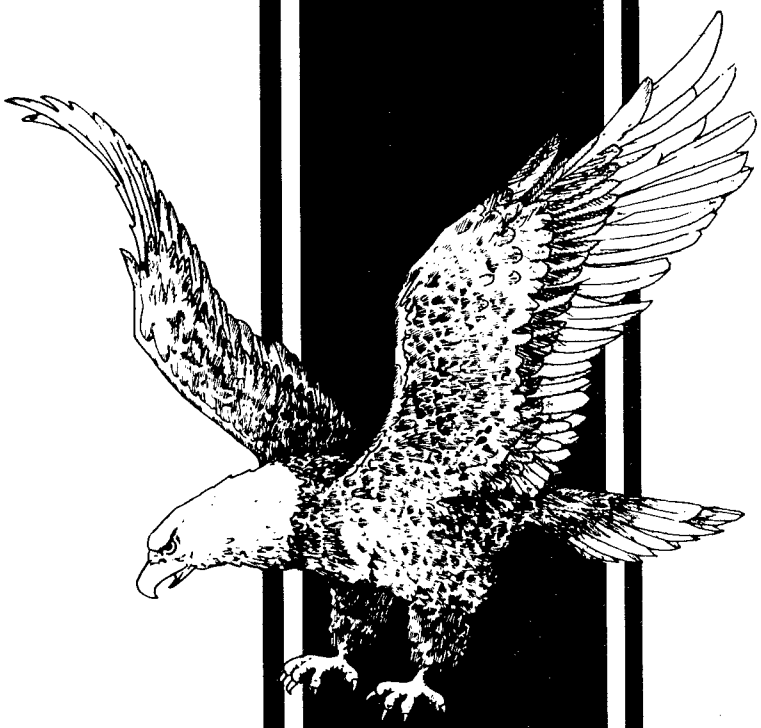

USAEC

U.S. Army Environmental Center

Jefferson Proving Ground
South of the Firing Line

Final Remedial Investigation/
Feasibility Study
Resource Management Plan

January 1993

Prepared for
U.S. Army Toxic and Hazardous Materials Agency
Aberdeen Proving Ground, Maryland 21010-5401

Prepared by
SEC Donohue, Inc.
Grand Junction, Colorado 81506
Under Contract No. DAAA15-90-D-0007

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Acronyms

ACM	Asbestos Containing Material
AHERA	Asbestos Hazard Emergency Response Act
ARARs	Applicable or Relevant and Appropriate Requirements
AREEs	areas requiring environmental evaluation
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DCL	DataChem Laboratory
DOD	Department of Defense
FOL	Field Operations Leader
HSP	Health and Safety Plan
IRDMIS	Installation Restoration Data Management and Information System
JPG	Jefferson Proving Ground
MDAA	Memo of Detailed Alternatives Analysis
MEP	Master Environmental Plan
PA	Preliminary Assessment
PCBs	polychlorinated biphenyls
PCP	pentachlorophenol
QA/QC	quality assurance/quality control
QCP	Quality Control Plan
RI/FS	Remedial Investigation/Feasibility Study
SARA	Superfund Amendments and Reauthorization Act
SDP	Sampling Design Plan
SEC Donohue	SEC Donohue, Inc.
semi-VOCs	semi-volatile organic compounds
SWMUs	Solid Waste Management Units
TEPS	Total Environmental Program Support
TP	Technical Plan
USAEC	U.S. Army Environmental Center
USTs	underground storage tanks
UXO	unexploded ordnance
VOCs	volatile organic compounds
WBS	Work Breakdown Structure

1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE OF PROGRAM

This plan contains a description of the personnel and procedures for managing the Remedial Investigation/Feasibility Study (RI/FS) at the U.S. Army Jefferson Proving Ground (JPG) in Madison, Indiana. The RI/FS is being performed to support base closure initiated in April of 1989, when Congress mandated that JPG be closed and its mission realigned with Yuma Proving Ground, Arizona. As a result, the U.S. Army Environmental Center (USAEC) was given the responsibility of conducting the environmental investigation associated with the Base Closure Program. An enhanced Preliminary Assessment (PA) was completed in March 1990, and a follow-up Master Environmental Plan (MEP) was prepared in November 1990. Results of these initial evaluations indicated that additional studies of identified Solid Waste Management Units (SWMUs) and areas requiring environmental evaluation (AREEs) were needed to satisfy the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA 1986). This act requires that a RI/FS be conducted to:

- Define the extent and magnitude of environmental contamination at JPG,
- Assess the human health and environmental risk from contamination at JPG,
- Determine the needs for remedial actions at JPG, and
- Develop and evaluate the remedial-action alternatives.

SEC Donohue, Inc. (SEC Donohue), has been tasked—under contract DAAA15-90-D-0007, Task Order 0005 and Task Order 0005 Modification—with performing an RI/FS for the south area of JPG and one off-site location evaluation. The following plans have already been prepared to serve as a basis for performing the RI/FS:

- Technical Plan (TP)
- Sampling Design Plan (SDP)
- Health and Safety Plan (HSP)
- Quality Control Plan (QCP)

This RI/FS Resource Management Plan has been prepared as a management-information and control document for conducting the work tasks defined under Task Order 0005 and Task Order 0005 Modification. It outlines the methods SEC Donohue will utilize in completing the work and describes the overall management approach.

1.2 PLAN ORGANIZATION

This plan is organized as follows:

1.0 Introduction
2.0 Program Organization

3.0 Project Personnel Staffing
4.0 Management Process

Also included are tables that provide a Work Breakdown Structure (WBS) for the project, a task schedule, and summaries of the estimated labor and other costs associated with each task.

1.3 PROGRAM BACKGROUND

Two significant environmental-investigation reports are available for JPG. These are the Enhanced Preliminary Assessment (PA) Report (March 1990) and the Master Environmental Plan (MEP) (November 1990), both prepared by Ebasco Environmental. The PA report provides a preliminary characterization of the nature of environmental contamination at JPG and an assessment of the installation from the perspective of potential property reuse. The PA, in general, helps to identify areas that will require further RI/FS work tasks in order to determine the extent and magnitude of environmental contamination and to assess risk to human health and the environment. The PA was based on existing installation data. Conclusions and recommendations for further work were provided.

The MEP was prepared following the enhanced PA study. The MEP defines, in detail, the existing conditions of all SWMUs and AREEs, additional data required, and proposed activities at JPG. It describes the environmental setting of the study area and defense regulatory considerations, and presents assessments of the proposed actions for all SWMUs and AREEs.

Both of the previous environmental-assessment reports were used by SEC Donohue to help formulate a TP for the completion of an RI/FS at JPG. The TP and associated documents (i.e., SDP, QCP, and HSP) address only those areas located south of the Firing Line at JPG, facility-wide asbestos-containing materials, and the off-site water supply wells. The plans were formulated to fill in data gaps in previous reports and during site visits. They also include requirements for additional sampling and analysis. In addition, SEC Donohue will conduct additional records searches, where appropriate, to more accurately determine the location and extent of known or suspected areas of potentially hazardous contaminant disposal, spills, or releases.

1.4 Facility Description

JPG is a test center of the U.S. Army Test and Evaluation Command (TECOM), which conducts production-acceptance tests of conventional ammunition and weapons. JPG occupies 55,265 acres of land along Highway 421, north of the city of Madison, Indiana (see Figure 1). The facility is approximately 18 miles long (north-south) and 5 miles wide (east-west). The major portion of JPG is wooded. Industrial buildings, workshops, and administrative buildings are located south of the firing line. North of the firing line are test impact areas, which are kept clear of vegetation by herbicide application. The topography at

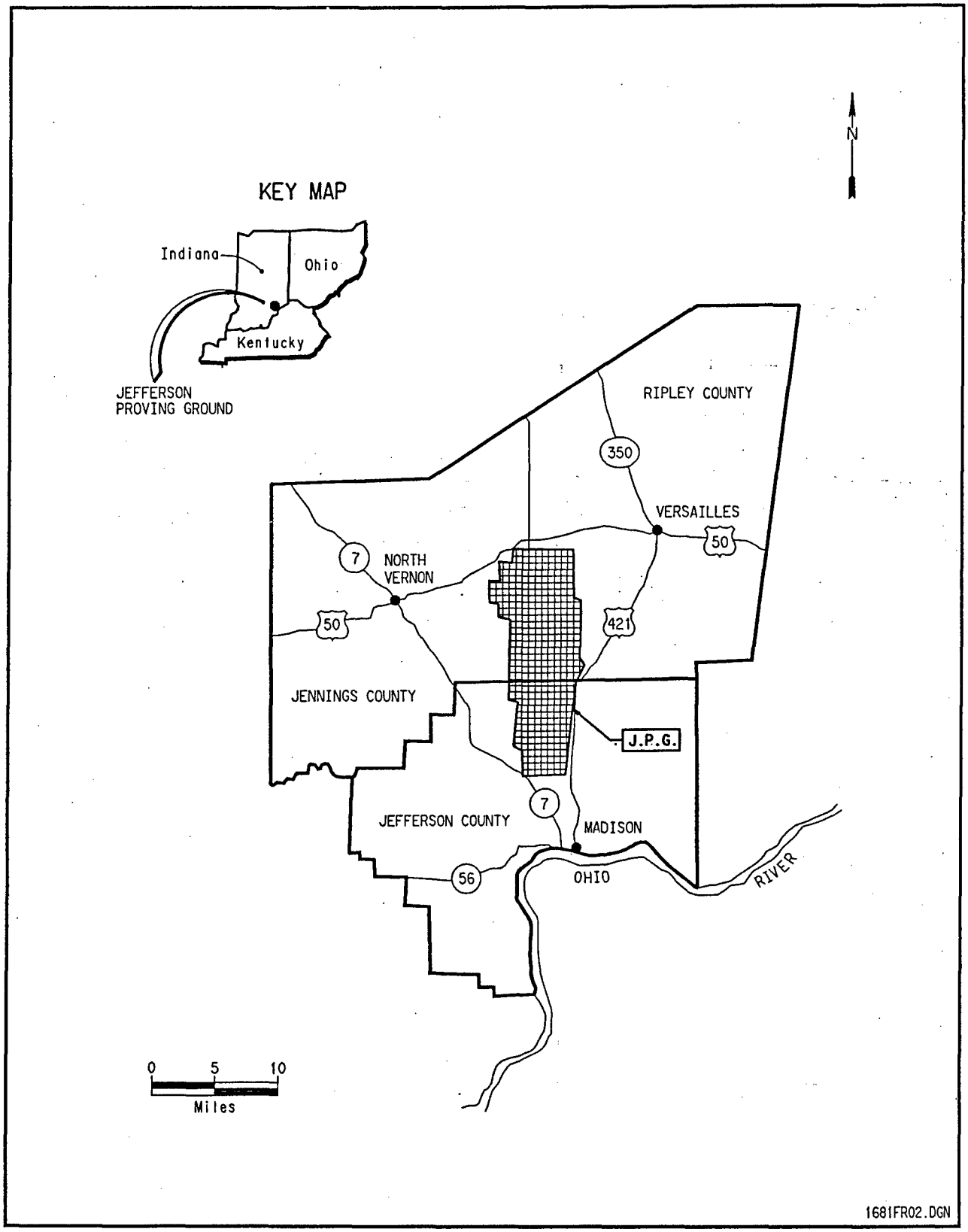

Figure 1. Location Map of Jefferson Proving Ground and Vicinity

JPG is characterized as flat to rolling. Surface water is drained by seven major streams and tributaries that flow through the installation.

JPG has been used as a testing proving ground since May of 1941. A wide assortment of conventional munitions and weapons have been tested. They include propellants, projectiles, cartridges, mortars, grenades, fuses, primers, boosters, rockets, tank ammunition, mines, and weapon components. The support structure was also built in 1941. Some facilities were added in later years. There are 268 gun positions along the Firing Line, 50 impact areas, 13 permanent test complexes, and 7 ammunition-assembly plants.

