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DOE/OR/21548-352
CONTRACT NO. DE-AC05-86OR21548

ENVIRONMENTAL QUALITY ASSURANCE PROJECT PLAN

SUPERSEDED

Weldon Spring Site Remedial Action Project
Weldon Spring, Missouri

MAY 1996 **REV. 2**

U.S. Department of Energy
Oak Ridge Operations Office
Weldon Spring Site Remedial Action Project

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PLAN TITLE: Environmental Quality Assurance Project Plan	

APPROVALS

Originator	10 May 96 Date
for PDC Project Quality Manager	5/10/96 Date
for Environmental Safety & Health Manager	5/13/96 Date
Environmental Documentation Manager	5/15/96 Date
Compliance Manager	5/16/96 Date
Deputy Project Director	5/17/96 Date
Project Director	5/17/96 Date

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DOE/OR/21548-352

Weldon Spring Site Remedial Action Project

Environmental Quality Assurance Project Plan

Revision 2

May 1996

Prepared by

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and
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for the

U.S. DEPARTMENT OF ENERGY
Oak Ridge Operations Office
Under Contract DE-AC05-86OR21548

SUMMARY OF CHANGES

The changes made to this document have been extensive. Revision 0 was written to the requirements of QAMS 005/80, *Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans*. Per EPA directive, QAMS 005/80 was replaced by EPA QA/R-5, *EPA Requirements for Quality Assurance Project Plans*. EPA QA/R-5 contains the information that the EPA believes to be necessary for environmental data operations and was thus used as a template for the preparation of this revision of the *Environmental Quality Assurance Project Plan*.

ABSTRACT

The *Environmental Quality Assurance Project Plan* (EQAPjP), has been written to fulfill U.S. Department of Energy (DOE) Order 5700.6C requirements under the Federal Facilities Agreement between the DOE and the U.S. Environmental Protection Agency (EPA) for the Weldon Spring site. The EQAPjP addresses the quality assurance elements of EPA QA/R-5 for environmental data operations and is intended to be used by personnel conducting routine environmental monitoring and remedial investigation/feasibility studies at the Weldon Spring site.

The primary purpose of this document is to specify quality assurance requirements for assessing environmental activities at the Weldon Spring site and to support the *Project Management Contractor Quality Assurance Program* (Ref. 2) as required by the DOE.

TABLE OF CONTENTS

SECTION **PAGE**

1 INTRODUCTION 1
2 PROJECT MANAGEMENT 4

2.1 Problem Definition/Background 4
2.2 Project/Task Description 8
2.3 Project/Task Organization 11
2.4 Quality Objectives and Criteria for Measurement Data 15
2.5 Special Training Requirements/Certification 17
2.6 Records 18

3 MEASUREMENT/DATA ACQUISITION 20

3.1 Sampling Process Design 20
3.2 Sample Custody 21

3.2.1 Field Sample Custody 22
3.2.2 Laboratory Sample Custody 23

3.3 Analytical Methods 23
3.4 Quality Control Requirements 24
3.5 Instrument/Equipment Calibration, Testing, and Maintenance 25

3.5.1 Field Sampling Equipment 25
3.5.2 Laboratory Instruments 26

3.6 Inspection/Acceptance Requirements for Supplies and Consumables 27

4 DATA MANAGEMENT 28

TABLE OF CONTENTS (Continued)

SECTION PAGE

4.1 Database Management 28
4.2 Data Packages 29

4.2.1 Data Verification 29
4.2.2 Data Review 29
4.2.3 Data Validation 30

4.3 Reporting 30

5 ASSESSMENTS/OVERSIGHT 31

5.1 Assessments—General 31
5.2 Assessment Preparation 32
5.3 Performance 34
5.4 System Assessment Performance 34
5.5 Assessment Reporting 36
5.6 Surveillance 37
5.7 Finding/Deficiency Corrective Action and Closure 37
5.8 Quality Assurance Records 38
5.9 Reports to Management 38

6 REFERENCES 40

7 DISTRIBUTION LIST 44

APPENDIX

A Environmental Quality Assurance Project Plan Document Hierarchy

LIST OF FIGURES

NUMBER		PAGE
2-1	Location of the Weldon Spring Site	5
2-2	General Layout of Chemical Plant Area	6
2-3	WSSRAP Project Schedule	9
2-4	Organizational Roles and Reporting Responsibilities	12

LIST OF TABLES

NUMBER **PAGE**

1-1 Environmental Quality Assurance Project Plan Elements 2

1 INTRODUCTION

The *Project Management Contractor Quality Assurance Program* (QAP) (Ref. 2) was written to meet the quality assurance program requirements of U.S. Department of Energy (DOE) Order 5700.6C. This *Environmental Quality Assurance Project Plan* (EQAPjP) focuses on the U.S. Environmental Protection Agency (EPA) requirements under the *Comprehensive Environmental Response, Compensation and Liability Act* (CERCLA) and meets the applicable requirements of EPA QA/R-5, *EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations*. This document primarily specifies the quality assurance requirements for Weldon Spring Site Remedial Action Project environmental data operations and supports the PMC Quality Assurance Program. According to EPA QA/R-5, environmental data operations refers to activities involving the acquisition, analysis, and evaluation of environmental data. This includes all work performed to obtain, use, or report information pertaining to environmental processes and conditions.

The Project Management Contractor QAP and the EQAPjP support quality affecting activities at the WSSRAP. The EQAPjP is supported by PMC standard operating procedures (SOPs), departmental instructions, the WSSRAP health and safety program, and work plans written for specific environmental tasks.

The quality assurance guidelines detailed in this document and within the associated work plans are intended to be followed by personnel conducting routine environmental data operations at the Weldon Spring site. Specific quality control procedures are detailed in PMC SOPs and in specific remedial investigation and monitoring sampling plans. This program fulfills DOE requirements under the Federal Facilities Agreement between the DOE and the EPA for the Weldon Spring site.

This EQAPjP addresses the quality assurance elements (see Table 1-1) specified by EPA QA/R-5 for environmental data operations.

TABLE 1-1 Environmental Quality Assurance Project Plan Elements

PROJECT MANAGEMENT	INFORMATION PROVIDED IN
1. Title and Approval Sheet	EQAPjP
2. Table of Contents	EQAPjP
3. Distribution List	EQAPjP Section 7
4. Project/Task Organization	EQAPjP Section 2.3
5. Problem Definition/Background	EQAPjP Section 2.1
6. Project/Task Description	EQAPjP Section 2.2
7. Quality Objectives and Criteria for Measurement Data	EQAPjP Section 2.4
8. Project Narrative	Not required for WSSRAP (for research and development projects only).
9. Special Training Requirements/Certification	EQAPjP Section 2.5
10. Documentation and Records	EQAPjP Section 2.6, SOPs
MEASUREMENT/DATA ACQUISITION	**INFORMATION PROVIDED IN**
1. Sampling Process Design	EQAPjP Section 3.1, Sampling Plans, SOPs
2. Sampling Methods Requirements	EQAPjP Section 3.1, Sampling Plans, SOPs
3. Sample Handling and Custody Requirements	EQAPjP Section 3.2, Sampling Plans, SOPs
4. Analytical Methods Requirements	EQAPjP Section 3.3, SOPs
5. Quality Control Requirements	EQAPjP Section 3.4, Sampling Plans, SOPs
6. Instrument/Equipment Testing, Inspection, and Maintenance Requirements	EQAPjP Section 3.5, SOPs
7. Instrument Calibration and Frequency	EQAPjP Section 3.5, SOPs
8. Inspection/Acceptance Requirements for Supplies and Consumables	EQAPjP Section 3.6, SOPs
9. Data Acquisition Requirements (Non-Direct Measurements)	Not applicable to WSSRAP
10. Data Management	EQAPjP Section 4, SOPs

TABLE 1-1 Environmental Quality Assurance Project Plan Elements (Continued)

ASSESSMENT/OVERSIGHT	INFORMATION PROVIDED IN
1. Assessments and Response Actions	EQAPjP Sections 5.1-5.7; SOPs
2. Reports to Management	EQAPjP Section 5.9, SOPs
DATA VALIDATION AND USABILITY	**INFORMATION PROVIDED IN**
1. Data Review, Validation, and Verification Requirements	EQAPjP Section 4
2. Validation and Verification Methods	EQAPjP Section 4
3. Reconciliation with User Requirements	EQAPjP Section 4

