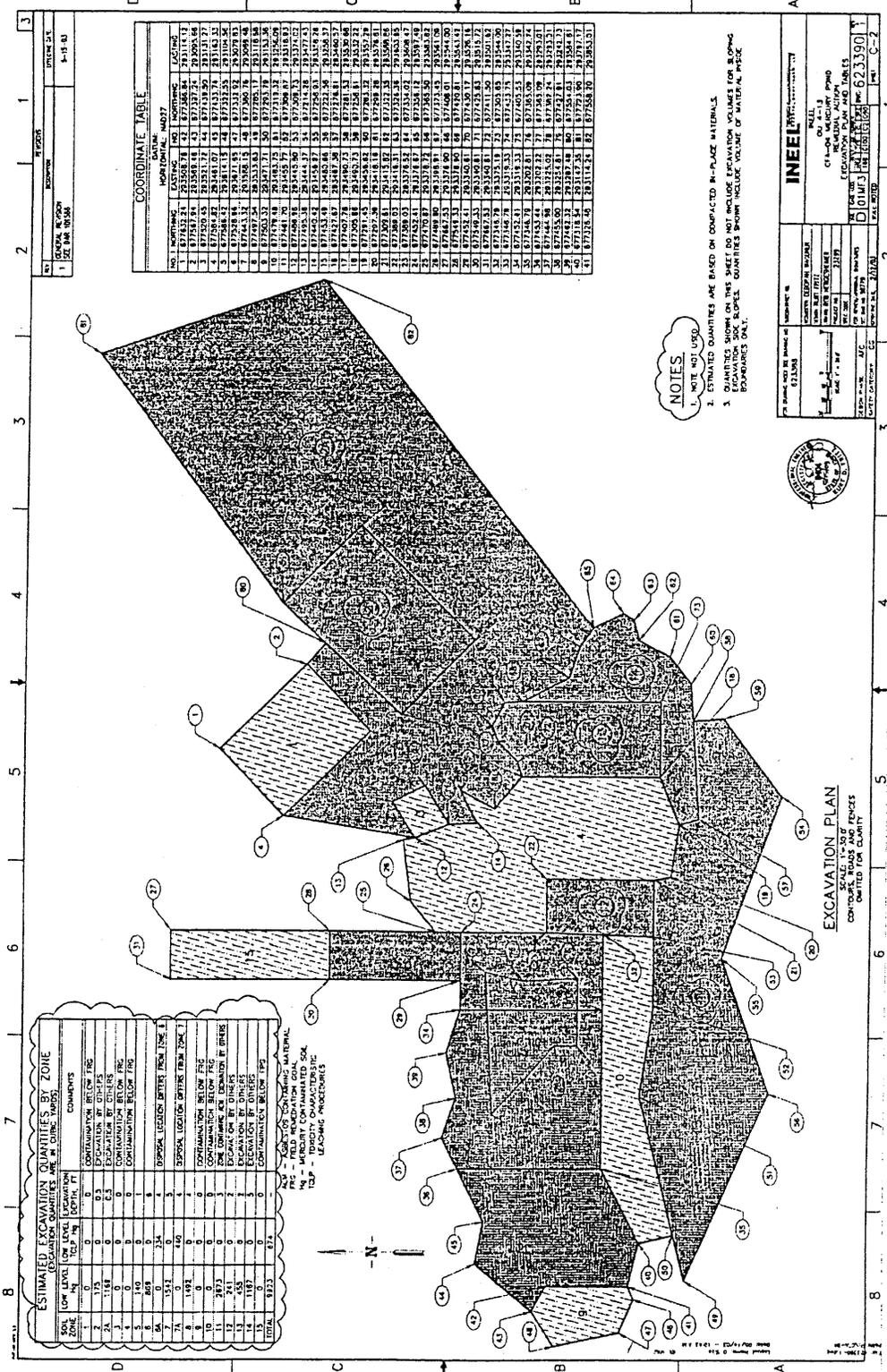


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STATEMENT OF WORK  
 REMEDIAL ACTION OF  
 CONTAMINATED SOIL SITES AT  
 WASTE AREA GROUPS 1,3,4  
 AND 5



APPENDIX C



SOIL ZONE	SOIL LEVEL	ON LEVEL	EXCAVATION QUANTITIES (ESTIMATED)	COMMENTS
1	0	0	0	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
2	1.75	0	0.3	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
3A	1.168	0	0.3	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
3B	0	0	0	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
4	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
5	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
6	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
7	1.541	0	3	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
8	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
9	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
10	0	0	0	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
11	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
12	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
13	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
14	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
15	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
16	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
17	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
18	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
19	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
20	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
21	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
22	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
23	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
24	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
25	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
26	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
27	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
28	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
29	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
30	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
31	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
32	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
33	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
34	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
35	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
36	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
37	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
38	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
39	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
40	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
41	1.10	0	1	EXCAVATION QUANTITIES ARE IN CUBIC YARDS
TOTAL	182.33	0.0	18.0	

COORDINATE TABLE	
EASTING	
POINT	COORDINATE
1	877218.24
2	877218.24
3	877218.24
4	877218.24
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35	877218.24
36	877218.24
37	877218.24
38	877218.24
39	877218.24
40	877218.24
41	877218.24

NOTES:  
 1. NOTE NOT USED  
 2. ESTIMATED QUANTITIES ARE BASED ON COMPACTED IN-PLACE MATERIALS  
 3. EXCAVATION QUANTITIES SHOWN ON THIS SHEET DO NOT INCLUDE QUANTITIES FOR REMEDIATION OF EXCAVATION SOILS. QUANTITIES SHOWN INCLUDE VOLUME OF MATERIALS TO BE REMOVED FROM EXCAVATION SITES.

PROJECT NO. 623390-1  
 SHEET NO. C-2  
 DATE: 11/15/90  
 DRAWN BY: J. J. BROWN  
 CHECKED BY: J. J. BROWN  
 INEEL  
 IDAHO NATIONAL ENGINEERING AND ENVIRONMENTAL LABORATORY  
 2215 SOUTH 3300 WEST, SALT LAKE CITY, UT 84143  
 PHONE: (801) 586-1600  
 FAX: (801) 586-1601

Identifier: SOW-691

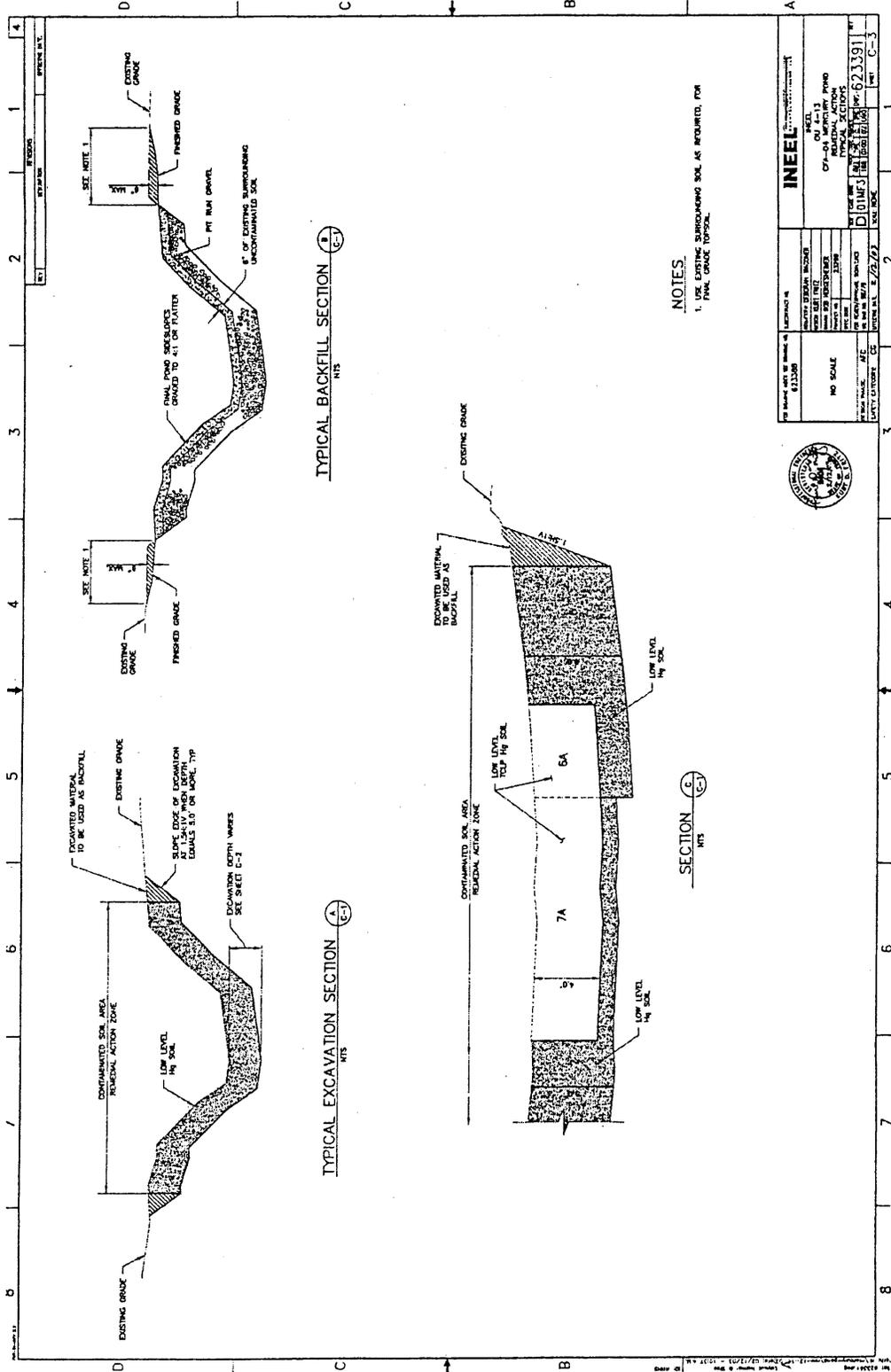
Revision: 1

Page: C4 of C5

# STATEMENT OF WORK REMEDIAL ACTION OF CONTAMINATED SOIL SITES AT WASTE AREA GROUPS 1,3,4 AND 5



## APPENDIX C





Identifier: SOW-691 Revision: 1 Page: D1 of D32	<b>STATEMENT OF WORK REMEDIAL ACTION OF CONTAMINATED SOIL SITES AT WASTE AREA GROUPS 1,3,4, AND 5</b>	 <b>INEEL</b> Idaho National Engineering and Environmental Laboratory
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**Appendix D**

**WAG 4 Specifications**

Document ID: SPC-403  
Revision ID: 1  
Effective Date: 5/19/03

**A-E Construction Specification**

SUBCONTRACT NO. TBD

PROJECT FILE NO. 23299

**CFA-04 Mercury Pond**

**APPROVED FOR CONSTRUCTION**

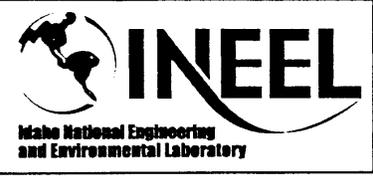
Prepared for:  
U.S. Department of Energy  
Idaho Operations Office  
Idaho Falls, Idaho



Form 412.14  
07/24/2001  
Rev. 03

Identifier: SOW-691  
 Revision: 1  
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**STATEMENT OF WORK  
 REMEDIAL ACTION OF  
 CONTAMINATED SOIL SITES AT  
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 AND 5**



**Appendix D**

412.15  
 02/21/2000  
 Rev. 02

**DOCUMENT MANAGEMENT CONTROL SYSTEM (DMCS)  
 DOCUMENT APPROVAL SHEET**

1. Document Identifier: <u>SPC-403</u>		2. Project File No. (optional): <u>23299</u>		3. Revision No.: <u>1</u>	
4. Document Title: <u>A-E Construction Specification--CFA-04 Mercury Pond</u>					
5. Comments: _____					
SIGNATURES					
6. Type or Printed Name Signature		7. Signature Code	Date	8. Organization/ Discipline	
K. D. Fritz <i>K. D. Fritz</i>		R	5/12/03	67A0/Civil Design--Diverse Projects	
V. J. Balls <i>V. J. Balls</i>		A	5/12/03	67A0/Engineering Group--Supervisor	
D. J. Wagoner <i>D. J. Wagoner</i>		R	5/12/03	31B0/Task Manager--WAG 4	
N. K. Rogers <i>N. K. Rogers</i>		A	5/12/03	67A0/ Project Engineer	
D. H. Preussner <i>D. H. Preussner</i>		A	5/13/03	31B0/Project Engineer--WAG 4	
J. A. Sherwood <i>J. A. Sherwood</i>		A	5/14/03	31B0/Project Manager--WAG 4	
9. Document Control Release Signature: <i>D.M. Rich</i>		EROB DC		Date: <u>5/19/03</u>	
RECORDS MANAGEMENT					
10. Is this a Construction Specification? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		11. NCR Related? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
12. Does document contain sensitive, unclassified information? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, what category: _____					
13. Can document be externally distributed? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>					
14. Area Index Code: Area <u>CFA</u> Type <u>NA</u>		SSC ID <u>NA</u>		Cutoff at submission of the final financial status report for the site, or after resolution of all issues arising from litigation, claim, negotiation, audit, cost recovery, or other action, whichever is later. Destroy 10 years after cutoff with written approval from the EPA award official.	
15. Uniform File Code: <u>6102</u>		16. Disposition Authority: <u>ENV1-h-1</u>			
17. For QA Records Classification Only: Lifetime <input type="checkbox"/> Nonpermanent <input type="checkbox"/> Permanent <input checked="" type="checkbox"/>					
Item or activity to which the QA Records apply: _____					
18. Periodic Review Frequency: N/A <input checked="" type="checkbox"/> 5 years <input type="checkbox"/> or Other _____					

Identifier: SOW-691 Revision: 1 Page: D3 of D32	<b>STATEMENT OF WORK REMEDIAL ACTION OF CONTAMINATED SOIL SITES AT WASTE AREA GROUPS 1,3,4, AND 5</b>	
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## Appendix D

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### CFA-04 MERCURY POND

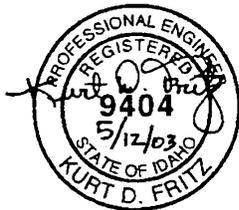
The following sections of this specification were prepared under the direction of the Professional Engineer as indicated by the seal and signature provided on this page. The Professional Engineer is registered in the State of Idaho to practice Civil Engineering.

#### Division 1 – General Requirements

01005 Summary of Work  
01051 Construction Surveying and Staking  
01270 Unit Prices  
01300 Submittals

#### Division 2 – Site Work

02200 Earthwork  
02486 Revegetation



Identifier: SOW-691 Revision: 1 Page: D4 of D32	<b>STATEMENT OF WORK REMEDIAL ACTION OF CONTAMINATED SOIL SITES AT WASTE AREA GROUPS 1,3,4, AND 5</b>	 <b>INEEL</b> Idaho National Engineering and Environmental Laboratory
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**Appendix D**

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**SPECIFICATIONS  
FOR  
CFA-04 MERCURY POND  
REVISION 1**

**Prepared for:**

**U. S. DEPARTMENT OF ENERGY  
IDAHO OPERATIONS OFFICE**

**Idaho Falls, Idaho**

**Project File No. 23299**

**May 2003**

**BECHTEL BWXT IDAHO, LLC (BBWI)  
Idaho Falls, Idaho 83415**

Identifier: SOW-691 Revision: 1 Page: D5 of D32	<b>STATEMENT OF WORK  REMEDIAL ACTION OF  CONTAMINATED SOIL SITES AT  WASTE AREA GROUPS 1,3,4,  AND 5</b>	
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**Appendix D**

**TABLE OF CONTENTS  
CFA-04 MERCURY POND  
Revision 1**

<u>TITLE</u>	<u>Number of pages in Section</u>
<u>DIVISION 1 – GENERAL REQUIREMENTS</u>	
01005 SUMMARY OF WORK.....	4
01051 CONSTRUCTION SURVEYING AND STAKING.....	3
01270 UNIT PRICES.....	2
01300 SUBMITTALS.....	4
<u>DIVISION 2 – SITE WORK</u>	
02200 EARTHWORK.....	8
02486 REVEGETATION.....	4
<u>ATTACHMENTS:</u>	
VENDOR DATA SCHEDULE	
SCHEDULE X	

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**STATEMENT OF WORK  
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CONTAMINATED SOIL SITES AT  
WASTE AREA GROUPS 1,3,4,  
AND 5**



**Appendix D**

Project Title: CFA-04 Mercury Pond  
Document Type: Construction Specification  
SPC Number: 403

Project Number: 23299  
Revision Number: 1

1 SECTION 01005--SUMMARY OF WORK

2

3 PART 1--GENERAL

4

5 SUMMARY:

6

7 The Subcontractor shall furnish plant, labor, material, equipment, and supplies (except  
8 government-furnished materials and/or equipment) and perform work and operations  
9 necessary to completely remediate the Central Facilities Area (CFA) -04 mercury pond in  
10 accordance with the subcontract drawings and these specifications.

11

12 Work Includes, but is not limited to:

13

- 14 • Mowing existing vegetation
- 15 • Marking/identifying the soil contamination areas for excavation based on the  
16 drawings
- 17 • Excavating soil that exceeds the mercury final remediation goal of 8.4 mg/kg  
18 identified herein as "Low-Level Hg"
- 19 • Transporting and disposing of soil that exceeds the mercury final remediation  
20 goal to the disposal location, as indicated in the Statement of Work for the  
21 Environmental Restoration Contaminated Soils Remedial Action
- 22 • Excavating soil that exceeds the Resource Conservation and Recovery Act  
23 characteristic hazardous waste level of 0.2 mg/L identified herein as "Low-  
24 Level TCLP Hg"
- 25 • Transporting and disposing of soil that exceeds the Resource Conservation  
26 and Recovery Act characteristic hazardous waste level to the disposal location,  
27 as indicated in the Statement of Work
- 28 • Excavating and disposing of construction debris, including basalt rubble,  
29 rebar, calcine-filled bottles and gravel. The disposal location shall be as  
30 indicated in the Statement of Work
- 31 • Backfilling and grading areas that have been excavated by the Subcontractor  
32 and excavated areas by others with uncontaminated soil to preconstruction  
33 grade. All excavated areas shall be contoured to match the surrounding terrain
- 34 • Finish grading and revegetating the identified areas
- 35 • Performing a topographical survey of the CFA-04 site, including the final  
36 disturbed surface.

