

5. REGULATORY REQUIREMENTS

5.1 Applicable or Relevant and Appropriate Requirements

The ARARs are substantive environmental requirements, cleanup standards, and standards of control that must be addressed as part of a treatability study. Compliance with administrative requirements such as permitting and reporting requirements is not required for CERCLA actions. An ARAR may either be applicable or relevant and appropriate, but not both. Applicable requirements are those requirements promulgated under federal or state law that specifically address a circumstance at the CERCLA site. Relevant and appropriate requirements are those requirements that address problems or situations similar, but not applicable, to conditions at the CERCLA site.

Applicable or relevant and appropriate statutes include those established by the EPA and other federal agencies and those established by the State of Idaho.

Five federal acts (or their state counterparts) typically comprise the basis for ARARs on CERCLA cleanup projects: (1) the Safe Drinking Water Act (SDWA), (2) the Clean Water Act (CWA), (3) RCRA, (4) the Clean Air Act (CAA), and (5) the DOE regulations included in Title 10 of the CFRs. The applicability of the specific requirements of these acts to this project include:

- The SDWA and CWA requirements are not applicable to this treatability study. Groundwater will be assessed through individual WAG comprehensive RI/FS actions or has already been covered by appropriate RODs.
- The RCRA requirements that apply to this action include 40 CFR 261.2, 261.3, 261.4, 262.11, and 264.13. These requirements address solid and hazardous waste definitions, determinations, and characterization.
- While the CAA does not provide specific ARARs, 40 CFR 61 was promulgated to enforce provisions of the CAA and Subpart H that contains a standard regulating the release of airborne radionuclides from DOE facilities. This was included in the ARARs assessment.
- The 10 CFR requirements for DOE facilities and radionuclides apply to this treatability study. However, there are no substantive requirements addressing radionuclide-related requirements in the promulgated DOE regulations.

Many federal and state programs have developed criteria, advisories, guidelines, or proposed standards that do not meet the definition of ARARs because they are not promulgated or enforceable. These criteria, advisories, guidelines, and proposed standards are called "to be considered" items, and may be useful in developing or carrying out remedial action alternatives. The DOE orders are "to be considered" items. The use of "to be considered" items is discretionary and not mandatory.

The ARARs for this treatability study are presented in Table 5-1.

Table 5-1. Applicable or relevant and appropriate requirements.

Category	Regulatory Requirement	Status	Affected Activity	Compliance Strategy
Solid and Hazardous Waste Definition	IDAPA* 16.01.05.006 (40 CFR 261.2, 261.3, and 261.4) These regulations provide the requirements to determine if a material is a solid waste, if a waste is hazardous, and noted exclusions.	Applicable	Waste definition/classification	Using these regulations, a determination of solid waste status will be made, followed by a hazardous waste determination for all waste streams.
Hazardous Waste Determination/Characterization	IDAPA 16.01.05.006 (40 CFR 262.11) A generator of a solid waste must determine if the waste is hazardous.	Applicable	Waste determination	A hazardous waste determination for all waste streams will be performed based on sampling and analysis data and/or process knowledge.
Air	40 CFR 61, Subpart H National Emission Standards for Hazardous Air Pollutants, Radionuclide Emissions Establishes emission limits for radionuclides. The standards limit emissions or control activities associated with air pollutants.	Applicable	Earthmoving activities	Standard dust suppression methods will be used to minimize dust emissions. These include the use of water as a dust suppressant, tarps to cover trucks, and application of dust suppressant and/or covers for stockpiles. Calculations of potential emissions will be performed and included in INEEL annual emissions calculations, which must be less than 10 mrem/yr for the INEEL.
Air	IDAPA 16.01.01.577(01)(a) The concentration of particulate matter (PM ₁₀) in ambient air shall not exceed 50 mg/m ³ (annual arithmetic mean) or 150 mg/m ³ (24-hour average concentration).	Relevant and Appropriate	Earthmoving activities	This requirement is for point sources. Earthmoving activities are not point sources; therefore, it is relevant and appropriate at best. Standard dust suppression methods will be used to minimize dust emissions. These include the use of water as a dust suppressant, tarps to cover trucks, application of dust suppressant and/or covers for stockpiles, and discontinuation of work in excessively high winds. Preaction calculations will be performed for inclusion in calculating the INEEL prevention of significant deterioration increments.
Air	IDAPA 16.01.01.651 All reasonable precautions shall be taken to prevent particulate matter from becoming airborne. In determining what is reasonable, consideration will be given to factors such as the proximity of dust emitting operations to human habitations and/or activities and atmospheric conditions that might affect the movement of particulate matter.	Applicable	Earthmoving activities	Standard dust suppression methods will be used to minimize dust emissions. These include the use of water as a dust suppressant, tarps to cover trucks, application of dust suppressant and/or covers for stockpiles, and discontinuation of work in excessively high winds.

