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ORNL/ER-394

**ENVIRONMENTAL
RESTORATION
PROGRAM**

**Comprehensive Work Plan
for the Well Driller's
Steam Cleaning Facility
at Oak Ridge National Laboratory,
Oak Ridge, Tennessee**

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DEPARTMENT OF ENERGY

Energy Systems Environmental Restoration Program

**Comprehensive Work Plan
for the Well Driller's
Steam Cleaning Facility
at Oak Ridge National Laboratory,
Oak Ridge, Tennessee**

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Oak Ridge, Tennessee 37831
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APPROVALS

Comprehensive Work Plan for the Well Driller's Steam Cleaning Facility
at Oak Ridge National Laboratory, Oak Ridge, Tennessee
(ORNL/ER-394)

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PREFACE

The *Comprehensive Work Plan for the Well Driller's Steam Cleaning Facility at Oak Ridge National Laboratory, Oak Ridge, Tennessee*, ORNL/ER-394, was prepared as a summary of activities that need to be performed to close the Oak Ridge National Laboratory Well Driller's Steam Cleaning Facility. This work will be performed under Work Breakdown Structure 1.4.12.6.1.14.01.04.50.15 (Activity Data Sheet 3300W). This document addresses the history of the site as well as the scope, roles and responsibilities, documentation, training, environmental compliance requirements, and field actions needed to close the facility.

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1. INTRODUCTION

1.1 PURPOSE

The purpose of this Comprehensive Work Plan is to address the history of the site as well as the scope, roles and responsibilities, documentation, training, environmental compliance requirements, and field actions needed to close the Oak Ridge National Laboratory (ORNL) Well Driller's Steam Cleaning Facility, hereinafter referred to as the Facility.

1.2 SITE HISTORY

The Facility was constructed in 1989 to provide a central area suitable to conduct steam cleaning operations associated with cleaning drilling equipment, containment boxes, and related accessories. Three basins were constructed of crushed stone (with multiple plastic and fabric liners) over a soil foundation to collect drill cuttings and wastewater generated by the cleaning activities. An operating permit was obtained from the Tennessee Department of Environment and Conservation in 1994 to cover the release of wastewater generated during steam cleaning activities. Refer to Fig. 1 for site location and details.

Well drilling activities and, subsequently, cleaning of equipment gradually declined and were discontinued in 1996. The operating permit was terminated in September 1996. Sampling and analysis undertaken per the operating permit indicate that the sediments are contaminated with some hazardous constituents and radionuclides. Additionally, review of the facility operations and further review of the analytical data indicates that the sediments are not Resource Conservation and Recovery Act of 1976 (RCRA) wastes. Given the relatively low concentrations of the aforementioned hazardous substances, the contaminated sediments are currently believed not to pose a hazard to human health or the environment. Therefore, closure of the basins with the sediments in place is deemed both a protective and cost-effective approach. In addition, the facility is considered a solid waste management unit under the Hazardous and Solid Waste Amendments of 1980 (HSWA) permit for the Oak Ridge Reservation and is included on the list of solid waste management units for ORNL (ref #79). Although it is unlikely, any release from this unit could, if necessary, be addressed pursuant to the HSWA permit and Federal Facility Agreement for the Oak Ridge Reservation under the Comprehensive Environmental, Response, Compensation, and Liability Act of 1980 (CERCLA).

1.3 SCOPE

The scope of this task will be to demolish the Facility by using a bulldozer and backhoe to recontour and dismantle the area.

The recontouring and dismantling operation will be complete when the area has been adequately graded to ensure positive drainage. Areas where soil is present will be hydroseeded to provide for a grass cover. Some additional crushed stone will be used in the crushed stone areas for erosion control.

Fig. 1. ORNL Well Driller's Steam Cleaning Facility.

2. ROLES AND RESPONSIBILITIES

The following participants will be involved in this task with corresponding responsibilities:

- Environmental Restoration Program will provide project management and prepare needed documentation, site sketches, and related information;

- Waste Management Operations will collect and treat the basin water;
- Plant & Equipment or Service Contractor forces will perform recontouring and demolition activities;
- ORNL Radiation Protection will provide Health Physics coverage;
- ORNL Environmental Compliance will provide environmental oversight support;
- Safety Health Evaluation Support Team will provide health and safety oversight support; and
- Environmental Restoration Waste Certification Office will coordinate waste disposal activities.

