Quality Assurance and Data Management

Prepared for the U.S. Department of Energy

Fluor Daniel Hanford, Inc.

Richland, Washington

Hanford Management and Integration Contractor for the
U.S. Department of Energy under Contract DE-AC-0696-RL13200

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Quality Assurance and Data Management

L. L. Lockrem
Numatec Hanford Corporation

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*Urban Air Pollution: The Sources, Health/Issues, Monitoring/
Data Management, Control and Regulations*

Data Management Relative to Air Measurements

By
L.L. Lockrem

Section I

Intoduction

- ***Opening Remarks***
- ***Introduction to Hanford***

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LL (Larry) Lockrem

- **M.S. Geochemistry**
- **B.S. Chemistry**
- **22 Years Experience (Industry, Government, Education)**
- **Areas of Technical Interest**
 - **Vapor-Analysis**
 - **Sampling and Analysis of Atmospheres - American Society of Testing Materials**
 - **Asbestos Analysis**
 - **Environmental Laboratory and Field Services**
 - **Spectroscopy and Mineralogy Analysis**

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Special Analytical Support

Field Assessment Services Team

- Environmental Sampling/Analysis
- Waste Sampling/Analysis
- Sampling and Field Management
- Field Team Leaders
- Field Screening
- Operations Sampling/Analysis
- Laboratory Information Management Systems Support
- Consulting Services

Organic Sampling and Analysis Team

- Vapor Sampling/Analysis
- Develop/Review of Data Quality Objectives
- Head Space Monitoring
- Screening/Field Monitoring
- Mobile analytical Services
- Consulting Services

In-Situ Measurement Treatment

- In-Situ Characterization
- Field Methods Development
- Hardware Development
- Non-Destructive Assay
- Fabrication/Development
- Radiological Screening
- Consulting Services

Baseline Support

- Planning/Scheduling
- Record Management
- Facilities/Property Management
- Procurement/Financial Affairs
- Training
- Contracts Administration
- Marketing/Laboratory Interface
- Quality Assurance
- Hazardous Waste Disposal

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Hanford Site Location Map

Washington State

Hanford Site
560 Square Miles

A95040268.1

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100

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Special Analytical Support

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Hanford Laboratory Facility

Single -Shell Tanks

- 149 Tanks Constructed 1943-64
- ~210 m³ to 3,800 m³ Capacity (55 kgal to 1 Mgal)
- Bottom of Tanks at Least 50 m (150 Feet) Above Groundwater
- No Waste Added to Tanks Since 1980
- Tanks Currently Contain:
 - ~136,800 m³ (36 Mgal) of Saltcake, Sludge, and Liquid
 - ~425 x 10¹⁶ Bq (115 MCi)
 - 67 Are Assumed to Have Leaked ~ 3,800 m³ (~1 Mgal)

Double-Shell Tanks

- 28 Tanks Constructed Between 1968-86

- ~3,800 m³ to 4,300 m³ (1 to 1.14 Mgal) Capacity

- Tanks Currently Contain

- ~ 72,000 m³ (19 Mgal) of Mostly Liquids (Also Sludges and Salts)

- ~ 296 x 10¹⁶ Bq (80 MCi)

- None Have Leaked

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Current Hanford Tank Waste Volume

- 177 Storage Tanks
- Volume ~55 Million Gallons (June 1996)
- ~50 Inactive Miscellaneous Underground Storage Tanks
- 1900 Cs / Sr Capsules
- 350 Million Curies of Radionuclides

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WRAP Module I

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Special Analytical Support Present Activities

- **Hanford Tank Initiative Program Management**
 - Field Measurements
- **Tank Vapor Sampling and Analysis**
- **Solid Waste Screening**
 - Drum Headspace

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Major Hanford Operations

- **Tank Waste Remediation System (TWRS) High Level Waste Management**
- **Spent Nuclear Fuel Storage**
- **Waste Management**
 - Liquid Effluent Retention facility
 - Effluent Treatment Facility
 - Evaporator
 - Solid Waste Management
- **Environmental Restoration Corporation (ERC)**
 - Site Soils Clean-up Environmental Restoration Disposal Facility (ERDF)
 - Decontamination and Decommissioning

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Section II

Workshop Overview

- ***Course Goals and Objectives***
- ***Definitions***
- ***Historical Trends***

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GOAL

- To develop an understanding of Environmental Management Systems

Objective

- **Develop an awareness of uniform quality standards and how the standards may be used**
- **Provide the framework for laboratory-program client agreement prior to sample collection and analysis**
- **Integrate the Data Quality Objective Planning Process**

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Definitions

- **Organization**

- **Company, corporation, firm, enterprise or institution, or part or combination thereof, whether incorporated or not, public or private, that has its own functions and administration**
 - **Note - For organizations with more than one operating unit, a single operating unit may be defined as an organization**

- **Top Management**

- **An individual or group of individuals with executive responsibility for the organization**

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Definitions (continued)

- **Environment**

- **Surroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, humans, and their interrelation**
 - **Note - Surroundings in this context from within an organization to the global system**

- **Environmental management**

- **Those aspects of the overall management function (including planning) that determine and implement the environmental policy**

Definitions (continued)

- **Environmental Management System (EMS)**
 - That part of the overall management system which includes organizational structure, planning activities, responsibilities, practices, procedures, processes, and resources for developing, implementing, achieving, reviewing, and maintaining the environmental policy
- **Environmental Management System Audit**
 - Systematic and documented verification process to objectively obtain and evaluate evidence to determine whether an organization's environmental management system conforms to the environmental management system audit criteria set by the organization, and communication of the results of this process to management

Definitions (continued)

- **Environmental Policy**
 - Statement by the organization of its intentions and principles in relation to its overall environmental performance which provides a framework for action and for setting of its environmental objectives and targets
- **Environmental Aspect**
 - Element of an organization's activities, products, or services which can interact with the environment
 - Note - A significant environmental aspect which has or can have a significant environmental impact

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Definitions (continued)

- **Environmental Impact**
 - Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's activities, products, or services
- **Environmental Objective**
 - Overall environmental goal, arising from the environmental policy, that an organization sets itself to achieve, and which is quantified where practicable

Definitions (continued)

- **Environmental Target**
 - Detailed performance requirements, quantified where practicable, applicable to the organization or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives
- **Environmental Performance**
 - Measurable results of the EMS related to an organization's control of its environmental aspects, based on its environmental policy, objectives and targets

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Definitions (continued)

- **Continual Improvement**
 - Process of enhancing the environmental management system to achieve improvements in overall environmental performance in line with the organization's environmental policy
- **Nonconformity**
 - The nonfulfillment of a specified 14001 requirement

Definitions (continued)

● Prevention of Pollution

- Use of processes, practices, materials or products that avoid, reduce or control pollution, which may include recycling, treatment, process changes, control mechanisms, efficient use of resources and material substitution
 - Note - The potential benefits of prevention of pollution include the reduction of adverse environmental impacts, improved efficiency and reduced costs

● Interested Party

- Individual or group concerned with or affected by the environmental performance of an organization

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Definitions (continued)

- **Pollution Prevention**

- The use of materials, processes, or practices that reduce or eliminate the creation of pollutants or wastes at the source; it includes practices that reduce the use of hazardous materials, energy, water or other resources, and practices that protect natural resources through conservation or more efficient use

- **Prevention Action**

- Steps taken to identify and avoid incidents potentially leading to a nonconformity

- **Corrective Action**

- An action taken to eliminate the causes of an existing nonconformity, defect, or other undesirable situation in order to prevent recurrence

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Reactive

- **Compliance Mode**
 - End of pipe control
 - Separate environmental management functions
 - Emphasis on remediation

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Proactive

- **Prevention mode**
 - **Pollution prevention**
 - **Environmental management functions integrated with operations**
 - **EMS approach developing**

Systems Approach

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Management System Approach

- **EMS**

- **Integration of environmental ethics throughout organization**
- **Integration of environmental business activities**
 - **Management systems**
 - **Accounting Systems**
- **International recognition through certification (an option)**

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Management Systems Development Drivers