Operations since 1941 have resulted in the release or potential release of hazardous contaminants into the environment at JPG. Contaminants were released as a result of detonation, burning, spills, and disposal activities. Resulting hazardous wastes include 1,1,1-trichloroethane, Stoddard solvent, paint thinner and paint sludge, excess pesticides, and excess photographic processing chemicals. Toxic wastes include polychlorinated biphenyls (PCBs), excess pesticides, and asbestos. Solid wastes include pentachlorophenol (PCP)-treated wood, sanitary sewer sludge, Inert Filler E, petroleum hydrocarbons, and explosives.

The 50 sites located south of the firing line to be investigated under Task Order 0005 and Task Order 0005 Modification are described in the *RI/FS Work Plans* (Volume I, *Final Technical Plan*, August 1992 and the *Draft Technical Plan Addendum*, November 1992).

1.5 DESCRIPTION OF SPECIFIC SAMPLE TASKS

This section restates the objectives of the proposed site-specific RI field and analytical work task presented in the TP (Volume I). The overall objective of the RI/FS process at JPG is to ensure that there is no significant risk to human health or the environment and to ensure compliance with applicable federal and state laws and regulations. To this end, certain data gaps have been identified that must be filled prior to making decisions on future remedial-action and base-closure activities. The scope of this plan, with the exception of the Gate 19 Landfill Area and the off-site water-supply wells, is restricted to those areas of JPG that are located south of the firing line. The following subsections are task-oriented summaries of the objectives previously identified in the Technical Plan and Technical Plan Addendum (Volume I) for those sites where data gaps exist:

1.5.1 Building 185 Incinerator

- Confirm the presence or absence of metals contamination in soils downwind of the abandoned incinerator.

1.5.2 Building 177 Sewage Treatment Plant

- Confirm the presence or absence of potentially hazardous contaminants in Harbert Creek that may be related to sewage-treatment-plant or water-quality-laboratory discharge.

- Determine if soils where on-site storage or disposal of sludge has occurred are contaminated with heavy metals or cyanide.

1.5.3 Explosive Burning Area

- Confirm the presence or absence of potentially hazardous contaminants in soil as a result of previous burning activities on the ground surface.

1.5.4 Abandoned Landfill

- Identify the locations of previous buried trenches.
- Evaluate whether a release of contaminants into the environment has occurred as a result of previous landfill burial of potentially hazardous materials.
- Determine if groundwater contamination has occurred where soils are found to be contaminated at depth.

1.5.5 Wood Storage Pile and Wood Burning Area

- Confirm the presence or absence of PCP, heavy metals, and dioxin in soils from the storage and burning of PCP-containing woods.

1.5.6 Red Lead Disposal Area

- Determine the exact location of the former Red Lead Disposal Area.
- Confirm the presence or absence of lead and barium in the soils at the former disposal site once the location is defined.
- Provide initial site-characterization data on the vertical and horizontal extent of contaminants.
- Determine if groundwater contamination has occurred.

1.5.7 Small Arms Firing Range (Building 295)

- Identify contaminants present within the building and their relative concentrations.
- Confirm the presence or absence of metals contamination outside of the building in surface soils.

- Assess the potential risk to human health and the need for further studies on the basis of contaminants found.

1.5.8 Burning Ground (South of Gate 19 Landfill)

- Define the location of previous trenches.
- Determine if releases of contaminants have occurred in surface and subsurface soils.
- Determine if releases of contaminants have occurred in the surface-water pathway near the burning ground.
- Provide initial site-characterization data on the vertical and horizontal extent of contamination, if present.
- Determine if releases of contaminants have occurred to the groundwater pathway.

1.5.9 Gate 19 Landfill

- Evaluate validity of previous groundwater sampling and analysis results to determine if the detection of mercury and volatile organic compounds (VOCs) calls for additional groundwater monitoring.
- Identify specific areas within the landfill, where metal containers or other metal debris have been disposed of, that may be potential sources of contamination.
- Identify specific areas within the landfill where spent solvents were disposed of.
- Provide initial data on the vertical and horizontal extent of contamination associated with identified disposal sites within the landfill.
- Provide additional data on occurrence and extent of groundwater contamination and the groundwater migration pathway.

1.5.10 Burning Area for Explosive Residue

- Sample areas of surface staining to determine if potentially hazardous contaminants have been released into the soils at the site.
- Obtain groundwater sample data where contaminants are found to exist at depth in order to determine if contaminants have entered the groundwater pathway.

1.5.11 Building Solvent Pits (Buildings 602, 617, and 279)

- Define further the extent of VOC contamination in soils surrounding Building 279.
- Confirm the presence or absence of VOC contamination in soils at Buildings 602 and 617.
- Provide initial groundwater quality data at the Building 602 and 617 sites and additional groundwater data at Building 279.

1.5.12 Old Fire Training Pit

- Determine the presence or absence of contamination in soils.
- Provide initial data on the vertical and horizontal extent of contamination, if present.
- Determine if contaminants have been released to the groundwater pathway.

1.5.13 Yellow Sulfur Disposal Area

- Confirm the presence or absence of contamination in the surface-water pathway
- Identify contaminants in soils associated with the sulfur disposal.
- Determine if contaminants have migrated to the groundwater pathway.

1.5.14 Burn Area South of New Incinerator

- Confirm the presence or absence of contaminants in surface soils and on the concrete pad.

1.5.15 Potential Ammo Dump Site

- Determine the location of the dump site.
- Evaluate the contents of the dump site by digging test pits.

1.5.16 Asbestos-Containing Materials

- Conduct inventory and identify all potential asbestos-containing materials.
- Perform laboratory analysis, as required, to confirm asbestos materials.
- Prepare a report with recommendations for asbestos abatement.

1.5.17 Underground Storage Tanks

- Perform follow-on sampling to determine extent of contamination for known or suspected leaking underground storage tanks (USTs).

1.5.18 Off-Site Water Supply Wells

- Perform site inspection and soil sampling to determine if contamination exists.

1.5.19 Temporary Waste Storage Areas (Buildings 279 and 305)

- Determine the presence or absence of contamination in soil and on building surfaces.
- Identify contaminants in soils and on building surfaces associated with waste storage.

1.5.20 Temporary Storage Areas (Buildings 105, 186, 204, 211, and 227)

- Determine the presence or absence of contamination in soil and on building surfaces.
- Identify contaminants in soils and on building surfaces associated with waste storage.

1.5.21 Groundwater System South of the Firing Line

- Assess the groundwater-system parameters and potential for lateral and vertical flow in the shallow alluvial and bedrock aquifers.

1.5.22 Building 216, Locomotive Maintenance Pit

- Perform a visual inspection of the locomotive maintenance pit to determine its construction and the potential for leakage from the pit.
- If evidence of a potential release is observed, determine if releases of contaminants to the subsurface soils near the pit have occurred.

1.5.23 Building 216, Potential Solvent Disposal Pit

- Confirm the presence or absence of VOC contamination in surface and subsurface soils.
- If evidence of subsurface soil contamination is observed, determine if VOCs have contaminated groundwater.

1.5.24 Building 602, Soil Staging Area

- Perform a visual inspection of the area to ensure that all contaminated soil has been removed.
- Confirm the presence or absence of contamination in natural drainage paths in the area.

1.5.25 Paper Mill Road Disposal Area

- Confirm the presence or absence of contamination in surface and subsurface soils that may have resulted from past disposal activities.

1.5.26 DRMO Storage Area

- Determine if releases of contaminants from the lead-acid-battery storage area and the former transformer storage area have occurred.

1.5.27 Sewage Sludge Application Area

- Verify the locations of previous sewage sludge application.
- Determine if the soils in the sewage sludge application areas have been contaminated with heavy metals or cyanide.

1.5.28 Gator Z Mine Open Burn Area

- Confirm the presence or absence of explosives and metals contamination in the ash pile and surrounding surface soils.

1.5.29 Gator Z Mine Scrap Disposal Area

- Determine if releases have occurred in the surface-water pathway near the scrap disposal area.
- Perform a geophysical survey of the area to identify other potential disposal areas.

1.5.30 Building 204, Pesticide Storage

- Determine the presence or absence of contamination associated with pesticide storage in surface soils around Building 204.

1.5.31 Building 227, Former Storage Pad

- Confirm the presence or absence of contaminants in the surface and subsurface soils around the former storage pad.

1.5.32 Building 105, Locomotive Maintenance Pit

- Perform a visual inspection of the locomotive maintenance pit to determine its construction and the potential for leakage from the pit.
- If evidence of a potential release is observed, determine if releases of contaminants to the subsurface soils near the pit have occurred.

1.5.33 Building 333, New Incinerator

- Determine the presence or absence of leachable metals in the ash from the incinerator and from the surrounding soils.

1.5.34 Building 136, Sandblasting Area

- Determine if contaminants have been released from the sandblasting operations area to the surface soils and natural drainage pathways around Building 136.
- Determine the background metal content of the unused sand for comparison with that of used sand.

1.5.35 Building 602, Former Leaking Underground Storage Tank

- Review documentation in JPG files concerning the response to the spill that occurred during the Building 602 UST removal.
- Collect surface-soil samples to confirm cleanup of the site.

1.5.36 Building 103, No. 2 Oil Spill

- Confirm the presence or absence of hydrocarbon contamination in surface and subsurface soils resulting from the fuel oil spill.
- If evidence of subsurface soil contamination is observed, determine if the contaminants have migrated to the groundwater pathway.

1.5.37 Building 118, Gas Station

- Determine the presence or absence of petroleum hydrocarbons contamination in soils around the gas station.

- Provide initial groundwater quality data for the area around the gas station.

1.5.38 Northwest-Southeast Runway Area

- Identify the flare-testing process presently used in this area and evaluate the potential for contaminant releases.
- Provide recommendations for further action or no action based on the review of the flare-testing process.

1.5.39 Gator Z Mine Test Area

- Determine the presence or absence of explosive residues and metals contamination in the mine test pits and the drainage ditches in the mine test area.

1.5.40 Building 259, Discharge/Fill Pipe

- Perform a visual inspection of the area around the pipe for potential releases.
- Verify former use and contents of the site.
- Sample areas of surface staining to determine what contaminants have been released to the surface soils near the pipe.

1.5.41 Building 281, Fuel Oil from Former Underground Storage Tank

- Determine the presence or absence of contaminant release from the former UST on the north end of Building 281.
- Determine if the groundwater has been contaminated by leakage from the former UST.

1.5.42 Building 281, Indoor Range

- Determine if metals contamination is present in the soil floor of the firing range.
- Determine if lead dust or lead oxide is present on firing range walls.

1.5.43 Possible USTs or Wells at Artillery and Infantry Roads

- Perform a visual inspection of the area and evaluate contaminant release potential.
- Physically check the standpipes to determine their depths, construction, and probable contents.

1.5.44 Underground Concrete Vault Near Airport Railroad Tracks

- Perform a visual inspection of the site to determine the potential for release.
- Search records at JPG to determine past use of the site.
- Perform a geophysical survey to locate possible USTs and associated underground piping.
- Analyze the oil in the vault to determine bulk composition.
- Confirm the presence or absence of contamination in the soils around the vault.

1.5.45 Possible Unexploded Ordnance at Airport

- Verify that the site has been surface cleared of unexploded ordnance (UXO).
- Perform a geophysical survey of the site to locate near-surface anomalies.

1.5.46 Old Flare Test Sites (2) at South End of Airport

- Identify past testing operations at the flare test sites and determine the potential for release to the environment.

1.5.47 Wooded Area South of the Airport

- Verify that the site has been surface cleared by JPG explosives ordnance personnel.
- Perform a visual inspection and a geophysical survey to locate near-surface anomalies.