2 PROJECT MANAGEMENT

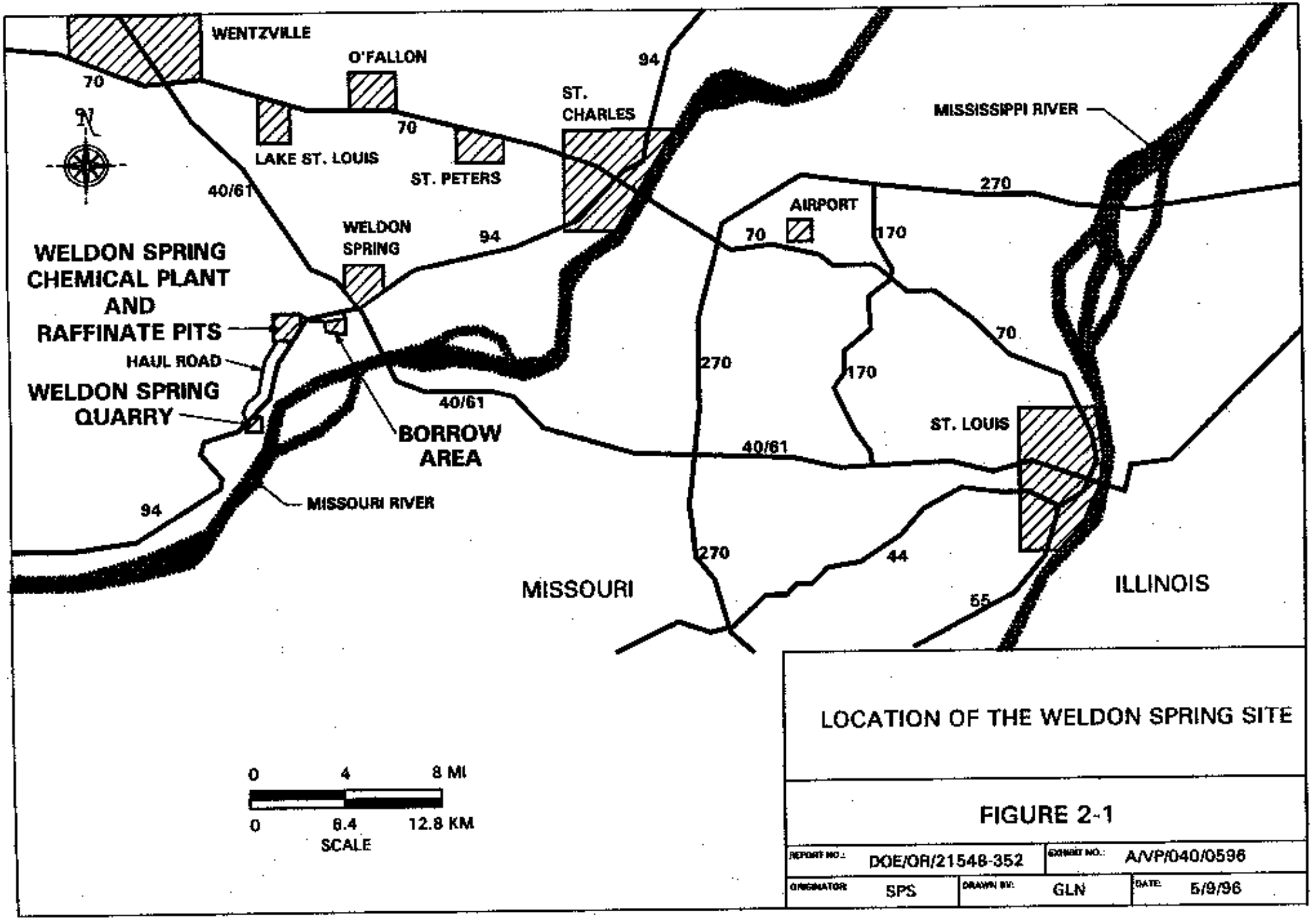
This portion of the Environmental Quality Assurance Project Plan addresses the basic areas of project management, including elements such as the project history, objectives, work to be performed, and project organization. The distribution list for this document can be found in Section 7.

2.1 Problem Definition/Background

The Weldon Spring site is located in St. Charles County, Missouri, about 48 km (30 mi) west of St. Louis (Figure 2-1). The site consists of two geographically distinct areas: the 88 ha (217 acre) chemical plant area, which is about 3.2 km (2 mi) southwest of the junction of Missouri (State) Route 94 and U.S. Highway 40/61, and a 3.6 ha (9 acre) limestone quarry, which is about 6.4 km (4 mi) south-southeast of the chemical plant area. The chemical plant area and the quarry are accessible from State Route 94, and both are fenced and closed to the public.

The site was initially used by the Army during the 1940s to produce trinitrotoluene and dinitrotoluene. After extensive demolition, decontamination, and regrading, the chemical plant was built by the U.S. Atomic Energy Commission ([AEC] a predecessor of the U.S. Department of Energy [DOE]) to process uranium and thorium ore concentrates during the 1950s and 1960s. Radioactive contaminants are primarily radionuclides of the natural uranium and Th-232 decay series; chemical contaminants include naturally occurring metals and inorganic anions, as well as organic compounds such as polychlorinated biphenlys and nitroaromatic compounds.

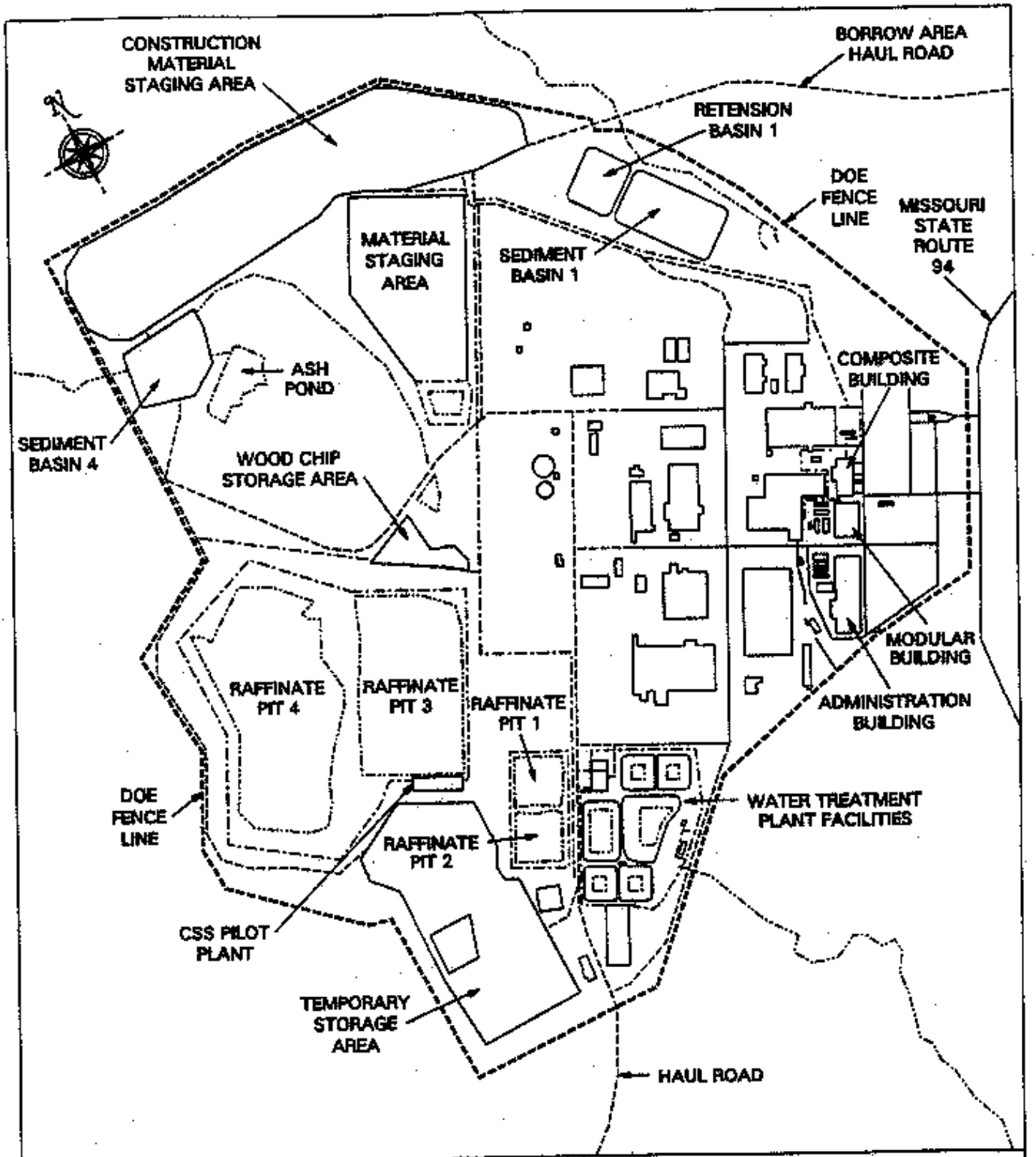
Site features include foundation remains from dismantled buildings, four raffinate pits, two ponds (Ash Pond and Frog Pond), and two former dump areas (north dump and south dump) (Figure 2-2). Most of the land surface around the buildings is paved or covered with gravel; the remainder of the site contains a variety of grasses and scattered shrubs and trees. Much of the site is routinely mowed, and little undisturbed and/or natural habitat exists except in the northern quadrant. Soil in the two dump areas and at scattered locations throughout the