3. DOCUMENTATION

This project will be performed as a routine maintenance action. No RCRA or CERCLA documentation will be prepared. The following limited project documents will be prepared to cover this task:

- Project Waste Management Plan,
- National Environmental Policy Act,
- Hazardous Waste Operations and Emergency Response (HAZWOPER) (Health and Safety Plan and Comprehensive Work Plan),
- Safety Review,
- Davis/Bacon Statement,
- Excavation/Penetration Permit,
- Quality Assurance Evaluation,
- Best Management Practices Plan,
- Readiness Assessment,
- Schedule,
- Cost Estimate,
- Design Sketch, and
- Relevant Engineering Standards.

4. FIELD ACTIVITIES

4.1 SITE PREPARATION

First, silt fencing will be upgraded, and straw bales will be added to control erosion during the field activities. Second, wastewater and rainwater currently stored in the three basins will be pumped out and transferred to the Process Waste Treatment Facility for treatment. Third, a

backhoe bucket will be used to punch holes sporadically in the basin liners. Last, the existing drain lines will be cut into sections and disposed of in the bottom of the basins.

4.2 RECONTOURING

A D-8 bulldozer will be used to recontour and compact the noncontaminated soil and crushed stone from on-site and adjacent areas to fill in the basins and develop a sloped configuration to provide positive drainage. The soil and crushed stone material will be compacted into 8–10 in. lifts to provide for adequate compaction. Existing liners will be perforated and left in place or destroyed by the bulldozer during the recontouring process. None of the sediments presently contained in the basins will be removed. However, at least 1 ft of noncontaminated material (soil with small amounts of crushed stone) will cover the entire area where the basins currently exist.

5. TRAINING AND PERSONAL PROTECTIVE EQUIPMENT

Because of the potential presence of low-level radioactive and chemical contamination, it will be necessary to use specially trained personnel to perform the field operations. The following training will be required for this task:

- Radiological Worker II,
- General Employee Training,
- 40 hour HAZWOPER,
- Medical Evaluation,
- Respirator Fit Test, and
- Bioassay (whole body count and urinalysis).

The following personal protective equipment may be required for field operations involving suspect contamination conditions if directed by Health Physics:

- Cotton or TYVEK coveralls,
- Rubber or cotton gloves,
- Steel-toed work boots,
- Hard hats and safety glasses, and
- Respirator with combination cartridge.

Only hard hats, steel-toed work boots, and safety glasses will be required for normal nonhazardous field operations.

6. ENVIRONMENTAL COMPLIANCE ACTIVITIES

6.1 WASTE DISPOSAL

Liquid and solid waste generated during site activities will be handled in accordance with the approved Project Waste Management Plan. As a general rule, the following guidelines will be followed:

- Sanitary waste generated at the site (e.g., trash, boxes) will be collected and disposed of into green dumpsters;
- All Category II radiologically contaminated soil and debris (including the cut up drain line) will be left on-site to be covered with at least 1 ft of noncontaminated material as allowed by *Health Safety and Environmental Protection Procedure for Excavation Operations*, M-116, Rev. 1;
- Liquid waste will be pumped into 5000-gal MC312 tankers and transported to and treated at the Process Waste Treatment Facility; and
- Contaminated solid waste (e.g., personal protective equipment, wipes) will be segregated, placed into 55-gal drums, and properly disposed of by Waste Management Operations forces.

6.2 CONTROL OF CONTAMINATED EQUIPMENT

A D-8 bulldozer, backhoe, and hand tools will be used on this project. At the end of each work day, equipment and tools will be surveyed by Health Physics, and any loose Category II contaminated material will be removed and contained in the basins. When site work is complete, all equipment and tools will be decontaminated before being released from the project.

6.3 SPILL PREVENTION PLAN

The following spill response equipment will be held on-site for spill control and cleanup:

- 55-gal waste containers,
- plastic sheeting and berm materials for storing contaminated equipment,
- shovel,
- absorbent wipes, and
- "kitty litter."

Spill prevention is the responsibility of each worker. Personnel are to conduct their daily activities such that spills of hazardous materials, including fuels and lubricating oils, are prevented. Each worker is to report spills of hazardous materials to the Site Superintendent as soon as possible and take action to minimize the spread of the spill immediately following discovery. Field personnel should be trained in spill control and cleanup and should assist as necessary to control and clean up spills.

The Site Superintendent is responsible for ensuring that the following actions are taken:

- Spill control materials are on-site and available for use for those hazardous materials that are brought on-site;
- Equipment is properly staged and stored to minimize the potential for spills of hazardous materials during storage or use;
- Wastes are collected, containerized, and stored as described in this section to minimize the potential for spills from any stored wastes;
- Full waste containers are removed from the site by Waste Management Operations forces as soon as possible, thus minimizing the spill potential from the stored wastes; and
- Timely and proper action is taken to contain and clean up reported spills.

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