1.5.48 Ammunition Storage Igloos South of the Firing Line

- Identify all igloos south of the firing line and verify past and present contents of each.
- Identify any evidence of release from the igloos.

1.5.49 Explosive Ordnance South of the Firing Line

- Perform a file search and interview JPG personnel to determine potential locations of explosive ordnance.
- Perform visual inspections of the potential locations and provide recommendations for further actions.

1.5.50 Building 186, Wash Rack

- Empty the sump at the wash rack and inspect it for integrity and assess the potential for contaminant release.
- Empty the oil/water separator and inspect for integrity.

1.5.51 Background Sampling

- Sample the surface soils at 15 locations across the area included in the JPG RI/FS and analyze for total metals.
- Sample the groundwater in all upgradient wells for sites included in the JPG RI/FS and analyze for total metals.
- Statistically analyze the data to determine background metals values in the soil at JPG.
- Use the statistical evaluation to determine when site-specific soil samples have exceeded three standard deviations above background and, therefore, need to be analyzed for leachable metals.

2.0 PROGRAM ORGANIZATION

2.1 KEY PERSONNEL RESPONSIBILITIES

Figure 2 shows the key personnel and the organizational hierarchy for the RI/FS at JPG. This section includes background information and resumes pertinent to this task.

2.1.1 USAEC Project Officer, K. Quirk

Mr. Quirk will represent USAEC in the area of overall project management for this task. His responsibilities include coordinating between JPG representatives and the contractor, as well as communicating with state or federal regulatory personnel.

2.1.2 Program Manager, R. Sanders

Mr. Sanders is the USAEC Total Environmental Program Support (TEPS) Program Manager for SEC Donohue. He is the individual responsible for the overall direction, coordination, technical consistency, and review of the entire program. His responsibilities include total responsibility for the work program; final approval of work plans, schedules, contract changes, manpower allocations, and the monthly Cost and Performance Reports for each task; monitoring performance of all team members through the Program Coordinators and Task Managers, particularly with respect to expenses and contractual matters; ensuring coordination among management, subcontractors, field teams, and support personnel; and communicating with USAEC.

In order to fulfill these responsibilities, Mr. Sanders is vested with the authority to select or dismiss contractor staff; select or terminate major subcontractors; approve or disapprove budgets and schedules; stop work; and communicate with USAEC as necessary to evaluate the progress on any task and to ensure the early resolution of any problem.

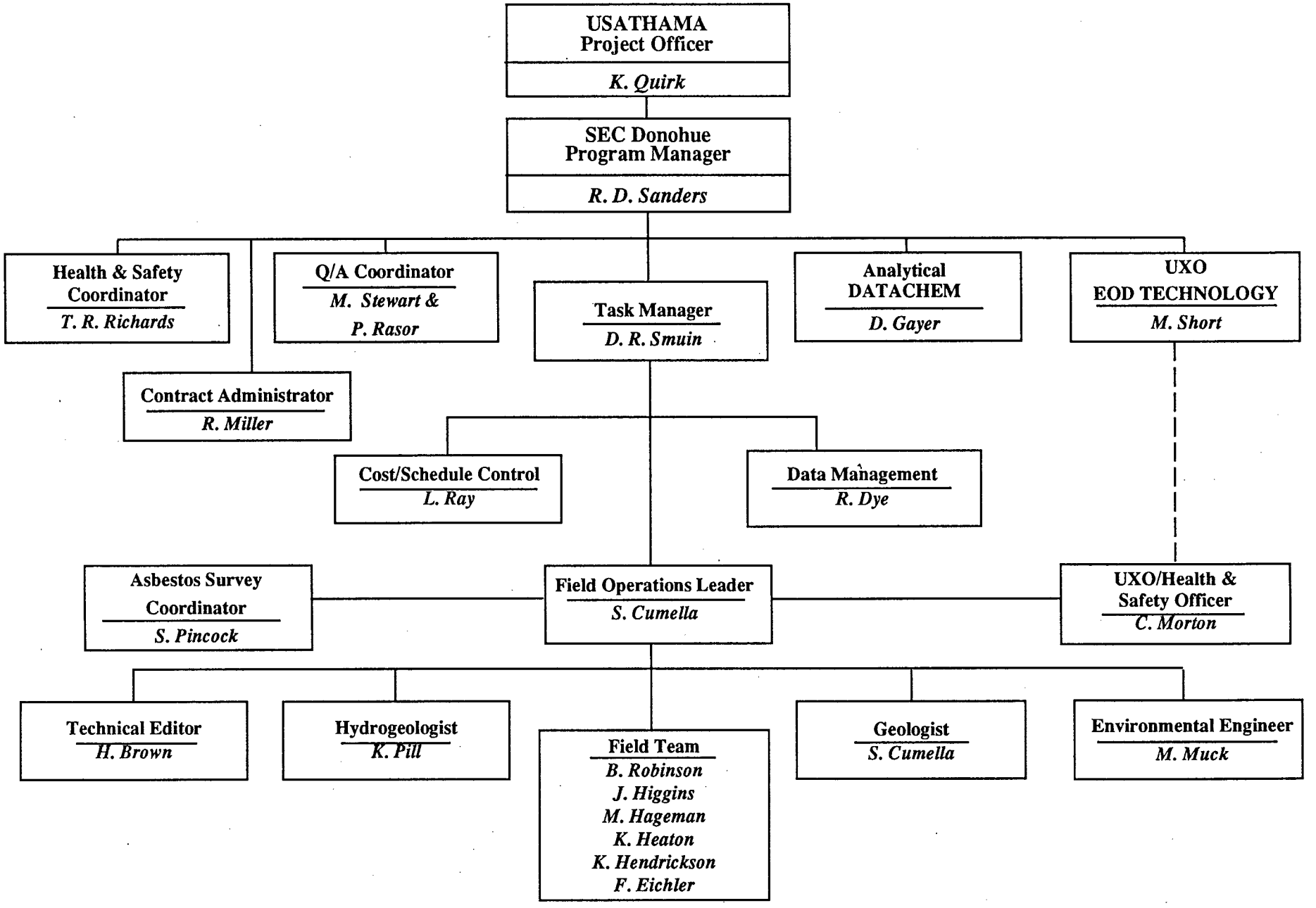

Figure 2: Jefferson Proving Ground-South RI/FS Task Organization

2.1.3 Task Manager, D. R. Smuin

Mr. Smuin reports to the Program Manager and is responsible for directing the day-to-day activities associated with the task. His responsibilities include preparing the Resource Management and Utilization Plan; overseeing implementation of the RI/FS Technical Plan and associated planning documents (i.e., SDP, HSP, and QCP), providing technical direction; managing budgets, schedules, and work assignments; interfacing with the Program Manager, Quality Assurance Coordinator, Contract Administrator, Health and Safety Coordinator, and USAEC technical representatives; and preparing technical reports, progress reports, status reports, and meeting reports. He will have the authority to allocate work assignments, budgets, and schedules to relevant elements of the team; to review subcontractor invoices; and to deal directly with USAEC regarding specific task-related matters.

2.1.4 Quality Assurance Coordinators, M. K. Stewart and P.J. Rasor

The QAC function will be jointly performed by Mr. Rasor and Mr. Stewart. Mr. Stewart will work closely with the Task Manager, but will report directly to the Program Manager. This independence will allow him to offer unbiased assessments and quality control recommendations for all activities associated with the USAEC contract. These responsibilities include ensuring that contract requirements and USAEC QA Program guidelines are met, which requires adherence to all field monitoring and sampling procedures; ensuring that adequate quality assurance/quality control (QA/QC) documentation is provided; ensuring that proper internal and external lines of communication are established and followed by the Project Team; enforcing formal sign-off procedures for document control and record keeping; and recommending and implementing corrective action as appropriate.

Mr. Rasor will interface with the Task Manager and the Laboratory Director. He will ensure that all Laboratory QA guidelines are met, will oversee the preparation of Laboratory Data Control Report, and will review all project chemical data for compliance with QA/QC requirements.

2.1.5 Contract Administrator, R. Miller

Mr. Miller will assist in contract negotiations and will administer the USAEC contract and all subcontracts. He will prepare procurement procedures, oversee subcontract bidding, and award subcontracts, while reporting directly to the Program Manager.

2.1.6 Health and Safety Manager, T. R. Richards

Mr. Richards will address the health and safety concerns that may be present and will have direct access to the Program Manager. Thus, he will be in a position to make direct recommendations to contractor management concerning the possible cessation or modification

of project activities for health and safety reasons. The responsibilities of this position will include overseeing preparation of a Health and Safety Plan, overseeing the submission of accident/incident reports, approving all individuals on the project team who will have safety/health responsibilities, monitoring all required safety/health training programs, providing on-call assistance to any part of the team on an as-needed basis; conducting safety program audits, and remaining current on all project activities involving health and safety issues. He has the authority to identify modifications to the safety program being implemented and to stop work due to safety hazards.

2.1.7 Data Management Coordinator, R. L. Dye

Ms. Dye will implement the Data Management Plan and will be responsible for establishing procedures for transmission of all data to USAEC. She will incorporate quality assurance and data-management requirements into the data management system, instruct laboratory and field personnel in the proper procedures for coding data, and oversee the operation of the data management system.

2.1.8 Cost/Schedule Coordinator, L. Ray

Ms. Ray will report through the Task Manager to the Program Manager and will be responsible for tracking actual costs against the initial baseline budget, updating the schedule as work progresses, producing cost reports, providing input to the monthly cost/performance report, and producing and distributing the monthly invoice.

2.2 Resumes of Key Program Personnel

The following pages are the resumes of personnel filling key positions for Task Order 0005 RI/FS at Jefferson Proving Ground, Indiana. Table 1 shows a list of those individuals.

Table 1. Key Program Personnel for Task Order 0005

Name	Position
Robert D. Sanders	Program Manager
David R. Smuin	Task Manager
Michael K. Stewart	Quality Assurance Coordinator
Peter J. Rasor	Quality Assurance Coordinator
Rex Miller	Contract Administrator
Thomas R. Richards	Health and Safety Coordinator
Roxanna L. Dye	Data Management Coordinator
Lynn Ray	Cost/Schedule Controller

Project Assignment: Project Manager, USAEC Programs

Education/Training: B.S., Idaho State University, 1977
Certified Hazardous Materials Technician

Related Experience:

As Division Manager, Grand Junction Colorado Division of the Mountain Region, Mr. Sanders oversees the operations of SEC Donohue, a WMES affiliate, and has full responsibility for division program performance. He provides program management oversight for a $15 million Total Environmental Program Support (TEPS) contract for USATHAMA. Current projects under this contract include the Tooele Army Depot and Jefferson Proving Grounds. His work covers all RCRA RFI/CMS and CERCLA RI/FS regulations, and the sampling of EOD and nerve gas breakdown products.

Chem-Nuclear Geotech, Grand Junction, Colorado. Mr. Sanders directed development and implementation of the Commingled Waste Investigation Project within the UMTRA Grand Junction Vicinity Property Program. He managed 30 professionals engaged in regulatory compliance for RCRA, CERCLA, TSCA, NEPA, HMTA, CAA, CWA, and SDWA. As part of the UMTRA program at DOE GJPO, he directed a RI/FS equivalent for 100 mixed waste sites in the Grand Junction area. Mr. Sanders played a major role in reaching consensus with the regulators on the program direction.

EG&G Idaho, Inc., Idaho Falls, Idaho. Mr. Sanders directed hazardous waste management projects for the U.S. Air Force. Major projects included characterization and inspection of the Industrial Waste Water Collection System, permitting and closure of Underground Storage Tanks, development of a generic Contaminated Soil Management Plan, feasibility study for the Centralization of Hazardous Waste Activities, and dismantlement of an abandoned metals plating operation.