37

38

Identifier: SOW-691 Revision: 1 Page: D7 of D32	<b>STATEMENT OF WORK  REMEDIAL ACTION OF  CONTAMINATED SOIL SITES AT  WASTE AREA GROUPS 1,3,4,  AND 5</b>	
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## Appendix D

<b>Project Title:</b> CFA-04 Mercury Pond	<b>Project Number:</b> 23299
<b>Document Type:</b> Construction Specification	<b>Revision Number:</b> 1
<b>SPC Number:</b> 403	

1 REFERENCES:

2

3 The following documents, including others referenced therein, form part of this section to the

4 extent designated herein.

5

6 **CODE OF FEDERAL REGULATIONS (CFR)**

7

8 29 CFR 1910	“Occupational Safety and Health Standards”
9 29 CFR 1926	“Safety and Health Regulations for Construction”
10 40 CFR 261	“Identification and Listing of Hazardous Waste”
11 40 CFR 300	“National Oil and Hazardous Substances Pollution
12	Contingency Plan”
13 10 CFR 830, Subpart A	“Quality Assurance Requirements”
14 10 CFR 835	“Occupational Radiation Protection”

15

16 **BECHTEL BWXT IDAHO, LLC (BBWI)**

17

18 *Subcontractor Requirements Manual*

19 *Health and Safety Plan for the CFA-04 Mercury Pond Sampling and Remedial Action*

20 *(INEEL/EXT-02-00528)*

21 *General Provisions for Fixed Price Construction Subcontracts*

22 *Statement of Work for the Environmental Restoration Contaminated Soils Remedial*

23 *Action, SOW-691*

24

25 Unless otherwise specified, references in these specifications or on the subcontract drawings

26 to other specifications, codes, standards, or manuals that are part of these specifications, but

27 not included herein, shall be the latest edition, including any amendments and revisions, in

28 effect as of the date of this specification.

29

30 SUBMITTALS:

31

32 See Section 01300, “Submittals,” and the Vendor Data Schedule for submittal requirements.

33

34 QUALITY ASSURANCE:

35

36 Quality Assurance Program requirements shall exist to ensure that work performed is in

37 conformance with the requirements established by the drawings and this specification.

38 Quality Assurance Program criteria applicable to this scope of work are addressed in the

39 General Provisions, the Special Conditions, these specifications, and the BBWI

40 *Subcontractor Requirements Manual*.

41

42 Standard Products: The materials and equipment furnished by the Subcontractor shall be

43 standard products of manufacturers regularly engaged in the production of the type of

44 materials and equipment required and shall be of the manufacturer's latest standard designs.

45

Identifier: SOW-691 Revision: 1 Page: D8 of D32	<b>STATEMENT OF WORK  REMEDIAL ACTION OF  CONTAMINATED SOIL SITES AT  WASTE AREA GROUPS 1,3,4,  AND 5</b>	
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## Appendix D

Project Title: CFA-04 Mercury Pond		Project Number: 23299
Document Type: Construction Specification		Revision Number: 1
SPC Number: 403		

1 SAFETY, HEALTH, AND ENVIRONMENT:

2  
3 In general, work shall be in compliance with the applicable sections of 29 CFR 1910,  
4 29 CFR 1926, the *Health and Safety Plan for the CFA-04 Mercury Pond Sampling and*  
5 *Remedial Action*, and the *BBWI Subcontractor Requirements Manual*.

6  
7 DELIVERY, STORAGE, AND HANDLING:

8  
9 All packaged materials shall be delivered to the site in the original, unopened packages with  
10 labels intact. Upon arrival, the Subcontractor shall inspect the materials or equipment for  
11 damage.

12  
13 PART 2--PRODUCTS

14  
15 MATERIALS:

16  
17 Government-Furnished Materials: Items shown on the subcontract documents as  
18 government-furnished equipment (GFE) are materials and/or equipment furnished by the U.S.  
19 Government to be installed by the Subcontractor. A complete and composite list of such  
20 material is attached to the Subcontract Specifications and is referred to as the Schedule "X"  
21 list.

22  
23 Hazardous Chemicals and Substances: The Subcontractor shall comply with applicable  
24 requirements of 29 CFR 1926.59, "Hazard Communication."

25  
26 PART 3--EXECUTION

27  
28 CONSTRUCTION AND INSTALLATION:

29  
30 General: Materials and equipment shall be erected or installed only by qualified personnel  
31 who are regularly engaged in the trades required to complete the work. The subcontract  
32 drawings show the general arrangement of the excavations specified. Work shall be done in  
33 a skillful and workmanlike manner.

34  
35 Coordination of Work: Where new work and existing facilities are shown on the drawings,  
36 but are not located precisely by dimensions, the Subcontractor shall be responsible for proper  
37 location and clearances and for correcting discrepancies and interferences in the work that are  
38 a result of the Subcontractor's operations. Work done by one trade that must be integrated  
39 with work of other trades shall be laid out with due regard to the work done, or to be done, by  
40 other trades; particularly if the work done by one trade depends on completion or proper  
41 installation of work done by other trades. The Subcontractor shall cooperate in coordinating  
42 his work with work being done by others if their work must be integrated with the  
43 Subcontractor's work. The Subcontractor shall notify the Contractor at least 1 week prior to  
44 starting of the date on which the Subcontractor proposes to proceed with the work.  
45

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### Appendix D

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<b>Project Title:</b> CFA-04 Mercury Pond	<b>Project Number:</b> 23299
<b>Document Type:</b> Construction Specification	<b>Revision Number:</b> 1
<b>SPC Number:</b> 403	

- 1 Work by Others: The Subcontractor shall coordinate work performed by others and notify
- 2 the Contractor at least 2 weeks prior to start of Subcontractor work in these areas.
- 3 Subcontractor shall show interface with work by others in the Subcontractor's construction
- 4 schedule.
- 5
- 6 END OF SECTION 01005

Identifier: SOW-691  
Revision: 1  
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**STATEMENT OF WORK  
REMEDIAL ACTION OF  
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AND 5**



**Appendix D**

**Project Title:** CFA-04 Mercury Pond  
**Document Type:** Construction Specification  
**SPC Number:** 403  
**Project Number:** 23299  
**Revision Number:** 1

1 SECTION 01051--CONSTRUCTION SURVEYING AND STAKING

2  
3 PART 1--GENERAL

4  
5 SUMMARY:

6  
7 Section Includes: Work includes, but is not limited to:

8  
9 The Subcontractor shall furnish all materials, labor, tools, and equipment to perform  
10 all surveying necessary to layout and control the construction work. The  
11 Subcontractor shall perform surveying to establish the excavation boundaries and  
12 perform topographic surveys as set forth in these specifications and the design  
13 drawings. The Subcontractor may perform the surveying, or an independent survey  
14 firm, provided the work is performed under the supervision of a Registered Land  
15 Surveyor in the State of Idaho

16  
17 The Contractor will provide survey coordinates for the excavation boundary zones, as  
18 shown on the drawings. The Subcontractor shall survey and mark the excavation  
19 boundary prior to commencement of excavation.

20  
21 SUBMITTALS:

22  
23 Submittals include, but are not limited to, the following:

24  
25 Certification: Submit certification that the land surveyor is a Registered Professional Land  
26 Surveyor licensed in the State of Idaho.

27  
28 Topographical Survey: Electronic data shall be reduced and plotted by the Subcontractor in  
29 standard ASCII and Autocad 14 format. Electronic data shall be submitted on electronic  
30 media such as CD or Zip Disk. Legible notes, drawings, and electronic data files (including  
31 point number, northing, easting, elevation, and point description) shall be submitted to the  
32 Contractor for approval. All surveys shall be conducted using the established project datum.  
33 Required surveys shall consist of:

- 34  
35 1) Topographical survey of the final excavated surface (prior to backfilling) of  
36 the entire CFA-04 site, including all areas disturbed by the Subcontractor and  
37 others, and a topographical map of the area with a contour interval of 1 ft. At  
38 a minimum, the topographic survey shall define all grade breaks, swales, and  
39 other natural features with sufficient detail to define the finished grade. In  
40 areas where the terrain is relatively flat, a grid of no greater than 50 ft. in all  
41 directions shall be used. The limits of the survey shall include all areas  
42 disturbed during construction, including the entire area within the outer  
43 perimeter fence.



**Appendix D**

<b>Project Title:</b> CFA-04 Mercury Pond	<b>Project Number:</b> 23299
<b>Document Type:</b> Construction Specification	<b>Revision Number:</b> 1
<b>SPC Number:</b> 403	

1 Excavation Zone Reference Stakes: Excavation limit stakes shall be established. The  
2 position of these stakes shall be determined by methods that will produce on the ground the  
3 Precision Level shown in Table 1. The excavation limit shall be located on the ground and  
4 marked with lath, flagging, or other methods approved by the Contractor's Representative.  
5  
6  
7

Table 1. Precision level.

Item	Precision
Horizontal accuracy for excavation limits. In feet or percentage of horizontal distance measured from transverse line, whichever is greater.	0.2 ft or 1.0%

8  
9 Monuments of Property Boundaries or Surveys of Other Agencies: If property boundary or  
10 survey monuments, or survey markers of other agencies, are found within or adjacent to the  
11 construction limits, the Subcontractor shall immediately notify the Contractor's  
12 Representative. These monuments shall not be disturbed.  
13

14 METHOD OF MEASUREMENT:

15  
16 Surveying: Surveying will not be measured.  
17

18 BASIS OF PAYMENT:

19 Surveying: Payment for surveying shall be included in the contract unit price for excavation.  
20  
21

22 FIELD QUALITY CONTROL:

23  
24 The Contractor's Representative will perform surveillance to verify compliance of the work  
25 to the drawings and specifications.  
26

27 END OF SECTION 01051

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## Appendix D

Project Title: CFA-04 Mercury Pond		Project Number: 23299
Document Type: Construction Specification		Revision Number: 1
SPC Number: 403		

- 1    SECTION 01270--UNIT PRICES
- 2
- 3    PART 1--GENERAL
- 4
- 5    RELATED DOCUMENTS:
- 6
- 7    Drawings and general provisions of the Contract and other Division 1 Specification Sections,
- 8    apply to this Section.
- 9
- 10   SUMMARY:
- 11
- 12   This Section includes administrative and procedural requirements for unit prices.
- 13
- 14   See related sections for procedures for measurement and payment for unit price items.
- 15
- 16   DEFINITIONS:
- 17
- 18   Unit price is (an amount proposed by bidders, stated on the Pricing Schedule) a price per unit
- 19   of measurement for materials or services. Estimated quantities of work required by the
- 20   Contract Documents are the engineer's best estimate and establish a uniform bid basis.
- 21
- 22   PROCEDURES:
- 23
- 24   Unit prices include all necessary material, plus cost for delivery, installation, insurance,
- 25   applicable taxes, overhead, and profit. Also see the Pricing Schedule for the line item
- 26   description for each Unit Price Item.
- 27
- 28   Measurement and Payment: Refer to individual Specification Sections for work that requires
- 29   establishment of unit prices. Methods of measurement and payment for unit prices are
- 30   described and specified in those Sections.
- 31
- 32   Contractor reserves the right to reject Subcontractor's measurement of work-in-place that
- 33   involves use of established unit prices and to have this work measured, at Contractor's
- 34   expense, by an independent surveyor acceptable to Subcontractor.
- 35
- 36   PART 2--PRODUCTS (Not Used)
- 37
- 38   PART 3--EXECUTION
- 39
- 40   LIST OF UNIT PRICES:
- 41
- 42   For list of Unit Prices see Unit Price Schedule attached to the Bid Documents.
- 43
- 44

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1 ACCURACY FOR PAY UNIT:

2

3 The following tabulation indicates the accuracy required for quantities of the various pay

4 units used in the Schedule of Items. Use this guide to determine the decimal placement in the

5 final payment. Carry field computations to one more decimal and then round the figure to the

6 decimal indicated below.

7

8 Pay Unit:

	Ton	0.1
11	Acre	0.1
12	Cubic Yard	1

13

14 END OF SECTION 01270

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1    SECTION 01300--SUBMITTALS

2

3    PART 1--GENERAL

4

5    SUMMARY:

6

7    This section specifies the administrative, technical, and quality requirements for vendor data  
8    submittals. Vendor data requirements are specified in individual specification sections or on  
9    the drawings and are tabularized on a Vendor Data Schedule. In the event of conflicting  
10    requirements, the submittal requirements prescribed in the individual specification section  
11    shall take top priority, the drawings second, and the vendor data schedule last.

12

13    The Subcontractor shall submit data, drawings, and other submittals specified. If the  
14    Contractor determines the Subcontractor's submittal to be incomplete or unacceptable, the  
15    Subcontractor shall make a complete and acceptable submittal to the Contractor by the  
16    second submission of a submittal item.

17

18    The Subcontractor shall be responsible for providing submittals in accordance with the  
19    Subcontract General Provisions document, providing submittals with adequate time for  
20    review and resubmittal, and advising the Contractor of any submittal that might be delayed  
21    and that might, if further delayed, extend completion of the project.

22

23    Section Includes, but is not limited to:

24

25            The preparation, transmittal, and delivery of documents by the Subcontractor to the  
26            Contractor as required in the "Submittals" subdivision of the specification sections  
27            and as provided on the Vendor Data Schedule.

28

29    Related Sections: General Provisions, *Subcontractor Requirements Manual*, Special  
30    Conditions, Drawings, Vendor Data Schedule, and other sections of these specifications  
31    apply to this section.

32

33    REFERENCES:

34

35    The following documents, including others referenced therein, form part of this section to the  
36    extent designated herein:

37

38                            AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

39

40            ANSI Y14.1            Drawing Sheet Size and Format

41

42    SUBMITTALS:

43

44    General Procedures: Vendor data, whether prepared by the Subcontractor or Subcontractor's

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1 subtier or supplier, shall be submitted as instruments of the Subcontractor. Therefore, prior  
2 to submittal, the Subcontractor shall ascertain that material and equipment covered by the  
3 submittal and the contents of the submittal itself meet all the requirements of the subcontract  
4 specifications, drawings, or other contract documents.  
5

6 Each submittal shall contain identification for each separable and separate piece of material  
7 or equipment and literature with respect to the information provided in the specification and  
8 on the Vendor Data Schedule. Submittals shall be numbered consecutively for each different  
9 submittal.  
10

11 Vendor Data Schedule: Vendor data required by the specification sections or the drawings to  
12 support design, construction, and operation of the project are identified on a Vendor Data  
13 Schedule. The Vendor Data Schedule provides a tabular listing by item number, drawing or  
14 specification reference, and description of the item or service. The type of submittal is  
15 identified by a "Vendor Data Code," and the time required to submit the item is identified by  
16 a "When to Submit" code. An "Approval" code specifies whether the submittal is for  
17 Mandatory Approval or for Information Only. One copy of routine paper or electronic file  
18 submittals is required; additional copies may be required by the Vendor Data Schedule.  
19 Electronic file submittals are preferred. Submittals that cannot be scanned or provided  
20 electronically, such as large shop drawings, will require six copies for Mandatory Approval  
21 and four copies for Information Only. Material or color samples will require two sets for  
22 Mandatory Approval and one set for Information Only.  
23

24 Vendor Data Transmittal and Disposition Form 431.13: All vendor data shall be submitted to  
25 the Contractor using the Vendor Data Transmittal and Disposition Form. The form provides  
26 the Subcontractor a method to submit vendor data and provides the Contractor a means of  
27 dispositioning the submittal. The Subcontractor shall list the Vendor Data Schedule item  
28 number, a Vendor Data Transmittal tracking number (if applicable), the drawing or  
29 specification number reference, a Tag Number (if applicable), the submittal status (e.g.,  
30 Mandatory Approval, Information Only, Re-submittal, or Or-equal), the revision level, and  
31 the item description. The description should be complete enough that a person unfamiliar  
32 with the project can determine what the submittal includes.  
33

34 Disposition by the Contractor: The Contractor's comments and required action by the  
35 Subcontractor will be indicated by a disposition code on the submittal. The disposition codes  
36 will be classed as follows:  
37

- 38 (A) "Work May Proceed." Submittals so noted generally will be classed as data  
39 that appear to be satisfactory without corrections.  
40
- 41 (B) "Work May Proceed with Comments Incorporated. Revise Affected Sections  
42 and Resubmit Entire Submittal." This category will cover data that, with the  
43 correction of comments noted or marked on the submittal, appear to be  
44 satisfactory and require no further review by the Contractor prior to

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- 1 construction.
- 2 (C) "Work May NOT Proceed. Revise and Resubmit." Submittals so dispositioned
- 3 will require a corrected resubmittal for one of the following reasons:
- 4
- 5 1) Submittal requires corrections, per comments, prior to final review
- 6 2) Submittal data are incomplete and require more detailed information
- 7 prior to final review
- 8 3) Submittal data do not meet Subcontract document requirements.
- 9
- 10 (D) "Accepted for Use. Information Only Submittal." Submittals so dispositioned
- 11 generally will be classified as Information Only for as-specified material and
- 12 equipment.
- 13
- 14 Mandatory Approval-coded vendor data will be reviewed by the Contractor and receive an A,
- 15 B, or C disposition. Information Only submittals without comments will receive a D
- 16 disposition. All dispositioned submittals will be returned to the Subcontractor. The
- 17 Contractor may provide internal review of Information Only submittals. In the event that
- 18 comments are generated on an Information Only submittal, the submittal may be
- 19 dispositioned B or C and returned to the Subcontractor for appropriate action.
- 20 Acknowledgment of receipt of dispositioned vendor data by the Subcontractor will not be
- 21 required.
- 22
- 23 The Contractor will return dispositioned submittals with reasonable promptness. The
- 24 Subcontractor shall note that a prompt review is dependent on timely and complete
- 25 submittals in strict accordance with these instructions.
- 26
- 27 PART 2--PRODUCTS (SUBMITTAL REQUIREMENTS)
- 28
- 29 PLAN SUBMITTAL INSTRUCTIONS:
- 30
- 31 Construction or other identified plan instructions shall be provided where specifically
- 32 required by other sections. Instructions shall be clear, concise, and detailed and shall utilize
- 33 drawings and pictures to the extent necessary. The instructions shall include procedures for
- 34 handling and preparation of supporting work, assembly, and incorporation of the
- 35 material/equipment into the work. The instructions shall include sequences, precautions, and
- 36 tolerances.
- 37
- 38 In general, the Contractor's Representative will inspect the work to the criteria and
- 39 instructions prescribed in the Subcontractor's plan instructions. The Subcontractor shall not
- 40 deviate from the written instructions without prior written approval and direction from the
- 41 Contractor.
- 42
- 43

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- 1 DRAWINGS:
- 2
- 3 The following additional submittals shall be required, as indicated on the Vendor Data
- 4 Schedule:
- 5
- 6 "Redline" Drawings: Copies of the construction drawings shall be updated to include
- 7 all changes or modifications made during construction and to reflect the actual
- 8 conditions of construction. Each drawing shall be marked "As-Built," signed by the
- 9 Subcontractor Representative, and be suitable for XEROX copying or microfilming.
- 10
- 11 PART 3--EXECUTION (NOT APPLICABLE)
- 12
- 13 END OF SECTION 01300

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1 SECTION 02200--EARTHWORK

2

3 PART 1--GENERAL

4

5 SUMMARY:

6

7 Section Includes, but is not limited to:

8

- |    |    |   |
|----|----|---|
| 9  | 1. | Mowing vegetation   |
| 10 | 2. | Excavating and disposing of all materials encountered, of every description,<br>for completion of the Subcontract as shown on the drawings and as specified<br>herein |
| 11 |    |   |
| 12 | 3. | Performing dust control   |
| 13 | 4. | Backfilling and grading all excavations, including areas excavated by others  |
| 14 | 5. | Compacting all backfill as specified herein   |
| 15 | 6. | Finish grading and grading for surface drainage.  |
| 16 |    |   |
| 17 |    |   |

18 REFERENCES:

19

20 The following documents, including others referenced therein, form part of this section to the  
21 extent designated herein.