- **Laws and Regulations**
- **U.S. Environmental Protection Agency (EPA) Initiatives**
- **Industry Standards**
 - Chemical Manufactures Association
 - Occupational Safety and Health Administration (OSHA) Voluntary Protection Program
 - Others
- **Other Standards**
 - International Standards Organization (ISO) 9000
 - British Standards (BS) 7750
 - ISO 14000
 - Hanford Analytical Services Quality Assurance Plan

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Section III

Management Process Flow

- Total Quality Fitness Review***
- 10-Step Sample and Data Management***

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Total Quality Fitness Review

Customer Orientation

**Human Resource
Excellence**

**Product/Process
Leadership**

**Management
Leadership**

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Management Process Flow

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Management Process Flow

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Data Quality Objectives (DQO)

Guidance for the Data Quality Objectives Process

EPA QA/G-4

*United States Environmental Protection Agency
Quality Assurance Management Staff*

Washington, DC 20460

Final

September 1994

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Data Quality Objectives

Purpose

- **To implement the EPA's 7-Step Data Quality Objectives (DQO) Process “to assure that the type quantity and quality of environmental data used in decision making will be appropriate for the intended application.”**

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Data Quality Objectives Process

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Data Quality Objectives Process

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Data Quality Objectives (Continued)

Process

Description

- **Task managers assemble team**
 - Scientists
 - Engineers
 - Analysts
 - Statisticians
 - Risk Assessors
 - Others

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Data Quality Objectives (Continued)

Process Description (continued)

- **Team reviews existing data (some electronically from databases)**
 - Data analyzed
 - Conceptual model built
- **Regulators, U.S. Department of Energy (DOE), and Team perform EPAs 7-Step Process using 3rd party facilitation**
 - **DQO Process Summary Report is prepared and issued**

Data Quality Objectives (Continued)

Process Strengths

- **DOE and Contractor are committed to DQO Process**
- **Significant cost/schedule savings can be achieved without jeopardizing technical decisions**

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Data Quality Objectives (Continued)

Process Weaknesses

- **New system**
 - Requires acceptance and training
 - Requires more up front resources
 - Time
 - Cost
 - Labor
- **DQO Process Summary Report format not standardized**

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Data Quality Objectives Process

- **Database information**
- **Site visits**
- **Interviews**
- **Literature**

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Data Quality Objectives Process

- **Prepare DQO Process
Summary Report**

The Vapor Monitoring “Database”

Vapor Monitoring “Database”

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The Vapor Monitoring “Database”

Purpose

- To provide the DQO team and task managers with a “Database” to evaluate the effectiveness of using vapor monitoring to meet their analysis needs

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The Vapor Monitoring “Database” Process

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The Vapor Monitoring “Database” (continued)

Process Description

- **Development of “Database”**
 - Identify chemicals of potential concern
 - Identify Task Managers potential needs
 - Conduct search of available methods
 - Literature
 - Networking
 - Etc.

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The Vapor Monitoring “Database” (continued)

Process Description (continued)

- **Development of “Database”**
 - Develop “Database” format
 - Input to spread sheet program
 - Update routinely

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The Vapor Monitoring “Database” (continued)

Process Strengths

- **Listing of all pertinent specifications for available vapor monitoring methods are centralized and available to DQO Teams and Task Managers**
- **Database promotes use of low cost and rapid analysis methods**

Sample and Data Management Process Flow

Sampling Documents

HNF-SD-WM-RPT-282
Revision 0

Report on Sampling and Analysis of Ambient Air at the Central Waste Complex

HNF-SD-WM-RPT-309
Revision 0

Report on Sampling and Analysis of Air at Trenches 218-W-4C and 218-W-5 #31 of the Low-Level Burial Grounds

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Sampling Documents

Purpose

- **To document the detailed instructions and controls needed for performing sampling and analytical services to meet Task Manager and regulator expectations**

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Sampling Documents

Prepare Sampling Documents

Step 1
Review DQO
Process
Summary
Report

Step 2
Task
Managers
Prepare
Draft

Step 3
Sample
and Data
Management
Review of Draft

Step 4
Issue
Document

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Sampling Documents (continued)

Process Description

- **Documents drafted based on DQO Process Summary Report**
- **Documents prepared by Task Managers**
- **Document reviewed by sample and data management**
- **Approved document used for input to services requested from Task Managers**

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Sampling Documents (continued)

Process Strengths

- Documents reviewed and approved by Task Managers, DOE, and Regulators

Process Weaknesses

- New document template is desirable

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Sample and Data Management Process Flow

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Sample Event Coordination

Purpose

- Based on requirements from approved sampling documents, sample event coordination establishes a foundation for field sampling and analytical work

Sample Event Coordination Process

Sample Event Coordination (continued)

Process Description

- **Request for Analytical Services**
 - **Provided by Task Manager**
 - **Communicates task background**
 - **Defines analytical requirements based on approved Sampling Document**

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Sample Event Coordination (continued)

Process Description (continued)

- **Sample Authorization Form/Field Sampling Requirements**
 - Prepared based on information from “Request for Analytical Services”
 - Unique number assigned to each sampling event
 - Pool of sample numbers form database library assigned to event
 - Event identification linked through entire process and across database systems

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Sample Event Coordination (continued)

Process Description (continued)

- **Sample Authorization Form/Field Sampling Requirements**
 - Establish menu of analytical methods, sample sizes, preservation requirements
 - Approved by Task Managers prior to issuance
 - Electronic distribution to Task Manager, samplers, analytical resources
 - Closed after confirmed completion of event

Sample Event Coordination (continued)

Process Strengths

- Integrated event identification across process

Process Weaknesses

- Lack of integration with sample tracking systems

Sample and Data Management Process Flow

Sample Collection and Shipment

Purpose

- To collect, describe, package, and ship samples to meet task managers approved sampling documents. To provide summary of activities to task managers on a routine basis

Sample Collection and Shipment Process

Sample Collection and Shipment (continued)

Process Description

● Preparations

- Block of unique sample numbers issued for the task**
- Information on the Sample Authorization Form used to prepare paperwork and sample bottle sets**

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Sample Collection and Shipment (continued)

Process Description (continued)

● Preparations (continued)

- Resources scheduled, including personnel and equipment**
- Databases are used to prepare for vapor sampling**

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Sample Collection and Shipment

(continued)

Process Description (continued)

- **Sample Collection**
 - Sampler takes prepared paperwork and bottles to the field
 - Sample collection documented in bound field logbooks with additional forms completed in the field
 - Samples radiological surveyed if required
 - Hard copies of field records are forwarded to task manager and records

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Sample Collection and Shipment (continued)

Process Description (continued)

● Interim Sample Storage

- Samples delivered to sample storage facility and placed in refrigerators until overnight radiological screening is completed**
- Historical information in databases used to determine if screening required**
- Hard copy sample check-in and temperature logs maintained**

Sample Collection and Shipment (continued)

Process Description (continued)

- **Ship Samples to Lab**

- Receive fax of total activity results
- Prepare shipping paperwork
- Package samples
- Hand carry to on site or local labs; ship by air to off site labs
- Copies of paperwork faxed to sample management to initiate sample tracking

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Sample Collection and Shipment (continued)

Process Description (continued)

- **Sample Summary Report**
 - Field information related to sampling event transmitted to task manager, sample management and data management
 - Connects the field data with the analytical data
 - Hard copy placed in project file

Sample Collection and Shipment (continued)

Process Strengths

- **Sample summary report is excellent project deliverable**
- **Using historical data to make decisions for radiological controls has eliminated total activity analysis for about 75% vapor samples**
- **The process adequately supports the sample and data management process**

Sample Collection and Shipment (continued)

Process Weaknesses

- **No integrated sample schedule for activities**
- **No prioritization of sampling tasks when schedules conflict - Everyone's task is a priority!**
- **Duplication of effort in generating, transmitting, and filing copies of paperwork**

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Sample and Data Management Process

Sample Analysis

Purpose

- To provide the analytical tools needed to meet Task Manager needs and produce quality data in a timely and cost effective manner

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Sample Analysis Process

Sample Analysis (continued)

Process Description (continued)