LOCATION OF THE WELDON SPRING SITE

FIGURE 2-1

REPORT NO.: DOE/OR/21548-352		EXHIBIT NO.: A/VP/040/0596	
ORIGINATOR: SPS	DRAWN BY: GLN	DATE: 5/9/96	

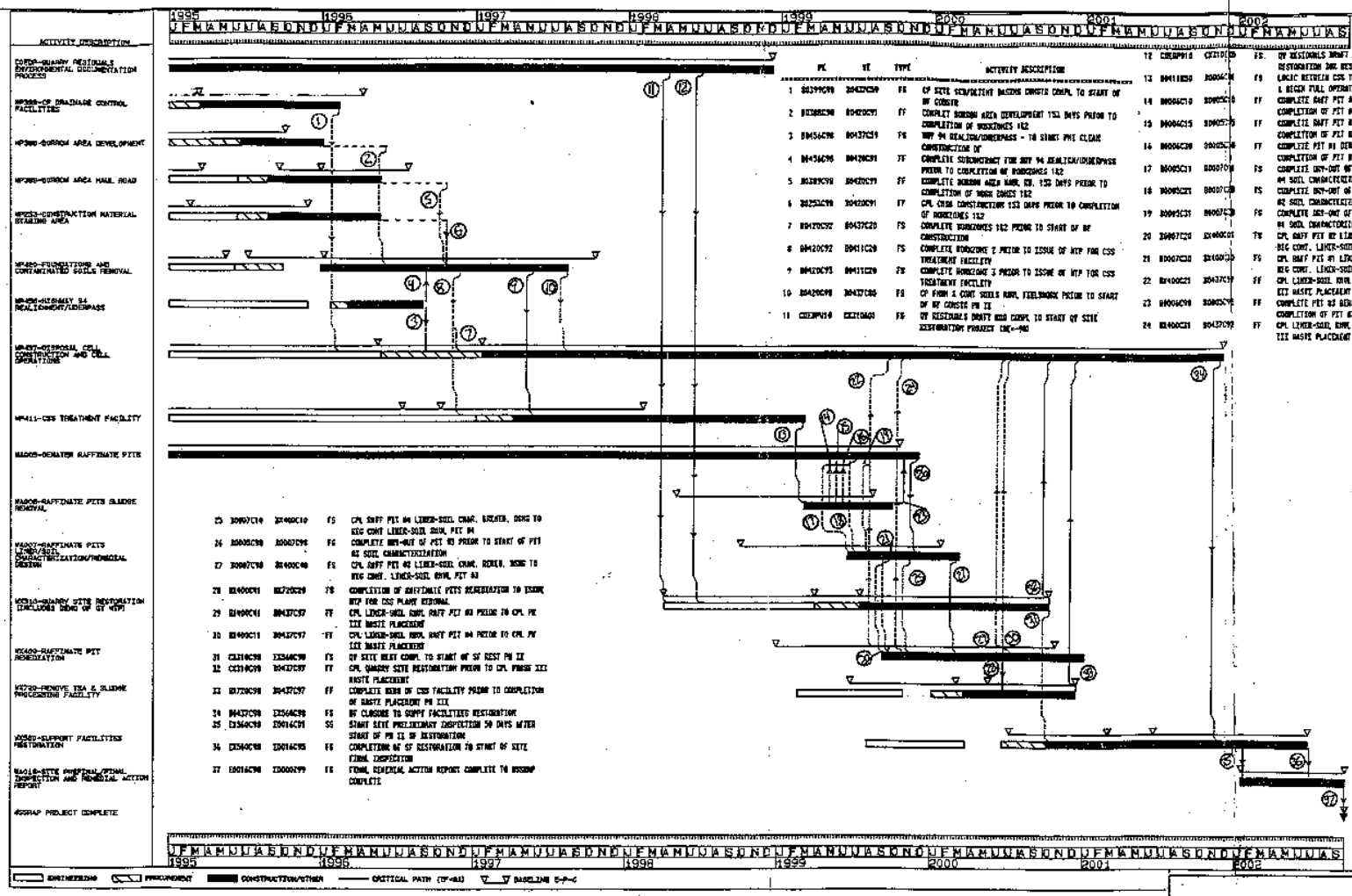


GENERAL LAYOUT OF THE CHEMICAL PLANT AREA

FIGURE 2-2

0 500 1000 FT
0 152.4 304.8 M
SCALE

REPORT NO.: DOE/OR/21548-352		EXHIBIT NO.: A/CP/037/0596	
ORIGINATOR: SPS	DRAWN BY: GLN	DATE: 5/9/96	



	PK	SI	TYPE	ACTIVITY DESCRIPTION
1	B6199C98	B0427C98	FS	OF SITE SCR/DEIFIRT BASINS DRNGTS COMPL TO START OF NF CONSTR
2	B0388C98	B0420C97	FF	COMPLET BORROW AREA DEVELOPMENT 152 DAYS PRIOR TO COMPLETION OF WORZONES 1&2
3	B0456C98	B0437C97	FS	NWF 94 REALIGN/UNDERPASS - TO START PRE CLEAR CONSTRUCTION OF
4	B0456C98	B0420C97	FF	COMPLETE SUBCONTRACT FOR NWF 94 REALIGN/UNDERPASS PRIOR TO COMPLETION OF WORZONES 1&2
5	B0389C98	B0420C97	FF	COMPLETE BORROW AREA HAUL RD. 152 DAYS PRIOR TO COMPLETION OF WORK ZONES 1&2
6	B0253C98	B0420C97	FF	CPL CRSB CONSTRUCTION 152 DAYS PRIOR TO COMPLETION OF WORZONES 1&2
7	B0420C92	B0437C20	FS	COMPLETE WORZONES 1&2 PRIOR TO START OF NF CONSTRUCTION
8	B0420C92	B0411C20	FS	COMPLETE WORZONE 2 PRIOR TO ISSUE OF WTP FOR CSS TREATMENT FACILITY
9	B0420C93	B0411C20	FS	COMPLETE WORZONE 3 PRIOR TO ISSUE OF WTP FOR CSS TREATMENT FACILITY
10	B0420C98	B0437C86	FS	CP FROM 2 CONT SOILS RMVL FIELDWORK PRIOR TO START OF NF CONSTR PH II
11	CQ7004C10	CC314A01	FS	OF RESIDUALS DRAFT EIS COMPL TO START OF SITE RESTORATION PROJECT (WC-RR)
12	CQ7004C10	CC314C10	FS	OF RESIDUALS DRAFT EIS COMPL TO START OF OF SITE RESTORATION DMC DESIGN
13	B0411E30	B0006C98	FS	LOGIC RETREIN CSS TREATMENT FACILITY PERF. TESTING & BEGIN FULL OPERATIONS
14	B0006C10	B0005C10	FF	COMPLETE RAFF PIT #4 DEWATERING 20 DAYS AFTER COMPLETION OF PIT #4 SLUDGE RMVL
15	B0006C15	B0005C15	FF	COMPLETE RAFF PIT #2 DEWATERING 20 DAYS AFTER COMPLETION OF PIT #2 SLUDGE RMVL
16	B0006C20	B0005C20	FF	COMPLETE PIT #1 DEWATERING 20 DAYS AFTER COMPLETION OF PIT #1 SLUDGE RMVL
17	B0005C13	B0007C10	FS	COMPLETE DEV-OUT OF PIT #4 PRIOR TO START OF PIT #4 SOIL CHARACTERIZATION
18	B0005C21	B0007C20	FS	COMPLETE DEV-OUT OF PIT #2 PRIOR TO START OF PIT #2 SOIL CHARACTERIZATION
19	B0005C31	B0007C30	FS	COMPLETE DEV-OUT OF PIT #1 PRIOR TO START OF PIT #1 SOIL CHARACTERIZATION
20	B0007C20	B1400C01	FS	CPL RAFF PIT #2 LINER-SOIL CHAR. & RMVD. DSNG TO BEG CONT. LINER-SOIL RMVL PIT #2
21	B0007C30	B1400C30	FS	CPL RAFF PIT #1 LINER-SOIL CHAR. & RMVD. DSNG TO BEG CONT. LINER-SOIL RMVL PIT #1
22	B1400C21	B0437C97	FF	CPL LINER-SOIL RMVL RAFF PIT #2 PRIOR TO CPL PH III WASTE PLACEMENT
23	B0006C98	B0005C98	FF	COMPLETE PIT #3 DEWATERING 20 DAYS AFTER COMPLETION OF PIT #3 SLUDGE RMVL
24	B1400C31	B0437C97	FF	CPL LINER-SOIL RMVL RAFF PIT #1 PRIOR TO CPL PH III WASTE PLACEMENT
25	B0007C10	B1400C10	FS	CPL RAFF PIT #4 LINER-SOIL CHAR. &RMVD. DSNG TO BEG CONT LINER-SOIL RMVL PIT #4
26	B0005C98	B0007C98	FS	COMPLETE DEV-OUT OF PIT #3 PRIOR TO START OF PIT #3 SOIL CHARACTERIZATION
27	B0007C98	B1400C40	FS	CPL RAFF PIT #3 LINER-SOIL CHAR. RMVD. DSNG TO BEG CONT. LINER-SOIL RMVL PIT #3
28	B1400C91	B1720C20	FS	COMPLETION OF RAFFINATE PITS DEWATERING TO ISSUE WTP FOR CSS PLANT REMOVAL
29	B1400C41	B0437C97	FF	CPL LINER-SOIL RMVL RAFF PIT #3 PRIOR TO CPL PH III WASTE PLACEMENT
30	B1400C11	B0437C97	FF	CPL LINER-SOIL RMVL RAFF PIT #4 PRIOR TO CPL PH III WASTE PLACEMENT
31	CC314C98	EX346C98	FS	OF SITE REST COMPL TO START OF SF REST PH II
32	CC314C98	B0437C97	FF	CPL QUARRY SITE RESTORATION PRIOR TO CPL PHASE XII WASTE PLACEMENT
33	B1720C98	B0437C97	FF	COMPLETE DEMO OF CSS FACILITY PRIOR TO COMPLETION OF WASTE PLACEMENT PH XIX
34	B0437C98	EX546C98	FS	NF CLOSURE TO SUPPORT FACILITIES RESTORATION
35	EX546C98	ID016C01	SS	START SITE PRELIMINARY INSPECTION 30 DAYS AFTER START OF PH II SF RESTORATION
36	EX546C98	ID016C95	FS	COMPLETION OF SF RESTORATION TO START OF SITE FINAL INSPECTION
37	ID016C98	ID000C99	FS	FINAL REMEDIAL ACTION REPORT COMPLETE TO WSSRAP COMPLETE

WSSRAP PROJECT SCHEDULE

FIGURE 2-3

REPORT NO.	DOE/OR/21548-352	DOCKET NO.	B/PI/119/1295
ORIGINATOR: SPS	DRAWN BY: SRS	DATE: 2/23/98	

system, waste containment system, cell drainage/water management system, and waste placement operations and maintenance.