22

23 AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS  
24 (AASHTO)

25

- |                |   |
|----------------|---|
| 26 AASHTO      | “Standard Specifications for Transportation Materials and<br>27 Methods of Sampling and Testing”                              |
| 28 AASHTO M145 | “Recommended Practice for the Classification of Soils and<br>29 Soil-Aggregate Mixtures for Highway Construction Purposes”    |
| 30 AASHTO T11  | “Standard Method of Test for Materials Finer Than 75<br>31 Micrometer (No. 200) Sieve in Mineral Aggregates by<br>32 Washing” |
| 33 AASHTO T27  | “Standard Method of Test for Sieve Analysis of Fine and<br>34 Coarse Aggregates”  |
| 35 AASHTO T99  | “Standard Method of Test for the Moisture-Density Relations<br>36 of Soils Using a 5.5 lb Rammer and a 12 in. Drop”           |
| 37 AASHTO T238 | “Standard Method of Test for Density of Soil and Soil-<br>38 Aggregate in Place by Nuclear Methods (Shallow Depth)”           |
| 39             |   |

40 CODE OF FEDERAL REGULATIONS (CFR)

41

- |                |  |
|----------------|--|
| 42 29 CFR 1926 | “Safety and Health Regulations for Construction,” Subpart P,<br>43 “Excavations” |
| 44 10 CFR 835  | “Occupational Radiation Protection”  |
| 45             |  |

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- 1 IDAHO TRANSPORTATION DEPARTMENT (ITD)
- 2
- 3 SSHC "Standard Specification for Highway Construction"
- 4
- 5 BECHTEL BWXT, IDAHO (BBWT)
- 6
- 7 *Health and Safety Plan for the CFA-04 Mercury Pond Sampling and Remedial Action*
- 8 *(INEEL/EXT-02-00528)*
- 9
- 10 *Subcontractor Requirements Manual*
- 11
- 12 **SUBMITTALS:**
- 13
- 14 Submittals include, but are not limited to, the following:
- 15
- 16 **Construction Work Plan:** The Subcontractor shall submit for Contractor approval a work
- 17 plan detailing the following:
- 18
- 19
  - Methods and equipment for excavation, clearing vegetation, and dust control
  - Sequence of operations
  - Construction details of the work platform for sealing truck liners and details of
  - the method for sealing liners prior to exit from the construction site
  - Methods for controlling excavation depth.
- 20
- 21
- 22
- 23
- 24
- 25 See Section 01300, "Submittals," and the Vendor Data Schedule for additional submittal
- 26 requirements.
- 27
- 28 **PART 2--PRODUCTS**
- 29
- 30 **MATERIALS AND EQUIPMENT:**
- 31
- 32 **Satisfactory Soil Materials:** Satisfactory soil materials are defined as those complying with
- 33 AASHTO M145, soil classification Groups A-1, A-2-4, and A-2-5.
- 34
- 35 **Unsatisfactory Soil Materials:** Unsatisfactory soil materials are those defined in AASHTO
- 36 M145 soil classification Groups A-2-6, A-2-7, A-4, A-5, A-6, and A-7; also peat and other
- 37 highly organic soils.
- 38
- 39 **Backfill and Fill Material:** "Satisfactory" soil materials free of clay, rock, gravel larger than
- 40 3 in. in any dimension, debris, waste, frozen materials, vegetable, and other deleterious
- 41 matter. Select pit run gravel is available at the CFA gravel pit. Gravel pit material and use of
- 42 the gravel pits shall be at no cost to the Subcontractor. Upon completion of operations
- 43 involving gravel pit material removal, the Subcontractor shall grade and reshape the disturbed

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1 areas. Sloped surfaces shall meet the requirements of 29 CFR 1926, "Safety and Health  
2 Regulations for Construction."  
3

4 Topsoil: The top 6 in. of backfill material shall be from grading or "pulling" material from  
5 the surrounding area to provide "topsoil" for revegetating and matching the surrounding  
6 terrain.  
7

8 Equipment: All equipment and tools used by the Subcontractor to perform the work shall be  
9 subject to inspection by the Contractor before the work is started and shall be maintained in  
10 satisfactory working condition at all times. The Subcontractor's equipment shall have the  
11 capability to perform the indicated work specified herein.  
12

13 Because of the potential for contamination, all equipment brought to the site slated for work  
14 in the contamination zone shall be identified to the Contractor prior to delivery and shall be  
15 clean and free of grease and oil spots (where applicable), and tires will be in a like-new  
16 condition, free of slits and cracks. The Contractor reserves the right to reject equipment not  
17 meeting these standards.  
18

19 The Subcontractor shall ensure that all equipment used for clearing vegetation or earthwork is  
20 fitted with appropriate safety devices that comply with all applicable federal laws and the  
21 *Health and Safety Plan for the CFA-04 Mercury Pond Sampling and Remedial Action* and  
22 adequately protect the operator and minimize exposure of workers and others to potentially  
23 contaminated material.  
24

25 PART 3--EXECUTION  
26

27 The existing fences will be removed by others prior to excavation activities, as indicated on  
28 the drawings. The Subcontractor shall be responsible for determining the method of  
29 excavation to be used for each of the areas identified on the drawings. The excavation  
30 method shall be submitted in the Construction Work Plan for Contractor approval.  
31

32 Soil samples collected from the pond inlet area of the CFA-04 site revealed the following  
33 constituents that exceeded background concentrations for the Idaho National Engineering and  
34 Environmental Laboratory: aluminum, arsenic, barium, cadmium, calcium, chromium, cobalt,  
35 lead, magnesium, mercury, nickel, Cs-137, Pa-234m, Sr-90, Th-234, U-234, U-235, and  
36 U-238. Aroclor-1254 also was detected at low levels.  
37

38 DUST CONTROL:  
39

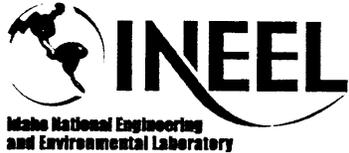
40 During all work activities performed under this contract, the Subcontractor shall minimize  
41 the creation and emission of dust in accordance with Idaho Administrative Procedures Act  
42 (IDAPA) Standards 58.01.01.650 and 58.01.01.651. This shall be accomplished by the use  
43 of water trucks and visual observation. Water-based dust-control additives may be used with  
44 the approval of the Contractor. The Subcontractor shall control the amount of water used so

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- 1 as not to create flowing water. The source of water for dust suppression will be specified in  
2 the Special Conditions.  
3
- 4 Unless otherwise stated, the Subcontractor shall contain and cover all excavated soil by the  
5 use of liners during transport to the disposal location as indicated in the Statement of Work.  
6 The liner system or "burrito bag" shall fully enclose the soil and protect the truck bed on all  
7 sides from contact with the soil. The liners shall be 6-mil (minimum) black polyethylene  
8 with formed corners, auto ignition no less than 650°F, and flash point no less than 600°F.  
9 Possible supplier is Packaging Research & Design-telephone: (800) 833-9364. Liners shall  
10 be thermally sealed to fully contain the waste prior to exit from the construction site. The  
11 Subcontractor shall construct a personnel platform for use during sealing of the burrito bags.  
12 The platform shall allow for a stable, flat working surface constructed of timber, scaffolding,  
13 or similar. Scaffolding systems shall be in accordance with the requirements of Program  
14 Requirements Document (PRD) -2004, "Scaffolding," as identified in the *Subcontractor*  
15 *Requirements Manual*. The use of stepladders is not acceptable.  
16
- 17 Preoperational Test: The Subcontractor will prepare and transport a load of clean soil  
18 obtained from the CFA gravel pit prior to initiating soil removal activities. The transport  
19 vehicle must have a sealed lining system of the type that will be used during the removal  
20 action to protect the vehicle and the environment from being contaminated by the excavated  
21 soil. The test load will be transported from the gravel pit and will travel at least 5 mi at a  
22 maximum speed of 55 mph (or lesser speed if proposed by the Subcontractor as a maximum  
23 hauling speed). Then, the load will be unloaded at the CFA gravel pit as if it were  
24 contaminated soil. During the test run, the Contractor, Radiological Control Technician, and  
25 Environmental, Safety, and Health Representative will visually evaluate the operation to  
26 determine if any soil is released. If it is determined that the liner system does not adequately  
27 contain the soil during transport, modifications shall be made and the test repeated.  
28
- 29 EXCAVATION:  
30
- 31 Clearing/Mowing Surface Vegetation: This work shall consist of mowing or brush hogging  
32 (or similar approved methods) of all weeds, grass, brush, and shrubs from within the  
33 boundaries of the zones requiring excavation, as shown on the drawings and in accordance  
34 with these specifications. Mowing shall remove vegetation to as close to the ground surface  
35 as practicable and reduce the size of the vegetation to particles as small as practicable.  
36 Mowed vegetation shall be evenly distributed across the boundaries of the excavation zone.  
37 Care shall be taken to keep the mowed vegetation particles inside the area to be excavated.  
38
- 39 Stockpiling: Unless otherwise identified, stockpiles of contaminated soil shall be securely  
40 covered with 8 mil of Visqueen at the end of each workday.  
41
- 42 General Soil Excavation Requirements: In all excavation locations shown on the drawings,  
43 the Subcontractor shall contain excavation operations within the designated limits. If

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- 1 conditions encountered warrant modification to the designated limits, the Contractor's  
2 Representative shall be notified prior to work proceeding.  
3
- 4 Excavations that expose basalt outcroppings are likely and in such cases, the Subcontractor  
5 will notify the Contractor. Manual cleaning by the Contractor such as brooming or  
6 vacuuming the basalt outcropping may be required.  
7
- 8 It is possible, however unlikely, that bulk calcine will be discovered during excavation; if this  
9 occurs, the Subcontractor shall immediately notify the Contractor's Representative.  
10
- 11 Mercury-Contaminated Soil Excavation: Mercury-contaminated soil excavation includes  
12 removal and disposal of soil zones identified on the drawings as contaminated with mercury.  
13 Upon completion of the initial excavation of each identified contaminated soil zone, the  
14 Contractor will perform field screening to determine if the remedial action goals have been  
15 met. Pending the results of screening, the soil may be deemed clean, and no further  
16 excavation is required; or the soil may be deemed contaminated, and the Subcontractor shall  
17 continue excavating as identified by the Contractor. Field screening and identification of  
18 boundaries shall take approximately 2 days. This process shall continue until field screening  
19 indicates levels below the remedial action goals. Prior to backfilling and grading of the  
20 remediated zone, the Contractor will perform confirmation analytical sampling. The  
21 Subcontractor may mobilize to another soil contamination zone during the time for analytical  
22 sampling and analysis, which shall take approximately 5 weeks.  
23
- 24 Mercury-contaminated soil identified on the drawings as "Low Level TCLP Hg" shall be  
25 excavated and transported to the disposal facility, as identified in the Statement of Work.  
26
- 27 Mercury-contaminated soil identified on the drawings as "Low Level Hg" shall be excavated  
28 and transported to the disposal facility, as identified in the Statement of Work.  
29
- 30 Debris Removal: Miscellaneous debris such as basalt rubble, lab bottles, concrete, and  
31 construction debris is located on the CFA-04 site. This debris may be encountered during  
32 excavation of the contaminated soil zones and shall be removed and disposed of with the  
33 commingled soil.  
34
- 35 Existing Utilities: Utilities shall be identified by the Contractor and protected by the  
36 Subcontractor. The Subcontractor shall immediately notify the Contractor should any  
37 utilities be discovered during construction activities that are not shown on the drawings.  
38
- 39 Rock Excavation: Rock excavation is not required.  
40
- 41 Shoring and Bracing: The sides of all excavations shall be sloped or securely shored and  
42 braced in accordance with 29 CFR 1926, Subpart P and the *Subcontractor Requirements*  
43 *Manual*. A competent person shall inspect excavations in accordance with 29 CFR 1926,  
44 Subpart P and the *Subcontractor Requirements Manual*.  
45

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1 Control of Water: If water in the excavation is encountered, notify the Contractor's  
2 Representative immediately.

3  
4 SOIL REMOVAL FROM BASALT OUTCROPPINGS:

5  
6 Contaminated soil could be in contact with basalt outcroppings. Where contaminated soil  
7 extends to the soil/basalt interface, the Contractor will remove contaminated soil from the  
8 rock outcroppings using methods including brooming and/or vacuuming.

9  
10 BACKFILLING AND GRADING:

11  
12 General: Backfill requirements are anticipated to vary. Excavations shall be cleared of all  
13 trash and debris prior to backfilling. All backfill or fill material shall be free from trash,  
14 organic matter, and frozen particles.

15  
16 Borrow: Backfill material shall be select pit run gravel from the CFA gravel pit. Backfilling  
17 with pit run gravel shall be used to within 1 ft. from the original grade. The top 6 in. of  
18 backfill material shall be from grading or "pulling" material from the surroundings to provide  
19 "topsoil" for revegetating and matching the surrounding terrain.

20  
21 Placement: Concentrated dumping of backfill material into excavations will not be  
22 permitted. All material must be placed in uniform layers not to exceed 8 in. loose  
23 measurement and brought up simultaneously. No water shall be used for placing, setting, or  
24 compacting backfill or fill except to obtain optimum moisture content.

25  
26 Compaction: Unless otherwise indicated on the drawings or specifications, compact all  
27 backfill using two to three passes by mechanical devices such as rollers, vibratory  
28 compactors, or mechanical tampers. Each 8-in. (maximum) loose measurement lift shall be  
29 compacted before the next lift is placed thereon. Sections of backfill or fill failing to meet  
30 the minimum compaction requirements shall be corrected prior to placement of subsequent  
31 lifts.

32  
33 Finish Grading: Areas where the sides of the CFA-04 pond, including disturbed and  
34 undisturbed walls of the pond, exceed a 4H:1V slope shall be graded to a smooth contour  
35 (4H:1V maximum slope).

36  
37 EQUIPMENT:

38  
39 Watering Equipment: Provide water tank trucks capable of applying a uniform, unbroken  
40 spread of water over the surface. A suitable device for positive shutoff and regulation of flow  
41 shall be located to permit operation by the driver in the cab. Water trucks used for dust  
42 suppression shall be labeled as "Non-Potable Water."

43  
44

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1    DECONTAMINATION:

2

3    Decontamination of all Subcontractor equipment or tools shall be performed in accordance

4    with the General Provisions (GP) Article GP-24. Decontamination activities will be

5    performed within the contamination areas. The Contractor will provide Radiological Control

6    Technician support when establishing these areas. All tools and equipment used by the

7    Subcontractor for mercury soil excavation will be initially decontaminated with dry methods

8    using brooms, wire brushes, and putty knives.

9

10   If the equipment used for mercury soil excavation has residual contamination after the initial

11   dry decontamination efforts, it shall be cleaned with low-volume, high-pressure water from a

12   portable spray unit. The tools and equipment to be cleaned will be isolated in the

13   decontamination pad. Any dry material and water used for decontamination efforts will be

14   collected and disposed of at an approved facility. All water used for decontamination must

15   be contained within the decontamination pad until such water can be transported to the

16   disposal facility for disposal. Upon completion of the removal action, the decontamination

17   pad must be size reduced, transported, and disposed of at an approved facility.

18

19   METHOD OF MEASUREMENT:

20

21   Dust Control: Dust control will not be measured for separate payment.

22

23   Clearing/Mowing Vegetation: Clearing vegetation will not be measured for separate

24   payment.

25

26   Pre-operational Test: Pre-operational testing will have no measurement.

27

28   Excavation: Excavation will be measured by the ton.

29

30   Backfill/Borrow: Backfill material including pit run gravel will be measured by the cubic

31   yard in its final in-place compacted position. Measurement will be from field survey cross

32   sections using the average end area method with no correction for curvature or soil expansion.

33

34   BASIS OF PAYMENT

35

36   Dust Control: No separate payment will be made for dust control. It shall be included in the

37   unit price for excavation.

38

39   Clearing Vegetation: No separate payment will be made for clearing vegetation. It shall be

40   included in the unit price for excavation.

41

42   Pre-operational Test: No separate payment will be made for pre-operational testing. It shall

43   be included in the unit price for excavation.

Identifier: SOW-691 Revision: 1 Page: D26 of D32	<b>STATEMENT OF WORK  REMEDIAL ACTION OF  CONTAMINATED SOIL SITES AT  WASTE AREA GROUPS 1,3,4,  AND 5</b>	
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## Appendix D

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<b>Project Title:</b> CFA-04 Mercury Pond	<b>Project Number:</b> 23299
<b>Document Type:</b> Construction Specification	<b>Revision Number:</b> 1
<b>SPC Number:</b> 403	

- 1 Excavation: Payment will be made at the contract unit price per ton of material removed.
- 2 The payment shall be full compensation for all work associated therewith, including but not
- 3 limited to, pre-operational tests, surveying of excavation boundaries and topography, clearing
- 4 vegetation, excavation of soil and loose rock, loading, and decontamination required to clear
- 5 the dump trucks out of the excavation boundaries, incidental dust control, and control of
- 6 storm water.
- 7
- 8 Backfill/Borrow: Backfill/Borrow will be paid for at the contract unit price per cubic yard of
- 9 soil in its final in-place location. The cost shall include loading, hauling from onsite borrow
- 10 pits, grading and compacting.
- 11
- 12 FIELD QUALITY CONTROL:
- 13
- 14 The Contractor's Representative will perform field surveillance to verify compliance of the
- 15 work to the drawings and specifications.
- 16
- 17 END OF SECTION 02200

Identifier: SOW-691 Revision: 1 Page: D27 of D32	<b>STATEMENT OF WORK  REMEDIAL ACTION OF  CONTAMINATED SOIL SITES AT  WASTE AREA GROUPS 1,3,4,  AND 5</b>	
--	---	---

## Appendix D

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Project Title: CFA-04 Mercury Pond		Project Number: 23299
Document Type: Construction Specification		Revision Number: 1
SPC Number: 403		

1 SECTION 02486--REVEGETATION

2

3 PART 1--GENERAL

4

5 SUMMARY:

6

7 Section Includes, but is not limited to:

8

9           Preparing seedbeds, sowing grasses, applying fertilizer, and applying a GFE wood  
10 chip mulch to revegetate the CFA-04 site. The boundary of the revegetation is the  
11 area contained by the outer perimeter fence as well as the dirt road and firebreak  
12 surrounding the site. **Note: An additional area identified as the "trenches" just**  
13 **east of the project site also shall be revegetated in accordance with this section.**

14

15 SUBMITTALS:

16

17 Submittals include, but are not limited to, the following:

18

19 Seed Mix Certification: Provide certification of the seed mixture composition and absence of  
20 noxious weeds.

21

22 Results of Soil Fertilizer Analysis: Provide test results and recommendations for the  
23 fertilizer type and application rate.

