


EXHIBIT D
SCOPE OF WORK

0	1/26/99	Issued for Use				
REV	DATE	REASON FOR REVISION	ORIGINATOR	CHECKER	LEAD ENGINEER	PROJ. ENGR/ES
 Bechtel Jacobs Company LLC ENVIRONMENTAL MANAGEMENT - MANAGEMENT & INTEGRATION PROJECT			JOB NO.			
			SCOPE OF WORK NO.:			
			SHEET 1 of			

DE01456-1.doc

EXHIBIT D SCOPE OF WORK

1.0 General

This Scope of Work includes providing all personnel, facilities, equipment, material, supplies, vehicles, and services as required for the treatment of low-level mixed liquid waste to meet the LDR treatment standards and Waste Acceptance Criteria (WAC) of the disposal sites. The work also includes the packaging of treated waste and any secondary or tertiary wastes generated during the treatment process and all waste transportation as needed from the Seller's facilities to the disposal site.

The liquid mixed wastes to be treated include waste from various Government sites. The wastes may contain primarily listed hazardous wastes and/or characteristically hazardous wastes. In addition, some of the wastes have come in contact with poly-chlorinated biphenyls (PCBs) at a concentration greater than 50 parts per million (ppm) and therefore are regulated under Toxic Substances Control Act (TSCA). All the wastes contain or are contaminated with one or more radioactive elements.

In general, the wastes consist of elemental mercury and liquid aqueous and organic RCRA non-wastewaters. The elemental mercury will require amalgamation and may contain small quantities of organics and other metals that could affect the amalgamation process. The aqueous and organic wastes are expected to consist of low-level, contact-handled liquids all of which are contaminated with organic constituents alone, or organic constituents and RCRA metals. The predominant waste codes in the aqueous and organic wastes will be D001 through D011 and F001 through F009. Additional codes that are expected include D018 through D043 and those listed codes that may need similar treatment technology. PCBs, at levels requiring regulation under TSCA, may be present in this waste. Cyanide levels in the raw waste may exceed 30 mg/L (amenable) and 590 mg/L (total). The radionuclides in the raw waste will be at levels that, after treatment, will be acceptable for disposal and consist of radioactive elements that are accepted for disposal at the disposal facility currently under contract to the USDOE.

2.0 Work Included

Specific Work tasks included in this Subcontract are as follows:

2.1 Transport Waste from Contractor's Facilities to Treatment Facility

Transport containerized waste from the staging areas of Contractor's facilities to the required treatment facility. Contractor will characterize the waste sufficiently to ensure it meets DOT shipping requirements and the WAC of the treatment facility.

2.2 Perform First Article Tests

Two First Article Tests will be required. One test will be performed on Liquid Aqueous and Organic Low-level RCRA non-wastewaters and the second test will be on Elemental Mercury. The FAT must be started within 25 weeks after the subcontract award.

After the SUBCONTRACTOR has obtained all required permits, authorizations, and licenses; submitted copies to the CONTRACTOR; completed and passed the Treatment Storage Disposal and Recycle (TSDR) facility audit; then the SUBCONTRACTOR is eligible to receive FAT quantities of waste. Actual FAT will be authorized to commence under the Agreement and shall be at the same price per kg as the production quantities.

FAT quantities will be offered from what is available for treatment and these materials will be within the treatment category definition presented. At least ten (10) calendar days prior to the start of FAT treatment and approval testing, the SUBCONTRACTOR shall submit written notification to the CONTRACTOR Subcontract Technical Representative giving the time and location of this treatment and testing so the CONTRACTOR may witness these activities, if it so elects.

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For the FAT, if the SUBCONTRACTOR's process is batch mode, the SUBCONTRACTOR shall treat enough raw waste to treat the entire first shipment or produce at least two separate batches or process runs. If the process is continuous operation mode, enough raw waste must be processed during the FAT to treat the entire first shipment or be equivalent to two separate shifts or two different days (a shift or day is eight hours) of normal process operations. If continuous operation requires that the system reach steady state before optimum treatment is accomplished, the entire first shipment or enough raw waste must be treated to produce a steady state final product for each process run.

The SUBCONTRACTOR shall perform the FAT using the same facilities, systems, equipment, method of treatment, technology, and personnel that are planned for full production processing. These planned facilities must meet the throughput requirements to accomplish treatment of minimum specified amounts within the Agreement period. The same method for container handling, delidding, emptying, blending, transfer, packaging, final waste form characterization, and waste management, described in the Project Plan for full production treatment, shall be used for the FAT. Also, all FAT activities shall adhere to all aspects of sampling, testing, inspection, safety, and quality plans that were submitted to the CONTRACTOR.