(3) **Treatment and processing.** The waste treatment and processing remedial activity encompasses treatment and processing of selected contaminated soils and sludges by chemical stabilization/solidification. The contaminated soils at the TSA may be treated with an in situ chemical stabilization/solidification (CSS) process, rather than being transported to the CSS plant. Other selected wastes (e.g., solid and liquid *Resource Conservation Recovery Act* [RCRA] hazardous wastes stored in Building 434, polychlorinated biphenyl-contaminated soils, sludges, and liquids, and arsenic-contaminated wood, and other RCRA debris stored at the asbestos storage area and TSA) will be treated by the alternative treatment methods presented in the *Site Treatment Plan* (Ref. 8). This remedial activity encompasses construction and operation of the pilot scale facility and the full-scale CSS facility, including systems for dewatering, decontamination, and additional treatments for other wastes.

(4) **Site closure.** This remedial activity refers to those activities that follow completion of treatment operations and closure of the disposal facility. It includes removal of temporary support facilities, removal of temporary haul and access roads, construction of final roads, implementation of site runoff controls, establishment of final security, and site revegetation.

(5) **Long-term monitoring and maintenance.** Long-term (post-closure) monitoring and maintenance activities for the chemical plant area will, in general, be in accordance with RCRA requirements set forth in 40 CFR 264. Subpart G of 40 CFR 264 specifies a 30-year post-closure care period for maintenance of the cover, leachate collection system, and groundwater monitoring system. 40 CFR 264, Subpart F, specifies general groundwater monitoring requirements.

Actual performance of long-term monitoring and maintenance activities are not part of the PMC's scope of work; however, the PMC will develop monitoring and maintenance plans, as well as the design of a groundwater compliance monitoring network.

The PMC is currently conducting remedial investigations for the Quarry Residual Operable Unit and the Site Groundwater Operable Unit.

2.3 Project/Task Organization

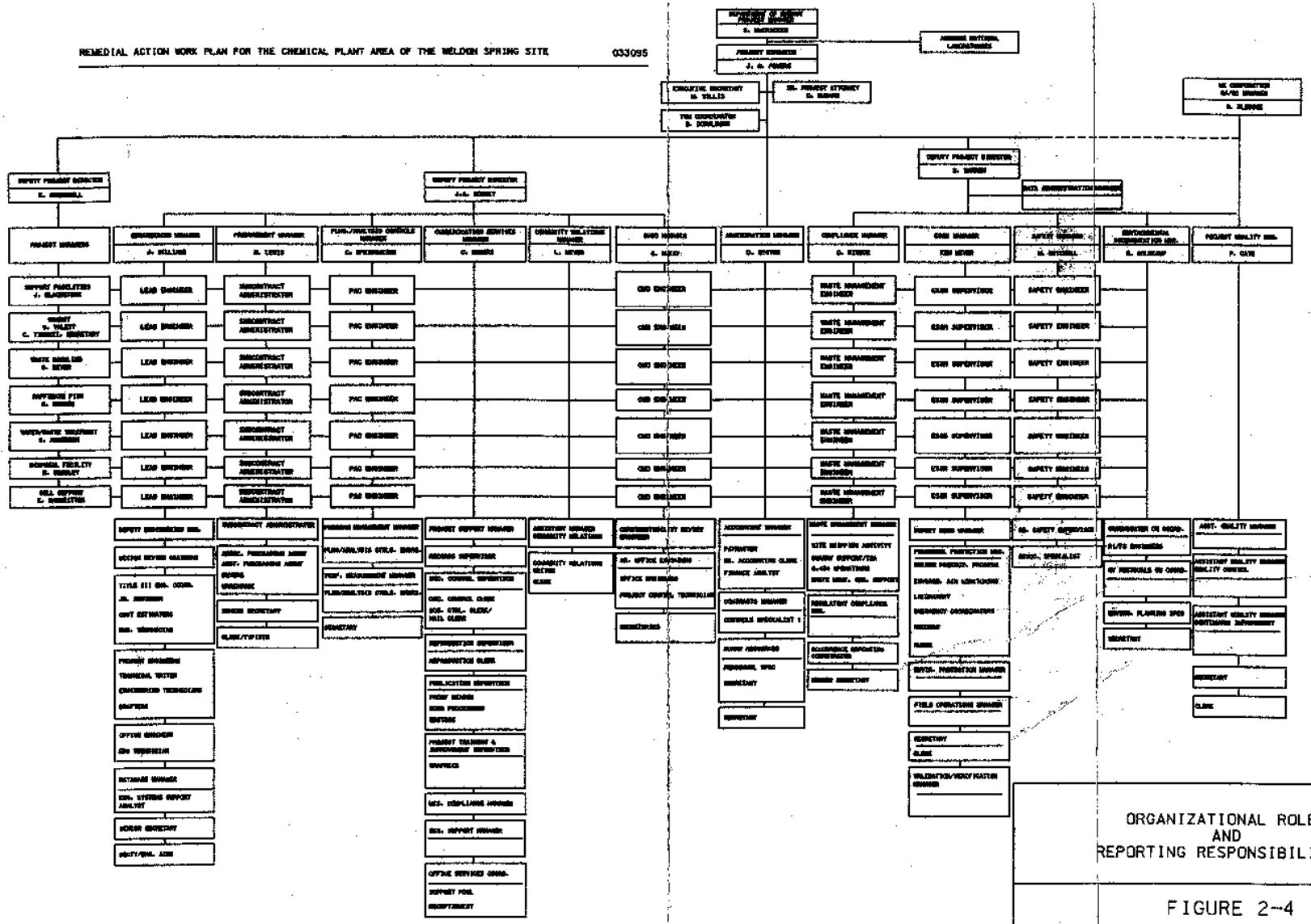
The DOE is responsible for conducting environmental monitoring and remedial actions at the Weldon Spring site that will place the site in a radiologically and chemically safe state, in accordance with guidelines established by the DOE and the U.S. Environmental Protection Agency (EPA). The responsibility for management and technical direction of these environmental activities has been delegated to the DOE Oak Ridge Operations Office. MK-Ferguson is the PMC assisting the DOE in planning and managing remedial action activities.

Headquartered in Cleveland, Ohio, MK-Ferguson is a wholly owned affiliate of Morrison Knudsen Corporation of Boise, Idaho. Joining MK-Ferguson as an integrated subcontractor is Jacobs Engineering Group, Inc., headquartered in Pasadena, California. Project support in the development of environmental documents is provided by Argonne National Laboratories (ANL). ANL serves as an independent contractor reporting directly to the DOE. The Project Organization Chart, Figure 2-4, shows the lines of authority, responsibilities, and communications assigned to key project entities.

Listed below are the reporting responsibilities and duties of key PMC personnel.

The Project Director reports to the DOE and to MK-Ferguson corporate management. The Project Director is responsible for the overall management of the WSSRAP. The Project Director's responsibilities include completion of all contract requirements within the approved schedule and budget and in accordance with applicable codes, standards, specifications, and the *Project Management Contractor Quality Assurance Program* (QAP) (Ref. 2).

The Deputy Project Directors report to the Project Director and are responsible for aiding the Project Director in accomplishing project management and administrative duties. The Deputy Directors are authorized to act for the Project Director when the latter is absent from the project office. The line of responsibility flows through a Deputy Project Director to area



ORGANIZATIONAL ROLES
AND
REPORTING RESPONSIBILITIES

FIGURE 2-4

DOE/OR/21548-352	B/PI/088/0795	
JB	CRM	2/23/96

PMC Project Managers who are responsible for the day-to-day completion of activities and the direction of technical support personnel from various departments.

The WSSRAP has been divided into seven project management groups, each of which is headed by a Project Manager who reports directly to a Deputy Project Director. The seven project management groups are: (1) Support Group, (2) Quarry Group, (3) Waste Treatment Group, (4) Cell Group, (5) Facilities Group, (6) Waste Placement Group, and (7) Waste Maintenance Group. Each Project Manager develops schedules and budgets; conducts readiness assessments prior to major scheduled work; and manages all construction, removal, and remediation activities within the scope of their project management group.

The Administrative Manager reports directly to the Project Director and is responsible for all administrative matters, i.e., timekeeping, payroll, industrial relations, property control, human resources, and all matters concerning finance.

The Project Procurement Manager reports to a Deputy Project Director and is responsible for all procurement activity including the issuing and administration of subcontracts. Additional responsibilities include evaluation and analysis of bids and warehouse functions.

The Community Relations Manager reports to a Deputy Project Director and is responsible for interfacing with public groups and government agencies, for arranging public presentations, and for all news media relations.

The Planning Analysis and Control Manager reports to a Deputy Project Director and is responsible for the overall project management control system, which includes the development of budgets and schedules, preparation of management reports and submittals, and review and analysis of progress.

The Compliance Manager reports to a Deputy Project Director and is responsible for waste management activities and for ensuring regulatory compliance. The Compliance Manager is also the Federal Facilities Agreement coordinator and the Off-Site Notification Officer for the WSSRAP.

The Engineering Manager reports to a Deputy Project Director and is responsible for directing and coordinating on- and off-site design activities. The Engineering Manager provides engineering support to remedial investigation/feasibility study (RI/FS), interim response action, conceptual design, and engineering evaluation/cost analysis documents as well as site construction and remediation activities. The Engineering Manager is also responsible for preparation, review, and approval of all WSSRAP engineering documents, including Title 1, 2, and 3 design drawings and construction specifications.

The Environmental Safety and Health (ES&H) Manager reports to a Deputy Project Director. The ES&H Manager is responsible for industrial hygiene, radiological protection, environmental monitoring, radiological and chemical analysis interpretation, data verification and validation, applied health physics, and all training required by these activities.

The Construction Management and Operations (CM&O) Manager reports to a Deputy Project Director. The CM&O Manager is responsible for construction management and coordination of all subcontractors, constructability reviews, and resolution of field problems. The CM&O Manager is additionally responsible for all construction operations and maintenance functions including those regarding existing facilities, new facilities, utilities, and equipment.

