

2.0 DESCRIPTION OF THE PROPOSED ACTION

The following subsections describe the basic elements of preparing for and conducting the ATCD Project. Major elements of the project are summarized in Section 1.1.1. Figure 2-1 illustrates the layout of the C tank farm and the location of tank C-106.

The ATCD Project has been developed to demonstrate regulatory and technical aspects of component closure actions in such a way that would not eliminate future closure decision options. The ATCD Project is consistent with the intent of 40 CFR 1502.4(c)(3) and 10 CFR 1021.212 concerning research, development, demonstration, and testing projects.

2.1 MOBILIZATION AND STAGING OF EQUIPMENT

A staging area for the ATCD Project would be established near the northeast corner of C tank farm in a previously disturbed area. Equipment for materials storage, and delivery of engineered fill materials would be trucked to the site and set up in a designated fenced area of 4,000 m² (one acre) or less. Trailers for contractor personnel also would be provided. Fill material produced offsite would be trucked in to the C tank farm. All contractor equipment and facilities would be located in this disturbed area.

2.2 SITE PREPARATION

The staging area would require limited preparation because of the relatively level topography in the 200 East Area around C tank farm. Fencing would be provided around the contractor facilities. Water and power would be provided from existing onsite sources, and temporary connections would be made to these services.

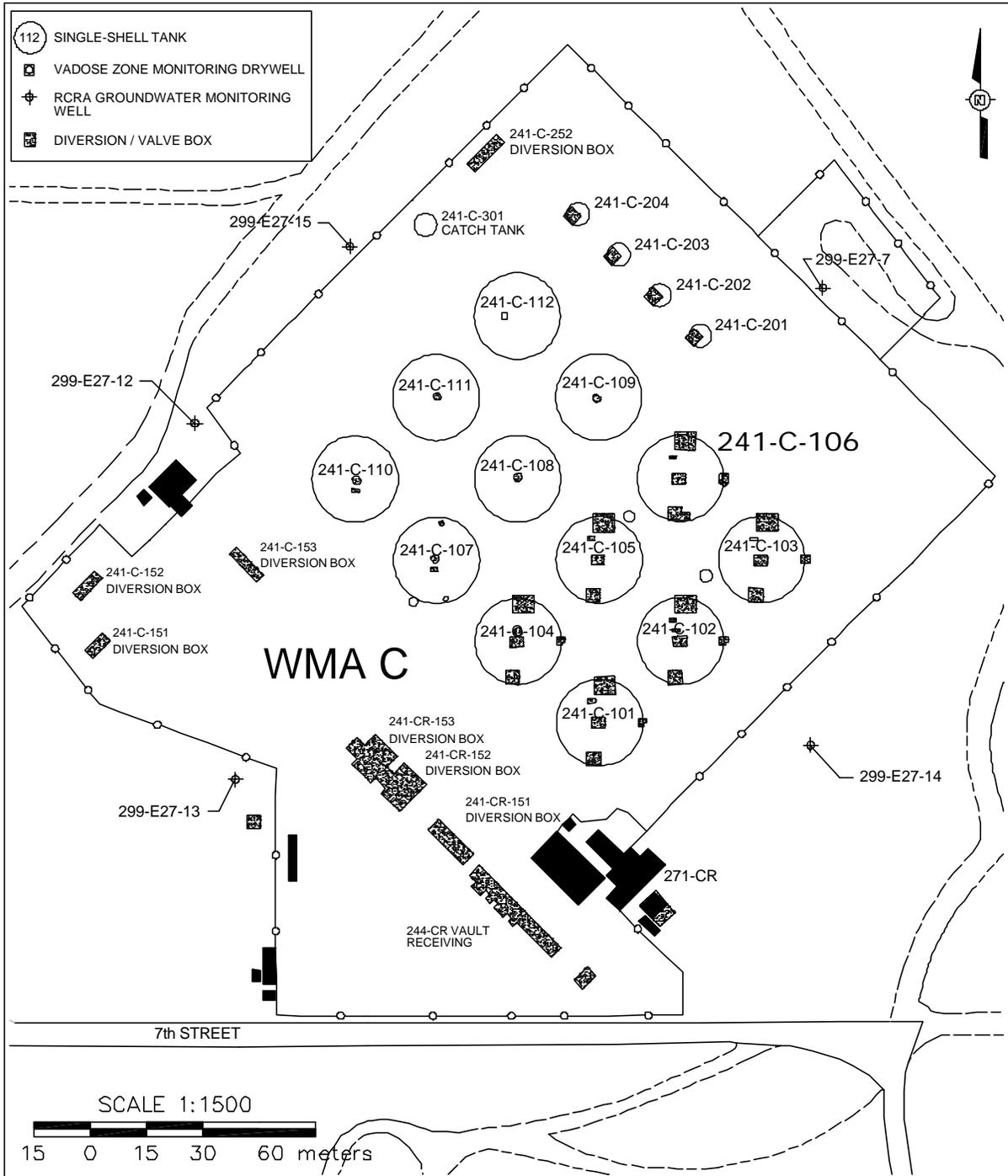
2.3 TANK PREPARATION

The existing tank farm work force including health physics technicians, nuclear operators, crane and rigging personnel, and other trained personnel would provide support for the project. Tank farm work forces would be used to pull cover blocks and gain tank access through the existing risers. Some internal tank equipment placed in risers would be removed and placed in burial boxes for disposal in an approved onsite solid waste disposal facility. No new penetrations or modifications of existing penetrations into the top of the tank are required. Technologies used in tank preparation operations would involve bulk material handling, video camera support, and remote testing and monitoring (e.g., heat generation measurement).

2.4 TANK WASTE RETRIEVAL

Retrieval will follow the HFFACO processes and requirements. The impacts of waste retrieval options, which could include the use of an acid wash, are not evaluated in this EA because retrieval actions were previously evaluated in the TWRS EIS and DOE/EIS-0189-SA3.

Figure 2-1. Location Map of WMA C and Surrounding Facility



2.5 RESIDUAL WASTE STABILIZATION