Mr. Sanders also developed and managed the mixed-waste materials program at INEL-RC. He served as laboratory QA officer for the INEL Federal Facility Agreement and Consent Order. He was the principal investigator for waste characterization efforts for the DOE Regional Hazardous Waste Processing Facility Feasibility Study, as well as Special Hazardous Waste Manager for the INEL.

Mr. Sanders managed a coal laboratory at two locations. He supervised analysis of water, soil, and fertilizer samples.

David R. Smuin SEC Donohue

Project Assignment: Task Manager

Education/Training: M.S. Hydrogeology, University of Nevada - Reno, 1992
B.S., Geology, Mesa State College, 1976
A.S., Environmental Geoscience, Mesa Junior College, 1971
Hazardous Material Handling Training
40-hour SARA Training and current 8-hour refresher
8-hour Supervisor SARA Training

Related Experience:

Mr. Smuin has 16 years of professional experience as a geoscientist, with emphasis on characterization of hazardous waste sites, and minerals exploration geology and geochemistry.

Mr. Smuin is presently a Senior Project Engineer for SEC Donohue with the responsibility of providing Task Manager support to USAEC under Contract No. DAAA15-90-D-007.

From 1985 to 1992, Mr. Smuin was a **Project Manager for Oak Ridge National Laboratory** in Grand Junction, CO, where he was responsible for managing completion of Preliminary Assessments/Site Investigations (PA/SI) and complete RI/FS for the Dyess Air Force Base, TX; Mare Island Naval Shipyard, CA; Naval Air Station, NV; and Anvil Point Naval Oil Shale Reserve, CO. Previous to that assignment, he was responsible for a DOE Headquarters-sponsored environmental assessment, including sampling and analysis of soil, surface water, and groundwater for both radioactive and hazardous waste constituents at several DOE facilities.

From 1976 to 1985, Mr. Smuin was an exploration geologist for various minerals exploration companies in the western United States where he was responsible for the implementation of exploration programs for uranium and precious metals deposits.

Project Assignment: Quality Assurance Coordinator

Education/Training: B.S., Manufacturing, Colorado State University, 1978

Related Experience:

Mr. Stewart has **13 years of experience as an engineer in the area of manufacturing systems and design.** He has experience in the specification, evaluation, and surveillance of new product lines; development, testing, and quality assurance of software; and manufacturing and administrative activities on product lines.

Mr. Stewart joined SEC Donohue in March of 1992 as a Quality Assurance Manager.

Mr. Stewart was **Lead Engineer** responsible for the specification, evaluation, and surveillance of activities for both existing and new product lines (reactor components/assemblies) at **Westinghouse Savannah River Company in Savannah, Georgia.** Also, he was responsible for the implementation of the NQA-1 Quality Assurance Manual and Total Quality Management System within the Reactor Materials Division. He, also, created and maintained inspection plans and procedures documenting inspection methodology and required M&TE; developed and maintained NQA-1 and TQM implementation procedures; preformed quality improvement activities using Total Quality concepts; and performed audits/surveillance as required. Mr. Stewart was the Quality Representative on the team responsible for fabrication of storage containers resulting in a savings of $100,000. He received the Total Quality Achievement Award.

Mr. Stewart was the **Lead Engineer** responsible for specific manufacturing, quality, and inspection process for the new and existing product lines (submarine power systems) at the **UNC Naval Products in Uncasville, Connecticut.** Also, he was responsible for development, testing, and quality assurance of software in support of $100 million Computer Integrated Manufacturing facility. He authorized final approval on changes to drawings, specifications, technical manuals, inspection procedures/plans, and software quality plans; applied technical expertise in troubleshooting problems and developing solutions; supervised process/design reviews to the customer; oversaw budgeting, scheduling, and interfacing between user groups and developers; and developed and implemented a successful Process Definition documentation system with an estimated value of $500,000.

Mr. Stewart was **Lead Engineer** responsible for manufacturing and administrative activities on both existing and new high-volume product lines (nuclear components/weaponry) at **Rockwell International in Golden, Colorado.** He, also, had authority and responsibility for project management/development on numerous special job orders (budgets up to $400,000).

Peter J. Rasor SEC Donohue

Project Assignment: Quality Assurance Coordinator

Education/Training: B.S., Chemistry, Marion College, 1972

Related Experience:

Mr. Rasor has **18 years of experience in solid/hazardous waste management and environmental laboratory quality assurance.** He began employment with SEC Donohue in 1990. Recently, he was one of only two persons in SEC Donohue to complete Halliburton NUS training for Navy Clean Data Validation, the primary focus of which is the Great Lakes Naval Station Project. Currently, he is helping complete Part II of the Indianapolis Stormwater Permit and the associated sampling and data review.

Mr. Rasor served as a **technical advisor** to the **Indiana Environmental Staff** during the development of rules for hazardous waste and PCBs and the updating of solid waste rules in conformance to the requirements of the Indiana Environmental Management Act. Duties included investigating and evaluating various situations concerning handling and disposal of solid/hazardous waste. Duties also included providing testimony as an expert witness during legal proceedings involving solid/hazardous waste environmental issues.

Mr. Rasor was the **chief evaluator** of **RCRA facilities** from a chemical waste viewpoint. Responsibilities included determination of RCRA facility status in conjunction with its petition for delisting and facility compliance with the requirements for a RCRA Part B Permit for Treatment, Storage, or Disposal Facilities.

Mr. Rasor served as the **Quality Assurance Officer** with responsibilities for several private and public sector environmental laboratories. Duties included performing analysis by approved U.S. EPA methodology, reviewing results of analyses performed by other analysts, preparing Quality Assurance Plans, and evaluating sampling methodologies. He initiated efforts toward a nationwide hazardous waste laboratory accreditation program with the National Bureau of Standards by Federal Register notice while employed by the State of Indiana.

Mr. Rasor developed or directly supervised the development of several principal areas within the scope of solid and hazardous waste management. He was also responsible for managing the implementation of these new program areas. Duties included development and implementation of portions relative to quality assurance and to technical and administrative aspects of solid/hazardous waste management.

Project Assignment: Contract Administrator

Education/Training: Bachelor of Science with a Minor in Business, Southwest Missouri State University, 1974.

Related Experience:

Mr. Miller has **15 years of experience in all phases of construction and construction management**, including cost accounting, contract administration and preparation, scheduling, quality-control development and implementation, drafting, and surveying.

Mr. Miller began his career in 1976 in Iowa City, Iowa, where he was an **Assistant Surveyor** for MMS Consultants. **From 1977 to 1979,** he worked as a **Project Manager** for the Melrose Corporation, where he organized feasibility studies. **In 1980,** he became a licensed **Real Estate Agent,** adding another credential to his resume. **From 1981 to 1985,** he held the positions of **Project Manager, Contract Administrator**, and **Construction Coordinator,** managing multi-million-dollar government construction contracts. Mr. Miller was a **Project Manager/Senior Contract Administrator from 1985 to 1986** for J&B Construction Company, where he was responsible for government contracts on various military installations. **From 1987 to 1992,** he was a **Senior Field Engineer** for Chem-Nuclear Geotech, responsible for commercial remediation projects and for all supporting personnel; **Senior Contract Administrator**, responsible for contract preparation and award for the Uranium Mill Tailings Remedial Action Program; and **Senior Contract Administrator,** responsible for EPA Superfund contracts for Denver Radium.

Project Assignment: Site Health and Safety Engineer

Education/Training: 1973 to 1976, Utah State University, Logan, UT. Field of study was Medical Technologist, completed 3 years of study toward degree. Certified Occupational Health and Safety Technologist (Certification Number 949), achieved through the successful completion of the American Board of Industrial Hygienists and the Board of Certified Safety Professionals examination. Other courses include Environmental Law, Pacific Radiation Health Physics, Basic and Advanced Industrial Hygiene, RCRA Law, CERCLA/SARA, Certified Asbestos Abatement, and Occupational Respiratory Protection Administrator.

Related Experience:

From **1991 to present**, Mr Richards has been the **Senior Health and Safety Manager** for SEC Donohue, Rocky Mountain Region, Grand Junction, Colorado. He has served as Health and Safety Coordinator for Task Orders 0002, 0003, and 0004 under USAEC Contract No. DAAA15-9 0-D-0007. In addition, he has been responsible for preparation of Health and Safety Plans, establishing and implementing policies and procedures, performing audits for compliance with regulatory requirements, and performing field surveillance of field activities for compliance with health and safety procedures as defined in the project-specific health and safety plans. He also has developed and instituted a sampling data evaluation program for respirable dust, heavy metals, asbestos, and organic vapors breathing zone sampling.

From 1986 to 1991, Mr. Richards was responsible for management of a multi-disciplinary team consisting of 3 Program Supervisors and 26 Health Physics Technicians, providing comprehensive health and safety support of waste management operations conducted for the DOE, DOD, and EPA. Projects include the Uranium Mill Tailings Remedial Action Program, U.S. DOE Surplus Facilities Management Program, and Remedial Investigation/Feasibility Study support at seven U.S. Air Force Bases. He is responsible for preparation and implementation of Health and Safety Policies, standard operating procedures, site Health and Safety Plans, and health risk assessments.

From 1976 to 1986, Mr. Richards was responsible for promoting safety and safety awareness, monitoring, reporting and correcting recognized workplace contaminants, investigating and reducing accidents, recognizing and eliminating hazards and ensuring compliance with MSHA and Company safety standards and regulations at a large mining operation in the State of Utah. Responsible for the safety supervision of 200 plus employees. Also, accountable for health, industrial hygiene, and radiation detection, these functions

include monitoring, correcting, and all associated record keeping requirements. In this position, Mr. Richards was responsible for 14 underground uranium mines and was a Utah State certified Emergency Medical Technician for eight years.

From 1965 to 1973, Mr. Richards was a Medical Laboratory Technician, Medical Technologist, and Field Medical Technician (Paramedic) in the U.S. Navy. He achieved the rank of E-5; graduated from the Hospital Corps School, San Diego, California; received Certification for Lab Tech after completion of on-the-job training program at Monterey Post Graduate School, Monterey, California; and received Certification for Field Medical Technician (Paramedic) upon completion of 4 months of intensive training for 18 months service as a frontline paramedic in Vietnam. He received an Honorable Discharge upon completion of 8 years of military service.

Roxanna L. Dye SEC Donohue

Project Assignment: Data Manager

Education/Training: High School Diploma, Clear Creek High School, League City, TX, 1975; Executive Secretarial Certificate, Zorn Business College, Houston, TX, 1979; 14 semester hours credit, San Jacinto Junior College, Pasadena, TX, 1985

Related Experience:

From January, 1991 to present, Ms. Dye has been the **Data Manager** for Task Orders 0001, 0002, 0003, and 0004 under USAEC Contract No. DAAA15-90-D-0007. She has been responsible for overall data management systems for each task order.

From early 1990 to January 1991, Ms. Dye was the **Data Coordinator** for **Field Assessments** at **CNES Geotech**. She was responsible for wordprocessing of UMTRA and SFMP completion reports for weekly submittal to the DOE and ORNL to meet monthly milestone requirements. She was also responsible for weekly input and editing of an established database for Land Survey group on UMTRA and SFMP properties. On an as-requested basis, Ms. Dye accessed the County Tax Assessor's database for property-owner information. She held back-up responsibility for maintenance of an UMTRA property assignments database.

From 1989 to 1990, she was the **Senior Secretary** for **Waste Management Programs** at **CNES Geotech**. She accomplished the timely disposition of weekly and monthly reports to the DOE, directly affecting Cost Performance Award Fee milestones. She provided secretarial support and wordprocessing to a staff of 8 project managers on 10 projects, maintained a database for employee training records, and provided shorthand and transcription services as required.