The Project Quality Manager reports to the Project Director on an administrative basis. Authoritatively, the Quality Manager reports off site to the MK-Corporate QA Director. The Project Quality Manager is responsible for development and implementation of the Quality Assurance Program. The Project Quality Manager has the authority to stop work or control further processing; identify the need for corrective actions; initiate, recommend, coordinate, and/or provide solutions; and verify implementation of solutions and corrective actions related to the quality of the work. The Project Quality Manager is also responsible for coordinating and managing the Project Performance Indicator System, the Site Wide Assessment Tracking System, lessons learned, and root cause analysis.

The Environmental Documentation Manager reports to a Deputy Project Director and is responsible for the preparation of *Comprehensive Environmental Response, Compensation and Liability Act* (CERCLA)-required documentation for each operable unit. Documentation may include sampling plans, work plans, remedial investigation/feasibility study reports, Record of Decisions and remedial design/remedial action work plans.

The Data Validation/Verification Supervisor reports to the ES&H Manager and is responsible for the evaluation and application of qualifiers to radiological and chemical data and for providing technical assistance pertaining to laboratory analyses and procedures.

The Communication Services Manager reports to a Deputy Project Director and manages the technical editing, word processing, document control, computer hardware and software support, and project support, as well as the project training and improvement program.

The Safety Manager reports to a Deputy Project Director and is responsible for the construction safety program. He promotes safety awareness and ensures that accidents are properly investigated and reported, and that action is taken to prevent recurrence.

The Data Administration Manager reports to a Deputy Project Director and is responsible for the management of environmental data systems and programs that involve: (1) sample planning, tracking, and coordinating; (2) analytical contracting and performance; and (3) data review, management, retrieval, and archiving.

2.4 Quality Objectives and Criteria for Measurement Data

The overall purpose of establishing quality assurance objectives for measurement data is to ensure that data of known and acceptable quality are provided for the intended uses. These objectives apply to both existing and future environmental data operations. Data reviewed or generated by the WSSRAP are to be of such quality that they can be used as direct indicators of the nature and extent of radiological and chemical contamination at the Weldon Spring site.

These objectives are achieved through the implementation of standard operating procedures for the following:

- Document control.
- Field activities, including sample collection for routine monitoring and characterization.
- Chain of custody.

- Equipment calibration.
- Laboratory analyses.
- Data validation, verification, reduction, and reporting.
- Internal quality control checks.
- Audits and surveillances.
- Preventive maintenance.
- Corrective actions.
- Document hierarchy.

Environmental data operations that support decisions (i.e., RIs, risk assessments, and FSs) should be conducted by implementing the EPA Data Quality Objective (DQO) process (EPA QA/G-4). The DQO process is a Total Quality Management approach to planning for data collection in support of environmental decision making. This planning tool uses seven key steps to ensure that decision makers and data collectors communicate effectively in addressing cleanup problems. These seven steps are:

(1) State the problem to be resolved.
(2) Identify the decision to be made.
(3) Identify information required to reach the decision.
(4) Define the boundaries of the study.
(5) Develop and define the decision criteria.
(6) Evaluate uncertainty constraints.
(7) Optimize the design for collecting data.

The DQO process is implemented in all activities that support environmental decision making (e.g., RI/FS, risk assessment, site closure). Implementation is described in the *Sample Management Guide* (Ref. 10).

2.5 Special Training Requirements/Certification

All personnel who will work within the controlled areas of the site are required to receive either 24 hours or 40 hours of Hazardous Waste Health and Safety Training, as provided for under the Occupational Safety and Health Administration (29 CFR 1910.120). This training is coordinated through the Project Training and Improvements Group (PTIG) and is administered by off-site training vendors. Annual refresher training is provided on site through PTIG.

Under the provisions of CERCLA, the WSSRAP is required to comply with the applicable substantive requirements of RCRA. Therefore, personnel involved in hazardous waste activities at the WSSRAP must successfully complete a training program commensurate with job functions and responsibilities, as required by 40 CFR 264.16. This classroom training is offered on site annually through PTIG.

In addition, the U.S. Department of Transportation requires that personnel involved in the transportation of hazardous materials receive the training outlined in 49 CFR 172, Subpart H. This training is offered through on-site classroom instruction by using the U.S. DOE Transportation Management Division's Hazardous Materials Modular Training Program. This training program is also available on site via computer software. A written exam is given to demonstrate proficiency. Personnel directly involved in the transportation of dangerous goods by air are also required to be trained in accordance with Section 1.5 of the *Dangerous Goods Regulations* (Ref. 4). This training is coordinated through the PTIG and is administered by off-site training vendors only. Again, a written exam is given to demonstrate proficiency.

Asbestos Hazard and Emergency Response Act training for workers and supervisors is required for those individuals who work in asbestos-contaminated work zones, in accordance with 40 CFR 763, 29 CFR 1910.1001, 29 CFR 1926.58, and 10 CSR 10-6.240(2)(b). This training is coordinated through the PTIG and is administered by off-site training vendors.

The U.S. Department of Energy requires performance-based training for personnel involved in the off-site release of radioactive wastes from radiological materials management areas, as outlined in PMC Procedure RC-32. Initial and recurrent training is given on site by Compliance Department personnel. Recurrent training is given only when significant changes (revisions to the content of the procedure) are made to the procedure.

Per the requirements of DOE Order 5700.6C, *Quality Assurance*, personnel performing quality affecting activities shall be indoctrinated and trained in the requirements of the Order and in the requirements of the *Project Management Contractor Quality Assurance Program* (Ref. 2). These training requirements are met when personnel view a training video created for this purpose.

All such training will be documented in each employee's training matrix, in accordance with PMC Procedure PS-14.

2.6 Records

In accordance with the *Analytical Support Services Specification* (Ref. 5), a complete data deliverable consists of:

- WSSRAP-specific report
  - Cover letter
  - Case narrative
  - Quality control summary
  - Hard copy data report
  - Original signed chain-of-custody
- Electronic data report (if applicable)
- Invoice
- Supporting data documentation package

Maintenance and storage of the aforementioned records shall be performed by the subcontracted laboratory in a WSSRAP-specific project file, in accordance with Section 01400 of the *Analytical Support Services Specification* (Ref. 5). These records shall be kept at the laboratory facility for three years after termination or expiration of the laboratory purchase order. After the three years, the PMC will either take possession of the files or give the laboratory written permission to properly dispose of the records.

All pertinent sampling and analysis records generated by the PMC or received by the PMC from its vendors (i.e., sampling forms, logbooks, sample analysis results, instrument calibration records) shall be managed in accordance with the PMC QAP (Ref. 2) and PMC Procedure SQP-7, as applicable.

3 MEASUREMENT/DATA ACQUISITION

The objective of field sampling and laboratory analytical procedures is to obtain defensible data that meet data quality requirements for precision, accuracy, representativeness, comparability, and completeness, as required by characterization and monitoring sampling plans that use the data quality objective process for data collection.

3.1 Sampling Process Design

Environmental sampling events (including but not limited to biological, chemical, radiological, and geotechnical sampling events) are directed by an activity-specific sampling plan. Sampling events, therefore, shall not take place until an activity-specific sampling plan is written, approved, and issued. If it is determined that an existing sampling plan will not suffice for the planned sampling event, a new sampling plan shall be developed in accordance with the *Sample Management Guide* (Ref. 10). Field sampling standard operating procedures (SOPs) are referenced in the sampling plan and followed in the field. These SOPs are designed to standardize, where possible, sampling protocol in order to ensure that samples are comparable to, and compatible with, other data collection activities at the Weldon Spring Site Remedial Action Project (WSSRAP). Sampling is conducted by individuals who are trained to the requirements of the appropriate sampling SOP. Training is conducted before any individual conducts or assists with sampling activities and is documented in accordance with PMC Procedure PS-14.

The WSSRAP SOPs include descriptions of:

- Reference of sample methods.
- Sample collection techniques.
- Sample identification.
- Sample preservation.
- Sample packaging and handling.
- Sampling quality control (QC) procedures.
- Quality assurance (QA) records.
- Equipment calibration and maintenance.
- Personnel and equipment decontamination.

The documentation of field sampling activities that produce data (e.g., logbooks, field data sheets, equipment calibration records) become QA records and are maintained in accordance with the *Project Management Contractor Quality Assurance Program* (QAP) (Ref. 2).

3.2 Sample Custody

A required component of all field investigation sampling plans is the maintenance of sample integrity from collection to data reporting. To maintain and document sample possession, chain-of-custody procedures must be implemented. Elements of the chain include at a minimum:

- Sample seals.
- Labels with identification numbers to allow for sample tracking.
- Field logbooks.
- Field data record forms.
- Chain-of-custody records.
- Sample analysis request sheets.
- Bills of lading and air bills.
- Field and laboratory tracking forms.

Field and laboratory sample custodians or their designated representatives are responsible for maintaining custody of samples. A sample is considered under a person's custody if one or more of the following conditions are met:

- It is in the person's physical possession.
- It is in view of the person.
- It is secured by the person so that no one can tamper with the sample without being detected.
- It is secured by the person in an area that is restricted to authorized personnel.

Sample custody is divided into the following two parts:

(1) Field sample custody
(2) Laboratory sample custody

3.2.1 Field Sample Custody

Sampling procedures for groundwater, soil, waste, etc., are addressed in PMC SOPs and sampling plans. The sample custody program for the Weldon Spring site includes documentation of procedures for the preservation of samples, sample identification, recording sample collection locations, and specific considerations associated with sample acquisition. Applicable forms for recording these data and for the tracking of samples as required by chain-of-custody procedures, are specified in SOPs. The chain of custody requires at a minimum:

- Sample identification
- Sample date
- Sample matrix
- Sample preservation
- Analysis required
- Release and acceptance information (i.e., date, location, and technician's signature)

In situ or field measurements (e.g., pH measurements, temperature, conductivity, flow measurements, and air monitoring data) are recorded in field logbooks or on field data record forms. Sample containers are labeled or tagged appropriately according to applicable SOPs. Labels or tags contain the following information:

- Organization name
- Location
- Date
- Matrix type

- Preservation
- Sample identification number
- Name(s) of sampler(s)

Samples are accompanied by chain-of-custody records. Completed chain-of-custody documents are retained as quality assurance records and maintained in accordance with the PMC QAP (Ref. 2).