Table 5-1. (continued).

Category	Regulatory Requirement	Status	Affected Activity	Compliance Strategy
Air	<p>DOE Order 5400.5, Chapter II(1)(b)</p> <p>The total effective dose equivalent to members of the public is limited to 10 mrem/yr from radioactive materials released to the atmosphere.</p>	To Be Considered	Earthmoving activities	<p>Standard dust suppression methods will be used to minimize dust emissions. These include the use of water as a dust suppressant, tarps to cover trucks, application of dust suppressant and/or covers for stockpiles, and discontinuation of work in excessively high winds.</p> <p>Calculations of potential emissions will be performed and included in INEEL annual emissions calculations.</p>
Stormwater Control	<p>40 CFR 122.26</p> <p>National Pollutant Discharge Elimination System, stormwater management requirements.</p> <p>IDAPA 20.03.02.140(01)</p> <p>Appropriate best management practices for nonpoint source sediment controls shall be designed, constructed, and maintained to achieve state water quality standards and protect existing beneficial uses of adjacent surface waters.</p>	Applicable	Earthmoving activities	The INEEL Stormwater Pollution Prevention Plan requirements will be followed.
Consolidation Location	<p>10 CFR 1022</p> <p>Adverse impacts to wetlands are to be avoided. If it is necessary to locate a facility in a wetland or floodplain, the impacts must be minimized. A wetland or floodplain assessment must be published in the FR prior to taking any action within the area to allow time for public review and comment.</p>	Applicable	Stockpiling and disposal	This analysis will be performed only if stockpiling will occur in an area determined to lie within a wetland or a flood plain.
Location	<p>16 USC^b 1531, Endangered Species Act</p> <p>Remedial activities shall mitigate any adverse impact that may affect the continued existence of any endangered species or threatened species. These activities shall not result in the destruction or adverse modification of a critical habitat.</p>	Applicable	Earthmoving activities	<p>There are no known endangered or threatened species at the INEEL. The bald eagle has been observed wintering on or near the INEEL. Candidate species that may occur at the site are the burrowing owl, Townsend's big-eared bat, pygmy rabbit, ferruginous hawk, and loggerhead shrike.</p> <p>Typically, these species are not present in the area of the removal action. Therefore, actions at the task sites are not anticipated to impact any of these species.</p>

Table 5-1. (continued).

Category	Regulatory Requirement	Status	Affected Activity	Compliance Strategy
Location	16 USC 4760, National Historic Preservation Act The Secretary of the Interior must be notified in writing whenever DOE finds, or is notified in writing by an appropriate historical or archaeological authority that the activities in connection with a project may cause irreparable loss or destruction of significant scientific, prehistorical, historical, or archaeological data.	Applicable	Earthmoving activities	The treatability study will not take place in any known areas subject to the National Historical Preservation Act.
Consolidation Location	Executive Order 11988 Floodplain management-federal facilities.	To Be Considered	Disposal	The RWMC is not currently known to be located within the 100-year flood plain for the Big Lost River.

a. IDAPA = Idaho Administrative Procedures Act.
b. USC = United States Code

5.2 Air Emissions Calculations

Compliance with both the state and federal air regulations cited for this treatability study work plan can be demonstrated via the air modeling work completed for the OU 2-10 WWP interim action project. Both the interim action and this project involve the same basic type of work: excavation, transportation, and placement of radionuclide-contaminated soils.