- **Receive Sampling Analysis Form/Field Sampling Report (SAF/FSR) electronically**
Analyze samples and report results
 - 1 and 50 day turnaround
 - Provide data electronically via electronic bulletin board
 - Provide paper record copy

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Sample Analysis (continued)

Process Description (continued)

- **Quick Turnaround**
 - 48 Hour turnaround
 - Confirmation analysis with commercial lab
 - Provide paper record copies

Sample Analysis (continued)

Process Description (continued)

- **Field Screening (On-Site Analysis)**
 - Immediate results
 - One-on-one communications (in field)
 - Confirmation analysis with quick turnaround
 - Provide paper copies of data

Sample Analysis (continued)

Process Strengths

- **Flexible strategy to provide timely and cost effective analytical services**
- **Each level of service is tied to more rigorous quality control requirements**

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Sample and Data Management Process Flow

Data Receipt

Purpose

- To establish standard methods for control, storage, access, and transmittal of data deliverables

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Data Receipt

Data Receipt (continued)

Process Description

● Paper System

- Data reviewed against Chain-of-Custody and analysis request to ensure receipt of complete deliverable**
- Unique number assigned to each data package during log in to create delivery group file**
- Data maintained in access controlled area**
- Formal Checkout system established**

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Data Receipt (continued)

Process Description (continued)

- **Paper System (continued)**
 - Documents generated through verification and validation processes in delivery group file
 - Files transmitted to Records Management after data assessment

Data Receipt (continued)

Process Description (continued)

- **Electronic System**

- **Analytical data received from commercial labs via an electronic bulletin board system**
- **Checker program used by both laboratory and data management**
- **Status reports generated weekly**

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Data Receipt (continued)

Process Strengths

- **Controlled receipt, storage, and access of hard copy deliverables**
- **System in place for transmittal and format checks of electronic deliverables**

Process Weaknesses

- **Some analytical resources in process of implementing electronic deliverables**

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Sample and Data Management Flow Process

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Data Verification/Validation

Purpose

- To verify completeness of data received from analytical resources and establish data of known quality that can be evaluated against intended use criteria

Data Verification/Validation Process

Data Verification/Validation (continued)

Process Description

- **Administrative verification**
 - Page by page review of package for pagination and copy quality
 - Deficiencies communicated to analytical resources for closure

Data Verification/Validation (continued)

Process Description (continued)

- **Technical Verification**

- Review of analytical deliverable for technical completeness
- Presence/Absence of deliverable elements documented on checklists
- Deficiencies communicated to analytical resources for closure
(2 day response time)

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Data Verification/Validation (continued)

Process Description (continued)

- **Validation**

- **Functional guidelines approach**
- **Graded option available**
- **Process done on paper (3-4 week turnaround)**
- **Validation documents managed as Quality Assurance records**
- **Services contracted to manage workload fluctuations**

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Sample and Data Management Flow Process

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Data Management

Purpose

- **To provide controlled access to legally defensible environmental data to meet the requirement that managers, scientists, and regulators are able to access the data in a timely manner to perform their work activities**

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Data Management Process

**Step 1
Data
Receipt**

**Step 2
Data
Entry**

**Step 3
Data Entry
Verification**

**Step 4
Store**

**Step 5
Data
Access**

Field

Lab

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Data Management (continued)

Process Description

- **Data Receipt**
 - **Electronic**
 - **Analytical data received from laboratories**
 - **Hard Copy**
 - **Sampling event data**
 - **Quick turnaround lab data**
 - **Field Screening data**

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Data Management (continued)

Process Description (continued)

● Data Entry

- Electronic data is loaded into the database using tested loader code**
- Hard copy data is loaded manually and verified for accuracy with a one-over-one peer review process**

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Data Management (continued)

Process Description (continued)

- **Storage**
 - **Analytical data/sampling event information**
 - **Waste site information**
 - **Geographic information**

Data Management (continued)

Process Description (continued)

- **Data Access**

- **Standard Reports (Analytical data/sampling event information)**
- **Direct queries to database**
- **Windows based**

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Data Management (continued)

Process Strengths

- **All analytical data from labs is being received electronically into the database**
- **Analytical data is available within 24 hours of receipt**
- **Database is under configuration management**
- **Database provides unique sample numbers prior to sampling**

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Closing Remarks

Questions?

Section IV

Cradle to Grave Sample Data Management

- Sample and Information
Retrieval System***
- Relational Laboratory
Information Management System***

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Based Upon Microsoft Product Line

Environmental Analytical Lab

Sample ID: SFL DRG 1

Batch ID: 941102A

Received date: 11/2/94

Environmental Lab 5

Import Data	Process Data	Transfer Data to RTMS Line		RTMS Test	
MATRIX	INST	RUN	STD	CAL DATE	IDL DATE
01	01	01	01	01	01
CONTROL	ANALYSIS	STD	EAL	SPEC	TOTAL
TYPE	ANALYSIS	SAMPLE	SAMPLE	VOLUME	VOLUME
		ID	ID	ml	ml
	Calcium				
SMA	Trilium		DIFFERENTIAL		
	Sodium				
	Phosphorus				
	Phosphorus				
	Phosphorus				

EAL SAMPLE RESULTS - BATCH 941102A

04/04/95

Project: 300-H-1

Customer: LCI

Matrix: SOIL

Sample ID: SFL DRG 1

Lead Quantity: 1.00

Batch/Project

Field Sample ID: EAL 000121

CAS No.	Analyte	Concentration	Units	Q
	Barium	24.5	ppm	
	Cadmium	1.30.193	ppm	
	Cobalt	15.202	ppm	
	Copper	14.004	ppm	
	Iron	1.30.202	ppm	
	Lead	153.254	ppm	
	Mercury	1.30.032	ppm	
	Nickel	147.200	ppm	
	Phosphorus	1.30.248	ppm	
	Tantalum	34.715	ppm

Internet

SIRS &

Standalone

Network

- ***File Server***
- ***Client Server***

SIRS &

RELIMS ETC

**Produce legally defensible data
for sampling and laboratories:**

• *Environmental*

• *Waste and Drinking Water*

• *Nuclear*

• *Forensics*

• *Process*

• *Health Services*

• *Pharmacy*

SIRS

*An Automated
Sampling and
Information
Retrieval
System*

Sampling Information and Retrieval System

Sampling Information and Retrieval System

- ***Establishes project plan***
- ***Plans sampling activity***
- ***Assists in work preparation***
- ***Logbook data entry***
- ***Produces documentation***
 - ***Labels***
 - ***Chain of Custody***
 - ***Shipping documents***

Sample Planning

SAF [Window Controls]

Project Management

Remove Proj. **Add Proj.** **Close**

Find Project #: [] []

Project #: [071895] **Project Name:** [East Drum Pit]

Work Order #: [XR67H] **Company:** [DOE] []

Chargecode: [38769] **Add/Edit Samples Sets** **Regulation:** [RCRA] []

Cross Chargeable: [] **Priority:** [ASAP] []

Initial Contact Date: [2/10/97] **Estimated Start Date:** [4/1/97]

Received Project: [3/7/97] **Estimated Completion Date:** [4/5/97]

Completed: []

SMO Contact: [MARKILLIE, BILL] [] **Customer:** [JACOBSON, GEORGE] []

Phone: [946-5269] [] **Phone:** [376-2674] []

Ext.: [] **Ext.:** [N2-04] []

COMMENTS: []

[] [] Record: 1 of 35 [] []

Sample Planning

Project Management			
Find Project #:	<input type="text"/>	<input type="button" value="Add Proj."/>	<input type="button" value="Remove Proj."/>
<input type="button" value="SAF"/>	<input type="button" value="Close"/>		
Project #:	071895	Project Name:	East Drum Pit
Work Order #:	XP867H	Company:	DOE
Chargecode:	38769	regulation:	RCRA
Cross Chargeable:	☒	Priority:	ASAP
Initial Contact Date:	2/10/97	Estimated Start Date:	4/1/97
Received Project:	3/7/97	Estimated Completion Date:	4/5/97
Completed:	☒		
<hr/>			
SMO Contact:	MARKILLIE, BILL	Customer:	JACOBSON, GEORGE
Phone:	946-5269	Phone:	375-2674
Ext.:		Ext.:	N2-04