3.2.2 Laboratory Sample Custody

Samples are packaged and shipped to the laboratory in accordance with International Air Transportation Association's *Dangerous Goods Regulations*, U.S. Department of Transportation requirements, PMC Procedure RC-17, and PMC Instruction ECDI-3, as appropriate, with a separate custody record accompanying each shipment. Authorized sample custodians at the laboratories sign for incoming field samples, obtain documents of shipment, and verify data entered onto the sample custody records. Laboratories are required to inform the Project Management Contractor (PMC) of receipt of samples within one working day. If any damage or shipping discrepancy is noted upon receipt of samples, the laboratories are required to inform the PMC immediately. Contract laboratories are required to maintain custody of samples as defined in Section 3.2.

3.3 Analytical Methods

Sample matrixes, parameters of interest, and estimated sample frequencies for contract laboratories are addressed in the *Analytical Support Services Specifications* (Ref. 5). Quantitative laboratories conducting geotechnical, radiological, and/or chemical analysis for the PMC are required to submit controlled copies of their site-specific Quality Assurance Project Plans (QAPjPs) and SOPs to the PMC. The PMC and contract laboratory SOPs direct operations, analyses, and activities that are thoroughly prescribed, documented, and performed in accordance with accepted standards and methodologies. Any changes to controlled SOPs and QAPjPs must also be submitted to the PMC. Laboratory QAPjPs and SOPs specify QC requirements to demonstrate the precision and accuracy of methods and procedures.

The operation of the on-site radiological laboratory is addressed in the *On-Site Radiological Laboratory Operational and Quality Assurance Plan* (Ref. 13).

Routine assessments and surveillances of the laboratories are conducted by the Project Quality Department to verify their conformance to their QA programs, WSSRAP contract specifications, and appropriate regulatory requirements, as appropriate.

3.4 Quality Control Requirements

To achieve the highest practical attainable level of precision and accuracy, sampling programs at the WSSRAP include the use of QC samples to measure field and laboratory performance. To provide quality control information, the following types of field QC samples may be used:

- Background Samples: The samples are obtained from media that is characteristic of the site but outside the zone of contamination; e.g., groundwater samples collected from the upper Burlington-Keokuk aquifer upgradient of the Weldon Spring Chemical Plant area.

- Duplicate Samples: These samples are collected at the same time from common collection manifolds, locations, or sampling divides, or as split samples from one sampling event, and then are sent to the same laboratory to verify sampling and intra-laboratory precision. Generally, one out of every 20 investigative samples is replicated.

- Equipment Blanks: Analyte-free deionized water is used to rinse sampling equipment that has been decontaminated; e.g., bailers, pumps, augers, split tube samplers. When using nondedicated sampling equipment, one rinsate sample is collected per day or for every 20 investigative samples, whichever is greater. Upon analysis, these samples are used to assess the adequacy of the field decontamination process.

- Trip Blank: This is analyte-free water taken from a laboratory to the sampling site and returned to the laboratory unopened. Trip blanks are used only when sampling for volatile organics.

Internal QC samples at the laboratories include the use of matrix spikes, laboratory duplicates, and laboratory control samples, including U.S. Environmental Protection Agency (EPA) quality control ampules, standard reference materials, laboratory-prepared solutions made from pure compounds, and method or analytical blanks. The laboratories selected by the PMC, including our on-site radiological laboratory, use the standards and guidelines prescribed by the appropriate governing body for analyzing relevant chemical and radiological constituents. The analytical internal QC operations presented in the *User's Guide to the Contract Laboratory Program* (Ref. 3) are applied to contract laboratories performing analyses on samples generated by the PMC.

It is the responsibility of each laboratory to document in each data package submitted that both initial and ongoing instrument and analytical QC requirements have been met. Any samples that have not been analyzed according to contract QC requirements are re-analyzed by the laboratory or properly qualified by the PMC Validation Group.

3.5 Instrument/Equipment Calibration, Testing, and Maintenance

3.5.1 Field Sampling Equipment

To ensure the precision, accuracy, and minimal downtime of field instruments and sampling equipment, the PMC develops SOPs for operation, calibration, and maintenance of all site field instrumentation sampling equipment.

These SOPs include means for demonstrating and documenting instrument precision and accuracy. Such means are:

- All measurement devices must be assigned individual identification numbers. Documentation must identify the function, calibration requirements, operating technicians, and standards used for calibration of each device.

- Each measuring device must be calibrated against a traceable standard of known accuracy.

- Sampling and analytical calibration methodologies must be documented and referenced to Federal and regulatory standards.

The SOPs also identify the type and frequency of routine preventive maintenance required for each model of field equipment used. Equipment must be maintained at least in accordance with manufacturers' recommendations. Logbooks must be maintained for each field sampling instrument. These logs must document the maintenance performed, the technician performing the maintenance, and whether maintenance was routine or for repair.

Personnel must be trained to the requirements of the governing SOPs before operating field instrumentation and sampling equipment. Documentation of training is in accordance with PMC Procedure PS-14. Only trained, qualified technicians perform preventive maintenance.

All records of calibration and maintenance are QA records and are maintained in accordance with QA Procedure SQP-7, *Quality Assurance Records*.

3.5.2 Laboratory Instruments

Laboratories conducting radiological and chemical analyses for the PMC must include in their site-specific QAPjPs, calibration and preventative maintenance requirements for the instruments used to conduct WSSRAP analyses. For each type of instrument the QAPjPs must identify:

- Calibration requirements
- Calibration acceptance criteria
- Corrective action, if required
- Routine maintenance requirements

Laboratories must, upon request, provide to the PMC, documentation for all calibration, maintenance, and corrective actions required. Calibration and maintenance documents are QA

records and are maintained in accordance with QA Procedure SQP-7, *Quality Assurance Records*.

3.6 Inspection/Acceptance Requirements for Supplies and Consumables

Procedure SQP-6 establishes the protocol to be employed by the PMC for evaluating the capabilities and qualifications of PMC suppliers. Quality receipt inspection may be required for supplies and consumables in accordance with Procedure SQP-20. Personnel performing receipt inspection activities shall be certified in accordance with Procedure SQP-15.

4 DATA MANAGEMENT

As stated in Section 3.1, each environmental sampling event is directed by an activity-specific sampling plan. Samples are collected from specific, preplanned locations, as directed in the sampling plans. Standard operating procedures (SOPs) are referenced in the sampling plan and followed in the field. Field Sample Data Forms are completed for each sample, in accordance with the SOP referenced in the appropriate sampling plan.

4.1 Database Management

The Field Sample Tracking (FST) database (Ref. 11) is used to plan sample collection activities. This database tracks environmental monitoring and characterization samples and the associated analyses requested at each laboratory. The Environmental Sampling Tracking (EST) database (Ref. 1) uses FST information to generate Chain-Of-Custody Forms. The EST system contains laboratory costs and budgeting information and allows the data user to track samples from sample shipment to the receipt of analytical results.

The WSSRAP Information System for Archiving and Reporting Data (WIZARD) database (Ref. 12) contains the analytical results received from the Weldon Spring Site Remedial Action Project (WSSRAP)-subcontracted laboratories. This database allows the data user to query and sort, perform statistical analysis, and print a given set of data.

FST, EST, and WIZARD are all custom-made software used on the WSSRAP local area network (LAN). These databases were developed in accordance with Procedure PS-26, *Custom Software Development*. Computer security and access are maintained in accordance with Procedures PS-22, *Computer Security Procedure*, and PS-23, *Computer Access Registration*, respectively. The Automated Data Processing (ADP) backup policy for the WSSRAP is established in Procedure PS-24, *ADP Backup*.

Other activity-specific or group-specific databases have been custom-built for various environmental data operations at the WSSRAP. These are managed as described above.

4.2 Data Packages

Data packages received from contract laboratories undergo several processes to evaluate the quality of the data. Original data packages are retained by the PMC Verification Group, and copies are made, as appropriate, for the data users to review. If validation of sample analysis is requested or randomly selected, a copy is forwarded to the PMC Validation Group for data qualification. The following subsections further describe the evaluation process.

4.2.1 Data Verification

The PMC processes all data received from contract laboratories in accordance with ES&H 4.9.1, *Environmental Monitoring Data Verification*. The following factors are reviewed to verify if a sample has been handled according to PMC protocol:

- Chain-of-custody
- Holding times
- Sample preservation requirements
- Sample analysis request form
- Quality control (QC) samples
- Laboratory receipt forms
- Data transcription

4.2.2 Data Review

Copies of the data packages are distributed to the data users for their review. The data are reviewed to identify discrepancies in the field QC samples, inconsistencies of the data in comparison to historical data, or apparent abnormalities. With the exception of the confidential bioassay data, deficiencies are reported to the verification group by the data users. Data users may request validation of any data that appear to be of questionable quality.

4.2.3 Data Validation

Randomly selected laboratory data and data selected by the Verification Group or the data users are thoroughly reviewed in accordance with PMC Procedures ES&H 4.9.2 and 4.9.4. These reviews are conducted by the PMC Validation Group.

The validation procedures specify a consistent means for reviewing and evaluating the data resulting from laboratory analyses and provide a consistent means for documenting the evaluation, and reporting the usefulness, of data to the data users. This is accomplished through a thorough review of the analytical data using laboratory analytical records to assess laboratory conformance to QC criteria, data quality requirements for data quality objectives, and procedural requirements.