Prior to joining CNES Geotech, Ms. Dye was the Office Manager and Security Supervisor for General Technology Applications, Inc., in Manassas, VA. In addition to general secretarial support, she created and maintained a database of Company shareholder and option holder information, and an extensive database of all U.S. EPA Regional Response Team members. She was responsible for government-contract proposal preparation and processing, and the administration of existing contracts. In this capacity, she created and maintained an extensive database on five government contracts in preparation for audits by the DOD. She was solely responsible for the accuracy and integrity of the database, and set up and maintained rigid quality-control procedures to achieve this goal. During the audit procedure, she provided as-needed manipulations of the database to auditor-requested information. She held primary responsibility for security administration in regard to classified contracts and biannual security inspections by the DOD, and had a secret-level clearance.

Lynn M. Ray SEC Donohue

Project Assignment: Cost/Schedule Controller

Education/Training:

High School Diploma, Carlsbad High School, Carlsbad, NM, 1965; Intensive Secretarial Program Diploma, New Mexico State University, San Juan Campus, Farmington, NM, 1976

Related Experience:

Since **October, 1990**, Ms. Ray has served as **Cost/Schedule Controller** for Task Orders 0001, 0002, 0003, and 0004 under USAEC contract No. DAAA15-90-D-0007. She has been responsible for establishing, updating, and reporting the project budget and schedule. This has included producing and submitting monthly cost/performance reports to USAEC.

From **1989 to October, 1991**, Ms. Ray was the **Office Manager** for Chem-Nuclear Environmental Services. In this capacity, she was responsible for all office functions such as supervising secretarial staff, handling office and equipment lease agreements, requisitioning equipment and supplies, and accounting. In the accounting functions, she coordinated all invoices with corporate headquarters and accrued cost information to project, project task and subtask, and schedule for all ongoing projects. Cost accruals in these areas were further divided into labor, travel, ODCs, subcontracts, and fee. She was also responsible for identifying cost variances, notifying the appropriate manager, and obtaining written resolution of any variances from the appropriate corporate department.

From **1985 to 1989**, Ms. Ray was a **Senior Secretary; Environmental Compliance and Regulatory Affairs Division, CNES Geotech, Grand Junction, CO.** In that capacity, she was responsible for preparation of various milestone and technical reports, presentation transparencies, weekly reports, general departmental correspondence, and creation and maintenance of databases and spreadsheets.

3.0 PROJECT PERSONNEL STAFFING

Contractor staffing at the program level was discussed in Section 2.1 of this plan. The organization of staff for the JPG task order is shown in Figure 2. The responsibilities of these key individuals are discussed in the following sections. Project personnel will report to the Task Manager.

3.1 TECHNICAL PERSONNEL

3.1.1 Field Operations Leader, S. Cumella

Mr. Cumella will assist the Project Manager in the preparation of the RI/FS planning documents with emphasis on the completion of the Sampling Design Plan. In addition, Mr. Cumella is responsible for coordinating the entire field program and will provide on-site leadership in the collection of all analytical samples. The Field Operations Leader (FOL) will report to the Task Manager.

3.1.2 Site Hydrogeologist, K. Pill

Mr. Pill will report to the FOL as site hydrogeologist and will be responsible for the water sampling, sample handling, and shipping. He will be responsible for sample logs and other documents associated with the monitoring wells.

3.1.3 Site Geologist, S. Cumella

Mr. Cumella will report to the Task Manager and will be responsible for completing and reviewing geologic evaluations of sites at JPG for preparation of RI/FS planning documents. He will also review the analytical results of the sampling effort and will provide interpretations, conclusions, and recommendations on the basis of the geochemical and geological environment at JPG. For Task 0005, Mr. Cumella will serve in a dual capacity as FOL and geologist. This dual effort will not compromise performance of either position.

3.1.4 Environmental Engineer, M. Muck

Ms. Muck will report to the Task Manager and will be responsible for completing and reviewing feasibility study evaluations of sites at JPG. She will be responsible for collecting data for and assisting with risk analysis and assessment.

3.1.5 Site Health and Safety Officer, C. Morton

EOD Technology will provide the Site Health and Safety Officer, Mr. Cecil Morton, who will be on-site at all times during field operations. He will monitor the site safety program and will report safety violations to the SEC Donohue Health and Safety Manager, Task Manager, and the FOL.

3.1.6 Asbestos Survey Coordinator, S. Pincock

Mr. Pincock will report to the Task Manager and will be responsible for surveying all buildings south of the firing line for asbestos-containing materials. He will also be responsible for writing and implementing the asbestos survey and sampling plan. He will act as the on-site coordinator during the asbestos sampling and will coordinate compilation, evaluation, and technical reporting of the resultant sample data.

3.1.7 Technical Editor, H. Brown

Mr. Brown will report to the Task Manager and will be responsible for the production of project hard-copy technical reports and plans. His specific responsibilities include editing for clarity and consistency, and coordinating authors, graphics personnel, and clerical staff to meet report deadlines.

3.2 Resumes of Key Project Personnel

Table 2 shows the name and position of key personnel for Task Order 0005. Resumes of these people are on the following pages.

Table 2. Key Project Personnel for Task 0005

Name	Position
S. Cumella*	Field Operations Leader
S. Cumella*	Site Geologist
K. Pill	Site Hydrogeologist
M. Muck	Environmental Engineer
S. Pincock	Asbestos Survey Coordinator
H. Brown	Technical Editor

* Dual Capacity

Stephen P. Cumella SEC Donohue

Project Assignment: Field Operations Leader and Site Geologist

Education/Training: Master of Arts, Geology, 1981, University of Texas at Austin;
Bachelor of Science, Geology, 1977, University of Texas at Austin;
Certification, Professional Geologist, State of Wyoming.

Related Experience:

Mr. Cumella has 12 years of experience in the earth sciences and technical services areas. He has experience in supervising drilling operations and well installations. He also has experience in logging of core and cuttings, petrography, and geochemistry. Other experience includes hydrologic investigations.

Mr. Cumella joined SEC Donohue in **May 1992** as a staff geologist. He has been assigned to provide geologic support to Task Orders 0002, 0003, and 0004 of USAEC Contract DAAA15-90-D-0007.

From **1990 to 1992**, Mr. Cumella provided consulting services to **Cockrell Oil Corporation**, Houston, Texas. Work responsibilities included the development of a water sampling and testing program for a coal-bed methane project to comply with regulatory requirements. He also designed and implemented well-completion programs, supported hydrologic studies for an Environmental Impact Statement, supervised wellsite geologic operations, and described core and cuttings during drilling operations.

From **1981 to 1990**, Mr. Cumella was employed by **Chevron Overseas Petroleum, Inc. and Chevron, U.S.A.** as an exploration and development geologist where he conducted hydrologic studies, completed well-permit applications, designed and implemented well workover procedures, performed core evaluations and petrography, and performed geochemical studies.

From **1978 to 1979**, Mr. Cumella performed regional groundwater aquifer studies for the **Texas Bureau of Economic Geology** in support of the East Texas Nuclear Waste Isolation Project.

Kenneth G. Pill SEC Donohue

Project Assignment: Site Hydrologist

Education/Training: Master of Science, Hydrology, 1989, University of Arizona, Tucson, Arizona; Bachelor of Arts, Geology, 1984, University of Northern Colorado, Greeley, Colorado. Masters program work related to water chemistry and bioremediation.

Related Experience:

From **May 1992 to present,** Mr. Pill has been employed by SEC Donohue as a staff hydrologist responsible for the oversight of all hydrologic characterization activities in support of USAEC Contract No. DAAA15-90-D-0007.

From **1989 to April, 1992,** Mr. Pill was employed as a **Sr. Staff Hydrologist** for **Hart Crowser, Inc.,** San Francisco and Portland offices. His responsibilities included all phases of site characterizations for a number of service stations with soil and groundwater contamination. Field experience includes soil and groundwater sampling, groundwater-monitoring well installation, slug and pump-test data collection, and soil-vapor extraction pilot testing. Mr. Pill has experience using various groundwater models which simulate contaminant transport in both unsaturated and saturated media. He was also responsible for project management for a soil remediation and groundwater-treatment-system installation project.

Project Assignment: Environmental Engineer

Education/Training: M.S. in Environmental Engineering, Mixed-Waste Management Emphasis, University of Tennessee, 1992.
B.S. in Geology, University of Missouri, 1987.
OSHA 40-Hour Training (29 CFR 1910.120), 1989, and current 8-Hour refresher.

Related Experience:

Ms. Muck has **3 years of experience as a hydrogeologist** with an emphasis on technical oversight of CERCLA projects on Department of Defense (DOD) facilities and **1 year of experience as an environmental engineer** for CERCLA and RCRA projects on DOD facilities.

Ms. Muck joined SEC Donohue in **August 1992** as a **Environmental Engineer/Geologist.** She has been assigned to perform Remedial Investigation/Feasibility Studies and RCRA Facility Investigation/Corrective Measures Studies for soil and groundwater contamination at CERCLA and RCRA sites on Department of Defense facilities; evaluate hydrogeological and analytical data, assess federal and state cleanup requirements, assess human health and environmental risk, and assemble and evaluate remedial alternatives in support of USAEC Contract No. DAAA15-90-D-0007.

From 1990 to 1992, Ms. Muck was employed by **Analysas Corporation** as a **Hydrogeologist** where she provided technical oversight of the Site Investigation (SI) and RI/FS phases of CERCLA projects, including NPL sites, managed by HAZWRAP for the Department of Defense.

In 1989, Ms. Muck worked as a **Hydrogeologist Intern** at the **Oak Ridge National Laboratory** where she prepared Air Force No-Further-Action Decision Documents for several CERCLA sites. In addition, Ms. Muck prepared the Statement of Work for SI and RI/FS activities, performed surveillance of field investigations, and provided technical review of SI and RI reports submitted to HAZWRAP by consultants.

Syd F. Pincock SEC Donohue

Project Assignment: Health and Safety Officer

Education/Training: A.A. in Arts and Sciences, Ricks College, Rexburg, ID, 1982.
A.A.S. in Nuclear Technology, Eastern Idaho Technical College, Idaho Falls, ID, 1983.
Certified Occupational Health and Safety Technologist #948, Joint Committee of the American Board of Industrial Hygiene and the Board of Certified Safety Professionals of the Americas, 1990 (and annually).
Registered Radiation Protection Technologist, National Registry of Radiation Protection Technologists, 1990 (and annually).
AHERA Certified Asbestos Inspector/Management Planner, 1989 (and annually). DOT/DOE Certified Hazardous Materials Shipper, 1988 (and annually).

Related Experience:

From 1987 to 1992, Mr. Pincock was the **Occupational Health and Safety Supervisor** for Chem-Nuclear Geotech where he was responsible for the management of the Operational Health and Safety technician staff. This included the coordination and assignment of health physics, industrial hygiene, and industrial safety field oversight tasks. Mr. Pincock also functioned as Health and Safety's point-of-contact with Program/Project Management for the Monticello Remedial action Project Superfund Site and various RI/FS projects within the Department of Defense; prepared Program/Project Planning documents, implementing the standard operating procedures based on the requirements of a site-specific health and safety hazard analysis; and oversaw field activities at the Monticello Millsite Remedial action Project Superfund Sites and various DOD sites.

From 1984 to 1987, Mr. Pincock was a **Certified Radiation and Chemistry Technician** for United Nuclear Industries. He performed radiological surveys for radiation, surface contamination, and airborne radioactive surveys; and performed water-chemistry analysis for reactor systems, support systems and waste streams.

In 1983 and 1984, Mr. Pincock worked at the Newport News Reactor Services as a **Health Physics Technician**, performing radiological controls surveys, which were required for the maintenance and repair of pressurized-water nuclear-propulsion systems.

Also **in 1983**, Mr. Pincock assisted the senior technical staff in radiation protection as a **Junior Health Physics Technician** at the Nuclear Support Services in Hershey, PA.