COMMENTS:

Sample Planning

SAF			
Project Management		Remove Proj.	Add Proj.
Find Project #: <input type="text"/>		Close	
Project #:	071895	Project Name:	East Drum Pit
Work Order #:	XR67H	Add/Edit Samples Sets	Company: DOE
Chargecode:	38769		Regulation: RCRA
Cross Chargeable:	☐		Priority: ASAP
Initial Contact Date:	2/10/97	Estimated Start Date:	4/1/97
Received Project:	3/7/97	Estimated Completion Date:	4/5/97
Completed:	☒		
SMO Contact:	MARKILLIE, BILL	Customer:	JACOBSON, GEORGE
Phone:	946-5269	Phone:	876-2674
Ext.:		Ext.:	N2-04
COMMENTS:			
<div></div>			
Record: 1		of 35	

Sample Planning

SAF Project Management Remove Proj. Add Proj. Close

Find Project #:

Project #: Project Name:

Work Order #:

Chargecode:

Cross Chargeable: ☐

Add/Edit Samples Sets

Company:

Regulation:

Priority:

Initial Contact Date: Estimated Start Date:

Received Project: Estimated Completion Date:

Completed: ☐

SMO Contact: Customer:

Phone: Phone:

Ext.: Ext.:

COMMENTS:

Record: 1 of 35

Sample Planning

SAF Project Management Remove Proj. Add Proj. Close

Find Project #:

Project #: Project Name:

Work Order #: Company:

Chargecode: Add/Edit Samples Sets Regulation:

Cross Chargeable: ☐ Priority:

Initial Contact Date: Estimated Start Date:

Received Project: Estimated Completion Date:

Completed: ☐

SMO Contact: Customer:

Phone: Phone:

Ext.: Ext.:

COMMENTS:

Record: 1 of 35

Sample Planning

SAF		Project Management		Find Project #: <input type="text"/>		Remove Proj.		Add Proj.		Close	
Project #:		<input type="text" value="071895"/>		Project Name:		<input type="text" value="East Drum Pit"/>					
Work Order #:		<input type="text" value="XR67H"/>		Add/Edit Samples Sets		Company:		<input type="text" value="DOE"/>			
Chargecode:		<input type="text" value="38769"/>		Regulation:		Regulation:		<input type="text" value="RCRA"/>			
Cross Chargeable:		☒		Priority:		Priority:		<input type="text" value="ASAP"/>			
Initial Contact Date:		<input type="text" value="2/10/97"/>		Estimated Start Date:		<input type="text" value="4/1/97"/>					
Received Project:		<input type="text" value="3/7/97"/>		Estimated Completion Date:		<input type="text" value="4/5/97"/>					
Completed:		☒									
SMO Contact:		<input type="text" value="MARKILLIE, BILL"/>		Customer:		<input type="text" value="JACOBSON, GEORGE"/>					
Phone:		<input type="text" value="346-5269"/>		Phone:		<input type="text" value="376-2674"/>					
Ext.:		<input type="text" value=""/>		Ext.:		<input type="text" value="N2-04"/>					
COMMENTS:		<input type="text"/>									

Sample Planning

SAF			
Project Management		Remove Proj.	Add Proj.
Find Project #: <input type="text"/>		Close	
Project #: 071895	Project Name: East Drum Pit		
Work Order #: XR67H	Add/Edit Samples Sets	Company: DOE	
Chargecode: 38769		Regulation: RCRA	
Cross Chargeable: ☒		Priority: ASAP	
Initial Contact Date: 2/10/97	Estimated Start Date: 4/1/97		
Received Project: 3/7/97	Estimated Completion Date: 4/5/97		
Completed: ☒			
SMO Contact: MARKILLIE, BILL	Customer: JACOBSON, GEORGE		
Phone: 946-5269		Phone: 376-2674
Ext.:		Ext.: 19204	
COMMENTS: <div></div>			
Record: 1 of 35

Sample Planning

Sample Information

Project: **JOHNSTON, JILL**

Lead Sampler: **JOHNSTON, JILL**

Find Sample: **JOHNSTON, JILL**

Sample Date: **4/1/97**

Total Samples: **2**

Total Containers: **2**

Sample ID: **SAS_SML_1**

Sample Point: **East Pit**

Customer Sample ID: **DB031097**

Duplicate Sample ID:

Del Sample

Add Sample

Copy

Del Event

Add Event

Close

Sample Containers

Analysis:

ICP METALS (6010)

Sub Analysis:

Pres/Hold Time:

Laboratory:

E/R/U Number:

HND3

6 Months

222-S

12345

Sample Matrix:

SLUDGE

Bottle Size:

60

Bottle Type:

gGs

Split/Main:

MAIN

Blank:

N/A

Sample Planning

Sample Information		Sample Containers		Analysis	
Sample ID:	SAS_SML_1	Customer Sample ID:	DB031097	Sample Matrix:	BLUDGE
Sample Point:	East Pit	Duplicate Sample ID:		Bottle Size:	60
Find Sample:				Bottle Type:	ags
Lead Sampler:	JOHNSTON, JILL	Del Sample	Add Sample	Split/Main:	MAIN
Pro. #: 071895	Event: 1	Copy		Blank:	N/A
Sample Date:	4/1/97			E/R/U Number:	12345
Total Samples:	2				
Del Event Add Event Close		Del Container Add Container		Sub Analysis: ICP METALS (6010)	
Pres/Hold Time: 6 Months		Laboratory: 222-S		Analysis: ICP METALS (6010)	

Sample Planning

Sample Information

Proj. #: 071895 Event: 1 Sample Date: 4/1/97 Total Samples: 2 +
Lead Sampler: JOHNSTON, J. Total Containers: +

Find Sample: Copy Del Sample Add Sample

Sample ID: SAS_SML_1 Customer Sample ID: DB031097
Sample Point: East Pit Duplicate Sample ID:

Sample Containers

Analysis: ICP METALS (6010) Sample Matrix: BLUDGE
Bottle Size: 60
Sub Analysis: Bottle Type: aGs
Pres/Hold Time: HNO3 6 Months Split/Main: MAIN
Laboratory: 222-S Blank: N/A
E/R/U Number: 12345

Sample Planning

Sample Information

Sample Information

Del Event

Add Event

Close

Proj #: 071895 Event: 1 Sample Date: 4/1/97 Total Samples: 2

Lead Sampler: JOHNSTON, JILL Total Containers: 1

Find Sample: [dropdown] Del Sample Add Sample

Sample ID: SAS_SML_1 Customer Sample ID: DB031097

Sample Point: East Pit Duplicate Sample ID: [dropdown]

Sample Containers

Del Container Add Container

Analysis: ICP METALS (6010) Sample Matrix: SLUDGE

Bottle Size: 60

Sub Analysis: [dropdown] Bottle Type: aGs

Pres/Hold Time: HNO3 [6 Months] Split/Main: MAIN

Laboratory: 222-S Blank: N/A

E/R/U Number: 12345

***Sampling Information
and Retrieval System***

***Instant
status
and
result
information***

Sampling Information and Retrieval System

SIRS Main Menu

SIRS™ Main Menu

Project

Pl

Logb

Ship

System

?