The modeling conducted for the OU 2-10 WWP project demonstrated compliance with both state and federal regulations and is believed representative of the air dispersion modeling that would be conducted for the treatability study. This is based on the application of engineering controls (e.g., tarping of the trucks during transportation), similar distances to a public corridor (the comparison considered the closest public road to the point of excavation), and considering the direction of the prevailing winds. Appendix A provides the results of the OU 2-10 air modeling.

If the action levels specified in the project HASP are reached, air monitoring will be performed in accordance with LMITCO MCP-357, "Job Specific Air Sampling/Monitoring" (LMITCO 1998f).

5.3 Water Quality

Due to depth of the groundwater table at the INEEL, this treatability study will not impact groundwater quality.

A project-specific Storm Water Pollution Prevention Plan in accordance with 40 CFR 122.26 may be required to address storm water runoff. Upon completion of any excavation activities, the excavated areas will be backfilled, as appropriate, to redevelop the area's original slope and natural flow patterns (see Section 4.4.2). Site closure activities will be performed in accordance with the Storm Water Pollution Prevention Plan, including seeding activities as necessary to prevent erosion.

5.4 Transportation

To implement this treatability study, the transportation of radionuclide- and mixed-contaminated materials will involve the use of INEEL and public highways. Therefore, the transportation of the contaminated soils will comply with 49 CFR 172 through 179 requirements, as appropriate.

6. ADMINISTRATIVE REQUIREMENTS

6.1 Organization

The DOE-ID WAG manager will be responsible for notifying the EPA and IDHW of project activities. The DOE-ID WAG manager will also serve as the single interface point for all routine contact between the agencies and the LMITCO project manager who interfaces with the Subcontractor through the FTL. The organizational structure and the task site responsibilities for the treatability study are detailed in the FSP (DOE-ID 1998c) and the *Health and Safety Plan for the INEEL Soils Policy Non-Time Critical Removal Action* (LMITCO 1998b).

6.2 Waste Minimization

The primary waste stream associated with this treatability study is the radionuclide-contaminated soils resulting from past INEEL operations at the task sites. The secondary waste streams are the equipment and materials that have come into direct contact from handling the primary wastes (stockpiled and excavated soils, sampling residue, decontamination residue).

Each waste stream generated by this treatability study will be examined in an effort to minimize the volume of waste generated. The waste minimization efforts will be summarized in the treatability study report.

Some methods that could be employed to minimize the primary and secondary wastes generated are as follows:

- Excavating only those soils exceeding the treatment standards
- Conducting the initial decontamination by dry methods (e.g., scraping, sweeping, brushing) and then using water as necessary to reach free release limits
- Using excavation methods that minimize quantities of excavated soils (i.e., hand and small equipment excavation), which are above treatment standards
- Using appropriate containers for the segregation and management of radionuclide-contaminated and noncontaminated waste at the step off pad at each task site
- Ensuring that all waste is surveyed by the RCT prior to removal from the work location as contaminated waste
- Judicious use of consumable materials
- Ensuring that the required radiological surveys are performed to prevent accidental spread of contamination.

6.3 Waste Management

The implementation of this treatability study will generate several secondary waste streams. These waste streams will be managed based on process knowledge and/or characterization results. The

Pollution Prevention/Waste Minimization Plan that forms a part of the *Waste Certification Plan for the Environmental Restoration Program* (LMITCO 1996d) shall be followed for all waste generated during the treatability study. All waste shall be handled as specified in the *Idaho National Engineering Laboratory Reusable Property, Recyclable Materials, and Waste Acceptance Criteria* (DOE-ID 1998d). It is anticipated that all soils are expected to be nonhazardous with the soils being surveyed for radioactivity. The following waste streams are expected to be generated as a result of implementing the treatability study:

- Plastic sheeting covering soil stockpiles
- PPE
- Decontamination water (from cleaning sampling equipment, excavation equipment, and personnel) and decontamination solids (e.g., dirt removed from excavation equipment)
- Radionuclide-contaminated soil sample containers
- Unaltered radionuclide-contaminated soil samples
- Equipment air filters
- Noncontaminated project waste
- Dry decontamination equipment (brushes, brooms, etc.) and wooden planks.