Project Assignment: Technical Editor/Document Coordinator

Education/Training: B.A. in English, Colorado State University, 1978.

Related Experience:

Mr. Brown has 12 years experience in technical editing and writing. He taught English at **Mesa State College** in **1990 and 1991**, before joining SEC Donohue in early 1992.

From 1988 to 1990, Mr. Brown was a **Technical Editor for UNC Geotech**, another contractor for the United States Department of Energy.

From 1986 to 1987, Mr. Brown taught English at the **University of California at Davis** and then held the position of **Director of Oyama English School in Oyama, Japan.**

From 1985 to 1986, Mr. Brown was a **Document Coordinator for Bendix Field Engineering Corporation**, which was a United States Department of Energy contractor for the remediation of uranium-mill tailings.

From 1983 to 1985, Mr. Brown edited and rewrote papers at **Yunnan Observatory** in the **People's Republic of China** in preparation for an international conference in solar physics.

4.0 MANAGEMENT PROCESS

4.1 SCOPE

The scope of this task order involves those resources and activities necessary to complete an RI/FS on the area south of the Firing Line at JPG, specific facility-wide studies (i.e., asbestos, USTs, and UXO), and one off-site location (e.g., inactive water supply wells). To accomplish this objective in an orderly and efficient manner, the work has been divided into the following summary tasks, which comprise the Work Breakdown Structure (WBS) shown in Table 3. The estimated labor hours and other associated costs required to accomplish these activities are shown in Table 4.

4.1.1 Initial Site Visit

A post-award conference and initial site visit with USAEC and JPG personnel will be the first phase of Task Order 0005 and Task Order 0005 Modification. This will be the planning phase of the project, which will include site familiarization, document review and assembly, obtaining Government Records, establishing site-specific and facility-specific health and safety requirements, and obtaining a sample of water to be used for decontamination that will be analyzed for project-specific analytes. In addition, requirements for containerization, storage, sampling, and disposal of field-generated wastes will be determined. During this visit, samples of the water to be used in well drilling and decontamination will be collected. Samples will be analyzed for all project-specific analytes (i.e., VOCs, semi-VOCs, metals, anions, explosives, and herbicides).

4.1.2 Resource Management Plan

A Resource Management Plan will be developed in accordance with USAEC requirements (ELIN A003). The plan will detail the management approach to completing the RI/FS work tasks as described in Task Order 0005 and Task Order 0005 Modification. Included in the plan will be a description of the program organization, listing key personnel and their respective program responsibilities; an outline of the management process to be utilized at JPG, including monitoring and reporting of budget and schedule; a detailed work breakdown structure showing types and distribution of resources required; and a detailed schedule showing start dates and completion dates for each major task or activity. Both a draft and a final version will be prepared. A draft will be submitted to USAEC no later than 30 days following the initial site visit.

4.1.3 Additional Plans

Because of the addition of 28 sites to the RI/FS at JPG, addenda to the existing work plans will be prepared under a modification to Task Order 0005. Drafts of these plans will be prepared prior to the start of field work; however, in order not to delay the start of field work, regulatory approval will not be required before field work commences. Instead, a

Table 3. Work Breakdown Structure for Remedial Investigation/Feasibility Study at Jefferson Proving Ground (continued)

WBS	Task Name
221	Jefferson Proving Ground
221.05	Task Order 0005 and 0005 Mod
221.05.01	Initial Site Visit
221.05.02	Resource Management Plan
221.05.03[b]	Work Plan Addenda
221.05.03.01	Draft Plans
221.05.03.02	Draft Final Plans
221.05.03.03	Final Plans
221.05.04	Asbestos Survey
221.05.04.01	Survey Buildings
221.05.04.02	Asbestos Work Plan
221.05.04.03	Asbestos Sampling
221.05.04.04	Asbestos Report
221.05.05	Field Work
221.05.05.01	Mobilization
221.05.05.02	Fall 1992 Field Work
221.05.05.03	Spring 1993 Field Work
221.05.05.04	Sample Analysis
221.05.05.05	Demobilization
221.05.06	RI Report
221.05.06.01	Data Validation
221.05.06.02	Data Evaluation
221.05.06.03	Risk Assessment
221.05.06.04	Draft RI Report
221.05.06.05	Draft Final RI Report
221.05.06.06	Final RI Report
221.05.07	Feasibility Study

Table 3. Work Breakdown Structure for Remedial Investigation/Feasibility Study at Jefferson Proving Ground (continued)

WBS	Task Name
221.05.07.01	Develop Alternatives
221.05.07.02	Screen Alternatives
221.05.07.03	Detailed Alternatives Analyses
221.05.07.04	Draft FS Report
221.05.07.05	Draft Final FS Report
221.05.07.06	Final FS Report
221.05.08	Project Management

[a]Work Breakdown Structure.
[b]Part of Task 0005 Modification.

Table 4. Estimated Labor Hours and Associated Costs for Completion of RI/FS at Jefferson Proving Ground

Table 4 SEC Donohue LABOR HOURS/BUDGET – TASK 0005 ACTIVITY/WBS		1992			1993												1994											
		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Initial Site Visit/221.05.01	Budget Hrs.	224	0																									
Total Hours = 224	Budget $	15357	0																									
Total $ – 26,306	Actual Hrs.	255	0																									
	Actual $	17224	0																									
	ODCs (Planned)	1000	0																									
	ODCs (Actual	329	44																									
	Travel (Planned)	8000	0																									
	Travel (Actual)	7188	1493																									
	Subcontractor (Planned)	0	0																									
	Subcontractor (Actual)	0	0																									
	Fee (Planned)	1949	0																									
	Fee (Actual)	1369	123																									
	Total (Planned)	26306	0																									
	Total (Actual)	26110	1660																									
	Cumulative (Planned)	26306	26306	26306	26306	26306	26306	26306	26306	26306	26306	26306	26306	26306	26306	26306	26306	26306	26306	26306	26306	26306	26306	26306	26306			
	Cumulative (Actual)	26110	27770	27770																								
Resource Management Plan/221.05.02	Budget Hrs.	112	0	88	86																							
Total Hrs. = 286	Budget $	7679	0	6033	5896																							
Total $ = 22,797	Actual Hrs.	36	2	55																								
	Actual $	1425	47	2987																								
	ODCs (Planned)	500	0	500	500																							
	ODCs (Actual	0	277	8																								
	Travel (Planned)	0	0	0	0																							
	Travel (Actual)	0	0	0																								
	Subcontractor (Planned)	0	0	0	0																							
	Subcontractor (Actual)	0	0	0																								
	Fee (Planned)	654	0	523	512																							
	Fee (Actual)	63	24	134																								
	Total (Planned)	8833	0	7056	6908																							
	Total (Actual)	1488	348	3129																								
	Cumulative (Planned)	8833	8833	15889	22797	22797	22797	22797	22797	22797	22797	22797	22797	22797	22797	22797	22797	22797	22797	22797	22797	22797	22797	22797	22797			
	Cumulative (Actual)	1488	1836	4965																								
Work Plan Addendums/221.05.03	Budget Hrs.	0	27	245	147	0	99																					
Total Hrs. = 518	Budget $	0	1851	16797	10078	0	6787																					
Total $ = 41,054	Actual Hrs.	164	201	196																								
	Actual $	8750	10050	8290																								
	ODCs (Planned)	0	500	1000	500	0	500																					
	ODCs (Actual	1656	0	215																								
	Travel (Planned)	0	0	0	0	0	0																					
	Travel (Actual)	0	0	0																								
	Subcontractor (Planned)	0	0	0	0	0	0																					
	Subcontractor (Actual)	0	0	0																								
	Fee (Planned)	0	188	1424	846	0	583																					
	Fee (Actual)	522	448	387																								
	Total (Planned)	0	2539	19221	11424	0	7870																					
	Total (Actual)	10928	10498	8892																								
	Cumulative (Planned)	0	2539	21760	33184	33184	41054	41054	41054	41054	41054	41054	41054	41054	41054	41054	41054	41054	41054	41054	41054	41054	41054	41054	41054			
	Cumulative (Actual)	10928	21426	30318																								

Table 4. Estimated Labor Hours and Associated Costs for Completion of RI/FS at Jefferson Proving Ground (continued)

Table 4 SEC Donohue LABOR HOURS/BUDGET – TASK 0005 ACTIVITY/WBS		1992			1993												1994											
		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Asbestos Survey/221.05.04	Budget Hrs.	102	286	38	900	1050	497	164	300	335	100	232																
Total Hours = 763	Budget $	4956	19608	2605	61704	71988	34074	11244	20568	22968	6856	15906																
Total $ = 440,665	Actual Hrs.	186	422	189																								
	Actual $	10374	25255	11167																								
	ODCs (Planned)	0	1700	500	9916	9916	1000	0	1000	1000	500	516																
	ODCs (Actual	1430	504	2298																								
	Travel (Planned)	0	4500	0	20000	20000	0	0	0	0	0	0																
	Travel (Actual)	689	4421	2899																								
	Subcontractor (Planned)	0	0	0	65000	0	0	0	0	0	0	0																
	Subcontractor (Actual)	0	0	0																								
	Fee (Planned)	396	2065	248	12530	8152	2806	900	1725	1917	588	1314																
	Fee (Actual)	632	1519	913																								
	Total (Planned)	5352	27873	3353	169150	110056	37880	12143	23293	25884	7944	17736																
	Total (Actual)	13125	31699	17277																								
	Cumulative (Planned)	5352	33225	36578	205728	315784	353664	365808	389100	414985	422930	440665	440665	440665	440665	440665	440665	440665	440665	440665	440665	440665	440665	440665	440665			
	Cumulative (Actual)	13125	44824	62101																								
Field Work/221.05.05	Budget Hrs.	182	1876	652	169	322	378	1216	1140	481	1037	233	372	121														
Total Hours = 8,179	Budget $	12478	128619	44701	11587	22076	25916	83369	78158	32977	71097	15974	25504	8296														
Total $ = 2,471,206	Actual Hrs.	137	1018	869																								
	Actual $	8173	52900	43465																								
	ODCs (Planned)	9416	8716	8916	0	1000	8916	10916	9916	9916	10416	10416	36636	2000														
	ODCs (Actual	43	5501	11565																								
	Travel (Planned)	6000	20500	14000	0	0	25000	25000	25000	10000	20000	5000	5000	0														
	Travel (Actual)	2171	4177	17956																								
	Subcontractor (Planned)	0	267000	274667	206111	122222	34666	130763	111590	11158	89145	140085	57313	0														
	Subcontractor (Actual)	0	5232	25725																								
	Fee (Planned)	2232	33987	27383	17416	11624	7560	20004	17973	5124	15253	13718	9956	824														
	Fee (Actual)	541	3550	6356																								
	Total (Planned)	30126	458822	369667	235114	156922	102058	270052	242637	69175	205911	185193	134409	11120														
	Total (Actual)	10928	71360	105067																								
	Cumulative (Planned)	30126	488948	858615	1093729	1250651	1352709	1622761	1865398	1934573	2140484	2325677	2460086	2471206	2471206	2471206	2471206	2471206	2471206	2471206	2471206	2471206	2471206	2471206	2471206			
	Cumulative (Actual)	10928	82288	187355																								
Remedial Investigation Report/	Budget Hrs.	0	0	0									411	516	612	1333	1053	354	363	43	181							
221.05.06	Budget $	0	0	0									28178	35377	41959	91391	72194	24270	24887	2948	12409							
Total Hours = 4,866	Actual Hrs.	0	0	0																								
Total $ = 438,986	Actual $	0	0	0																								
	ODCs (Planned)	0	0	0									5500	8916	10916	10916	9606	2922	4125	10212	1103							
	ODCs (Actual	0	0	0																								
	Travel (Planned)	0	0	0									0	2160	2160	2160	2160	0	0	0	0							
	Travel (Actual)	0	0	0																								
	Subcontractor (Planned)	0	0	0									0	0	0	0	0	0	0	0	0							
	Subcontractor (Actual)	0	0	0																								
	Fee (Planned)	0	0	0									2694	3716	4403	8357	6717	2175	2321	1053	1081							
	Fee (Actual)	0	0	0																								
	Total (Planned)	0	0	0									36372	50169	59438	112824	90677	29367	31333	14213	14593							
	Total (Actual)	0	0	0																								
	Cumulative (Planned)	0	0	0									36372	86541	145979	258803	349480	378847	410180	424393	438986	438986	438986	438986	438986			
	Cumulative (Actual)	0	0	0																								