24

25 See Section 1300, "Submittals," and the Vendor Data Schedule for additional submittal  
26 requirements.

27

28

**Appendix D**

Project Title: CFA-04 Mercury Pond	Project Number: 23299
Document Type: Construction Specification	Revision Number: 1
SPC Number: 403	

1 PART 2--PRODUCTS

2  
3 MATERIALS:

4  
5 Seed Mix: Seed mix shall be free of noxious weeds and other deleterious materials. The  
6 following seed mix shall be used for all areas disturbed during the remedial action as well as  
7 the additional area west of the CFA-04 site:  
8

SPECIES	RATE OF APPLICATION (lb/acre pure live seed)
"Secar" Bluebunch Wheatgrass <i>(Pseudoroegneria spicata)</i>	2
"Critanna" Thickspike Wheatgrass <i>(Elymus lanceolatus)</i>	2
Northern Sweetvetch <i>(Hedysarum boreale)</i>	1
"Sodar" Streambank Wheatgrass <i>(Elymus lanceolatus)</i>	2
Sandberg's Bluegrass <i>(Poa secunda)</i>	4
Scarlet Globemallow <i>(Sphaeralcea munroana)</i>	2
Total	13

9  
10 Fertilizer: The Subcontractor shall perform a soil analysis of the soil at the CFA-04 site to  
11 determine the appropriate fertilizer mix and application rates for successful growth of the  
12 specified seed mix. All costs associated with the soil analysis and fertilizer requirements  
13 shall be included in the subcontract price.

14  
15 Mulch: Mulch shall be processed wood chips supplied by the Contractor at no cost to the  
16 Subcontractor.

17  
18 EQUIPMENT:

19  
20 Seedbed Preparation: Disks, harrows, roller harrow-packers (culti-packers), tooth-type  
21 harrows, shovels, or other similar equipment.

22  
23 Seeding and Fertilizing: Truax-type drill.

24  
25 PART 3--EXECUTION

26  
27 Season of Work: Seeding shall be done between October 10 and November 30 or February 1  
28 and March 20. Specific ideal seeding times within these windows shall be as required for  
29 proper seedbed preparation.  
30

Identifier: SOW-691 Revision: 1 Page: D29 of D32	<b>STATEMENT OF WORK  REMEDIAL ACTION OF  CONTAMINATED SOIL SITES AT  WASTE AREA GROUPS 1,3,4,  AND 5</b>	
--	---	---

## Appendix D

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<b>Project Title:</b> CFA-04 Mercury Pond	<b>Project Number:</b> 23299
<b>Document Type:</b> Construction Specification	<b>Revision Number:</b> 1
<b>SPC Number:</b> 403	

- 1 Weed Control: Areas to be seeded shall be maintained reasonably free of weeds. Weeds
- 2 shall be kept from going to seed. Only weed-free equipment and vehicles will be allowed to
- 3 enter the project area.
- 4
- 5 Seedbed Preparation: Soil shall be tilled a minimum depth of 4 in. The seedbed shall be firm
- 6 below seeding depth and well-pulverized and loose on top. The seedbed shall be free of
- 7 clods and weeds. Seedbed preparation shall not be performed when soil conditions are not
- 8 suitable for tilling: too dry, too wet, frozen, etc. Tillage shall produce cross-slope furrows on
- 9 slopes.
- 10
- 11 On areas subject to severe erosion, the extent of seedbed preparation shall not exceed that
- 12 which can be seeded in 1 day.
- 13
- 14 Fertilizing: Fertilizing shall closely follow seedbed preparation. Fertilizer shall not be mixed
- 15 with seed. Fertilizer may be drilled or broadcast. Fertilizer shall be applied at a rate
- 16 determined by the soil analysis.
- 17
- 18 Seeding: Seeding shall closely follow fertilizing. If the seedbed has been disturbed, then the
- 19 Subcontractor shall prepare the seedbed again. Seeding work shall not proceed until the
- 20 seedbed has been inspected. Seeds shall be thoroughly mixed prior to application. Seeds
- 21 shall be uniformly applied at the previously specified rate. Seeds shall be buried 0.25 to
- 22 0.75 in. Seeding shall not be performed when weather conditions are unfavorable: high wind,
- 23 heavy rain, etc.
- 24
- 25 Drilling shall maintain cross-slope furrows on slopes.
- 26
- 27 Mulching: The GFE wood chip mulch shall be spread uniformly at a rate of 15 to 17 tons per
- 28 acre. Mulching shall not be performed when wind interferes with mulch placement.
- 29
- 30 Protection: Traffic over seeded area shall be prohibited.
- 31
- 32 METHOD OF MEASUREMENT
- 33
- 34 Revegetation: Revegetation will be measured by the acre using field survey.
- 35
- 36 BASIS OF PAYMENT
- 37
- 38 Revegetation: The accepted quantities of revegetation will be paid for at the contract unit
- 39 price per acre of revegetated area. This price shall include seedbed preparation, seeding,
- 40 mulching and anchoring, and fertilizing.
- 41
- 42

Identifier: SOW-691 Revision: 1 Page: D30 of D32	<b>STATEMENT OF WORK  REMEDIAL ACTION OF  CONTAMINATED SOIL SITES AT  WASTE AREA GROUPS 1,3,4,  AND 5</b>	
--	---	---

## Appendix D

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Project Title: CFA-04 Mercury Pond	Project Number: 23299
Document Type: Construction Specification	Revision Number: 1
SPC Number: 403	

- 1 FIELD QUALITY CONTROL:
- 2
- 3 Seedbed Inspection: Seeding shall not proceed until the Contractor's Representative has
- 4 inspected the seedbed for conformance to these specifications.
- 5
- 6 The Contractor's Representative will perform surveillance to verify compliance of the work
- 7 to the drawings and specifications.
- 8
- 9 END OF SECTION 02486



Identifier: SOW-691 Revision: 1 Page: D32 of D32	<b>STATEMENT OF WORK          REMEDIAL ACTION OF          CONTAMINATED SOIL SITES AT          WASTE AREA GROUPS 1,3,4,          AND 5</b>	
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**Appendix D**

SUBCONTRACT NO. S- (TBD)

SCHEDULE "X"

The Government will furnish to the Subcontractor at no cost the equipment or material listed below. The equipment or material may be obtained by the Subcontractor at the time he is ready to make the installation in accordance with the provisions of the contract.

The items will be available only during normal working hours, and a 24-hour minimum advance notice (Saturdays, Sundays, and holidays excluded) to the Subcontracting Officer will be required.

Transportation costs shall be the responsibility of the Subcontractor.

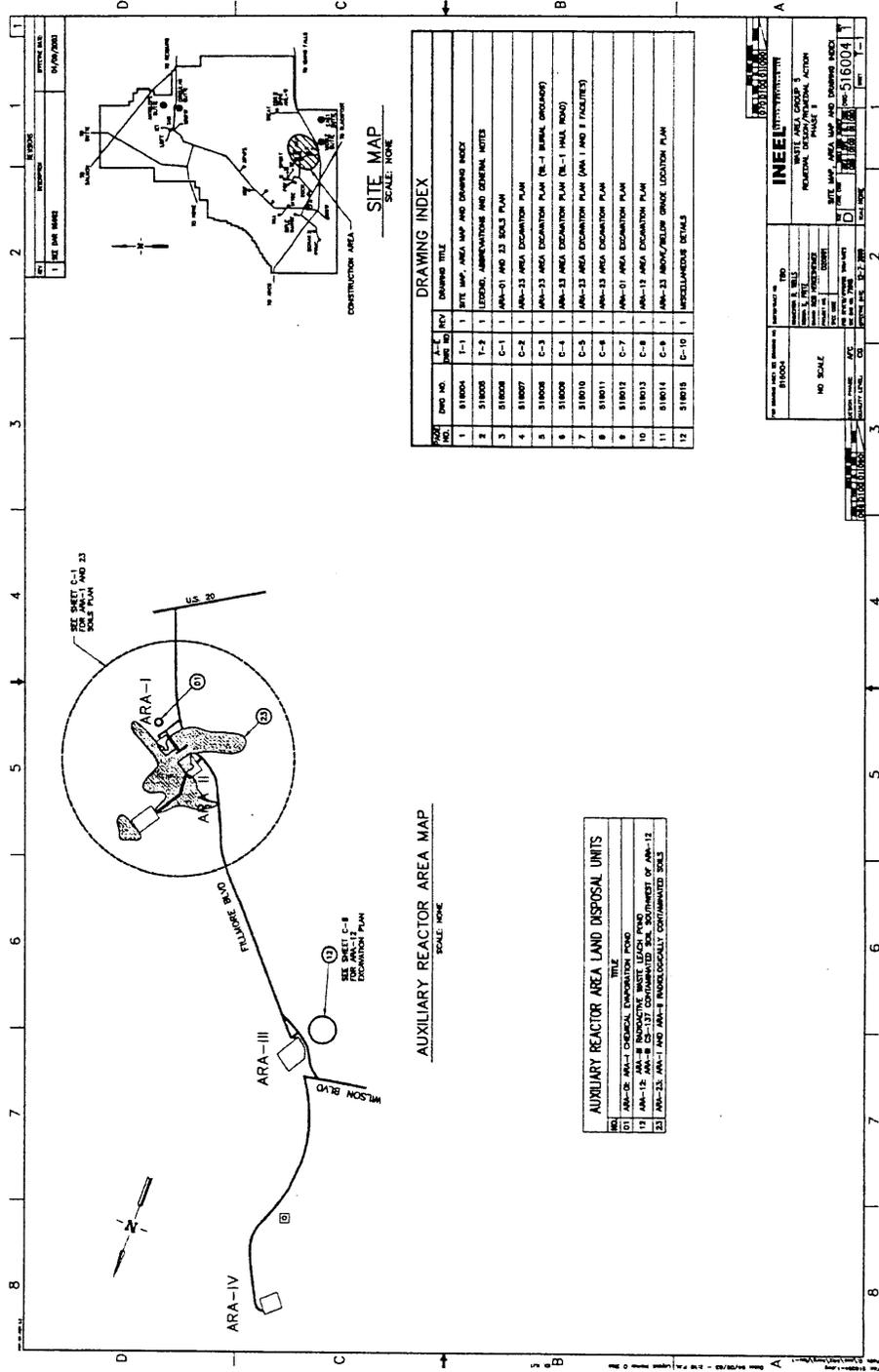
Item No.	Description	Location	Reference	Approximate Cost	Date Available
1.	Wood Chip Mulch	CFA	Specification 02486	No Cost	Award of Contract

Identifier: SOW-691  
 Revision: 1  
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**STATEMENT OF WORK  
 REMEDIAL ACTION OF  
 CONTAMINATED SOIL SITES AT  
 WASTE AREA GROUPS 1,3,4,  
 AND 5**



**Appendix E  
 WAG 5 Drawings**



**AUXILIARY REACTOR AREA MAP**  
 SCALE: NONE

NO.	TITLE
01	ARA-I CHEMICAL EXHAUSTION POND
02	ARA-I CHEMICAL EXHAUSTION POND
03	ARA-I CHEMICAL EXHAUSTION POND
04	ARA-I CHEMICAL EXHAUSTION POND
05	ARA-I CHEMICAL EXHAUSTION POND
06	ARA-I CHEMICAL EXHAUSTION POND
07	ARA-I CHEMICAL EXHAUSTION POND
08	ARA-I CHEMICAL EXHAUSTION POND
09	ARA-I CHEMICAL EXHAUSTION POND
10	ARA-I CHEMICAL EXHAUSTION POND
11	ARA-I CHEMICAL EXHAUSTION POND
12	ARA-I CHEMICAL EXHAUSTION POND
13	ARA-I CHEMICAL EXHAUSTION POND
14	ARA-I CHEMICAL EXHAUSTION POND
15	ARA-I CHEMICAL EXHAUSTION POND
16	ARA-I CHEMICAL EXHAUSTION POND
17	ARA-I CHEMICAL EXHAUSTION POND
18	ARA-I CHEMICAL EXHAUSTION POND
19	ARA-I CHEMICAL EXHAUSTION POND
20	ARA-I CHEMICAL EXHAUSTION POND
21	ARA-I CHEMICAL EXHAUSTION POND
22	ARA-I CHEMICAL EXHAUSTION POND
23	ARA-I CHEMICAL EXHAUSTION POND

NO.	NO.	REV.	DRAWING TITLE
1	51800A	E-1	SITE MAP, AREA MAP AND DRAWING INDEX
2	51800B	E-2	LEGEND, ABBREVIATIONS AND GENERAL NOTES
3	51800C	C-1	ARA-1 AND 23 SOILS PLAN
4	51800D	C-2	ARA-23 AREA EXHAUSTION PLAN
5	51800E	C-3	ARA-23 AREA EXHAUSTION PLAN (N-1 BURNAL OPERATOR)
6	51800F	C-4	ARA-23 AREA EXHAUSTION PLAN (N-1 HOLD INVENTORY)
7	51800G	C-5	ARA-23 AREA EXHAUSTION PLAN (ARA 1 AND 2 FACILITIES)
8	51800H	C-6	ARA-23 AREA EXHAUSTION PLAN
9	51800I	C-7	ARA-23 AREA EXHAUSTION PLAN
10	51800J	C-8	ARA-23 AREA EXHAUSTION PLAN
11	51800K	C-9	ARA-23 AREA EXHAUSTION PLAN
12	51800L	C-10	EXHAUSTION DETAILS

**INEEL**  
 Idaho National Engineering and Environmental Laboratory

PROJECT NO. 516004  
 DRAWING NO. 51800A  
 SHEET NO. E1 OF E12

DATE: 10/15/94



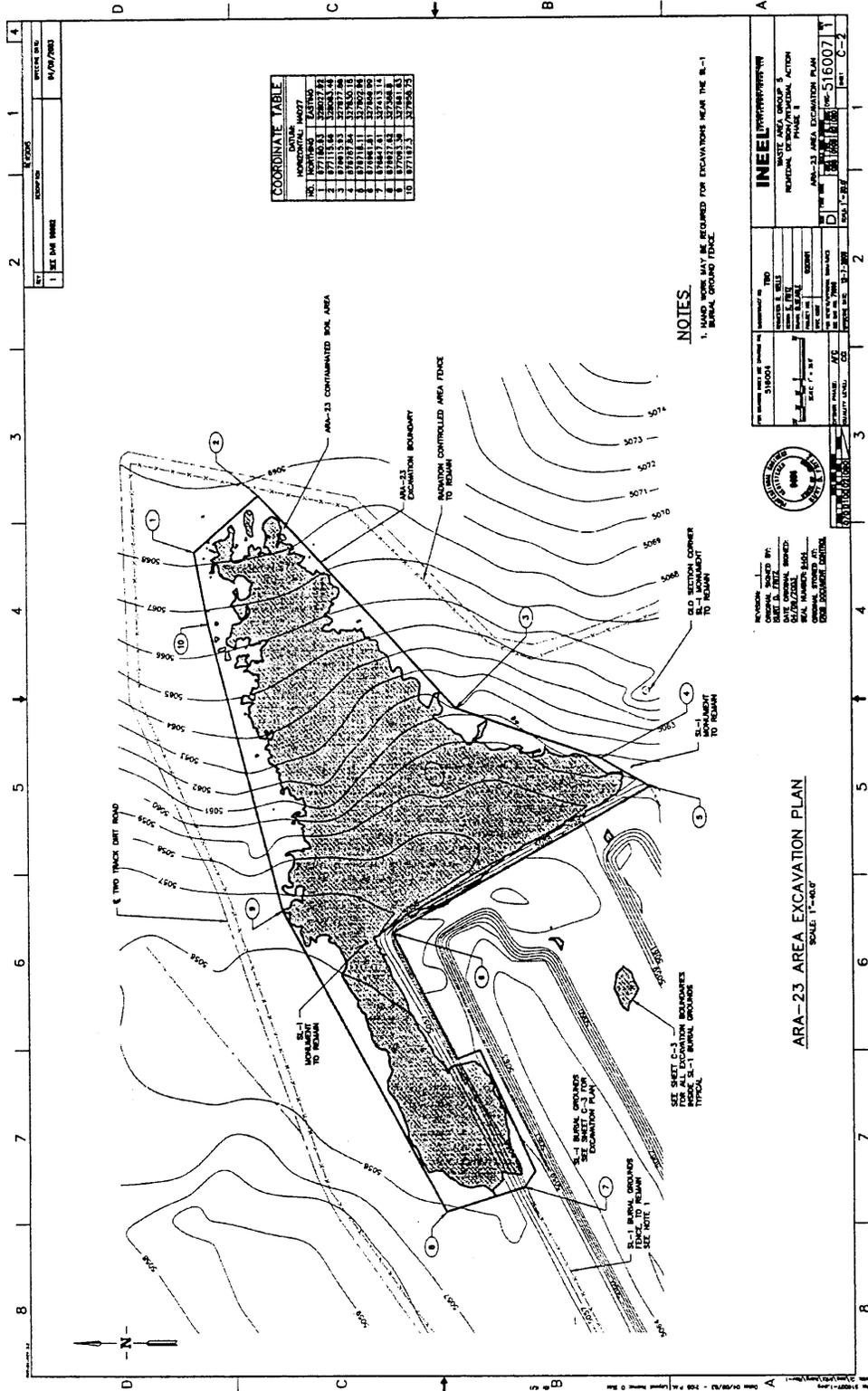


Identifier: SOW-691  
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**STATEMENT OF WORK  
 REMEDIAL ACTION OF  
 CONTAMINATED SOIL SITES AT  
 WASTE AREA GROUPS 1,3,4,  
 AND 5**