The plastic sheeting covering the soil stockpiles will be sent to the Waste Reduction Operations Complex (WROC) for incineration and ash consolidation at the RWMC.

The PPE used during the removal action will be segregated into three categories:

1. Reusable
2. Compactible
3. Combustible (incinerable).

Reusable cloth PPE will be sent to the laundry. Polyvinyl chloride (PVC) PPE or contaminated PVC will be sent to the WROC for compaction. Combustible PPE will be sent to the WROC for incineration and the ash will be shipped to the RWMC.

Decontamination water may be evaporated and the resulting solids transported to the appropriate facility for consolidation with the waste stream from which the decontamination water originated. As an alternative, decontamination water may be containerized and disposed at an appropriate Treatment, Storage, and Disposal Facility (TSDF). Decontamination solids will be collected and transported to the appropriate facility for consolidation with the waste stream from which the decontamination solids originated.

Unaltered radionuclide-contaminated soil samples and liquid quality assurance/quality control samples will be handled as specified in the FSP, MCP-2864, "Sample Management" (LMITCO 1997a), and the laboratory task order statements of work. The laboratory will dispose of samples and sample

residuals. In the event that samples must be returned from the laboratory, unaltered samples may be returned to the project for consolidation with the waste stream from which the samples originated. Returned sample residuals will be containerized and shipped to an appropriate TSDF for treatment and/or disposal.

If not easily decontaminated, contaminated high-density polyethylene sample containers will be sent to the WROC for incineration and ash consolidation at RWMC. Contaminated glass sample containers are considered compactible and will be sent for consolidation to the WROC.

If contaminated, air filters generated during routine maintenance of equipment associated with the removal action will be packaged and shipped to WROC as low-level mixed waste.

Step off pads will only be used for soil contamination areas greater than 100 counts per minute above background.

Noncontaminated (nonregulated) project waste, including paper and other miscellaneous items, will be recycled, reused, reduced, and/or disposed, as appropriate, at the sanitary landfill located at the INEEL's Central Facilities Area.

With the exception of the noncontaminated waste stream, the waste streams generated during this treatability study will be identified, classified, and managed in accordance with the criteria established in the *Idaho National Engineering Laboratory Reusable Property, Recyclable Materials, and Waste Acceptance Criteria* (DOE-ID 1998d), as appropriate.

6.3.1 CERCLA Areas of Contamination

The CERCLA area of contamination shall be considered to be the areal extent of defined contamination plus ancillary contiguous contamination necessary for the performance of the treatability study.

6.3.2 Waste Characterization, Handling, and Tracking

The waste management strategy, waste characterization, packaging, handling and storage, and waste certification methodology shall be in accordance with the *Waste Certification Plan for the Environmental Restoration Program* (LMITCO 1996d). The waste is expected to be radioactive and is to be stored, handled, and loaded for transport within the CERCLA area of contamination. Additionally, the environmental restoration Waste Management Board is tasked with review and approval of this waste management plan and the treatability study waste management practices. The generator is responsible for completing and submitting the "Material and Waste Characterization Generator's Certification and Information" (INEEL Form L-0435) for review and approval for each waste stream and transfer activity. Detailed process knowledge and data collected in accordance with the FSP shall be used for waste characterization.

6.3.2.1 Low-level Radioactive Waste. Low-level radioactive waste will be segregated into nonprocessable, compactible, or combustible (incinerable) waste after which it will be inventoried, bagged/boxed, and marked with an identifying number. The FTL will keep an inventory of materials placed in each box. The inventory will include a description of each item in the box, when and where it was generated, and the contact radiation readings on the item. The bagged/boxed items will be stored in 0.6 × 1.2 × 2.4-m (2 × 4 × 8-ft) or 1.2 × 1.2 × 2.4-m (4 × 4 × 8-ft) plywood boxes in a "Radioactive Materials Area." The acceptance criteria and packaging specified in the *Idaho National Engineering*