Table 4. Estimated Labor Hours and Associated Costs for Completion of RI/FS at Jefferson Proving Ground (concluded)

Table 4 SEC Donohue LABOR HOURS/BUDGET – TASK 0005 ACTIVITY/WBS		1992			1993												1994											
		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Feasibility Study/221.05.07	Budget Hrs.	0	0	0													115	483	583	673	201	580	0	145	125			
Total Hours = 2,905	Budget $	0	0	0													7884	33115	39971	46141	13781	39765	0	9941	8570			
Total $ = 307,052	Actual Hrs.	0	0	0																								
	Actual $	0	0	0																								
	ODCs (Planned)	0	0	0													1310	7994	6791	704	9813	10916	10916	10927	11004			
	ODCs (Actual	0	0	0																								
	Travel (Planned)	0	0	0													0	2160	2160	2160	2160	2160	0	2160	2487			
	Travel (Actual)	0	0	0																								
	Subcontractor (Planned)	0	0	0													0	0	0	0	0	0	0	0	0			
	Subcontractor (Actual)	0	0	0																								
	Fee (Planned)	0	0	0													0	3461	3914	3920	2060	4227	873	1842	1765			
	Fee (Actual)	0	0	0																								
	Total (Planned)	0	0	0													9194	46730	52836	52925	27814	57068	11789	24870	23826			
	Total (Actual)	0	0	0																								
	Cumulative (Planned)	0	0	0													9194	55924	108760	161685	189499	246567	258356	283226	307052			
	Cumulative (Actual)	0	0	0																								
Project Management/221.05.11	Budget Hrs.	116	88	98	93	93	107	102	93	102	98	102	98	98	93	102	93	93	107	98	98	102	93	107	96			
Total Hours = 2,370	Budget $	7953	6033	6719	6376	6376	7336	6993	6376	6993	6719	6993	6719	6719	6376	6993	6376	6376	7336	6719	6719	6993	6376	7336	6582			
Total $ = 178,360	Actual Hrs.	141	52	194																								
	Actual $	8366	1975	10069																								
	ODCs (Planned)	0	0	0	0	0	500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	ODCs (Actual	79	67	810																								
	Travel (Planned)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2160	0	0			
	Travel (Actual)	0	0	0																								
	Subcontractor (Planned)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	Subcontractor (Actual)	0	0	0																								
	Fee (Planned)	636	483	538	510	510	627	559	510	559	538	559	538	538	510	559	510	510	587	538	538	559	683	587	527			
	Fee (Actual)	379	93	513																								
	Total (Planned)	8589	6516	7257	6886	6886	8463	7552	6886	7552	7257	7552	7257	7257	6886	7552	6886	6886	7923	7257	7257	7552	9219	7923	7109			
	Total (Actual)	8824	2135	11392																								
	Cumulative (Planned)	8589	15105	22362	29248	36134	44597	52149	59035	66587	73844	81396	88653	95910	102796	110348	117234	124120	132043	139300	146557	154109	163328	171251	178360			
	Cumulative (Actual)	8824	10959	22351																								
Totals	Budget Hrs.	736	2277	1121	1395	1465	1081	1482	1533	918	1235	567	881	735	705	1435	1261	930	1053	814	480	682	93	252	221	0	0	0
Total Hours = 22,246	Budget $	48423	156111	76855	95641	100440	74113	101606	105102	62937	84672	38874	60401	50392	48335	98384	86454	63761	72194	55808	32909	46758	6376	17277	15152	0	0	0
Total $ = 3,926,426	Actual Hrs.	919	1695	1503	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Actual $	54312	90227	75978	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ODCs (Planned)	10916	10916	10916	10916	10916	10916	10916	10916	10916	10916	10932	42136	10916	10916	10916	10916	10916	10916	10916	10916	10916	10916	10927	11004	0	0	0
	ODCs (Actual	3537	6393	14896	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Travel (Planned)	14000	25000	14000	20000	20000	25000	25000	25000	10000	20000	5000	5000	2160	2160	2160	2160	2160	2160	2160	2160	2160	2160	2160	2487	0	0	0
	Travel (Actual)	10048	10091	20855	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Subcontractor (Planned)	0	267000	274667	271111	122222	34666	130763	111590	11158	89145	140085	57313	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Subcontractor (Actual)	0	5232	25725	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Fee (Planned)	5867	36723	30116	31812	20286	11576	21463	20209	7600	16380	15591	13188	5078	4913	8916	7227	6146	6822	5511	3679	4787	1556	2429	2289	0	0	0
	Fee (Actual)	3507	5757	8303	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total (Planned)	79207	495750	406554	429480	273864	156271	289748	272816	102611	221112	210481	178038	68546	66324	120376	106757	82983	92092	74395	49664	64621	21008	32793	30932	0	0	0
	Total (Actual)	71403	117700	145757	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Cumulative (Planned)	79206	574956	981510	1410994	1684858	1841129	2130876	2403692	2506305	2727417	2937898	3115936	3184482	3250806	3371182	3477939	3560921	3653014	3727408	3777073	3841694	3862702	3895495	3926426	0	0	0
	Cumulative (Actual)	71403	189103	334860	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

field meeting with regulatory personnel will be arranged to familiarize them with the proposed work for the additional sites. The work plan addenda will be submitted at a later date for regulatory review and approval.

4.1.4 Asbestos Survey

An asbestos survey will be performed on all structures at JPG. According to Task Order 005, there are approximately 226 structures, which consist of administrative facilities; storage and warehouse facilities; maintenance and industrial facilities; and housing, dining, and medical facilities. The assessment shall be performed in accordance with the Asbestos Hazard Emergency Response Act of 1986 (AHERA) and TM 5-612. This assessment shall include, as a minimum, an inspection of each building to determine:

- Types of building materials suspected to be Asbestos Containing Material (ACM).
- Proposed sampling locations.
- Current condition of suspected ACM.
- Potential for future damage to suspected ACM.
- Inherent friability of material.
- Number of people in suspected potential exposure area.
- Duration of exposure in suspected area.

A separate inspection checklist covering these areas shall be prepared for each building.

Following the survey, an Asbestos Sampling Work Plan as described in the RI/FS Technical Plan will be prepared and submitted to USAEC after the Asbestos Survey. The Work Plan will include an evaluation of existing data, a description of the technical procedures, a schedule, and a task organization summary.

Upon approval of the Asbestos Sampling Work Plan, asbestos samples will be collected from each suspected ACM location as deemed appropriate by the SEC Donohue inspector and analyzed for asbestos content by polarized light microscopy. The number of samples collected will be statistically appropriate as defined in AHERA. For estimating purposes, a total of 3,000 samples was assumed.

After the sample and survey results have been collated for each facility, a hazard-ranking system assessment will be performed in accordance with TM-612. The facilities will be prioritized based upon ACM abatement requirements, and a draft asbestos report will be prepared. Results for each specific building or building group will be provided in separate appendices. The individual building results will include assessments and recommendations for friable ACM, building drawings, walk-through survey data sheets, laboratory certifications of analysis showing results, hazard-ranking system calculations and results, and chain of custody forms. Conclusions and recommendations will be provided for abatement of ACM, including volume/area estimates and cost estimates for removal/maintenance recommendations. Recommendations for abatement for ACM will be in accordance with current Army policy. Because of property transfer and impact of ACM upon demolition and renovation, the requirements will be addressed. The draft report will be reviewed and

commented on by USAEC personnel. A final asbestos report will then be prepared addressing the comments. The report will not be submitted for regulatory review and comment.

4.1.5 RI/FS Field Work

Following the initial site visit, where SEC Donohue personnel will familiarize themselves with JPG and will obtain available documents and site information, a thorough review of existing data will be conducted. Additional record searches will be conducted into files on USTs (active and abandoned), UXO south of the firing line, and potential contaminant pathways and receptors. The SEC Donohue Task Manager and FOL will then return to JPG prior to the start of field work to revisit sites south of the firing line and to select the sampling locations for each site.

The initial activities under this task consist of mobilizing to JPG. This includes procurement of subcontracts and equipment; establishing office, storage, and personnel logistics at JPG; and implementing the safety plan. These activities conclude with issuance by JPG personnel of dig/drilling permits.

Implementation of the Health and Safety Plan requires establishing a safety office and identifying emergency facilities, conducting UXO surveys as necessary, locating surface structures including above- and below-ground utilities, and conducting daily safety briefings.

The investigation will then be completed under the following six subtasks. The first subtask includes performance of geophysical surveys, excavation and sampling of test pits, collection of surface and shallow soil samples, collection of soil samples from borings, collection of surface-water and sediment samples, characterization of background soil samples, UST soil sampling, conducting the asbestos survey, and collection of the asbestos samples. The second subtask includes installation of monitoring wells and collection of optional soil samples from monitoring-well borings. The third subtask is well sampling, which includes performing well tests to obtain information on aquifer characteristics. The fourth subtask is to survey in all of the wells. The fifth subtask is to perform the receptor/pathway investigation to gather data for risk assessment. The sixth subtask is demobilization, which will consist of removal of equipment and personnel from JPG, site restoration as required, and removal and disposal of decontamination pad and other field-investigative-derived wastes. A summary of the site-specific data collection objectives is provided in Section 1.5.

4.1.5.1 *Sample Analysis/Validation*

DataChem Laboratory (DCL) of Salt Lake City, Utah, will perform analyses of all samples using methodologies and procedures specified in the USAEC Quality Assurance Plan for the analytes specified in the QC Plan for Task Order 0005 (see Table 1). SEC Donohue will verify that DCL is current on all USAEC certifications prior to the start of work.

SEC Donohue will conduct a QA/QC audit of the laboratory data packages for completeness, accuracy, and precision prior to the submittal of a final Level 2 data package to USAEC. The audit will be conducted according to the Contractor QAC Checklist (USAEC QAP - Appendix D). This task will be performed after the Installation Restoration Data Management and Information System (IRDMIS) accepts all files as being validated.

4.1.6 Remedial Investigation Report

All data will be evaluated in terms of meeting the objectives established for the field-investigation activities for each site. The main objective of the sampling is to provide the data to support risk assessment and feasibility studies.

SEC Donohue will conduct a Risk Assessment that will be incorporated into the RI Report. The Risk Assessment will determine whether suspected areas of contamination, based on the analytical data generated during the RI, pose a potential threat to public health or the environment in the absence of any remedial action. The Risk Assessment will address the following four components:

- Contaminant identification
- Exposure assessment
- Toxicity assessment
- Risk characterization

The risk assessment will be utilized to identify data gaps and will be incorporated into the RI Report.

Following completion of the field investigation and analysis of the resulting data, SEC Donohue will prepare and submit to the Army a draft, final draft, and final version of the RI Report. The draft version will be an Army-only review copy, while the final draft version will be released to the regulators by the Army for review and comment. The final version will incorporate Army and regulatory review comments. SEC Donohue will include in the RI Report results of field activities used to characterize the sites, nature and extent of contamination, fate and transport of contaminants, the environmental setting, the short- and long-term threats to human health and the environment, and an update of the results of baseline risk assessment using data obtained during any subsequent field investigations.