Appendix E

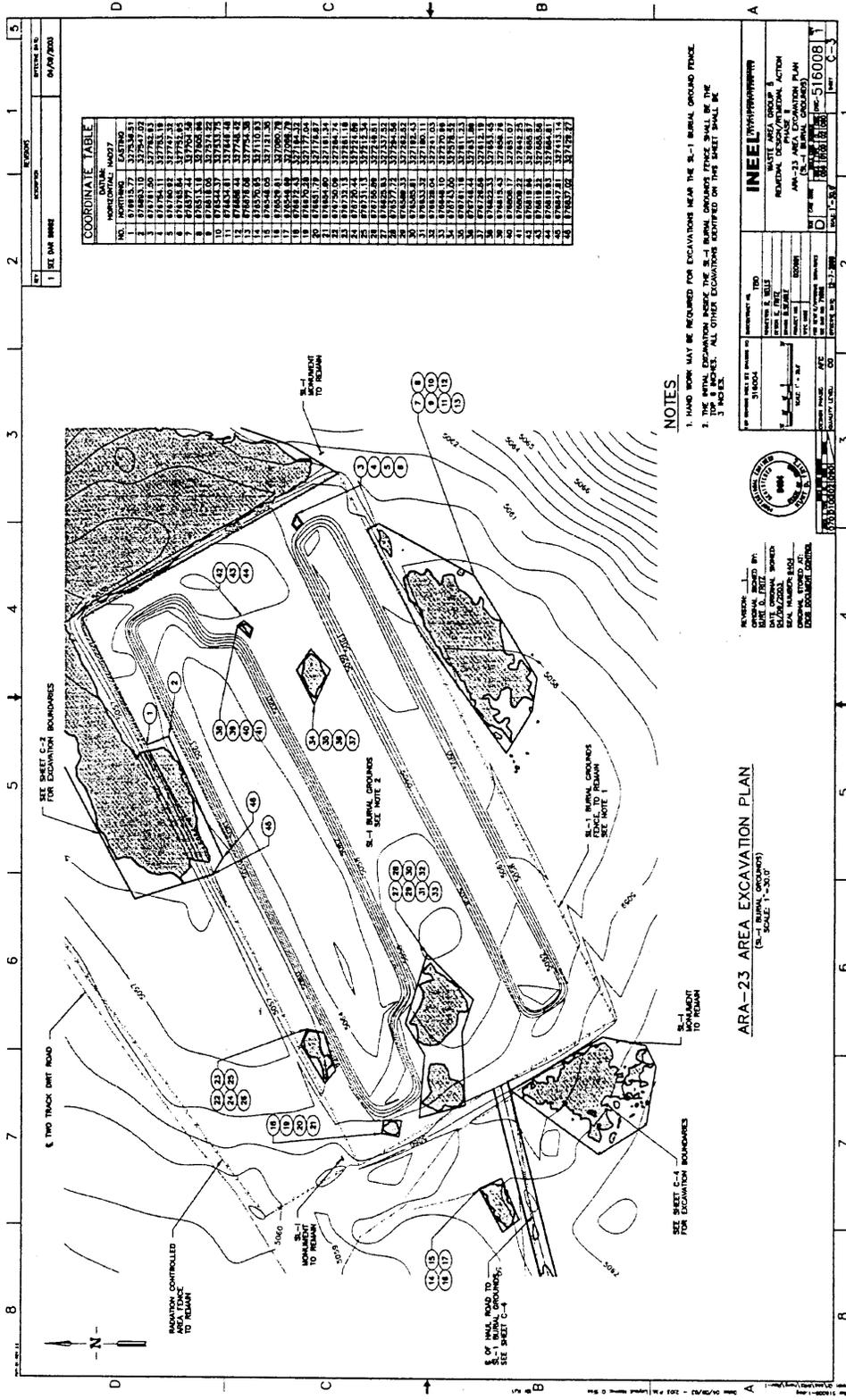


Identifier: SOW-691  
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**STATEMENT OF WORK  
 REMEDIAL ACTION OF  
 CONTAMINATED SOIL SITES AT  
 WASTE AREA GROUPS 1,3,4,  
 AND 5**



**Appendix E**

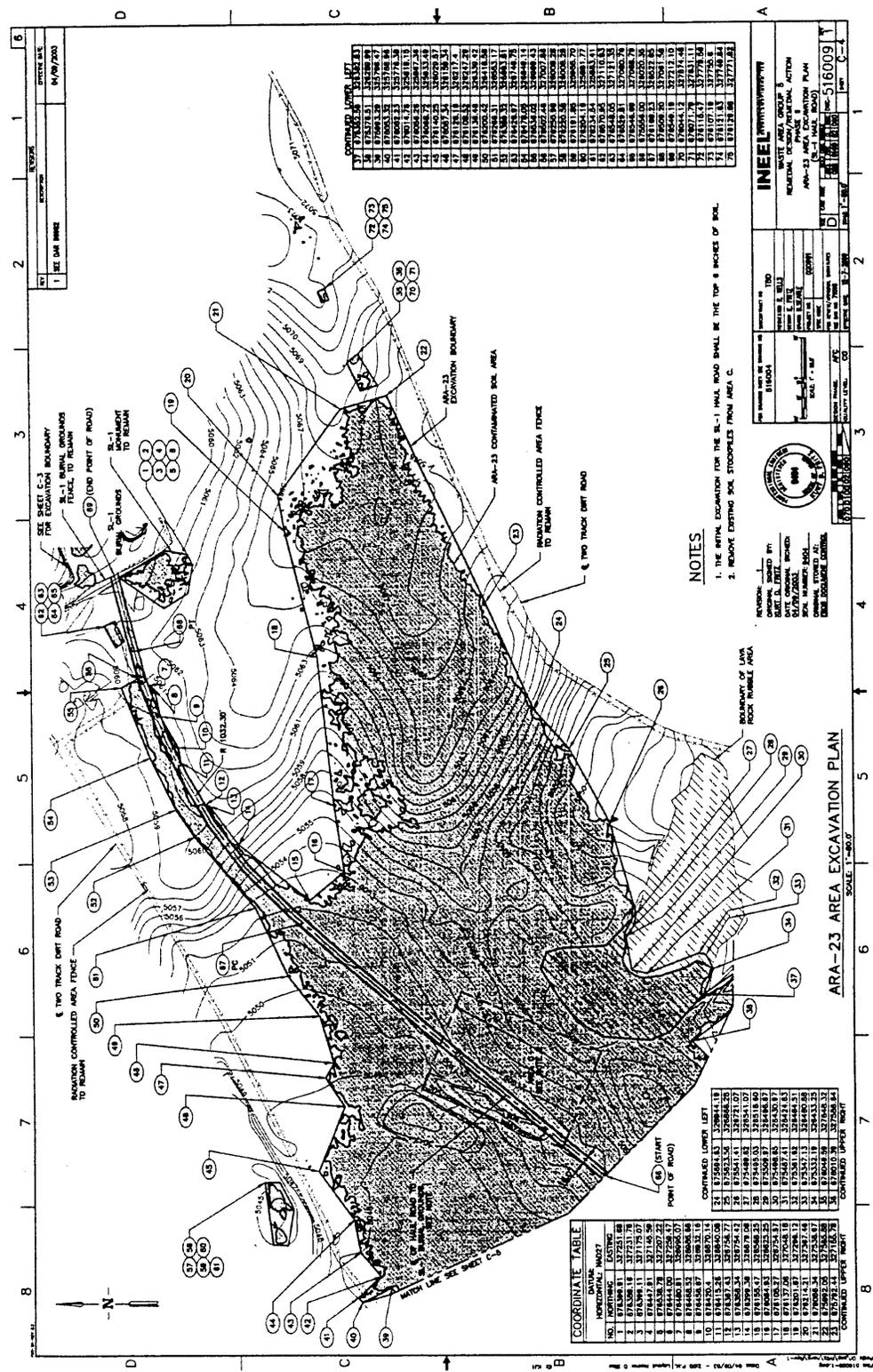


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**STATEMENT OF WORK  
 REMEDIAL ACTION OF  
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 AND 5**



Appendix E

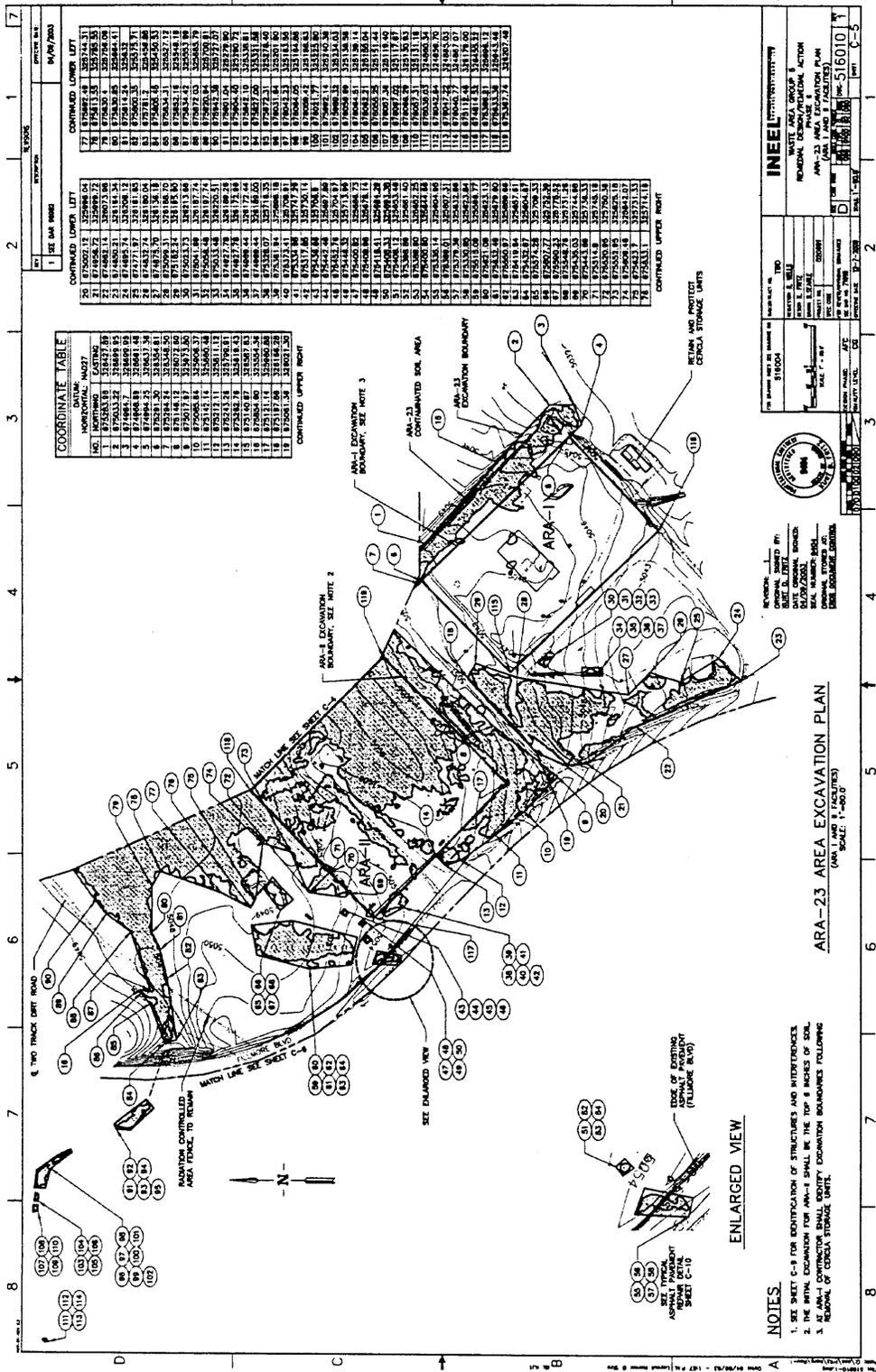


Identifier: SOW-691  
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**STATEMENT OF WORK  
 REMEDIAL ACTION OF  
 CONTAMINATED SOIL SITES AT  
 WASTE AREA GROUPS 1,3,4,  
 AND 5**



**Appendix E**



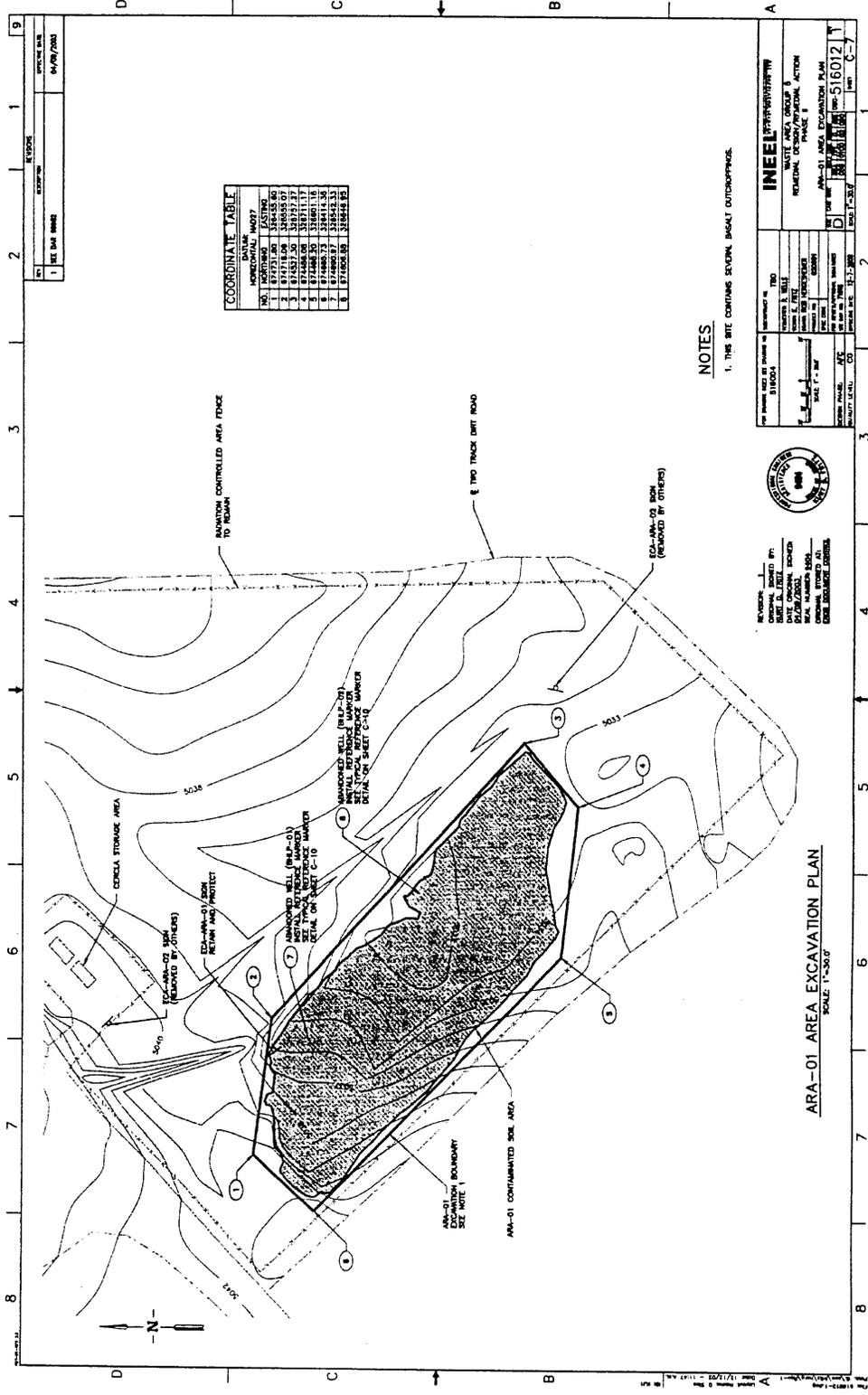


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**STATEMENT OF WORK  
 REMEDIAL ACTION OF  
 CONTAMINATED SOIL SITES AT  
 WASTE AREA GROUPS 1,3,4,  
 AND 5**



**Appendix E**









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Appendix F

**WAG 5 Specifications**

Document ID: SPC-317  
Revision ID: 2  
Effective Date: 05/15/03

**CONSTRUCTION SPECIFICATION**

SUBCONTRACT NO. TBD  
PROJECT FILE NO. 020911

**Waste Area Group 5  
Remedial Design/Remedial Action –  
Phase II**

**APPROVED FOR CONSTRUCTION**

Prepared for:  
U.S. Department of Energy  
Idaho Operations Office  
Idaho Falls, Idaho



Form 412.14  
07/24/2001  
Rev. 03



Identifier: SOW-691 Revision: 1 Page: F3 of F34	STATEMENT OF WORK REMEDIAL ACTION OF CONTAMINATED SOIL SITES AT WASTE AREA GROUPS 1,3,4, AND 5	
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Appendix F

**Waste Area Group 5, Remedial Design/Remedial Action, Phase II**

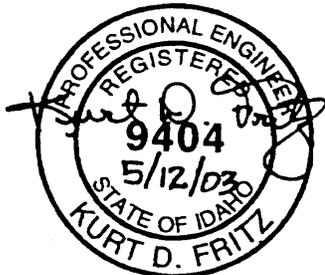
The following Sections of this Specification were prepared under the direction of the Professional Engineer as indicated by the seal and signature provided on this page. The Professional Engineer is registered in the State of Idaho to practice Civil Engineering.