Laboratory Reusable Property, Recyclable Materials, and Waste Acceptance Criteria (DOE-ID 1998d) shall be adhered to. The project manager will complete the INEEL Waste Tracking System (IWTS) Material and Waste Characterization Profile (M&WCP) and/or INEEL Form Series L-0435.9#-0435.13. This will include making a hazardous waste determination in accordance with MCP-444, "Characterization Requirements for Solid and Hazardous Waste" (LMITCO 1998a). The completed L-0435 (M&WCP) form shall be approved by waste operations Waste Generator Services (WGS), and the environmental restoration waste management coordinator, who will interface with Waste Operations. The WGS will coordinate waste shipment to the WROC or to the RWMC. Before the shipment of any radioactive or mixed waste, IWTS Container Profile(s) and Shipment and Relocation Task Profile(s) shall be approved by D&D, the TSDF operations, packaging and transportation, and WGS.

6.4 Reports

At the conclusion of the work, a treatability study report will be generated that summarizes the treatability study, including soil quantities excavated and treated. The report will provide the radiation surveys and sample data, identify as-built drawings, describe problems encountered during the project, and discuss lessons learned. Weekly reports, field documentation, final costs, and the actual schedule of activities will also be included in the memorandum.

6.5 Treatability Study Schedule

The major components of this treatability study include mobilization, excavation, sampling, loading, hauling, consolidation, backfill and seeding, demobilization, and a project technical memorandum. Additional sampling and disposition of waste streams is required prior to beginning the treatability study as described in the project FSP. The treatability study will start in May 1999 and may continue until signature of the WAG 5 ROD. It is anticipated that hauling and consolidation of soils will be complete by the end of July but the analytical results and final report may not be available until late August 1999. Refer to Figure 6-1 for a schedule of events.