Sampling

SAF Outline

Project Outline

Close

Click '+' to expand, '-' to collapse, double click on Project number to full screen

+ S4-090	2				
+ 95-666	1				
+ 95-013	1				
+ 95-012	1				
+ 95-009	1				
+ 95-008	1				
+ 95-006	1				
- 94-454	14				
- B0DF52	300 area process sewer				
+ AMERICIUM-241 (Lab Specific)					
+ Gross Alpha/Gross Beta (ITAS-RD-3214)					
- TOTAL ACTIVITY (LA-548-111/LA-548-121)					
20 P		WATER	222-S	N/A	N/A
+ 94-439	1				
+ 94-438					

▶

Sampling Information and Retrieval System

- Assists in work preparation
- Logbook data entry

SIRS Main Menu

SIRS™ Main Menu

Sampling Information and Retrieval System

Sampling Information and Retrieval System

- *Assists in work preparation*
- *Logbook data entry*

Sampling Information and Retrieval System

Sample Information After Event Close

Sample Information

Find Existing Project #: +

Sample ID	Analysis	Sample		C.O.C #	Ice Chest #	Lot Number	Serial Number		
		Date	Time						
SAS_SML_1.1	ACTIVITY SCAN (Lab Specifi	7/29/95	1300	SML1	10			Cpy	Clr
SAS_SML_1.4	Am-241, Sb-7041, As-7060	7/29/95	1300	SML1	10			Cpy	Clr
SAS_SML_1.3	Cd-7131, Br, Be, GAMMA SPI	7/29/95	1300	SML1	10			Cpy	Clr
SAS_SML_1.9	Am-241 / Pu-241	7/29/95	1300	SML1	10			Cpy	Clr
SAS_SML_1.4	TOC(9060)	7/29/95	1300	SML1	10			Cpy	Clr
SAS_SML_1.3	Gamma Scan (ITAS-RD-321	7/29/95	1300	SML1	10			Cpy	Clr
SAS_SML_1.3	Aluminum (6010)	7/29/95	1300	SML1	10			Cpy	Clr
SAS_SML_2.4	ACTIVITY SCAN (Lab Specifi	7/29/95	1300	SML1	10			Cpy	Clr
SAS_SML_2.4	Am-241 / Pu-241	7/29/95	1300	SML1	10			Cpy	Clr
SAS_SML_2.3	AMERICIUM-241 Lab Specifi	7/29/95	1300	SML1	10			Cpy	Clr

Sampling Information and Retrieval System

SIRS Main Menu

SIRS™ Main Menu

Project Management

Project C

Logbook Ma

Shipping M

Repor

System Data M

Exit S

Sampling and

Logbook Text

Close

Find an Existing Project #:

Project #: 071895

Event #: 1

Estimated Sample Date:

4/1/97

Logbook #: WHC-000231

Pages: 4

Number of Photos:

1

Lead: JOHNSTON, JILL

Total Samples:

2

List attending Personnel (ie. JD SMITH, HPT)

Tim Burrill, HPT Jill Johnston, Sampler

List personal Protective Equipment (PPE) used

Surgical Gloves and Safety Glasses

List Comments, Hazards, and possible Contaminants

Sample taken next to a drum of unknown material.

List any Special Lab Instructions/Conditions to be included on the COC

SIRS Main Menu

SIRS™ Main Menu

Sampling Information and Retrieval System

Field Data

Field Data

Close

Find Project #:

Project #: 071895

Event #:

Sample Date:

4/1/97

Sample Point: East Pit

pH: 5

Conductivity: 1

Temperature: 25 °C

Wind: 10 mph NW

Speed

Direction

Other:

Comments:

Drum of unknow substance next to sample point and the wind was blowing over it

Sampling Information and Retrieval System

SIRS Main Menu

SIRS™ Main Menu

Field Data

Field Data

Find Project #:

Project #: Event #:

Sample Point:

pH:

Conductivity:

Temperature: °C

Wind: mph Direction

Other:

Comments:

Sampling Information and Retrieval System

Close

Sample Date: 4/1/97

pH: 5

Conductivity: 1

Temperature: 25 °C

Wind: 10 mph NW

Speed

Direction

Other:

Comments:

Drum of unknow substance next to sample point and the wind was blowing over it

Latitude/Longitude

+	46	33	10	0.2
+	119	27	53	0.9

Sampling Information and Retrieval System

•Produces documentation

- Labels*
- Chain of Custody*
- Shipping documents*

Westinghouse Hanford Company

Shipping Information Report

Project Designation: East Drum Pit

SAF #: 071895

Event #: 1

Start Date: 7/29/95

Lab: 222-S

Bill of Lading:

Offsite Property Control:

Person Shipping: CAMPBELL, MONTE

Number of Photos: 0

Shipping Remarks:

Westinghouse Hanford Company

Sample Point Information Report

Project Designation: East Drum Pit***SAF #:*** 071895***Event #:*** 1***Start Date:*** 4/1/97

Sample Point: East Pit***pH:*** 5***Conductivity:*** 1***Temperature:*** 25 °C***Wind: Speed*** 10 ***mph*** ***Direction*** NW***Other:******Comments:*** Drum of unknow substance next to sample point and the wind was blowing over it

PLAS-Life

***An Automated
Laboratory
Information
Management
System***

Relational Laboratory Information Management System-Lite

RLIMS-Lite

RLIMS-Lite Main Menu

Project Planning

Sample Management

Workload Planning

Results Management

Status Advance

System Data Maintenance

Archive / Restore

Produce Reports

Exit RLIMS-Lite

NUMATEC Hanford, Analytical Lab

Relational Laboratory Information Management System-Lite

- Pre-planning / Sales
- Sample Receiving
- Sample Preparation
- Sample Analysis
- Quality Control
- Sample Reporting
- Lab Management

***Based Upon EPA's
RLIMS Oracle
Database***

***Re-Engineered
Using Microsoft
Access***

RIMS-Lite

Laboratory View

Local Area Network

File Server

OLE and DDE - Integrated System

Import Data		Process Data		Transfer Data to RLIMS-Lite	
MATRIX	INST	RUN	STD	CAL DATE	
WATER	IC-1	run one	3	7/6/94	
CONTROL TYPE	ANALYTES	SAMPLE	STD	SAMPLE	SPIKE VOLUME
ICV	Fluoride	STD1	STD1	ID	(ml)
ICV	Chloride	STD1	STD1		
ICV	Nitrate	STD1	STD1		
ICV	Phosphate	STD1	STD1		
ICV	Sulfate	STD1	STD1		

↓

Analytical Instrument

SIR: 941109A

Date: 7/26/94
Typed Name: [Signature]
Printed Name: [Signature]

Case Narrative:

NDATORY)

☒ No ☐ Yes

as Proprietary and/or Inventions?
appropriate Legends/Notices.

f "Yes", Attach Permission

f "Yes", Identify in Document.

☒ No ☐ Yes

KARNATAKA,

☒ Yes

Public Y/N (If N, complete J)

Y / N

Y / N

Y / N

Y / N

Y / N

Information Clearance Approval

RLIMS-Lite Main Menu

Project Planning

Relational Laboratory Information Management System-Lite

Project Maintenance

Project Maintenance

Select Project ID: East Drum Pit

Add New

Close

Copy Anal.

Del Project

Status: APPROVED

Project ID: East Drum Pit

Facility: East Pit

Customer: George Jacobson

Sampl. Org: Tims Sampling

Priority: ROUTINE

Turnaround Time: 10

Cust Proj Id: East Drum Pit

Account Number: XR67H

Comments:

Quote:

Discount:

Project Analyses:

Method	Parameter	Status	Comments
Herbicides	Herbs	APPROVED	Del
Pesticides	Pest/PCB	APPROVED	Del
Solids Vols	Vols	APPROVED	Del
SW Sulfides	SW-Sulf	APPROVED	Del
SW-WetChem	Misc-WC	APPROVED	Del
Waste Cynde	Measmts	APPROVED	Del
PCP-RCRA v1	Metals	APPROVED	Del

Records

of 7

Relational Laboratory Information Management System-Lite

RLIMS-Lite

RLIMS-Lite Main Menu

Project Planning

Project Maintenance

Project Maintenance

Select Project ID: East Drum Pit

Add New

Close

Copy Anal.