Division 1 – General Requirements

- 01005 Summary of Work
- 01051 Construction Surveying And Staking
- 01270 Unit Prices
- 01300 Submittals

Division 2 – Site Work

- 02200 Earthwork
- 02486 Revegetation



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**STATEMENT OF WORK  
REMEDIAL ACTION OF  
CONTAMINATED SOIL SITES AT  
WASTE AREA GROUPS 1,3,4,  
AND 5**



**Appendix F**

**SPECIFICATIONS  
FOR  
WASTE AREA GROUP 5 REMEDIAL DESIGN/REMEDIAL ACTION, PHASE II  
REVISION 2**

**Prepared for:**

**U. S. DEPARTMENT OF ENERGY  
IDAHO OPERATIONS OFFICE**

**Idaho Falls, Idaho**

**Project File No. 020911**

**May 2003**

**BECHTEL BWXT IDAHO, LLC (BBWI)  
Idaho Falls, Idaho 83415**

Identifier: SOW-691 Revision: 1 Page: F5 of F34	<b>STATEMENT OF WORK  REMEDIAL ACTION OF  CONTAMINATED SOIL SITES AT  WASTE AREA GROUPS 1,3,4,  AND 5</b>	
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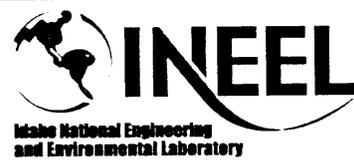
**Appendix F**

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REVISION 2**

<u>SPECIFICATION TITLE</u>	<u>NUMBER OF PAGES IN SECTION</u>
 <u>DIVISION 1 - GENERAL REQUIREMENTS</u>	
01005 SUMMARY OF WORK .....	2
01051 CONSTRUCTION SURVEYING AND STAKING .....	3
01270 UNIT PRICES .....	2
01300 SUBMITTALS .....	3
 <u>DIVISION 2 - SITE WORK</u>	
02200 EARTHWORK .....	12
02486 REVEGETATION .....	3
 <u>ATTACHMENTS:</u>	
VENDOR DATA SCHEDULE	
SCHEDULE X	

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**STATEMENT OF WORK  
REMEDIAL ACTION OF  
CONTAMINATED SOIL SITES AT  
WASTE AREA GROUPS 1,3,4,  
AND 5**



**Appendix F**

**Project Title: Waste Area Group 5 Remedial Design/Remedial Action - Phase II**  
**Document Type: Construction Specifications**      **Project Number: 020911**  
**SPC Number: 317**      **Revision Number: 2**

1 SECTION 01005--SUMMARY OF WORK

2  
3 PART 1--GENERAL

4  
5 SUMMARY:

6  
7 The Subcontractor shall furnish labor, material, equipment, and supplies; and perform work  
8 and operations necessary to perform the OU 5-12 Phase II remedial action completely, in  
9 accordance with the subcontract drawings and these specifications.

10  
11 All soil removal areas shall be clearly marked by the Subcontractor prior to start of work  
12 using coordinates as shown on the drawings.

13  
14 The marked areas will identify the radionuclide contaminated surface soil that requires  
15 excavation. Prior to excavation, the vegetation that covers the areas shall be mowed.  
16 Vegetation and contaminated soil shall be transported to an onsite disposal facility as indicated  
17 in the Statement of Work for the Environmental Restoration Contaminated Soils Remedial  
18 Action. The Subcontractor shall remove the soil in 3 inch or 6 inch lifts as shown on the  
19 drawings. Upon completion of the excavation, the area will be surveyed by the Contractor to  
20 determine if contaminants are still present. If the cleanup level is not obtained, then the  
21 contaminated area coordinates will be provided by the Contractor and an additional  
22 excavation cut by the Subcontractor will be taken. This will be done until the area meets or  
23 exceeds the cleanup goals or until basalt has been reached. No basalt outcroppings will be  
24 removed during this removal action.

25  
26 The excavated soil shall be loaded into the transport vehicles equipped with "burrito bag"  
27 containment liners and covered to prevent the loss of any material during transport. After  
28 covering, each vehicle shall be visually inspected by the Job Site Supervisor (JSS), and the  
29 Radiological Control Technician (RCT) will perform a radiological survey to ensure that the  
30 load is securely contained prior to leaving the area. Surveys may take as little as 15 minutes  
31 for each vehicle. However, if radiation is detected, the survey may take over an hour and the  
32 Subcontractor shall be responsible for removing any contamination found prior to leaving the  
33 area. The same radiological survey sequence shall take place prior to leaving the disposal site.  
34 All radiological surveying shall be in accordance with PRD-3001.

35  
36 Once excavation activities are completed in a work area (ARA 01, 12, or 23) and  
37 confirmation surveys and samples of the area are complete, the Subcontractor shall  
38 decontaminate equipment and move to the next work area. Confirmation samples will be  
39 collected by the Contractor to verify that the excavation area meets the cleanup goals. Site  
40 closure will be initiated upon notification that the excavation area has obtained compliance  
41 with remedial action goals.

42  
43 Site close out includes regrading and revegetating disturbed areas. Backfilling will be required  
44 in excavations exceeding 1 foot in depth as directed by the Contractor's Representative.

45 REFERENCES:

Identifier: SOW-691  
Revision: 1  
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**STATEMENT OF WORK  
REMEDIAL ACTION OF  
CONTAMINATED SOIL SITES AT  
WASTE AREA GROUPS 1,3,4,  
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**Appendix F**

**Project Title: Waste Area Group 5 Remedial Design/Remedial Action - Phase II**  
**Document Type: Construction Specifications**      **Project Number: 020911**  
**SPC Number: 317**      **Revision Number: 2**

1  
2 The following documents, including others referenced therein, form part of this Section to the  
3 extent designated herein.  
4

5 **CODE OF FEDERAL REGULATIONS (CFR)**

6  
7 29 CFR 1910 OSHA General Industry Safety Standards  
8 29 CFR 1926 OSHA Construction Industry Safety Standards  
9

10 **BECHTEL BWXI IDAHO, LLC (BBWI)**

11  
12 SRM Subcontractor Requirements Manual  
13 PROC-185 General Provisions for Fixed Price Construction Subcontracts  
14 SOW-691 Statement of Work for the Environmental Restoration  
15 Contaminated Soils Remedial Action  
16

17 Unless otherwise specified, references in these specifications or on the subcontract drawings  
18 to other specifications, codes, standards or manuals which are part of these specifications, but  
19 not included herein, shall be the latest edition, including any amendments and revisions, in  
20 effect as of the date of this Specification.  
21

22 **SUBMITTALS:**

23  
24 Submittals include, but are not limited to the following:  
25

26 **Hazardous Chemicals and Substances:** Subcontractor shall submit a list of hazardous  
27 chemicals and substances in accordance with General Provisions for mandatory approval.  
28 Chemicals and substances not previously approved for use will require the submittal of MSDS  
29 for mandatory approval.  
30

31 **QUALITY ASSURANCE:**

32  
33 Quality Assurance Program requirements shall exist to assure that work performed is in  
34 conformance with the requirements established by the drawings and this specification. QA  
35 Program criteria applicable to this scope of work is addressed in the Special Conditions and  
36 these specifications.  
37

38 **SAFETY, HEALTH AND ENVIRONMENT:**

39  
40 In general work shall be in compliance with the applicable sections of 29 CFR 1910, 29 CFR  
41 1926 and the Subcontractor Requirements Manual and General Provisions.  
42

43 **END OF SECTION 01005**

## Appendix F

**Project Title:** Waste Area Group 5 Remedial Design/Remedial Action - Phase II  
**Document Type:** Construction Specifications      **Project Number:** 020911  
**SPC Number:** 317      **Revision Number:** 2

1    SECTION 01051--CONSTRUCTION SURVEYING AND STAKING

2  
3    PART 1--GENERAL

4  
5    SUMMARY:

6  
7    Section Includes: Work includes, but is not limited to:

8  
9            The Subcontractor shall furnish all materials, labor, tools and equipment to perform all  
10            surveying necessary to lay out and control the construction work. The Subcontractor  
11            shall perform surveying to establish the "first cut" excavation boundaries as set forth in  
12            these specifications and the design drawings. Following excavation and screening of  
13            the first cut excavation, the Contractor will provide survey coordinates for the  
14            "selective" excavation boundary as required. The Subcontractor shall then survey and  
15            mark the excavation boundary prior to commencement of selective excavation. See  
16            Section 02200 for definition of excavation terms.

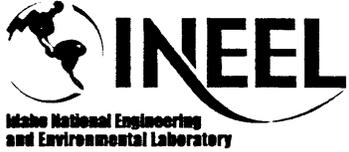
17  
18    SUBMITTALS:

19  
20    Submittals include but are not limited to the following:

21  
22    Certification: Submit certification that the land surveyor is a registered professional in the  
23    State of Idaho.

24  
25    Topographical Survey: Electronic data shall be reduced and plotted by the Subcontractor in  
26    standard ASCII and AutoCAD 14 format. Electronic data shall be submitted on electronic  
27    media such as CD or Zip Disk. Legible notes, drawings, and electronic data files (including  
28    point number, northing, easting, elevation, and point description) shall be submitted to the  
29    Contractor for approval. All surveys shall be conducted using the established project datum.  
30    Required surveys shall consist of:

- 31  
32            1.) Topographical survey of the final excavated surface (prior to backfilling) of the  
33            entire ARA-01, 12 and 23 site including all disturbed areas and a topographical  
34            map of the area with a contour interval of 1 foot. At a minimum, the  
35            topographic survey shall include all breaks in grade, swales, and other natural  
36            features with sufficient detail to accurately model the disturbed surface. In  
37            areas where the terrain is relatively flat, a grid of no greater the 50 ft. in all  
38            directions shall be used
- 39            2.) Topographical survey of the final backfilled surface for ARA-01, 12 and 23  
40            sites including all areas which required backfilling. A topographical map of  
41            each area shall be submitted with a contour interval of 1 foot. Survey shall  
42            include all breaks in grade and of sufficient grid to accurately model the  
43            disturbed surface.  
44

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## Appendix F

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1 The topographic surveys will be used to calculate compacted in-place backfill quantities as  
2 well as revegetation areas.

3  
4 See Section 01300, Submittals and Vendor Data Schedule for additional requirements.

5  
6 QUALITY CONTROL:

7  
8 Qualifications: Construction surveying and staking shall be accomplished under the direction  
9 of a registered professional land surveyor.

10  
11 PART 2--PRODUCTS

12  
13 Stakes: Identification stakes and hubs shall be of sufficient length, width and depth to provide  
14 a solid set in the ground and to provide space for marking above ground when applicable.  
15 The top 2-in. of all stakes shall be painted or marked with plastic flagging.

16  
17 PART 3--EXECUTION

18  
19 SURVEY REQUIREMENT:

20  
21 Control: Use existing control as required. The coordinates of the existing controls will be  
22 provided by the Contractor. Prior to commencement of construction work, the Subcontractor  
23 shall establish survey control inside the work area.

24  
25 Project Datum: Horizontal coordinates are based on NAD27 Idaho East Zone State Plane.  
26 All surveying for the project construction shall be based on this datum.

27  
28 Excavation Limit Reference Stakes: Excavation limit stakes shall be established. The position  
29 of these stakes shall be determined by methods that will produce precision level C shown in  
30 the Table 1.

31  
32 The clearing limit shall be located on the ground and marked with lath, flagging, or other  
33 methods approved by the Contractor's Representative.

34  
35 Monuments, Poles, Signs, and Other Existing Items: The following items shall be left in place  
36 and not be disturbed.

- 37
- 38 SI-1 Burial Ground fencing, monuments, and engineered barrier
  - 39 Institutional control signs
  - 40 Power poles
  - 41 Monitoring wells
  - 42 Abandoned piping outside excavation boundary or below excavation depth.
  - 43 Survey control points
  - 44 Borehole markers
- 45

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TABLE 1. REFERENCE STAKES AND CLEARING LIMITS PRECISION

Item	Precision		
	A	B	C
Horizontal accuracy for clearing limits. In feet or percentage of horizontal distance measured from transverse line, whichever is greater.	.05 ft or 0.2%	0.15 ft or 0.6%	0.2 ft or 1.0%

- 1
- 2 **METHOD OF MEASUREMENT:**
- 3
- 4 **Surveying:** Surveying will not be measured.
- 5
- 6 **BASIS OF PAYMENT:**
- 7
- 8 **Surveying:** Payment for surveying shall be included in the contract unit price for excavation.
- 9
- 10 **FIELD QUALITY CONTROL:**
- 11
- 12 Surveillance will be performed by the Contractor's Representative to verify compliance of the
- 13 work to the drawings and specifications.
- 14
- 15 **END OF SECTION 01051**

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## Appendix F

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1 SECTION 01270--UNIT PRICES

2

3 PART 1--GENERAL

4

5 RELATED DOCUMENTS:

6

7 Drawings and general provisions of the Contract and other Division 1 Specification Sections,  
8 apply to this Section.

9

10 SUMMARY:

11

12 This Section includes administrative and procedural requirements for unit prices.

13

14 See related sections for procedures for measurement and payment for unit price items.

15

16 DEFINITIONS:

17

18 Unit price is (an amount proposed by bidders, stated on the Pricing Schedule) a price per unit  
19 of measurement for materials or services. Estimated quantities of Work required by the  
20 Contract Documents are the engineer's best estimate and establish a uniform bid basis.

21

22 PROCEDURES:

23

24 Unit prices include all necessary material, plus cost for delivery, installation, insurance,  
25 applicable taxes, overhead, and profit. Also see the Pricing Schedule for the line item  
26 description for each Unit Price Item.

27

28 Measurement and Payment: Refer to individual Specification Sections for work that requires  
29 establishment of unit prices. Methods of measurement and payment for unit prices are  
30 described and specified in those Sections.

31

32 Contractor reserves the right to reject Subcontractor's measurement of work-in-place that  
33 involves use of established unit prices and to have this work measured, at Contractor's  
34 expense, by an independent surveyor acceptable to Subcontractor.

35

36 PART 2--PRODUCTS (Not Used)

37

38 PART 3--EXECUTION

39

40 LIST OF UNIT PRICES:

41

42 For list of Unit Prices see Unit Price Schedule attached to the Bid Documents.

43

44

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1 ACCURACY FOR PAY UNIT:

2

3 The following tabulation indicates the accuracy required for quantities of the various pay units

4 used in the Schedule of Items. Use this guide to determine the decimal placement in the final

5 payment. Carry field computations to one more decimal and then round the figure to the

6 decimal indicated below.

7

8 Pay Unit:

9

10	Ton	0.1
11	Acre	0.1
12	Cubic Yard	1

13

14 END OF SECTION 01270

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## Appendix F

**Project Title:** Waste Area Group 5 Remedial Design/Remedial Action - Phase II  
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1 SECTION 01300--SUBMITTALS

2

3 PART 1--GENERAL

4

5 SUMMARY:

6

7 This section specifies the administrative, technical and quality requirements for vendor data  
8 submittals. Vendor data requirements are identified in individual specification sections or on  
9 the drawings, and tabularized on a Vendor Data Schedule. In the event of conflicting  
10 requirements, the submittal requirements prescribed in the individual specification section shall  
11 take top priority, the drawings second and the vendor data schedule last.

12

13 The Subcontractor shall submit data, drawings, and other submittals specified. If the  
14 Contractor determines the Subcontractor's submittal to be incomplete or unacceptable, the  
15 Subcontractor shall make a complete and acceptable submittal to the Contractor by the second  
16 submission of a submittal item.

17

18 The Subcontractor shall be responsible for providing submittals in accordance with the  
19 Subcontract General Provisions Document, providing submittals with adequate time for  
20 review and resubmittal, and advising the Contractor of any submittal that may be delayed and  
21 which might, if further delayed, extend completion of the project.

22

23 Section Includes: Work includes, but is not limited to:

24

25 The preparation, transmittal and delivery of documents by the Subcontractor to the  
26 Contractor as required in the "Submittals" subdivision of the specification section and  
27 as provided on the Vendor Data Schedule.

28

29 Related Sections: General Provisions, Subcontractor Requirements Manual, Special  
30 Conditions, Drawings and Vendor Data Schedule and other sections of these specifications  
31 apply to this section.

32

33 REFERENCES:

34

35 The following documents, including others referenced therein, form part of this Section to the  
36 extent designated herein.

37

38 AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

39

40 ANSI Y14.1 Drawing Sheet Size and Format

41

42 SUBMITTALS:

43

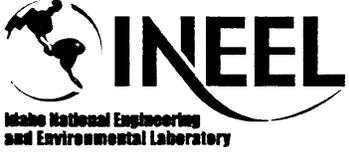
44 General Procedures: Vendor data, whether prepared by the Subcontractor or Subcontractor's

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- 1 subtier or supplier, shall be submitted as instruments of the Subcontractor. Therefore, prior to  
2 submittal, the Subcontractor shall ascertain that material and equipment covered by the  
3 submittal and the contents of the submittal itself, meet all the requirements of the subcontract  
4 specifications, drawings, or other contract documents.  
5
- 6 Each submittal shall contain identification for each separable and separate piece of material or  
7 equipment, and literature with respect to the information provided in the specification and on  
8 the Vendor Data Schedule. Submittals shall be numbered consecutively for each different  
9 submittal.  
10
- 11 Vendor Data Schedule: Vendor data required by the specification sections or the drawings to  
12 support design, construction, and operation of the project is identified on a Vendor Data  
13 Schedule. The Vendor Data Schedule provides a tabular listing by item number, drawing or  
14 specification reference, and description of the item or service. The type of submittal is  
15 identified by a "Vendor Data Code," and the time required to submit the item is identified by a  
16 "When to Submit" code. An "Approval" code specifies whether the submittal is for  
17 Mandatory Approval or for Information Only. One copy of routine paper or electronic file  
18 submittals are required; additional copies may be required by the Vendor Data Schedule.  
19 Electronic file submittals are preferred. Submittals that cannot be scanned or provided  
20 electronically, such as large shop drawings, will require 6 copies for Mandatory Approval and  
21 4 copies for Information Only. Material or color samples will require 2 sets for Mandatory  
22 Approval and 1 set for Information Only.  
23
- 24 Or Equal Material or Equipment Submittals: All "or equal" materials, equipment or systems  
25 shall be identified and submitted for approval as required by the Subcontractor Requirements  
26 Manual.  
27
- 28 An "or equal" submittal shall contain as a minimum all operating and physical parameters  
29 necessary to show that the material or equipment is equivalent to the specified material or  
30 equipment. All parameters shall be specifically identified by the submitter in the proposal.  
31 Exceptions or differences between the specified item and the "or equal" item shall also be  
32 identified.  
33
- 34 If an "or equal" material, equipment or system is approved, the Subcontractor shall be  
35 responsible to provide backup material necessary to include the material, equipment or system  
36 in the technical documents.  
37
- 38 Vendor Data Transmittal and Disposition Form 431.13: All vendor data shall be submitted to  
39 the Contractor using the Vendor Data Transmittal and Disposition Form. The form provides  
40 the Subcontractor a method to submit vendor data and provides the Contractor a means of  
41 dispositioning the submittal. The Subcontractor shall list the Vendor Data Schedule item  
42 number, a Vendor Data Transmittal tracking number (if applicable), the drawing or  
43 specification number reference, a Tag Number (if applicable), the submittal status (e.g.,  
44 Mandatory Approval, Information Only, Re-submittal, or Or-equal), the Revision Level, and

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1 the item description. The description should include the heat or lot number for items requiring  
2 Certified Mill Test Reports. The description should be complete enough that a person  
3 unfamiliar with the project can determine what the submittal includes.  
4

5 Disposition by the Contractor:  
6

7 The Contractor's comments and required action by the Subcontractor will be indicated by a  
8 disposition code on the submittal. The disposition codes will be classed as follows:  
9

- 10 (A) "Work May Proceed." Submittals so noted will generally be classed as data  
11 that appears to be satisfactory without corrections.  
12
- 13 (B) "Work May Proceed Subject to Incorporation of Comments." This category  
14 will cover data which, with the correction of comments noted or marked on the  
15 submittal, appear to be satisfactory and require no further review by the  
16 Contractor prior to construction. Revised drawings shall be provided upon  
17 request.  
18
- 19 (C) "Work May NOT Proceed. Revise and Resubmit." Submittals so  
20 dispositioned will require a corrected resubmittal for one of the following  
21 reasons.  
22
  - 23 1) Submittal requires corrections, per comments, prior to final review
  - 24 2) Submittal data incomplete and requires more detailed information prior  
25 to final review
  - 26 3) Submitted data does not meet specification requirements.  
27
- 28 (D) "Received for Information Only." Submittal so dispositioned will generally be  
29 classified as Information Only for as-specified material and equipment.  
30

31 Mandatory Approval coded vendor data will be reviewed by the Contractor and receive an A,  
32 B, or C disposition. The Contractor may provide internal review of Information Only  
33 submittals. In the event that comments are generated on an Information Only submittal, the  
34 submittal may be dispositioned B or C and returned to the Subcontractor for appropriate  
35 action. Information Only submittals without comments will receive a D disposition.  
36 All submittals will be returned to the Subcontractor. Acknowledgment of receipt of  
37 dispositioned vendor data by the Subcontractor will not be required.  
38

39 The Contractor will return dispositioned submittals with reasonable promptness.  
40 Subcontractor shall note that a prompt review is dependent on timely and complete submittals  
41 in strict accordance with these instructions.  
42

43 END OF SECTION 01300

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1 SECTION 02200--EARTHWORK

2  
3 PART 1--GENERAL

4  
5 SUMMARY:

6  
7 Section Includes: Work includes, but is not limited to:

8  
9       Clearing vegetation as required

10  
11       Excavating all materials encountered, of every description, for completion of the  
12       project as shown on the drawings and as specified herein

13  
14       Dust control

15  
16       Delivery of all contaminated material excavated for completion of the project to an  
17       onsite disposal facility as indicated in the Statement of Work

18  
19       Backfilling of all excavations as specified herein

20  
21       Compacting of all backfill as specified herein

22  
23       Finish grading and grading for surface drainage or revegetation.