Prior to preparation of the FS, SEC Donohue will review all project data and evaluate the need for collecting additional analytical information to fill data gaps or the need for performing treatability studies. The additional studies required prior to commencing with the FS will be provided to USAEC. Following approval of these additional studies by the Army's technical representative, the studies will be implemented and the data will be incorporated into the FS.

4.1.7 Feasibility Study Report

SEC Donohue will perform a detailed FS in accordance with Section C.3.1.2.2 of the basic contract.

4.1.7.1 *Development of Alternatives*

SEC Donohue will conduct an FS, which develops a range of waste-management options that protect human health and the environment for all sites listed in the task order. In developing the alternatives, volumes or areas of media to which treatment and containment actions may be applied will be identified. The identified technologies will be screened to determine those that would be effective for the contaminants and media of interest at the site.

4.1.7.2 *Initial Screening of Alternatives*

During the initial screening of alternatives phase of the FS, the alternatives will be screened and refined to reduce the number of alternatives that will be analyzed in detail. The alternatives will be analyzed to evaluate the interaction among media in terms of both the effectiveness of technologies and sitewide protectiveness. On the basis of this analysis, the alternatives may be refined or modified with respect to the technologies or the volumes or areas of affected media.

4.1.7.3 *Detailed Analysis of Alternatives*

SEC Donohue will conduct a detailed analysis of the alternatives that were carried through the screening process as specified in the EPA CERCLA Guidance. During this process, the alternatives will, at a minimum, be analyzed in detail with respect to the following nine criteria: short-term effectiveness, long-term effectiveness and permanence, reduction of toxicity, mobility or volume, costs, compliance with Applicable or Relevant and Appropriate Requirements (ARARs), overall protection of human health and the environment, State acceptance, and community acceptance. The alternatives that are developed will provide decision makers with an appropriate range of options and sufficient information to adequately compare the alternatives against each other. A range of options will be developed. The following options, at a minimum, will be included:

- Treatment alternatives, which range from those that would eliminate or minimize the need for long-term management to one that would use treatment as a primary component of an alternative to address the principle threats at the site.

- One or more alternatives that involve containment of waste with little or no treatment but protects human health and the environment by preventing potential exposure and/or reducing the mobility of the contaminants.

- No-action alternative.

For all sites listed in this task, SEC Donohue will prepare a Memo of Detailed Alternatives Analysis (MDAA). The purposes of this memorandum will be to ensure the identification of a complete and appropriate range of viable alternatives for the detailed analysis and to refine the remedial-action objectives. Once the MDAA is complete, it will be included in the FS report.

4.1.7.4 *Feasibility Study Report*

Following completion of the alternatives analysis, SEC Donohue will prepare and submit to the Army a draft, final draft, and final version of the FS Report. The draft version will be an Army only review copy, while the final draft and final versions will be released to the regulators by the Army for review and comment. The final versions will incorporate Army and regulatory review comments. A summary table highlighting the assessment of each alternative with respect to the nine criteria will be included. A comparative analysis will be performed to evaluate the relative performance of each alternative in relation to each specific evaluation criteria. The purpose of this comparison analysis is to identify the advantages and disadvantages of each alternative relative to one another so that the key tradeoffs to be evaluated by the decision maker can be identified.

Within the FS Report, SEC Donohue will identify ARARs, that were utilized to evaluate and select the remedial action(s) at each site. This information will be provided to SEC Donohue by the Army and the State of Indiana.

4.1.8 Project Management

Monthly Cost and Performance Reports will be prepared and submitted by SEC Donohue to report progress by SEC Donohue on task scope, budget, and schedule. This report will be provided within 10 working days after each calendar month. The report will present actual-versus-projected requirements of manhours, costs, and work performance. The report format will be that shown in Figure 3. Coordination of subcontractors, interface with USAEC technical staff, regulatory support, procurement activities, and cost/schedule control support are also considered part of the Project Management Task.

4.2 SCHEDULE

The schedule for completing work tasks under Task Order 0005 and Task Order 0005 Modification is presented in Table 5 and Figure 4 of this plan.

When preparing this schedule, the following assumptions were made: (1) complete evaluation of soil sample results will not be required prior to the installation of monitoring wells; (2) work associated with the sites included in Task Order 0005 Modification will be performed concurrently with that performed on the sites in Task Order 0005; (3) a risk assessment must be completed prior to writing the RI report or the FS report; (4) and typical Army review time will be 15 working days and typical regulatory review time will be 30 working days on all project documents.

INSTALLATION/ACTIVITY Jefferson Proving Ground, Indiana	REPORT MONTH
PROJECT NO. DAAA15-90-D-0007 Task Order 0005 - Jefferson Proving Ground Remedial Investigation/Feasibility Study	WBS ELEMENT
SECTION 1 - TECHNICAL PERFORMANCE PARAMETERS	
PLANNED vs. ACTUAL ACCOMPLISHMENTS FOR PERIOD: Planned Actual	
PLANNED ACCOMPLISHMENTS NEXT PERIOD:	
SECTION II - RESOURCE UTILIZATION INDICATORS (see attached)	
SECTION III - NARRATIVE EVALUATION AND VARIANCE ANALYSIS	
A. WORK PERFORMED B. COST ANALYSIS OF WORK PERFORMED	

Figure 3. Example Monthly Cost and Performance Report

Budgeted	Actual	Variance
Labor	Labor	Labor
Travel	Travel	Travel
ODC	ODC	ODC
Subcontracts	Subcontracts	Subcontracts
G&A	G&A	G&A
Fee	Fee	Fee
Total		
Cumulative		

C. **MILESTONES**

D. **PROBLEMS/ISSUES**

Figure 3. Example Monthly Cost and Performance Report (concluded)

Table 5. Work Schedule for Task Order 0005 and 0005 Modification

Event	Date
Task Award	Sep 28, 1992
Initial Site Visit	Oct 08, 1992
Submit Draft Resource Management Plan	Oct 23, 1992
Field Investigation	Nov 02, 1992
Submit Draft Work Plan Addenda	Dec 11, 1992
Complete Field Effort	Jul 22, 1993
Submit Army Draft RI Report	Jan 25, 1994
Submit Draft Final RI Report	Mar 15, 1994
Submit Army Draft FS Report	May 10, 1994
Submit Final RI Report	May 25, 1994
Submit Draft Final FS Report	Jun 29, 1994
Submit Final FS Report	Sep 12, 1994

WBS Code	Task Name	1992		1993				1994		
		Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
221-5	Jefferson Proving Ground RI/FS									
221-5.01	Initial Site Visit									
221-5.02	Resource Management Plan									
221-5.03	Work Plan Addendums									
221-5.04	Asbestos Survey Work Plan									
221-5.05	Field Work									
221-5.06	Remedial Investigation Report									
221-5.07	Feasibility Study on All Sites									
221-5.08	Project Management									

Figure 4. Summary Schedule for RI/FS at Jefferson Proving Ground

4.3 MONITORING PROGRESS

Activities within the project schedule will be monitored and updated on a monthly basis to reflect accomplishments during the period. A comparison between the current (updated) and the baseline (original plan) schedules will be made each month. These reports will provide USAEC with the relevant project information needed to respond to any inquiries from regulatory agencies in an accurate up-to-date fashion.

The goal of program management is to keep each item of work within the technical schedule and budget baseline established at the onset of the effort. The schedule information and the awareness of all personnel as to the importance of closely monitoring and controlling their efforts help achieve this goal. However, changes do occur and they cannot always be accommodated within the schedule and budget of the effort. Control functions have been designed to recognize this fact and to deal with it through formal work authorization and disciplined change control.

4.4 BUDGET AND ACCOUNTING

The breakout of labor hours required for each task under Task Order 0005 and Task Order 0005 Modification are shown in Table 4. Detailed budgets have been developed for each task and are also shown in Table 4. These budgets identify labor hours and costs, travel, subcontracting requirements, other direct costs (e.g., ODC's), fee, and government-owned equipment requirements. A chart of accounts has been established to correlate the various work tasks within a work assignment with the corresponding budget account so that task-related actual charges can be appropriately accumulated with our cost-accounting system. Actual cost data provided during billing by each subcontractor will be subdivided by task into labor, travel, and ODC costs. The subcontractors' billed cost will be accumulated within our accounting system by work assignment. Budget and Accounting information will be included in the Monthly Cost and Performance Reports.

4.5 DELIVERABLES

The following are deliverables under Task Order 0005 and 0005 Modification:

- Draft and Final Resources Management Plan
- Draft, Draft Final, and Final Work Plan Addenda
- Monthly Cost and Performance Reports
- Draft, and Final Asbestos Sampling Plan
- Draft, Draft Final, and Final Asbestos Report
- Draft, Draft Final, and Final RI Report
- Draft, Draft Final, and Final FS Report

Table 6 contains a listing of the deliverables with delivery dates and the quantity to be delivered.

Table 6. Deliverable Schedule

Item	Quantity	Delivery Date
Draft Resource Management Plan	5	Oct 23, 1992
Draft Final	5	Dec 15, 1992
Final	10	Jan 22, 1993
Monthly Cost/Performance Reports	3	10 working days AEM*
Work Plan Addenda		
Draft	5	Dec 11, 1992
Draft Final	10	Jan 20, 1992
Final	25	Mar 17, 1993
Asbestos Sampling Plan		
Draft	5	Dec 04, 1992
Final	5	Jan 08, 1993
Asbestos Report		
Draft	5	Jan 30, 1993
Final	10	Aug 20, 1993
RI Report		
Draft	5	Jan 25, 1994
Draft-Final	10	Mar 15, 1994
Final	25	May 25, 1994
FS Report		
Draft	5	May 10, 1994
Draft-Final	10	Jun 29, 1994
Final	25	Sep 12, 1994

*AEM=after end of month.

4.6 PROJECT FILING

The following is the filing system structure that will be maintained at SEC Donohue during the performance of the RI/FS at JPG:

CORRESPONDENCE
WORK PLANS
- DRAFT PLANS
- DRAFT FINAL PLANS
- FINAL PLANS

ASBESTOS WORK PLAN
RESOURCE MANAGEMENT PLAN
COMMUNITY RELATIONS PLAN
WORK PLAN ADDENDA
SCHEDULES AND COST ESTIMATES
TASK OOO5 RESPONSE
TASK 0005M RESPONSE
SUBCONTRACTS
EQUIPMENT AND SUPPLIES
MAPS
SURVEY REFERENCE DATA
WORK PLAN MAPS
FIELD MAPS
TASK 0002 REPORT
FIELD WORK DOCUMENTATION
- PHOTOGRAPHS
- CHAIN OF CUSTODY
- FIELD LOGS
- WELL LOGS
- WELL CONSTRUCTION
- WELL DEVELOPMENT

HEALTH AND SAFETY
- FIELD NOTES AND FORMS
- UXO RELATED
- GEOPHYSICS

WATER/SEDIMENT SAMPLING
SURFACE SOIL SAMPLING
WIPE SAMPLING
SOIL BORINGS
BACKGROUND SAMPLING
SURVEY DATA
INVESTIGATIVE DERIVED WASTE
RECEPTOR PATHWAY ANALYSIS
PRELIMINARY ASSESSMENTS
HYDROGEOLOGY/GEOLOGY
WELL TESTS
BACKGROUND DATA
SOILS MAPS
WATER LEVEL DATA
RI REPORT
ANALYTICAL DATA
DATA TABLES
DATA REPORT
DATA GAP MEMO
RISK ASSESSMENT
DRAFT RIR
DRAFT FINAL RIR
FINAL RIR
FS REPORT
LIST FS ALTERNATIVES
SCREEN FS ALTERNATIVES
DETAILED ANALYSIS FS ALTS
DRAFT FS REPORT
DRAFT FINAL FS REPORT
FINAL FS REPORT

5.0 REFERENCES

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