Del Project

Status: APPROVED

Project ID: East Drum Pit

Facility: East Pit

Customer: George Jacobson

Sampl. Org: Tims Sampling

Priority: ROUTINE

Turnaround

Time: 70

Cust Proj Id: East Drum Pit

Account Number: XR67H

Comments:

Quote:

Discount:

Project Analyses:

Method	Parameter	Status	Comments
Herbicides	Herbs	APPROVED	Del
Pesticides	Pest/PCB	APPROVED	Del
Solids Vols	Vols	APPROVED	Del
SW Sulfides	SW-Sulf	APPROVED	Del
SW-WetChem	Misc-WC	APPROVED	Del
Waste Cyanide	Measmts	APPROVED	Del
PCR-BCRA v1	Metals	APPROVED	Del

Menu

End

RLIMS-Lite Main Menu

Project Planning

Relational Laboratory Information Management System-Lite

Facility Maintenance

Facility Maintenance

Facility: East Pit

Add New

Close

Facility: East Pit

Description: East Pit Hanford 300 Area

Address 1: 300 Area

Address 2:

City: Hanford

State: WA

Zip: 99352

County:

Coordinate Type:

Date Coordinate Determined:

Coordinate Source:

Sign DEC MM SS Fract

Latitude: 0 0 0 0

Longitude: 0 0 0 0

Facility Method: F Method 1

Accuracy: 0

Datum: 1

Acc. Units:

Spatial Ref Code:

Finds ID:

Add New

Station	Latitude/Longitude				C.Type	Method	Source	Accuracy	Units	Date Determined	Depth
▶ Top	+	46	33	10	0.21	F Method 1	US FS	2		1/5/96	0
	+	119	27	54	0.098	1 A	Descrip.: surface sample				
*											
							Descrip.:

Relational Laboratory Information Management System-Lite

Method Maintenance

Find Method: ICP-RCRA v1

Method: ICP-RCRA v1

Matrix Type: General

Service Group: Metal

UNITS: PPB

Method Full Name: Analysis of As, Ag, Ba, Cd, Cr, Pb, and Se by ICP

Standard Method: SW846 8080B

Method Inc. ☒ SOP Name:

Instrument Type: ICP

Analysis Rate: Prep Rate: \$60.00

Est. Analysis Hours: 0.5 Est. Prep Hours: 0.25

Analysis Matrl Cost: \$0.00 Prep Matrl Cost: \$0.00

Analysis Holding Days: 14 Prep Holding Days: 5

Analysis Holding Weeks: 0 Prep Holding Weeks: 0

Analysis Calculation Type: PREP Prep Calculation Type: ECOLLECT

COMMENTS:

Method Parameters:

PARAMETER:	COMMENTS:
Metals	

Method Prompt

Sort Renumber

Sequence	PROMPT
1	Ag SAM
3	Ag DUP
5	Ag MS %R
7	As SAM
9	As DUP RPD
11	As MS %R
13	Ba SAM
15	Ba DUP
17	Ba MS %R

Record: 1

Relational Laboratory Information Management System-Lite

- Sample
- Sample

Batch Login

Find Sample Batch ID: 970121C

Add New Batch

Bar Code Labels

Close

Sample Batch ID: 970322A

Lab: RJ Lee

Status: LOGGED IN

Project ID: East Drum Pit

Priority: ROUTINE

Turnaround Time: 10

Projected Completion Date: 11-Apr-97

Due Date: 11-Apr-97

Facility (Sample Origin): East Pit

Sample Purpose: Routine

Sampling Org: Tims Sampling

Sampler: Jill Johnston

Customer: George Jacobson

Acct No./PO: XPR011

Chain of Custody: SML1

COMMENTS:

Login Samples for this Batch

Assign Project Analyses to Batch

Drinking Water

* need a Sampling Org.

Case Narrative -
double-click to
edit existing docAdd New
Narrative

RLIMS-Lite

Sample Management

RLIM

Relational Laboratory
Information Management

Batch Login

Sample Login

Batch ID: 970322A

Sample Status: LOGGED IN

Close

Find Sample: RJW-0417-01

Add New Sample

Copy

Analysis Login

ANALYSES

Sample ID: RJW-0417-01

Press F1 for help

Add Analyses

Assign from Project

Exit Analyses Login

Close - Don't Add Results

Close + Add Result Rec

Assign Analyses to Batch

Parameter	Analyte List Type	Method	Control Type	Seq. #	Priority	Phase	Status
Misc-WC	WetChem	SW-WetChem	SAM	1	ROUTINE		LOGGED IN
Edit Comments		Copy Default Analytes		Edit Analytes		☐ Analytes have been assigned to this Batch ID	
						DELETE	
Pest/PCB	Organics	Pesticides	SAM	1	ROUTINE		LOGGED IN
Edit Comments		Copy Default Analytes		Edit Analytes		☐ Analytes have been assigned to this Batch ID	
						DELETE	
Metals	RCRA 8	ICP-RCRA v1	SAM	1	ROUTINE		LOGGED IN
Edit Comments		Copy Default Analytes		Edit Analytes		☐ Analytes have been assigned to this Batch ID	
						DELETE	
SW-Sulf	Ions	SW Sulfides	SAM	1	ROUTINE		LOGGED IN
Edit Comments		Copy Default Analytes		Edit Analytes		☐ Analytes have been assigned to this Batch ID	
						DELETE	

Record: 41 of 41

Sample Management

Batch Login

Batch Login

Environmental Analytical Laboratory

NHC

Nimatoe Hanford Corporation
An SDG&P Company, Inc. Company

SDG: 970322A

Date: Sunday, 11/11/97
Project Manager: David SumillCase Narrative:Soil analysis requested on: 11/11/97
See attached data report
The following sample results are posted, under the NHC

270 00 0 41

Time for Process

- [X] [X]

Close

Labels

LOGGED IN

Sampling

Inston

e Jacobson

Add New
Narrative Case Narrative--
double-click to
edit existing doc

RLIMS-Lite

Sample Management

RLIMS

Sample Manage

Pr

Batch Login

Sam

Batch Outline

Sample Prep

Sample Prep Batch

Close

Find Prep Batch:

Add New Prep Batch

PREP BATCH ID: PB931116-A

ANALYST: THB

PREP DATE: 16-Nov-93

PREP METHOD: Temp-1

COMMENTS:

Select Analyses for Prep

Select Analytes for Prep

Record: 1 of 11

Batch Outline View Click '+' to expand, '-' to collapse, double click on batch ID to fully expand a batch

Close

+	951227A	John Wayne	LOGGED IN	
+	951019A	John Wayne	COMPLETE	
-	941213A	John Wayne	COMPLETE	
-	MINERALS I	COMPLETE		
+	Anions	DUP	1	ANION1.MET
+	Anions	MS	1	ANION1.MET
-	Anions	SAM	1	ANION1.MET
	Cl SAM		1.69E+02 ug/ml	169.419998168945
	F SAM		0.00E+00 ug/ml	<IDL
	NO3 SAM		0.00E+00 ug/ml	<IDL
	PO4 SAM		0.00E+00 ug/ml	<IDL
	SO4 SAM		6.88E+01 ug/ml	68.8244018554687
+	MINERALS II	COMPLETE		
+	941209A	John Wayne	LOGGED IN	
+	941201A	John Wayne	LOGGED IN	
+	941102A	John Wayne	COMPLETE	
+	970131B	MR. CHUCK NORRIS	COMPLETE	
+	970314A	MR. DON CARSON	LOGGED IN	
+	970304A	MR. DON CARSON	LOGGED IN	
+	970131A	MR. DON CARSON	IN PROGRESS	
+	960429G	Mr. Long	IN PROGRESS	
+	960429B	Mr. Long	IN PROGRESS	
+	941130A	Mr. Long	COMPLETE	
+	941117A	Mr. Long	LOGGED IN	
+	970131C	MR. PAUL ZIES	COMPLETE	

Relational Laboratory

RLIMS-Lite

Workload Planning

Select Date, Instrument, and Run before adding samples to the

March 1997

	M	Tu	W	Th	F	S
1						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Service Group: IonChrom

Instrument: IC-1

Service Dates:

Last: Next:

Analyst:

Instrument Run: IC10/31/94

Hours/day: 0

Starting Time: 7:00

Select Samples to

Close

Priority	Due Date	Method	Sample ID	Sample Type
ROUTINE		IC WATER-A	00001000	SAM
ROUTINE		BRITTON3.MET	EAL9606	SAM
ROUTINE		BRITTON3.MET	EAL9607	SAM
ROUTINE		BRITTON3.MET	EAL9609	SAM
ROUTINE		BRITTON3.MET	EAL9610	SAM
ROUTINE		BRITTON3.MET	EHHERB2	SAM
ROUTINE		BRITTON3.MET	EHHERB3	SAM
ROUTINE		BRITTON3.MET	RJL011902	SAM
ROUTINE		BRITTON3.MET	RJL011903	SAM
ROUTINE		BRITTON3.MET	RJL011904	SAM