24  
25 REFERENCES:

26  
27 The following documents, including others referenced therein, form part of this Section to the  
28 extent designated herein.

29  
30       AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION  
31       OFFICIALS (AASHTO)

32  
33       AASHTO M145       Classification of Soils and Soil-Aggregate Mixtures for  
34       Highway Construction Purposes

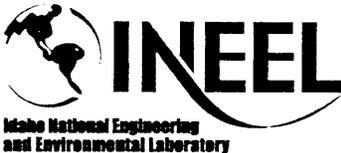
35  
36       CODE OF FEDERAL REGULATIONS

37  
38       29 CFR 1926        OSHA General Industry Safety Standards, Subpart P

39  
40       BECHTEL BWXT IDAHO, LLC (BBWI)

41  
42       Health and Safety Plan (HASP) for the Remedial Action of Waste Area Group 5,  
43       Operable Unit 5-12

44

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## Appendix F

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1 SUBMITTALS:  
2

3 Submittals include but are not limited to the following:  
4

5 Construction Work Plan: The Subcontractor shall submit a construction work plan detailing  
6 the following:  
7

- 8 • Methods and equipment for clearing vegetation, excavation, and dust control
- 9 • Address minimization of cross contamination and strategies for controlling  
10 excavation depth
- 11 • Construction details of the work platform for sealing truck liners and details of  
12 the method for sealing liners prior to exit from the construction site.  
13

14 PART 2--PRODUCTS

15  
16 MATERIALS AND EQUIPMENT:  
17

18 Satisfactory Soil Materials: Satisfactory soil materials are defined as those complying with  
19 AASHTO M145, soil classification Groups A-1, A-2-4, A-2-5, and A-3.  
20

21 Unsatisfactory Soil Materials: Unsatisfactory soil materials are those defined in  
22 AASHTO M145 soil classification Groups A-2-6, A-2-7, A-4, A-5, A-6, and A-7; also peat  
23 and other highly organic soils.  
24

25 Backfill and Fill Material: "Satisfactory" soil materials free of clay, rock, gravel larger than  
26 3 in. in any dimension, debris, waste, frozen materials, vegetable and other deleterious matter.  
27 Topsoil and gravel pit material and use of the borrow pits shall be at no cost to the  
28 Subcontractor. Topsoil and gravel borrow source locations are identified in the Special  
29 Conditions. Upon completion of operations involving fill material removal, the Subcontractor  
30 shall grade and reshape the disturbed areas. Sloped surfaces shall meet the requirements of  
31 OSHA 29 CFR 1926.  
32

33 Equipment: All equipment and tools used by the Subcontractor to perform the work shall be  
34 subject to inspection by the Contractor before the work is started and shall be maintained in  
35 satisfactory working conditions at all times. The Subcontractor's equipment shall have the  
36 capability to perform the indicated work specified here in.  
37

38 Due to the potential for contamination, all equipment brought to the site slated for work in the  
39 contamination zone shall be identified to the Contractor prior to delivery and shall be clean  
40 and free of grease and oil spots where applicable, tires will be in a like-new condition, free of  
41 slits, and cracks. The Contractor reserves the right to reject equipment not meeting these  
42 standards.  
43

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1 The Subcontractor shall ensure that all equipment used for clearing vegetation or earthwork is  
2 fitted with appropriate safety devices that comply with all applicable Federal laws and the  
3 Health and Safety Plan (HASP) for Waste Area Group 5 Remedial Design/Remedial Action -  
4 Phase II, and adequately protect the operator and minimize exposure of workers and others to  
5 potentially contaminated material.  
6

7 PART 3--EXECUTION  
8

9 The Subcontractor shall be responsible for determining the method of excavation to be used  
10 for each of the areas identified on the drawings. The excavation method shall make every  
11 possible effort to remove the contaminated soil while controlling the depth of excavation and  
12 minimizing over excavation. The excavation method shall be submitted for Contractor  
13 approval. It is recommended that most of the mass excavation be accomplished using an all-  
14 wheel drive motor grader for windrowing the soils to minimize the spread of contamination.  
15 Hand excavation may be required around site features such as fences, power poles, trees, etc.  
16 and where localized contamination does not require the use of mechanized excavation  
17 equipment.  
18

19 The Subcontractor shall locate and mark existing monuments, monitoring wells, protection  
20 posts, and markers before construction operations commence and protect such items during  
21 construction. The Subcontractor shall restore or replace damaged items to original condition  
22 as required by the Contractor.  
23

24 The Subcontractor shall keep all roads and parking areas adjacent to and included in this  
25 project usable at all times; this shall include maintaining haul roads and access roads at the  
26 project site, INEEL site and borrow areas used under this contract. Sections of the haul route  
27 are over deteriorating asphalt roads (Wilson and Fillmore Boulevards). Periodic patching and  
28 maintenance by the Subcontractor may be required as necessary. The Subcontractor shall  
29 provide all necessary barricades, temporary walkways, lights, signs, signals, etc., for the  
30 protection of the workers and the public as per the Occupational Safety and Health  
31 Administration (OSHA), Construction Safety and Health Regulation 29 CFR, Part 1926,  
32 Subpart G, Signs, Signals, and Barricades.  
33

34 The Subcontractor shall clearly mark and post all laydown areas.  
35

36 DUST CONTROL:  
37

38 The Subcontractor shall minimize the creation and emission of dust per IDAPA Standards  
39 58.01.01.650 and 58.01.01.651 during all work activities performed under this contract. This  
40 shall be accomplished by the use of water trucks and visual observation. Water based dust  
41 control additives may be used with the approval of the Contractor. The Subcontractor shall  
42 control the amount of water used so as not to create flowing water. Source of water for dust  
43 suppression is specified in the Special Conditions.  
44

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1 The Subcontractor shall contain and cover excavated soil during transport to the ICDF or  
2 other INEEL disposal facility by the use of liners and tarps. The liner system or "burrito bag"  
3 shall fully enclose the soil and protect the truck bed on all sides from contact with the soil.  
4 The liners shall be 6-mil, minimum black polyethylene with formed corners, auto ignition no  
5 less than 650°F, and flash point no less than 600°F. Possible supplier is Packaging Research  
6 & Design, 800-833-9364. Liners shall be thermally sealed and securely covered with a tarp to  
7 fully contain the waste prior to exit from the construction site. A personnel platform shall be  
8 constructed by the Subcontractor for use during sealing of the burrito bags. The platform  
9 shall allow for a stable, flat working surface constructed of timber, scaffolding, or similar.  
10 Scaffolding systems shall be in accordance with the requirements of PRD-2004, "Scaffolding"  
11 as identified in the Subcontractor Requirements Manual. The use of stepladders is not  
12 acceptable.

### CLEARING SURFACE VEGETATION:

16 This work shall consist of mowing and disposing of all weeds, grass, brush, shrubs, and logs  
17 from all the excavation boundaries shown on the drawings for areas ARA-01, ARA-12, and  
18 ARA-23, in accordance with these specifications. Mowed vegetation shall be removed and  
19 disposed of with the contaminated soil excavation. Mowing shall remove vegetation to as  
20 close to the ground surface as practicable. The limits of clearing shall be the excavation  
21 boundaries shown on the design drawings and as staked by the Subcontractor.

24 Trees shown on the design drawings shall be protected during excavation. Trees or shrubs to  
25 be retained, which have been cut or scarred, shall be painted with an asphaltum base paint  
26 prepared especially for tree surgery.

27 Any areas outside the designated excavation areas which are damaged or disturbed by the  
28 Subcontractor's operations shall be revegetated by the Subcontractor at no cost to the  
29 Contractor. Revegetation shall be in accordance with Section 02486 of these specifications.

### EXCAVATION:

33 Description: This work shall consist of authorized excavation of contaminated soils and  
34 hauling of these contaminated soils to an onsite disposal facility as indicated in the Statement  
35 of Work.

37 Pre-Operational Test: Prior to initiating soil removal activities, the Subcontractor will prepare  
38 and transport a load of clean soil obtained from the CFA gravel pit. The transport vehicle  
39 must have a sealed lining system and covering in place of the type that will be used during the  
40 removal action to protect the vehicle and the environment from being contaminated by the  
41 excavated soils. The test load will be transported from the CFA gravel pit to the ARA area at  
42 a maximum speed of 55 miles per hour (or lesser speed if proposed by the Subcontractor as a  
43 maximum hauling speed). In order to demonstrate unloading procedures, the load will then be  
44 returned to the CFA gravel pit and unloaded as if it were contaminated soil. During the test

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CONTAMINATED SOIL SITES AT  
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- 1 run, the Contractor, RCT, and Environmental Safety and Health (ES&H) representative will  
2 visually evaluate the operation to determine if any soil is released. If it is determined that the  
3 covering does not adequately contain the soil during transport, modifications shall be made  
4 and the test repeated.  
5
- 6 General Soil Excavation Requirements: In all excavation locations shown on the drawings,  
7 the Subcontractor shall contain excavation operations within the designated limits. If  
8 conditions encountered warrant modification to the designated limits, the Contractor shall be  
9 notified prior to work proceeding.  
10
- 11 The Subcontractor shall mark or otherwise indicate the location of items to be protected as  
12 stated in this specification, and protect these existing structures during construction activities.  
13
- 14 Excavations that expose basalt outcroppings are likely and in such cases, the Subcontractor  
15 will notify the Contractor. Manual cleaning by the Contractor such as brooming or  
16 vacuuming the basalt outcropping may be required. Additional requirements are identified in  
17 the Statement of Work.  
18
- 19 Items to be Protected: Trees shown on the design drawings shall be protected during  
20 excavation. If the contaminated soil surrounding a tree cannot be removed, the Subcontractor  
21 may remove the tree with permission of the Contractor's Representative.  
22
- 23 The Subcontractor shall protect all bore hole markers, institutional control signs, power poles,  
24 monitoring wells, and survey control points shown on the design drawings. Abandoned piping  
25 outside excavation boundary or below excavation depth shall also remain.  
26
- 27 The Subcontractor shall protect the permanent monuments, chain link fence, and the  
28 engineered barrier of the SL-1 burial grounds. If mechanical excavation is not feasible in this  
29 area, manual excavation methods shall be used.  
30
- 31 Unauthorized Excavation: Unauthorized excavation consists of removal of materials beyond  
32 indicated elevations or dimensions without specific direction by the Contractor. Unauthorized  
33 excavation shall be at the Subcontractor's expense.  
34
- 35 Stockpiling and Disposal: No overnight stockpiling of contaminated soil shall be allowed  
36 without prior Contractor approval. Stockpiles, if approved, shall be securely covered with 8-  
37 mil Visqueen, or similar approved material, to prevent erosion.  
38
- 39 Shoring and Bracing: The sides of all excavations shall be sloped or securely shored and  
40 braced in accordance with OSHA 29 CFR 1926, Subpart P.  
41
- 42 Control of Water: The Subcontractor shall furnish, install and operate the equipment required  
43 to keep surface water contained inside the contaminated soil boundary shown on the drawings

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## Appendix F

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1 by constructing temporary ditches, berms or other appropriate means of control. Water shall  
2 be allowed to infiltrate into the soil or used for dust suppression.

3  
4 Existing Utilities: There are existing utilities within the limits of the construction area. The  
5 utilities shall be identified by the Contractor and protected by the Subcontractor. The  
6 Subcontractor shall immediately notify the Contractor should any utilities be discovered  
7 during construction activities that are not shown on the design drawings. Any utility such as  
8 risers, manholes, shut off valves, etc., uncovered that interferes with excavation activities,  
9 shall be removed to a depth sufficient to be below the finished grade. The object shall be  
10 surveyed by the Contractor's Representative, then disposed at the direction of the  
11 Contractor's Representative.

12  
13 First Cut Excavation: First cut excavation shall be defined as the initial excavation of a  
14 designated area (ARA-01, ARA-12, and ARA-23). Included in this activity is surveying of  
15 excavation boundaries, mobilization, excavation of soil, loading, transport to the disposal  
16 facility, incidental dust control, control of storm water, and demobilization. Excavation areas  
17 are shown in the drawings. Estimated quantities are shown in the subcontract documents.

18  
19 Selective Excavation: Selective excavation shall be defined as any excavation from any area  
20 that has been previously excavated under this contract. This activity includes, but is not  
21 necessarily limited to mobilization, surveying and marking excavation boundaries, excavation  
22 of soil, loading, transport to the disposal facility, incidental dust control, control of storm  
23 water and demobilization. Excavations may include mechanical and manual methods.  
24 Estimated quantities are shown in the subcontract documents.

25  
26 Site Locations:

27  
28 ARA-01: ARA-I Chemical Evaporation Pond:

29  
30 This area is shown on drawing C-7. The contamination found in this area is Arsenic,  
31 Selenium, Thallium. The site contains a large basalt outcropping that covers  
32 approximately 15% of the excavation area.

33  
34 The "first cut excavation" shall be 3 inches in depth or to basalt outcropping,  
35 whichever is the lesser depth. Upon completion of the "first cut excavation",  
36 analytical sampling shall be performed by the Contractor. The Subcontractor may  
37 mobilize to another excavation area during the time for sampling and analysis. If the  
38 analytical sampling results indicate that the remedial action goals have not been met,  
39 the Contractor will identify the boundaries of any remaining contamination.  
40 Identification of boundaries shall take approximately 2 working days. At the direction  
41 of the Contractor, the Subcontractor will re-enter the area and perform "selective  
42 excavation" at 3 inch intervals or as directed by the Contractor until the Contractor's  
43 Representative has determined the contamination is below remedial action goals.  
44

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- 1      ARA-12: ARA-III Radioactive Waste Leach Pond:
- 2
- 3      This area is shown on drawing C-8. The contamination found in this area is Silver-
- 4      108m, Copper, Mercury, and Selenium. The site contains many large rocks (2 to 3
- 5      feet in diameter) that shall be removed and disposed with the contaminated soil.
- 6
- 7      The "first cut excavation" shall be 3 inches in depth or to basalt outcropping,
- 8      whichever is the lesser depth. Upon completion of the "first cut excavation",
- 9      analytical sampling shall be performed by the Contractor. The Subcontractor may
- 10     mobilize to another excavation area during the time for sampling and analysis. If the
- 11     analytical sampling results that indicate the remedial action goals have not been met,
- 12     the Contractor will identify the boundaries of any remaining contamination. Screening
- 13     and identification of boundaries shall take approximately 2 working days. At the
- 14     direction of the Contractor, the Subcontractor will re-enter the area and perform
- 15     "selective excavation" at 3 inch intervals or as directed by the Contractor until the
- 16     Contractor's Representative has determined the contamination is below remedial
- 17     action goals.
- 18
- 19     ARA-23: Hot Spot Inside the SL-1 Burial Ground:
- 20
- 21     This area is shown on drawing C-3. The contamination found in this area is Cesium-
- 22     137. The source of radiological contamination may be from the surface soils or from
- 23     highly contaminated material below the surface.
- 24
- 25     The "first cut excavation" shall be 6 inches in depth. Upon completion of the "first cut
- 26     excavation", a Contractor's Representative shall perform field screening to determine
- 27     the remaining contaminated area. Screening shall take approximately 2 days. Pending
- 28     the results of the radiological screening and at the direction of the Contractor, the
- 29     Subcontractor shall backfill the excavation with clean soil or perform "selective
- 30     excavation" at 3 inch intervals or as directed by the Contractor until the Contractor's
- 31     Representative has determined the contamination is below remedial action goals. The
- 32     Subcontractor shall perform all work inside the SL-I Burial Ground fence line with
- 33     small rubber-tired equipment or manual excavation.
- 34
- 35     ARA-23: Haul Road Leading to SL-1 Burial Ground:
- 36
- 37     This area is shown on drawing C-4. The contamination found in this area is Cesium-
- 38     137. This contamination likely is a result of material falling off of objects as they were
- 39     dragged to the SL-1 Burial Ground.
- 40
- 41     The "first cut excavation" shall be 6 inches in depth. Upon completion of the "first cut
- 42     excavation", a Contractor's Representative shall perform field screening to determine
- 43     the remaining contamination. If the results of the radiological screening indicate
- 44     remedial action goals have not been met, the Contractor will identify the boundaries of

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1 any remaining contamination. Screening and identification of boundaries shall take  
2 approximately 2 working days. The Subcontractor shall perform "selective  
3 excavation" at 3 inch intervals or as directed by the Contractor until the Contractor's  
4 Representative has determined the contamination is below remedial action goals.