4.3 Reporting

Documentation of the data collection and analysis process is an integral part of the Quality Assurance/QC program. Data validation techniques require that SOPs, sample tracking methods, validation procedures, QC checks on precision, accuracy, representativeness, completeness, and comparability criteria, and all sampling and laboratory activities be documented. Data obtained from sample collection and analysis operations are recorded on standardized report forms or logbooks.

These documents include approved PMC forms. Some of these documents are listed below:

- Contract Laboratory Program report forms
- Chain-of-custody forms
- Sample analysis request forms
- QA/QC report forms for laboratory
- Equipment calibration report forms
- Standard field and laboratory log forms

5 ASSESSMENTS/OVERSIGHT

Quality assurance (QA) objectives for the Weldon Spring Site Remedial Action Project (WSSRAP) will be met in part by assessment of field sampling and laboratory analysis activities. The goals or objectives of the Weldon Spring site characterization QA/quality control (QC) assessment program ensure that:

- QA/QC requirements are clearly established.
- All sampling and analytical efforts are described by an approved sampling plan.
- Standard operating procedures are developed for each measurement activity.
- Qualified personnel are assigned to perform these activities in accordance with the procedures.
- Proper documentation is prepared to establish data validity.
- Assessments are performed to determine compliance with the established QA/QC requirements.
- Corrective actions are proposed and implemented to address deficiencies identified during assessments. The corrective actions are also verified and validated.

This section describes the performance, reporting, and documentation phases of the assessment portion of the *Project Management Contractor Quality Assurance Program* (QAP) (Ref. 2).

5.1 Assessments—General

An assessment program is implemented to ensure compliance with the QA/QC program requirements established for the WSSRAP in the approved *Project Management Contractor Quality Assurance Program* (Ref. 2). This mechanism is intended to assess systems and procedure effectiveness.

Assessments:

- Identify weaknesses and strengths of overall programs.
- Dictate corrective actions as required.
- Allow for modification and enhancement of QA/QC programs.
- Serve as a vehicle for providing necessary technical assistance.
- Measure the effectiveness of QA/QC programs in order to ensure data quality.

Assessments at the WSSRAP include performance and systems assessments. These assessments are performed both internally and externally to the Project Management Contractor (PMC). All assessments are performed by PMC personnel certified in accordance with SQP-17, *Assessor Training and Lead Assessor Certification*.

Systems assessments consist of an evaluation of all components of a measurement system to determine their capability, proper selection, and use. A systems assessment includes a careful evaluation of field and/or laboratory QA/QC programs. Systems assessments are normally performed prior to, or shortly after, systems are operational; however, such assessments are performed on a regularly scheduled basis for the duration of the WSSRAP. Systems assessments are performed in accordance with PMC Procedure SQP-18, *Independent Assessment*.

5.2 Assessment Preparation

Assessments are performed under the direction of certified lead assessors who are assisted by certified assessors and/or technical specialists, as required. For each assessment, the lead assessor is responsible for preparing and maintaining a schedule, reviewing and documenting the qualifications of all personnel (including technical specialists), providing notifications to organizations, and preparing and/or approving plans and checklists.

The lead assessor after a review of applicable requirements such as procedures, contracts, plans, standards, and project schedules, prepares an assessment schedule indicating the organization to be assessed, subjects to be assessed and schedule of the assessment. The assessment schedule is reviewed periodically and revised as necessary to ensure that coverage is kept current. Before the assessment the lead assessor notifies the organization to be assessed of the proposed schedule and scope of the assessment.

The lead assessor selects the team members including assessor, technical specialists, and observers as required to best perform a comprehensive assessment. Team personnel do not have direct responsibilities in the areas being assessed. The lead assessor is responsible for preparing a written assessment plan as requested by the Project Quality Manager. The assessment plan includes:

- Assessment number
- Organization to be assessed
- Subjects to be assessed
- Scope of the assessment
- Projects or activities to be assessed
- Assessment team members
- Assessment schedule
- Applicable documents

The assessment plan is used to provide the assessed organization's management with the proposed scope, requirements, personnel, and schedule for the assessment.

The assessment team prepares assessment checklists based on their review of applicable or relevant and appropriate requirements, documents, and procedures; standards, contracts, and plans; and previous assessments, if any, of the systems or tasks to be assessed. The lead assessor is responsible for review and approval of the assessment checklists. These checklists are used to evaluate the performance of the assessed activity.

The lead assessor provides the assessment team with the assessment plan and checklists. The lead assessor also orients the team to the assessment schedule as well as the internal and external organization and contractual interfaces and responsibilities of the organization to be assessed.

Assessments are scheduled at intervals consistent with the schedule for accomplishing the activity and commensurate with the status and importance of the activity.

Assessments are performed in accordance with written procedures.

Assessment results are documented by assessment personnel and are reviewed by management having responsibility in the area assessed.

5.3 Performance

Performance assessments are used to quantitatively determine the accuracy of a laboratory's performance, using a blind quality control sample. The PMC requires that laboratories participate in the appropriate performance sample programs if they generate data used for making decisions that could impact the health and safety of the public or the environment. The following are examples of programs that are presently used for this purpose:

- U.S. Department of Energy (DOE) Environmental Measurement Laboratory QA Program
- U.S. Environmental Protection Agency (EPA) Environmental Monitoring System Laboratory Program
- EPA Water Pollution and Water Supply Intra-Laboratory Performance Program
- U.S. Department of Energy (DOE) Mixed Analyte Performance Evaluation Program.

A laboratories' performance in these programs is evaluated during annual system assessments conducted by the PMC.

5.4 System Assessment Performance

For each assessment the lead assessor conducts a pre-assessment meeting at the assessment site with the assessment team and responsible management of the organization to be assessed. The pre-assessment meeting provides a means to introduce the assessment team; establish contacts and interfaces; present and confirm the assessment plan, scope, and sequence; and schedule the post-assessment meeting.

The assessment is conducted by using the assessment checklist as a guideline. The lead assessor may assign portions of the checklist to members of the assessment team commensurate with their expertise. The checklist is a guideline; responsible questioning or investigation may lead the assessment into areas not described in the assessment plan or by the assessment checklist.

Assessments include objective examination of work areas, activities, processes, and items and review of documents, records, quality-related practices, procedures, and instructions to determine compliance with the QA/QC program requirements and the project procedures manual. The results of the investigations are recorded on the assessment checklists.

Discrepancies or concerns discovered during the course of the assessment are presented to the lead assessor for review and discussion prior to formalizing. Discrepancies are categorized as follows:

1. Finding: A deficiency or non-compliance to established procedures, requirements, or regulations.

2. Item of Concern: A condition or item identified during an assessment which, although currently meeting established requirements, may, if left without management attention, lead to a departure from established requirements.

3. Observation: A conclusion which is the result of a generally subjective evaluation of implementation practices or management systems related to the area under review.

At the conclusion of the assessment, a post-assessment meeting is chaired by the lead assessor. This post-assessment meeting is used to present the findings, items of concern, and observations to the responsible management of the assessed organization. Resolution of discrepancies and commitments for corrective actions, including a tentative schedule for completion of corrective actions, are discussed at this time.

5.5 Assessment Reporting

Assessment reports are submitted to cognizant managers by the Project Quality Manager or the lead assessor. These reports address the performance of measurement systems and data quality. Assessment reports include the dates of assessments, assessment procedures, names of assessors, assessed organization participants, specific procedures assessed, a summary of assessment results including findings and observations (if any), and recommendations for correcting deficiencies or improving the QA/QC programs, if necessary.

Assessment findings are recorded on the Quality Finding Report Form and are included as part of the assessment report as detailed in PMC Procedure SQP-18. Items of concern are also included in the assessment report.

Assessment reports are issued promptly upon completion of an assessment (within 30 days), and include the date required for response to assessment findings. Findings require responses within 30 days. Responses must include commitment dates for completion of corrective actions, results of a review for potential impact on other items or activities, and the causes of deficiencies.

Items of concern also require response within 30 days, as appropriate, and do not necessarily include corrective actions or causes of deficiencies.

Observations may or may not require formal responses, depending upon the severity, type, and number of specific deficiencies. The lead assessor specifies which of the observations require written responses. Observations are recorded in the body of the assessment report.

Completion of corrective actions noted in assessment responses are verified and validated upon receipt of the responses or by the dates specified on the responses.

5.6 Surveillance

In addition to regularly scheduled assessments, the QA Department performs surveillances of field and laboratory activities in accordance with PMC Procedure SQP-2, *Quality Assurance Surveillance*. Surveillance is the act of monitoring or observing to verify whether an item or activity conforms to specified requirements.

Surveillances may be planned or unplanned, scheduled or unscheduled. No checklist is required; however, the approved procedure for the operation or task is followed to ensure adherence to the requirements. Surveillance reports are prepared by the individuals performing the surveillances and are reviewed by the Project Manager, or designee. When deficiencies are noted, the responsible departments are notified by Quality Finding Reports (QFRs) or items of concern, as presented in the surveillance report.

Responses to QFRs and items of concern must be returned to the Project Quality Department by the responsible department manager and appropriate follow-up actions must be prescribed at that time.

5.7 Finding/Deficiency Corrective Action and Closure

The lead assessor is responsible for the evaluation of corrective action responses to determine if the corrective action for each finding/deficiency is adequate, has been scheduled, or has been completed. The lead assessor ensures that responses to findings written by assessment team members fully address discrepancies.

Follow-up may be accomplished through written communication, re-assessment, surveillance, or other appropriate means. Unsatisfactory responses are addressed in writing, indicating why they are unsatisfactory, and specifying a reply due date. Findings and deficiencies are considered open until approved corrective actions have been completed. The lead assessor is responsible for closing all findings and deficiencies.