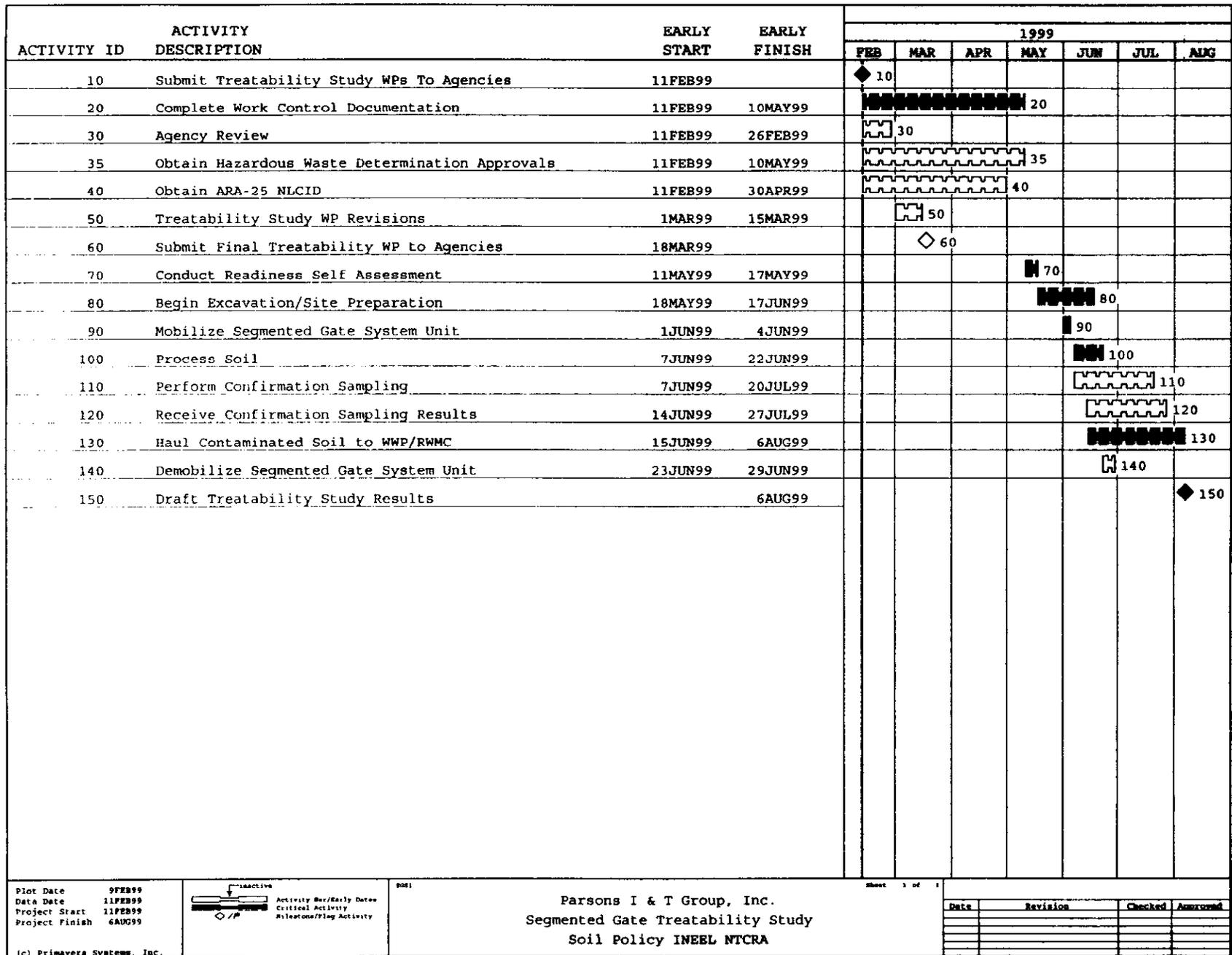


Figure 6-1. Activity schedule.

7. DATA CONTROL

7.1 Data Management

The treatability study is an important component of the RI/FS study process. It verifies the effectiveness of a selected technology to meet the expected remediation goals for the site. The Data Management Plan (DMP) provides or references procedures and requirements necessary to develop a database of relevant information that can be readily accessible and accurately maintained. The plan describes the data flow process, data custodianship, and organizational and individual responsibilities associated with data management. The plan also provides project file and reporting requirements and identifies extensive database capability requirements to allow selective data sorting, analysis, formatting, and reporting.

The *Data Management Plan for the Idaho National Engineering Laboratory Environmental Restoration Program* (LMITCO 1995d) will function as the DMP for this treatability study. Data and information from the treatability study will be placed in the Administrative Record and Document Control for control. Additionally, hard copies of the raw data and test results will be summarized in a final treatability study report. Specific data quality objectives are specified in this treatability study work plan, with data validation requirements listed in the project FSP. Program Requirements Document (PRD)-111, "Records and Forms Management," (LMITCO 1997e) will assist in ensuring that information is available when needed, protected as appropriate, and properly dispositioned. In addition, a number of LMITCO internal MCPs are also invoked during the treatability study process. The primary MCPs that will be used are as follows:

- MCP-227, "Sampling and Analysis Process for Environmental Management Funded Activities" (LMITCO 1996e)
- MCP-230, "Environmental Restoration Document Control Center Interface" (LMITCO 1996f)
- MCP-231, "Logbooks" (LMITCO 1996g)
- MCP-242, "Obtaining Laboratory Services for Environmental Management Funded Activities" (LMITCO 1997f)
- MCP-244, "Chain-of-Custody, Sample Handling, and Packaging for Comprehensive Environmental Response, Compensation, and Liability (CERCLA) Activities" (LMITCO 1998g)
- MCP-452, "Treatability Studies" (LMITCO 1997g)
- MCP-2725, "Field Work at the INEEL" (LMITCO 1998h)
- MCP-2864, "Sample Management" (LMITCO 1997a).

7.2 Data Analysis and Interpretation

Upon completion of the treatability study, the data will be summarized and evaluated to determine the validity of the data and to assess the efficiency of the Thermo NUtech segmented gate system. To accomplish this goal, results will be reduced to a useful form in accordance with the data uses defined in Section 3. Test results are to be interpreted on the segregation systems efficiency. This rolls into the technology's overall effectiveness and costs. At the end of the treatability study, a final report summarizing the results of the treatability study will be written by project personnel. The final report will provide the key information required to complete data analyses and interpretations.