It is estimated that between 30 and 90 cm (12 to 36 in.) of high-strength grout (~126 to 380 m³ or ~160 to ~500 yd³) would be placed in C-106 as part of the Phase I fill demonstration. This volume assumes that the Phase I fill volume required for waste heel stabilization is a minimum of 30.5 cm (12 in.) deep in a flat-bottomed tank. To evaluate the grout behavior around in-tank equipment during placement, additional grout will be placed in C-106. The actual volume of fill may vary depending on the height of the waste heel and the height of equipment present. Phase II tank fill would involve placement of material that would fill the majority of the void space in the tank and provide structural support to the tank. Phase III fill would be a very high strength material that would fill the remaining tank volume. Prior to the placement of any fill material in C-106, DOE has committed to review the success of the tank waste retrieval efforts with Ecology. Placement of the Phase I grout would not commence until Ecology and DOE have concurred that retrieval goals had been satisfied.

The ATCD Project can provide more applicable information that will be consistent with the alternatives being evaluated in the Tank Closure EIS if a specially formulated grout is placed as a Phase I fill material. The Tank Closure EIS will evaluate landfill and clean closure alternatives of the single-shell tank farm systems. The basic landfill closure alternative consists of adding grout in layers into retrieved tanks. Phase I grout addition will be composed of a free-flowing grout with possible addition of sequestering agents (getters) for one or more contaminants of concern (CoCs). The Phase II layer will provide structural stability and fill the majority of the tank volume. The Phase III fill will be a high compressive strength grout that could add a benefit of protection to an inadvertent intruder by providing an obvious layer that would resist drilling activities to the extent that the inadvertent driller would likely move away from the tank area.

Savannah River Technology Center (SRTC) is working on the tank fill formulation and placement that will be incorporated into a vendor specification. (WSRC-RP-2003-00341) The SRTC development program will recommend a grout formula based on variables such as compressive strength, flow, gel time, set time, bleed water, air content, hydraulic conductivity, porosity and the applicability of incorporating sequestering agents. In addition, testing of various grout/sequestering agent formulas for waste components, such as Tc-99, is planned to provide additional immobilization of wastes, if determined to be necessary in the future for other tanks. This latter testing, being conducted at Sandia National Laboratories, will be conducted in the laboratory and is not a part of the C-106 in-tank demonstration project (SNL, 2003).