5  
6 ARA-23: ARA-I Facility:  
7

8 This area is shown on drawing C-5. The potential contamination found in this area is  
9 Cesium-137, however, could not be identified due to highly contaminated material  
10 being stored in the area. Upon moving the stored material (by the Contractor), the  
11 Contractor will screen the ARA-I area and identify the areas for Subcontractor  
12 excavation. There is asphalt covering approximately 10% of the area.

13  
14 Once identified, the "first cut excavation" shall be 3 inches in depth within the limits of  
15 the ARA-I area. Upon completion of the "first cut excavation", a Contractor's  
16 Representative shall perform field screening on the excavated area. Pending the  
17 results of the screening, the soil may be deemed clean and no further excavation is  
18 required or deemed contaminated and the Subcontractor shall perform "selective  
19 excavation" at 3 inch intervals or as directed by the Contractor until the Contractor's  
20 Representative has determined the contamination is below remedial action goals. The  
21 screening shall take approximately 2 working days. For estimating purposes, the  
22 Subcontractor shall use the estimated quantities as identified on the design drawings  
23 for ARA-I excavation.

24  
25 ARA-23: ARA-II Facility:  
26

27 This area is shown on drawing C-5. The contamination found in this area is Cesium-  
28 137. There is asphalt covering approximately 50% of the area (assumed to be 4" to 6"  
29 thick). The contamination under the asphalt may be high. The existing reactor  
30 foundation is below the excavation depth and shall remain in its original location.

31  
32 The "first cut excavation" shall be 6 inches in depth. Upon completion of the "first cut  
33 excavation", a Contractor's Representative shall perform field screening to determine  
34 the remaining contaminated area. Pending the results of the radiological screening, the  
35 Contractor will re-survey the area to identify the boundaries of any remaining  
36 contamination. Screening and identification of boundaries shall take approximately 2  
37 working days. The Subcontractor shall perform "selective excavation" at 3 inch  
38 intervals or as directed by the Contractor until the Contractor's Representative has  
39 determined the contamination is below remedial action goals.

40  
41

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1 ARA-23: Soil Areas A and C:

2  
3 These areas are shown on drawings C-4 and C-6. The contamination found in this  
4 area is Cesium-137. These areas have been excavated approximately 3 inches during a  
5 1999 treatability study and the contaminated soil was stockpiled.  
6

7 In both areas, the Subcontractor shall completely remove the contaminated soil  
8 stockpiles. In Area C, the Subcontractor will remove 3 inches and 6 inches over the  
9 haul road area. In Area A, the "first cut excavation" shall be 3 inches in depth. Upon  
10 completion of the "first cut excavation," a Contractor's Representative shall perform  
11 field screening to determine the remaining contaminated area. Pending the results of  
12 the radiological screening, the Contractor will re-survey the area to identify the  
13 boundaries of any remaining contamination. Screening and surveying shall take  
14 approximately 2 working days. The Subcontractor shall perform further excavation at  
15 3 inch intervals or as directed by the Contractor until the Contractor's Representative  
16 has determined the contamination is below remedial action goals.  
17

18 ARA-23: All Other Areas:

19  
20 This area is shown on drawings C-2 through C-6. The contamination found in this  
21 area is Cesium-137. This contamination likely is in the top 3 inches. Due to the large  
22 size of the contaminated area, the Subcontractor shall limit excavation activities to  
23 plots no larger than 10 acres.  
24

25 The site contains many large rocks (1 to 2 feet in diameter) covering an area of 45,629  
26 square feet and an average depth of 2 feet (approximately 3380 cubic yards). The rocks  
27 shall be removed and disposed of with the contaminated soil.  
28

29 The "first cut excavation" of a plot shall be 3 inches in depth. Upon completion of the  
30 "first cut excavation", a Contractor's Representative shall perform field screening to  
31 determine the remaining contamination. The Contractor will re-survey the area to  
32 identify the boundaries of any remaining contamination. Screening and surveying shall  
33 take approximately 2 working days.  
34

35 During the field screening and re-surveying, the Subcontractor shall move to an adjacent plot  
36 and perform the "first cut excavation" of 3 inches.  
37

38 If required, the Subcontractor shall return to any plot and perform "selective excavation" at 3  
39 inch intervals or as directed by the Contractor until the Contractor's Representative has  
40 determined the contamination is below remedial action goals.  
41

42 This sequence shall continue until all soil within the limits of excavation have been cleared by  
43 the Contractor's Representative and dust control measures have been implemented.  
44  
45

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1 OBLITERATION OF ASPHALT:  
2

3 The Subcontractor shall obliterate all asphalt in the excavation boundaries. The material shall  
4 be delivered to the disposal facility with the excavated soils.  
5

6 BACKFILLING AND GRADING:  
7

8 General: Backfill requirements are anticipated to vary by site. The excavations shall be  
9 cleared of all trash and debris prior to backfilling or grading. Excavations that constitute a  
10 physical hazard as determined by the Contractor shall be backfilled. All backfill or fill material  
11 shall be free from trash, organic matter and frozen particles. Backfilling is required when the  
12 excavation depth is greater than 1 ft. from the original grade. Backfilling shall be done only  
13 when approved by the Contractor. Backfill material shall consist of pit run gravel and the top  
14 six inches of material being topsoil. In excavations that are shored, shoring and formwork  
15 shall be removed or raised as backfill or fill is placed. Areas where only the top 3 to 12 inches  
16 of soil are removed may not require backfill if the surface drainage can be maintained as to not  
17 allow ponding and there is sufficient topsoil to support revegetation. Disturbed areas  
18 identified as not supporting revegetation shall be backfilled with six inches of topsoil. Upon  
19 completion of excavation work at a designated area, the sides of all excavations not being  
20 backfilled shall be graded to a smooth contour (4:1 maximum slope). In all excavations,  
21 modifications to the site may be made by grading or other means to provide drainage of  
22 surface water from the site.  
23

24 Placement: Concentrated dumping of backfill material into excavations will not be permitted.  
25 All material must be placed in uniform layers not to exceed 8-in. loose measurement and  
26 brought up simultaneously. No water shall be used for placing, settling or compacting backfill  
27 or fill except to obtain optimum moisture content.  
28

29 Compaction: Unless otherwise indicated on the drawings or specifications, compact all  
30 backfill using 3 to 4 passes by mechanical devices such as rollers, vibratory compactors or  
31 mechanical tampers. Each 8-in., maximum, loose measurement lift shall be compacted before  
32 the next lift is placed thereon. Sections of backfill or fill failing to meet the minimum  
33 compaction requirements shall be corrected prior to placement of subsequent lifts.  
34

35 BORROW:  
36

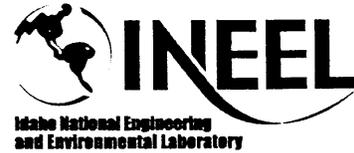
37 Borrow material shall be used as backfill as required. The location of select pit run gravel and  
38 topsoil is indicated in the Special Conditions.  
39

40 DECONTAMINATION:  
41

42 Decontamination of all Subcontractor equipment or tools shall be the responsibility of the  
43 Subcontractor. If after the Subcontractor has made every attempt to decontaminate an item,  
44 the Subcontractor and the Contractor's Representative determine that the Subcontractor was

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1 unsuccessful, the Contractor may elect to attempt decontamination. The Contractor  
2 decontamination shall be completed within 60 working days. If decontamination proves  
3 impracticable or impossible, General Provisions Article GP-24 will then be invoked.  
4

5 The decontamination activities will be performed within the contamination areas. RCT  
6 support will be provided by the Contractor when establishing these areas. All tools and  
7 equipment used by the Subcontractor will be initially decontaminated with dry methods using  
8 brooms, wire brushes and putty knives. If equipment has residual contamination after the  
9 initial dry decontamination efforts, it will be cleaned with low volume, high pressure water  
10 from a portable spray unit. The tools and equipment to be cleaned will be isolated in the  
11 decontamination pad. Any dry material and water used for decontamination efforts will be  
12 collected and disposed of at an approved facility. All water used for decontamination must be  
13 contained within the decontamination pad until it can be transported to the disposal facility for  
14 disposal. Upon completion of the removal action, the decontamination pad must be size  
15 reduced, transported, and disposed of at an approved facility.  
16

17 SOIL REMOVAL FROM BASALT OUTCROPPINGS:  
18

19 Contaminated soil may be in contact with basalt outcroppings. Where contaminated soil  
20 extends to the soil/basalt interface, the Contractor will remove contaminated soil from the  
21 rock outcroppings using methods including brooming and/or vacuuming.  
22

23 METHOD OF MEASUREMENT:  
24

25 Dust Control: Dust control will not be measured for separate payment.  
26

27 Clearing/Mowing Vegetation: Clearing vegetation will not be measured for separate payment.  
28

29 Pre-operational Test: Pre-operational testing will have no measurement.  
30

31 Utility Removal: Utility removal will not be measured for separate payment.  
32

33 First Cut Excavation: First Cut Excavation will be measured by the ton.  
34

35 Selective Excavation: Selective excavation will be measured by the ton.  
36

37 Obliteration of Asphalt: Obliteration of asphalt will not be measured.  
38

39 Backfill/Borrow: Backfill material including pit run gravel and topsoil will be measured by the  
40 cubic yard in its final in-place position. Measurement will be from field survey cross sections  
41 using the average end area method with no correction for curvature or soil expansion.  
42  
43

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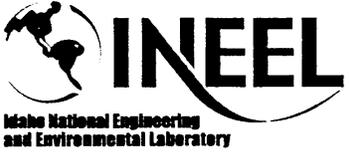
- 1 BASIS OF PAYMENT:
- 2
- 3 Dust Control: No separate payment will be made for dust control. It shall be included in the
- 4 unit price for excavation.
- 5
- 6 Clearing Vegetation: No separate payment will be made for clearing vegetation. It shall be
- 7 included in the unit price for excavation.
- 8
- 9 Pre-operational Test: No separate payment will be made for pre-operational testing. It shall
- 10 be included in the unit price for excavation.
- 11
- 12 Utility Removal: No separate payment will be made for utility removal. It shall be included in
- 13 the unit price for excavation.
- 14
- 15 First Cut Excavation: Payment will be made at the contract unit price per ton of material
- 16 removed. The payment shall be full compensation for all work associated therewith, including
- 17 but not limited to, pre-operational tests, surveying of excavation boundaries and topography,
- 18 clearing vegetation, excavation of soil and loose surface rock, loading, utility removal,
- 19 obliteration and removal of asphalt, decontamination required to clear the dump trucks out of
- 20 the excavation boundaries, incidental dust control, and control of storm water.
- 21
- 22 Selective Excavation: Payment shall be made at the contract unit price per ton of material
- 23 removed. The payment shall be full compensation for all work associated therewith, including
- 24 but not limited to, pre-operational tests, surveying of excavation boundaries and topography,
- 25 clearing vegetation, excavation of soil and loose rock, loading, utility removal, obliteration
- 26 and removal of asphalt, decontamination required to clear the dump trucks out of the
- 27 excavation boundaries, incidental dust control, and control of storm water.
- 28
- 29 Obliteration of Asphalt: No separate payment will be made for obliteration of asphalt. It shall
- 30 be included in the unit price for excavation.
- 31
- 32 Backfill/Borrow: Backfill/Borrow will be paid for at the contract unit price per cubic yard of
- 33 soil in its final in-place location. The cost shall include loading, hauling, grading and
- 34 compacting the material from onsite borrow pits to various excavation areas.
- 35
- 36 FIELD QUALITY CONTROL:
- 37
- 38 Topographic surveys may be conducted by the Contractor prior to the start and upon
- 39 completion of the excavation work to verify quantities. The Subcontractor shall provide
- 40 confirmatory final survey.
- 41
- 42 The Subcontractor shall be responsible to in-process inspection during execution of all work.
- 43 Surveillance will be performed by the Contractors Representative to verify compliance of the
- 44 work to the drawings and specifications.

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- 1
- 2 END OF SECTION 02200

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1 SECTION 02486--REVEGETATION

2

3 PART 1--GENERAL

4

5 SUMMARY:

6

7 Section Includes, but is not limited to:

8

9            Preparing seedbeds, sowing grasses, applying fertilizer, and applying a GFE wood chip  
10            mulch to revegetate disturbed sites.

11

12 Related Work:

13

14            02200--Earthwork

15

16 SUBMITTALS:

17

18 Seed mix certification: The Subcontractor shall submit seed mix certification for approval by  
19 the Contractor 8 days prior to revegetation.

20

21 Soil Analysis: The Subcontractor shall submit results of the soil and fertilizer analysis for  
22 approval by the Contractor 8 days prior to revegetation.

23

24 PART 2--PRODUCTS

25

26 MATERIALS:

27

28 Topsoil: Clean topsoil free from any toxic minerals, noxious weeds or other objectionable  
29 material.

30

31

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1 Seed Mix: The grass species shall be applied at the rate specified below.

2  
3  
4

The following grass mix shall be used for roadsides and all other disturbed areas:

Grass Mix	RATE OF APPLICATION (POUNDS PER ACRE PURE LIVE SEED)
SPECIES	
Indian Rice Grass "Rimrock" <i>(Achnatherum hymenoides)</i>	2
Thickspike wheatgrass "Bannock" <i>(Elymus lancolatus ssp. lanceolatus)</i>	2
Streambank wheatgrass "Sodar" <i>(Elymus lancolatus ssp. psammophilus)</i>	2
Bluebunch wheatgrass "Goldar" <i>(Pseudoroegneria spicata ssp. spicata)</i>	2
Munro globemallow <i>(Sphaeralcea munroana)</i>	1
Northern Sweetvetch <i>(Hedysarum boreale)</i>	1
Wyoming Big Sagebrush <i>(Artemisia tridentata ssp. wyomingensis)</i>	.5
Green Rabbitbrush <i>(Chrysothamnus viscidiflorus)</i>	.5
Total	11

5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21

Seed Mix Sources:

Approved dealers for the seed mixes are:

- Granite Seeds (801) 768-4422
- Grimm Growers (208) 785-0830
- Wind River Seed (307) 568-3361
- Maple Leaf (800) 287-3162.

Fertilizer: The Subcontractor shall perform a soil analysis of the soils at the ARA area disturbed by the construction and also of the identified borrow source for topsoil to determine the appropriate fertilizer mix and application rates for successful growth of the specified seed mix. The Subcontractor shall identify to the soil analysis laboratory that revegetation will be with native grasses. All costs associated with the soil analysis and fertilizer requirements shall be included in the subcontract price.

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1 Mulch: Mulch shall be processed wood chips supplied by the Contractor at no cost to the  
2 Subcontractor.

3  
4 EQUIPMENT:

5  
6 Seedbed Preparation: Disks, harrows, roller harrow-packers (culti-packers), tooth type  
7 harrows, shovels, or other similar equipment as required to prepare the seedbed.

8  
9 Seeding and Fertilizing: Brillion seeder, or similar approved equipment.

10  
11 PART 3--EXECUTION

12  
13 Season of Work: Seeding shall be done between October 1 and November 30. Areas to be  
14 seeded shall be maintained reasonably free of weeds. Weeds shall be kept from going to seed.

15  
16 Seedbed Preparation: Soil shall be tilled a minimum depth of 3 inches. The seedbed shall be  
17 firm below seeding depth and well pulverized and loose on top. It shall be free of clods and  
18 weeds. Seedbed preparation shall not be performed when soil conditions are not suitable for  
19 tilling; too dry, too wet, frozen, etc. Tillage shall produce cross-slope furrows on slopes.  
20 Note: seedbed preparation is not required in areas backfilled with topsoil from Rye Grass  
21 Flats.

22  
23 On areas subject to severe erosion, the extent of seedbed preparation shall not exceed that  
24 which can be seeded in one day.

25  
26 Fertilizing: Fertilizing shall closely follow seedbed preparation. Fertilizer shall not be mixed  
27 with seed. Fertilizer may be drilled or broadcast. Fertilizer shall be uniformly applied at a rate  
28 determined by the soil analysis.

29  
30 Seeding: Seeding shall closely follow fertilizing. If the seedbed has been disturbed, then the  
31 Subcontractor shall prepare the seedbed again. Seeding work shall not proceed until the  
32 seedbed has been inspected. Seeds shall be thoroughly mixed prior to application. Seeds shall  
33 be uniformly applied at the previously specified rate. Seeds shall be buried 0.25 to  
34 0.75 inches. Seeding shall not be performed when weather conditions are unfavorable: high  
35 wind, heavy rain, etc.

36  
37 Drilling shall maintain cross-slope furrows on slopes.

38  
39 Mulching: GFE wood chip mulch shall be spread uniformly at a rate of 15 to 17 tons per  
40 acre. Mulching shall not be performed when wind interferes with mulch placement.

41  
42 Protection: Traffic over the seeded area shall be prohibited by the Subcontractor during all  
43 work activities performed under this contract.

44

Identifier: SOW-691 Revision: 1 Page: F32 of F34	<b>STATEMENT OF WORK  REMEDIAL ACTION OF  CONTAMINATED SOIL SITES AT  WASTE AREA GROUPS 1,3,4,  AND 5</b>	
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### Appendix F

<b>Project Title:</b>	Waste Area Group 5 Remedial Design/Remedial Action - Phase II	<b>Project Number:</b>	020911
<b>Document Type:</b>	Construction Specifications	<b>Revision Number:</b>	2
<b>SPC Number:</b>	317		

- 1    METHOD OF MEASUREMENT
- 2
- 3    Revegetation: Revegetation will be measured by the acre using field survey.
- 4
- 5    BASIS OF PAYMENT
- 6
- 7    Revegetation: The accepted quantities of revegetation will be paid for at the contract unit
- 8    price per acre of revegetated area. This price shall include seedbed preparation, seeding,
- 9    mulching and anchoring, and fertilizing.
- 10
- 11   FIELD QUALITY CONTROL:
- 12
- 13   Surveillance will be performed by the Contractor's Representative to verify compliance of the
- 14   work to the drawings and specifications.
- 15
- 16   END OF SECTION 02486



Identifier: SOW-691 Revision: 1 Page: F34 of F34	<b>STATEMENT OF WORK  REMEDIAL ACTION OF  CONTAMINATED SOIL SITES AT  WASTE AREA GROUPS 1,3,4,  AND 5</b>	
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**Appendix F**

SUBCONTRACT NO. S- (IBD)

SCHEDULE "X"

The Government will furnish to the Subcontractor at no cost the equipment or material listed below. The equipment or material may be obtained by the Subcontractor at the time he is ready to make the installation in accordance with the provisions of the contract.

The items will be available only during normal working hours, and a 24-hour minimum advance notice (Saturdays, Sundays, and holidays excluded) to the Subcontracting Officer will be required.

Transportation costs shall be the responsibility of the Subcontractor.

Item No.	Description	Location	Reference	Approximate Cost	Date Available
1.	Wood Chip Mulch	CFA	Specification 02486	No Cost	Award of Contract