5.8 Quality Assurance Records

All assessment plans, correspondence relating to assessments/surveillances, findings, reports, and individual certifications become QA records and are maintained in accordance with the WSSRAP *Quality Assurance Program* (Ref. 2).

5.9 Reports to Management

The PMC Validation Group generates periodic and semiannual reports to management. The appropriate validation standard operating procedures clearly define the mechanism for transmitting these reports.

Reports generated by the PMC Validation Group from random selection or data user requests are submitted to management upon completion. These periodic reports are submitted to the managers of the appropriate departments for their information.

The PMC Validation Group reports all data assessments to date to management on a semiannual basis. These reports are submitted, as a minimum, to the following:

- The Deputy Project Director
- The Project Quality Department (PQD)
- Environmental Safety and Health Manager

The PQD standard quality procedures define the disposition of all reports generated by QA activities to the appropriate management levels.

The PQD developed the Site Wide Assessment Tracking System (SWATS) to identify, track, and document closure of quality-affecting deficiencies. The SWATS is divided into two categories:

- Extrinsic SWATS: Deficiencies that have been identified and issued to the WSSRAP from an outside source (e.g., the DOE or a PMC corporate office).

- Internal/Subcontractor SWATS: Deficiencies that were identified by QA surveillances, inspections, and assessments.

Monthly Project Quality Status reports will be submitted to the MK corporate Quality Director and monthly SWATS reports will be submitted to PMC management to identify open deficiencies. Quarterly Project Quality Status reports summarizing quality activities will be submitted to the DOE Project Office. The extrinsic SWATS reports will be submitted quarterly to the DOE project office for closure of externally identified deficiencies.

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29 CFR 1910, *Occupational Safety and Health Standards*
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40 CFR 300, *National Oil and Hazardous Substances Contingency Plan.*
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49 CFR 172, *Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements*

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PROCEDURES

ECID-3,
ES&H 4.9.1, *Environmental Monitoring Data Verification*
ES&H 4.9.2, *Environmental Monitoring Data Validation*
ES&H 4.9.4, *Data Validation Package and Data Reviews*
PS-14, *Indoctrination and Training of Project Personnel*
PS-22, *Computer Security Procedure*

PS-23, *Computer Access Registration*
PS-24, *ADP Backup*
PS-26, *Custom Software Development*

RC-17, *Off-Site Transportation of Hazardous Materials*
RC-32, *Determining the Radioactive Component of Hazardous Work*
SQP-2, *Quality Assurance Surveillance*
SQP-6, *Evaluation of Suppliers for the Approved Suppliers' List (ASL) and Subcontractor Audit/Surveillance List (SASL)*
SQP-7, *Quality Assurance Records*
SQP-15, *Certification of Inspection and Test Personnel*
SQP-17, *Assessor Training and Lead Assessor Certification*
SQP-18, *Independent Assessment*
SQP-20, *Quality Receipt Inspection*

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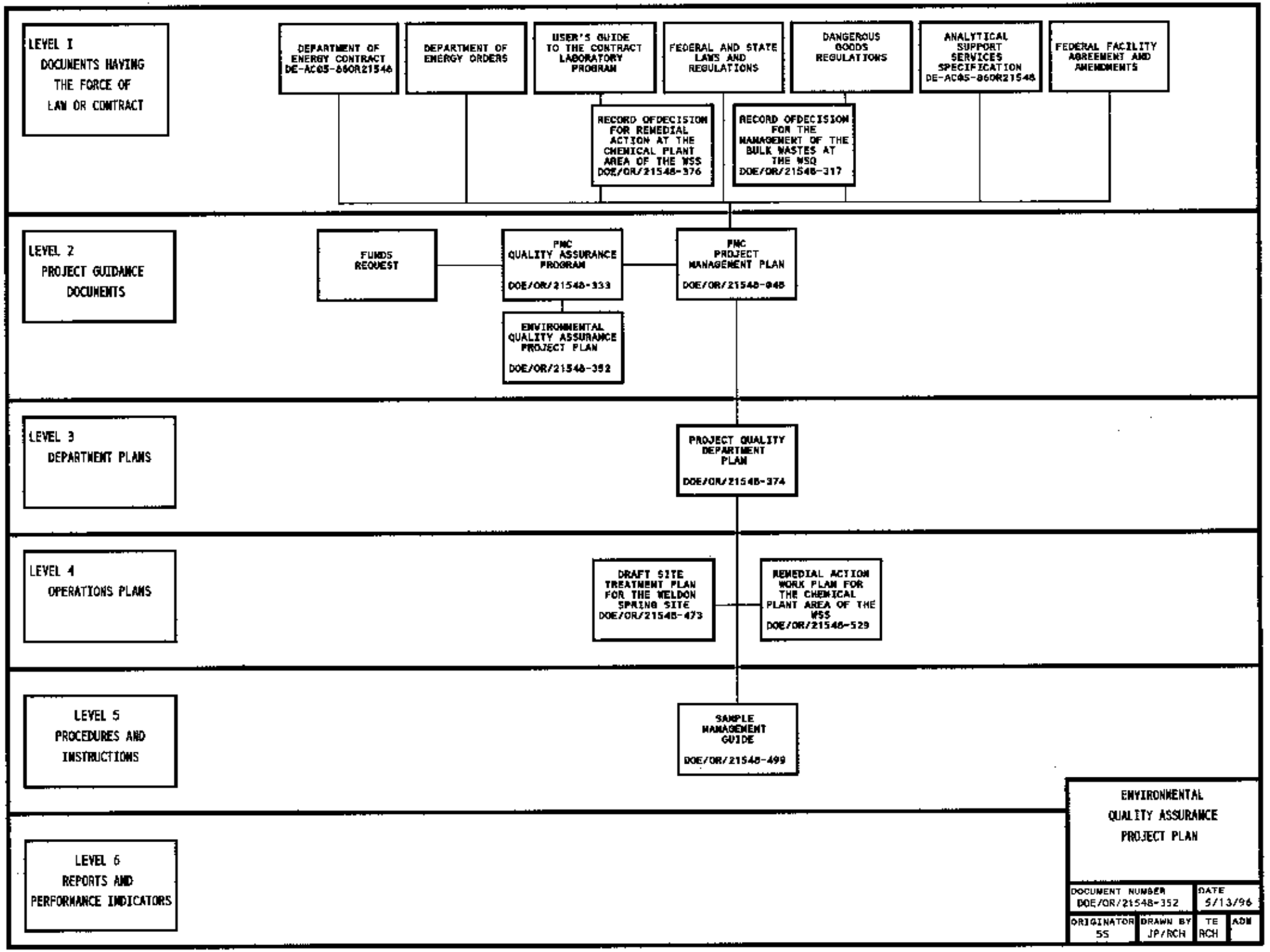
APPENDIX A
Environmental Quality Assurance Project Plan Document Hierarchy


LEVEL 1
DOCUMENTS HAVING THE FORCE OF LAW OR CONTRACT
DEPARTMENT OF ENERGY CONTRACT DE-AC05-86OR21548
DEPARTMENT OF ENERGY ORDERS
USER'S GUIDE TO THE CONTRACT LABORATORY PROGRAM
FEDERAL AND STATE LAWS AND REGULATIONS
DANGEROUS GOODS REGULATIONS
ANALYTICAL SUPPORT SERVICES SPECIFICATION DE-AC05-86OR21548
FEDERAL FACILITY AGREEMENT AND AMENDMENTS
RECORD OF DECISION FOR REMEDIAL ACTION AT THE CHEMICAL PLANT AREA OF THE WSS DOE/OR/21548-376
RECORD OF DECISION FOR THE MANAGEMENT OF THE BULK WASTES AT THE WSQ DOE/OR/21548-317
LEVEL 2
PROJECT GUIDANCE DOCUMENTS
FUNDS REQUEST
FMC QUALITY ASSURANCE PROGRAM DOE/OR/21548-333
FMC PROJECT MANAGEMENT PLAN DOE/OR/21548-048
ENVIRONMENTAL QUALITY ASSURANCE PROJECT PLAN DOE/OR/21548-352
LEVEL 3
DEPARTMENT PLANS
PROJECT QUALITY DEPARTMENT PLAN DOE/OR/21548-374
LEVEL 4
OPERATIONS PLANS
DRAFT SITE TREATMENT PLAN FOR THE WELDON SPRING SITE DOE/OR/21548-473
REMEDIAL ACTION WORK PLAN FOR THE CHEMICAL PLANT AREA OF THE WSS DOE/OR/21548-529
LEVEL 5
PROCEDURES AND INSTRUCTIONS
SAMPLE MANAGEMENT GUIDE DOE/OR/21548-499
LEVEL 6
REPORTS AND PERFORMANCE INDICATORS
ENVIRONMENTAL QUALITY ASSURANCE PROJECT PLAN
DOCUMENT NUMBER DOE/OR/21548-352
DATE 5/13/96
ORIGINATOR SS
DRAWN BY JP/RCH
TE RCH
ADM

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MK-Ferguson Company
Weldon Spring Site Remedial Action Project

TRANSMITTAL OF CONTRACT DELIVERABLE

Date: 5/20/96 Transmittal No.: CD-0003-02

Title of Document: Environmental Quality Assurance Project Plan

Doc. Num.: 352 Rev. No.: 2 Date of Document: May 1996

Purpose of Transmittal: Request for Department of Energy acceptance of contract deliverable.

The Project Management Contractor has reviewed and approved the attached document and hereby delivers it to the U.S. Department of Energy, Weldon Spring Site Office.

The document will be considered accepted unless we receive written notification to the contrary within 30 days of the date of this transmittal.

James R. Powers

James R. Powers
Project Director

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