Tank fill operations would be monitored with in-tank remote video cameras to ensure placement in accordance with construction requirements and specifications. A video inspection would be performed to document and assess the residual waste volume remaining in the tank for closure. Other methods (e.g., topographical mapping systems) may be used to demonstrate and/or reduce uncertainty with residual waste volume estimates.

As previously noted, the ATCD Project will provide information to evaluate component closure methods as part of preliminary engineering or final design activities. Approved methods will be stated within the closure plans that are currently being negotiated with Ecology. Adaptation of these requirements will undergo further stakeholder and public reviews as part of planned

modifications to the Hanford sitewide RCRA permit. Placement of fill material to the tank dome to stabilize the tank structure and enhance long-term performance may be done at a later date, pending the outcome of the Tank Closure EIS.

2.6 TANK AIR FILTRATION SYSTEM

The ATCD Project would not generate any substantial increase in air emissions. A portable air filtration system would be used to control any toxic or radioactive air emissions from C-106 during the period it is open for waste stabilization activities as required by regulations or permits.

2.7 DECONTAMINATION AND DISPOSAL OF EQUIPMENT

Contaminated equipment removed from the tank would be disposed as solid waste in an approved onsite facility. Fill equipment removed from the tank may be cleaned using water, and decontamination water would be collected and disposed using permitted wastewater treatment systems.

2.8 STAGING AREA CLEANUP AND DEMOBILIZATION

Upon completing the ATCD Project, the contractor would dismantle and move equipment offsite and the site would be returned to pre-construction conditions.

2.9 TANK ISOLATION

The current approach for isolating tanks from water intrusion or inadvertent waste transfer would be employed following component closure activities. This includes sealing off drain lines to tanks or tank risers and waste transfer lines entering above-tank pits. It also includes spraying a foam coating over above-tank pits to eliminate rainwater intrusion. This method of tank isolation would be maintained until final tank farm closure.

2.10 POSTCLOSURE SURVEILLANCE AND MONITORING

This section describes activities DOE will undertake to provide care for C-106 between the time DOE completes component closure activities and the time DOE closes Waste Management Area (WMA) for the C tank farm (WMA C). While conducting closure actions under HFFACO schedules of compliance and permit requirements, the tank systems must continue to comply with interim status technical standards.

DOE will maintain control over WMA C for the foreseeable future. Roadways to the unit and site access will remain administratively restricted to use by authorized personnel only. Posted warning signs restrict access from the Columbia River. A chain-link fence surrounds WMA C. The 200 Areas are under 24-hour security surveillance. DOE will inspect security systems and controls on a routine basis.

The current vadose zone and groundwater monitoring programs will continue after component closure actions. Current restrictions ensuring that groundwater is not used as a drinking water source in the 200 Areas will continue after component closure actions.

Isolation of C-106 from water intrusion will be continued pending WMA C closure. Isolation techniques include sealing surface risers and tank pits with bolted or welded flanges for risers and spray foam coating for pits.

Activities following component closure actions will include inspection and maintenance of institutional controls, tank C-106 and its ancillary equipment, and the groundwater monitoring system.

2.11 RESEARCH, DEVELOPMENT, DEMONSTRATION, AND TESTING UNDER NEPA

10 CFR 1021.212 (b) states, “For any proposed program described in paragraph (a) of this section, DOE shall begin its NEPA review (if otherwise required by this part) as soon as environmental effects can be meaningfully evaluated, and before DOE has reached the level of investment or commitment likely to determine subsequent development or restrict later alternatives, as discussed at 40 CFR 1502.4 (c)(3).”

DOE, in conducting the ATCD Project, does not undertake an action that determines subsequent development or restricts alternatives for tank closure. DOE retains the capability to conduct either a landfill closure or clean closure of C-106.

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