The SUBCONTRACTOR shall sample, characterize, and inspect each container or package of treated waste produced during the FAT. All treated FAT material must be accepted for disposal by the disposal contractor, as evidenced by acceptance of approved profile sheets by the disposal site and furnished to the Subcontract Technical Representative or accepted for resale prior to approval of the FAT.

Within 30 calendar days after acceptance of the approved profile sheets at the disposal facility, the SUBCONTRACTOR shall submit for review to the Subcontract Technical Representative, a First Article Test Report that describes all aspects of FAT treatment, processing, and testing. The technology, method of treatment, packaging, sampling, testing, characterization, and inspection performed during all FAT activities shall be discussed.

After all FAT material has been accepted for final disposition and DOE has completed the NEPA documentation process (proposers are required to support DOE in the NEPA process), permission will be given, in the form of a written letter, to the SUBCONTRACTOR for full production treatment operations of the raw waste covered by the FAT to commence. The SUBCONTRACTOR will be compensated for waste treated during the FAT on the same per unit basis as full production processing.

If by his actions, the SUBCONTRACTOR is unable to start the FAT within 25 weeks from subcontract award, or if the final product does not meet the disposal contractor's WAC or is not accepted for resale and the FAT is determined unsuccessful, the SUBCONTRACTOR will not be allowed to start production treatment of the awarded grouping of waste. All raw waste and any unsuccessfully treated waste shall be returned to the origin site at the SUBCONTRACTOR's expense. All characterization data, test results, file data, and project records shall be turned over to the CONTRACTOR as information necessary to place the waste in compliant storage at the origin site. The SUBCONTRACTOR must return the waste in a condition that meets the storage WAC of the origin site. The SUBCONTRACTOR will not be paid for an unsuccessful FAT.

2.3 Treat and Dispose of Treated Waste

Upon successful completion of FAT, Subcontractor shall treat and dispose of remaining waste population. The waste must be treated to meet the applicable regulatory requirements and the WAC of the disposal site. Upon completion of treatment, the waste shall be packaged and transported to the disposal site.

WASTE DESCRIPTION

- A. The low-level and mixed wastes to be treated may include waste from various Government sites that fit one of the treatment categories listed below. The wastes may contain primarily listed hazardous wastes and/or characteristically hazardous wastes. In addition, some of the wastes have come in contact with poly-chlorinated biphenyls (PCBs) at a concentration greater than 50 parts per million (ppm) and therefore are regulated under Toxic Substances Control Act (TSCA). All the wastes contain or are contaminated with one or more radioactive elements.

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B. In general, the wastes are aqueous liquids or elemental mercury. The aqueous wastes may carry a multitude of EPA waste codes and may be contaminated with PCBs and have their own unique chemical and physical properties.

C. The treatment categories of low-level and mixed waste are as follows:

- Liquid Aqueous and Organic Low-level RCRA non-wastewaters

The waste offered for treatment is generally expected to consist of low level, contact-handled liquids all of which is contaminated with organic constituents alone, or organic constituents and RCRA metals. The predominant waste codes in this category will be D001 through D011 and F001 through F009. Additional codes that are expected include D018 through D043 and those listed codes that may need similar treatment technology. PCBs, at levels requiring regulation under TSCA, may be present in this waste. Cyanide levels in the raw waste may exceed 30 mg/L (amenable) and 590 mg/L (total). The radionuclides in the raw waste will be at levels that, after treatment, will be acceptable for disposal and consist of radioactive elements that are accepted for disposal at the disposal facility currently under contract to the USDOE.

- Elemental Mercury

The waste offered for treatment consists of low-level elemental mercury. The mercury may be contained in glass or plastic bottles or in manometers, thermometers, mercury switches, etc. The radionuclides in the raw waste will be at levels that, after treatment, will be acceptable for disposal and consist of radioactive elements that are accepted for disposal at the disposal facility currently under contract to the US DOE.

- Liquid Low-Level RCRA Wastewaters

The waste offered for treatment is generally expected to consist of low level, contact handled liquids all of which is contaminated with organic constituents alone, or organic constituents and RCRA metals. The predominant waste codes in this category will be D001 through D011 and F001 through F009. Additional codes that are expected include D018 through D043 and those listed codes that may need similar treatment technology. PCBs, at levels requiring regulation under TSCA, may be present in this waste. Cyanide levels in the raw waste may exceed 0.86mg/L (amenable) and 1.2mg/L (total). The radionuclides in the raw waste will be at levels that, after treatment, will be acceptable for disposal and consist of radioactive elements that are acceptable for disposal at the disposal facility currently under contract to the USDOE.

3.0 Work Not Included

- Characterization/packaging of waste for shipment to the treatment facility in accordance with DOT regulations
- Loading waste containers on trucks at Contractor's facilities
- Writing manifests for the waste from the Contractor's facilities to the Treatment facility
- Treating and/or disposing of waste that does not meet Subcontractors WAC

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