The data will be both qualitative and quantitative. The qualitative data will include but not be limited to photographic records of major events, visual observations, logbook entries, and descriptions. At a minimum, quantitative data will include equipment operating hours, scheduled maintenance, downtimes, pre and postsegregation soil volumes, field screening data, and laboratory generated data. Data of sufficient quality will be obtained for the overall technology to perform a full-scale operations estimate, which includes such items as cost, manpower requirements, time, etc. LMITCO project personnel or their designees will perform the analysis and interpretation of test data. Samples for off-Site analyses will be sent to Sample Management Office approved laboratories.

7.3 Reports

During the course of the treatability study, open lines of communication are essential to ensure smooth and accurate flow of information to all parties directly or indirectly involved with the project. The following sections identify the necessary treatability study documentation.

7.3.1 Weekly Reports

The FTL or designee is responsible for submitting weekly reports updating the progress of the treatability study project. As a minimum, the weekly reports will be distributed to the project manager. The project manager as appropriate will then forward the weekly reports or relevant information to the program manager, the DOE-ID project manager, and the control account managers. The weekly reports should include, but not be limited to, the following:

- Accomplishments of work performed for the week
- Anticipated work to be performed the following week
- Any problems or issues encountered and the actions taken
- Schedule.

7.3.2 Monthly Reports

In the event that duration of the treatability study project exceeds 1 month, a monthly report shall be prepared by the control account manager and will be distributed to the program manager, project manager, and the DOE-ID project manager. If the project is completed in less than 1 month, the control account manager shall prepare a similar report. As a minimum, the monthly reports will contain the following:

- A summary of project work progress
- Summary of work completed
- Planned work to follow
- Problems or issues encountered and the actions taken
- Results of any Change Control Board or Internal Change Board actions
- Key position changes
- Contracts awarded, completed, and terminated
- Audits performed
- Safety, health, and environmental assessment of work performed for the month
- Schedule and any variances
- Cost and any variances
- Earned value reports.

7.3.3 Occurrence Reporting

During the treatability study process, unusual events may occur that fall within the scope of DOE Order 5000.3b and DOE Order O 232.1. If such events occur, notifications will be made in accordance with LMITCO MCP-190, "Event Investigation and Occurrence Reporting" (LMITCO 1999), which addresses the requirements of these orders. Unusual events that fall outside the scope of DOE Order 5000.3b and MCP-190 will be reported as follows:

- Minor problems that can be field corrected will be reported to the FTL or site supervisor. The FTL or site supervisor will ask the RCTs, industrial hygienists, or safety representative for assistance as appropriate.
- Problems that could stop work more than one shift or cause a schedule change of greater than 2 days, or a budget change greater than \$1,000 will be reported to the appropriate work package manager by the FTL or site supervisor. The work package manager will report these problems to the control account manager, project manager, and program manager as appropriate.

7.3.4 Postjob Review

A critical aspect of the treatability study is the postjob review as required by MCP-3003, "Performing Pre-Job Briefings and Post-Job Reviews" (LMITCO 1998i). A formal postjob review is required "when new or special technology or techniques were used." The formal postjob review will be completed as per the requirements set forth in MCP-3003.

7.3.5 Final Treatability Study Report

At the completion of the treatability study activities, a treatability study report will be prepared documenting project activities, results, conclusions, and recommendations. Complete and accurate reporting is essential, as decisions concerning the segregation technology as a remedial alternative for WAG 5 or other INEEL sites will be based in part on the outcome of this treatability study. The treatability study report will be prepared following the EPA guidance, *Guide for Conducting Treatability Studies under CERCLA* (EPA 1992).

8. COMMUNITY RELATIONS

The community relations' task is designed to ensure community understanding of actions taken during the treatability study and to obtain community input on the treatability study program. Community relations are an integral part of any CERCLA action whether or not the action is at a federal facility. At the INEEL, all CERCLA actions will be subject to both CERCLA and National Environmental Policy Act community involvement requirements. The INEEL public affairs group of LMITCO has prepared a programmatic Environmental Restoration Program Community Relations Plan that covers projects conducted in support of the INEEL environmental restoration program. This plan was issued as a DOE document representing "the process established by mutual agreement between the DOE, EPA, and State of Idaho to address environmental restoration concerns at the INEEL." The plan will guide the actions taken to ensure appropriate public involvement in agency decision-making and will serve as the community relations plan for this treatability study.

9. REFERENCES

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