Record: 3 of 19

Start Time	Duration	Instrument Run	# Samples
7:00:00 AM	1		0

Recalculate Start Times

1 2 1 2

RLIMS-Lite Main Menu

Project Planning

Sample Management

Workload Planning

Results Management

Status Advance

System Data Maintenance

Archive / Restore

Produce Reports

Exit RLIMS-Lite

NUMATEC Hanford, Analytical

Close

Transfer Data From Spreadsheet

☒ Excel

☐ Lotus 1-2-3

Instrument Data Transfer

Check Transfer Errors

Manual Results Entry by Sample

Manual Results Entry by Batch

Select Batch ID

Edit Instrument Run

Archive Instrument Run

Approve Results by Batch

Approve Results by Inst. Run

TIC Results Entry

Wastewater Treatment

RLIMS-Lite Main Menu

Results Management

Close

Project Planning

Transfer Data From Spreadsheet

Excel

Lotus 1-2-3

ic.xls											
	A	B	AI	AJ	AK	AM	AN	AO	AP	AQ	
	Import Data	Process Data									
1											
2	MATRIX	INST									
3	WATER	IC-1									
4	CONTROL	ANALYTES									
5	TYPE	Anions									
6											
17	MB	Nitrate	Anions ICV			1 NO2 ICV		2.309999943	2.31	run one	
18			Anions ICV			1 NO2 ICV %R		0.230999991	0.231	run one	
19	SAM	Fluoride	Anions ICV			1 NO3 ICV		0	0	run one	
20	SAM	Nitrite	Anions ICV			1 NO3 ICV %R		0	0	run one	
21	SAM	Nitrate	Anions MB			1 F MB		0.068000004	0.063	run one	
22			Anions MB			1 NO2 MB		0	<IDL	run one	
23	MB	Fluoride	Anions MB			1 NO3 MB		0.411000013	0.411	run one	
24	MB	Nitrite	AUTO C Anions SAM			1 F SAM		1	1	run one	
25	MB	Nitrate	AUTO C Anions SAM			1 NO2 SAM		1	1	run one	
26			AUTO C Anions SAM			1 NO3 SAM		0	<IDL	run one	
27	SAM	Fluoride	Anions MB			1 F MB		0.071999997	0.072	run one	
28	SAM	Nitrite	Anions MB			1 NO2 MB		0	<IDL	run one	
29	SAM	Nitrate	Anions MB			1 NO3 MB		0	<IDL	run one	
30			AUTO C Anions SAM			1 F SAM		0.5	0.5	run one	

Results Management

Close

Perkin-Elmer AA / Winlab
Instrument Data Interface

Close

Winlab Data

View Selected Data

View Formatted Data

Transfer to RLIMS-Lite

Winlab Data Formatted for RLIMS-Lite

Winlab AA Data

Close

GED03202	Standard 6	Pb	STD_6	2	49.61073	49.6	GED0320
GED03206	QC 422 1-1	Pb	SAM	6	12.06991	12.1	GED0320
GED03206		Pb					GED0320
GED03208		Pb	SAM	8	5.689911	5.7	GED0320

of 238

Record 1

Relational Laboratory Information Management

Sample Results Entry

Close

Sample Results Entry

Sample ID Parameter Control Type Seq. #

TEST4 Anions SAM 1

PROMPT	Numeric Result	Result Reported	Qualifier	Unit
C SAM		<IDL		ug/mL
Dil. Factor:	0	Quant. Limit:	0	Report: ☒
Run ID:		Event #: 15	Result #: 0	
				<input type="button" value="Edit Comment"/> <input type="button" value="AN95"/>

PROMPT	Numeric Result	Result Reported	Qualifier	Unit
F SAM		<IDL		ug/mL
Dil. Factor:	0	Quant. Limit:	0	Report: ☒
Run ID:		Event #: 15	Result #: 0	
				<input type="button" value="Edit Comment"/> <input type="button" value="AN95"/>

PROMPT	Numeric Result	Result Reported	Qualifier	Unit
SO4 SAM		<IDL		ug/mL
Dil. Factor:	0	Quant. Limit:	0	Report: ☒
Run ID:		Event #: 15	Result #: 0	
				<input type="button" value="Edit Comment"/> <input type="button" value="AN95"/>

PROMPT	Numeric Result	Result Reported	Qualifier	Unit
NO3 SAM		<IDL		ug/mL
Dil. Factor:	0	Quant. Limit:	0	Report: ☒
Run ID:		Event #: 15	Result #: 0	
				<input type="button" value="Edit Comment"/> <input type="button" value="AN95"/>

RLIMS-Lite Main Menu

Results Management

Close

Project Planning

Transfer Data From Spreadsheet

Excel

Lotus 1-2-3

Review/Approve Sample Results

Review/Approve Sample Results

Chart RPD	Chart %	Approve All Batch, Chemist 1	Approve All Batch, Chemist 2	Approve All Batch, QA	Quality Samples
-----------	---------	------------------------------	------------------------------	-----------------------	-----------------

Sample ID	Control Type	Seq #	Prompt	Result	Units
-----------	--------------	-------	--------	--------	-------

101	DUP	1	NO2 DUP RPD	0.3105058	ug/ml
-----	-----	---	-------------	-----------	-------

Sample Status: COMPLETE Review Status:

Chem-1 Rvw

Batch ID: 941130A

Review Comments:

101	DUP	1	NO2 DUP	0.765431	ug/ml
-----	-----	---	---------	----------	-------

Sample Status: COMPLETE Review Status:

Chem-2 Rvw

Batch ID: 941130A

Review Comments:

101	MS	2	NO2 MS 3R	108.2218	ug/ml
-----	----	---	-----------	----------	-------

Sample Status: COMPLETE Review Status:

QA-Review

Batch ID: 941130A

Review Comments:

101	MS	2	NO2 MS	5.09462	ug/ml
-----	----	---	--------	---------	-------

Sample Status: COMPLETE Review Status:

Chem-1 Rvw

Batch ID: 941130A

Review Comments:

RLIMS-Lite Main Menu

Results Management

Close

Project Planning

Transfer Data From Spreadsheet

Excel

Lotus 1-2-3

Review/Approve Sample Results

Review/Approve Sample Results

Select Batch ID: 941130A

Qualify Samples

Chart RPD

Chart %Rec

Approve All Batch,
Chemist 1Approve All Batch,
Chemist 2Approve All Batch,
QA

Close

Sample	Control Type	Batch	Prompt	Result	Result Reported	Units
TM1	DUP	1	NO2 DUP RPD	0.3105058	0.3105058	ug/ml

Sample Status:	COMPLETE	Review Status:	Chem-1 Rvw	Batch ID:	941130A
----------------	----------	----------------	------------	-----------	---------

Review Comments:

TM1	DUP	1	NO2 DUP	0.785431	0.785431027412414	ug/ml
-----	-----	---	---------	----------	-------------------	-------

Sample Status:	COMPLETE	Review Status:	Chem-2 Rvw	Batch ID:	941130A
----------------	----------	----------------	------------	-----------	---------

Review Comments:

TM1	MS	2	NO2 MS %R	108.2218	108.2218	ug/ml
-----	----	---	-----------	----------	----------	-------

Sample Status:	COMPLETE	Review Status:	QA-Review	Batch ID:	941130A
----------------	----------	----------------	-----------	-----------	---------

Review Comments:

TM1	MS	2	NO2 MS	5.09462	5.09462022781372	ug/ml
-----	----	---	--------	---------	------------------	-------

Sample Status:	COMPLETE	Review Status:	Chem-1 Rvw	Batch ID:	941130A
----------------	----------	----------------	------------	-----------	---------

Review Comments:

Record 1 of 8

RLIMS-Lite Main Menu

Results Management

Close

Project Planning

Transfer Data From Spreadsheet

Excel

Lotus 1-2-3

Review/Approve Sample Results

Review/Approve Sample Results

Select Batch ID: 9411304

Qualify Samples

Chart RPD

Chart %Rec

Approve All Batch,
Chemist 1Approve All Batch,
Chemist 2Approve All Batch,
QA

Close

Qualify Sample Results

Qualify Sample Results

9411304

11/10/94

Find by Batch

Find by Prep

Find by Run

Set All ->

Qualifier: FBK

Qualifier: FBK

Sample ID	Parameter	Control Type	Seq #	Prompt
-----------	-----------	--------------	-------	--------

TM1	Anions	DUP	1	NO2 DUP RPD
-----	--------	-----	---	-------------

Result:	0.3105058	Result Reported:	0.3105058	Qualifier:	FBK
---------	-----------	------------------	-----------	------------	-----

TM1	Anions	DUP	1	NO2 DUP
-----	--------	-----	---	---------

Result:	0.785431	Result Reported:	0.785431027412414	Qualifier:	FBK
---------	----------	------------------	-------------------	------------	-----

TM1	Anions	MS	2	NO2 MS %R
-----	--------	----	---	-----------

Result:	108.2218	Result Reported:	108.2218	Qualifier:	FBK
---------	----------	------------------	----------	------------	-----

TM1	Anions	MS	2	NO2 MS
-----	--------	----	---	--------

Result:	5.08462	Result Reported:	5.08462022781372	Qualifier:	FBK
---------	---------	------------------	------------------	------------	-----

TM1	Anions	SAM	2	NO2 SAM
-----	--------	-----	---	---------

Result:	0.782996	Result Reported:	0.782995998859405	Qualifier:	FBK
---------	----------	------------------	-------------------	------------	-----

D	Dilution required
FBK	Found in blank
J	Present but below quality
JB	Present but below quality
LTC	Less than criteria of detection
LTL	Less than lower detection
TIE	Tentatively Identified - not
U	Analyzed but under detection

Data Report by Run

Chart Relative Percent Difference

Close

Select Analyte: S04

Run ID: 941213A

Quality S

All Batch.

Approve All Batch.

Control Chart! Pro

File Edit Graph Options

Help

	Date	Sample	Val1	Val2	Delta	Comments
1	7/19/94	MINERALS I	68.824	68.984	0.160	

Plotting Column Delta

RELATIVE PERCENT DIFFERENCE
FOR S04

n= 2 Mean= 0.753 SD= 0.839 CV= 111.40% Min= 0.160 Max= 1.346

Relational Laboratory Information Management

RLIMS-Lite Main Menu

Project Planning Status Advance Criteria

Print Status Report

Close

Sample Manager

Workload Planning

Results Manager

Status Advance

System Data Maintenance

Archive / Restore

Produce Report

Exit RLIMS-Lite

You must enter at least one of the following:
Service Group, Parameter, Sample Batch ID, or Sample ID.

Service Group:

Parameter:

Control Type:

Sample Batch ID:

Sample ID:

Current Status:

DESIRED Status:

Analyses Status Advance

Analyses selected:

Count
Analyses
Selected

Select
Analyses for
Status Advance

*Allows management to
override RLIMS-Lite
assigned status*

Sample, Batch Status Advance

Advance Batch +
Samples Status

Update Batch,
Sample, Anal. Status

NUMATEC Hanford, An

System Data Maintenance

Edit System Tables

Data Path= C:\RLIMS\

Maintenance

Security Administration

Security Administration

Security must be managed
Refer to the Microsoft
System for security de

Edit Users

Edit Groups

Change Password

Sample Types

Sample Period

Export Table

Security

Unattach RLIMSDAT!

Show Users

Users

User

Name:

Dave

Personal ID:

New User/Group

Name:

Dave

OK

Cancel

Group Member

Available Groups:

Admins
Chemist
Developer
Guests
Install

Member Of:

Users
Guests

Add >>

<< Remove

Close

Users

Prefix

Lists

Groups

Titles

Orgs

Purpose

System Data Maintenance

Edit

Data Path= C:\RLIMS\

Laboratories

Units

Instruments

Analyte List Defaults

Method Hold Types

Me

Accounts

Qualifiers

Edit Calculations

Sample Types

Export Table

Show Users

User Status

Edit use count directly or
reset all to zero by pressing
the "Reset All..." button.

Show:

- ☒ All Users
☐ Users Logged On
☐ Users Logged Off

Close

Reset All
Use CountsRefresh
Screen

Users

User	Date/Time Stamp	Use Count
devel	3/25/97 1:31:16 PM	14
lm1	3/21/97 9:54:34 AM	2
sysadmin	9/26/96 8:35:02 AM	0
chem1	8/23/96 7:57:20 AM	0
tech1	3/21/97 9:54:40 AM	0
exceluser	11/30/94 2:27:21 PM	0
george		0

Export

Data Destination:

Microsoft Access
Text (Delimited)
Text (Fixed Width)
Word for Windows Merge
Microsoft Excel 2.0-4.0
Microsoft Excel 5.0
Lotus (WKS)
Lotus (WK1)
Paradox 3.X
Paradox 4.X

OK

Cancel

System Data Maintenance

Edit System Tables

Close

Data Path= C:\RLIMS\

SERVICE GROUP Maintenance

SERVICE GROUP Maintenance

Close

Find Service Group Class: Inorganics

Service Group CLASS: Inorganics

Add New

DESCRIPTION: Misc. wet chemistry and other inorganic analyses

SERVICE GROUP DESCRIPTION

▶ Metal

Metal Composition

Add

ANALYST

▶ AML-In	↓
BM	↓
DR	↓
KD	↓
JM	↓

Record: 1 of 8

Record: 1 of 8

Record: 4 of 10

eters

ix

Lists

mpts

ties

g Orgs

urpose

Users

System Data Maintenance

Update Sample Seed

Data Path= C:\RLI

SAMPLE SEED

Close

Sample Seed:

Sample ID formats:

- ☐ Ammddyy-####
- ☐ AA-#####
- ☐ Ayyymmdd-####
- ☐ #####
- ☐ ###-###-####
- ☐ freeformed
- ☒ none

Laboratories

Units

Instruments

Analyte List Default

Method Hold Type

Accounts

Qualifiers

Edit Calculations

Conversion Factors

Collection Types

Sample Types

Sample Period

Parameters

Matrix

Analyte Lists

Exit Prompts

Facilities

Sampling Orgs

Sample Purpose

Export Table

Security

Unattach RLIMSDAT!

Show Users

Relational Laboratory

System Data Maintenance

_ □ ×

Edit System Tables

Close

Data Path

Conversion Factors

_ □ ×

Labo

Conversion Factors

Add

Close

U

Instr

Analyte L

Method I

Acc

Qua

Edit Ca

Sampl

Expo

Edit List of Laboratories

Parameters

Matrix

IYTE Lists

Prompts

ilities

pling Org

le Purpose

ow Users

Element/Anion

Oxides/Acid

Factor

Al

Al2O3

1.8895

Ca

CaO

1.3992

Ca

Ca(OH)2

1.8487

Cr

Cr2O3

2.923

Fe

FeO

1.2865

Fe

Fe3O4

1.382

Fe*

FeC12

2.2695

Fe*

FeC13

2.9044

K

K2O

1.2046

K

KOH

1.4349

Mg

MgO

1.6581

Record: 1 of 29

▶▶

▶

Relational Laboratory Information Management System-Lite

Relational Laboratory Information Management System-Lite

Select Report or Graph

Close

EAL SAMPLE RESULTS - BATCH 941102A

01-Apr-96

Project: 300-FF-1

Customer: LC Hulstrom

Matrix: SOIL

Sample ID: SFE DRO 1

Level (low/med): Low

Date Received: 11/2/94

Field Sample ID: EAL 000121

CAS No.	Analyte	Concentration	Units	Q
	Decane	N/A	ug/g	
	Docosane	138.193	ug/g	
	Dodecane	15.292	ug/g	
	Eicosane	141.084	ug/g	
	Hexacosane	138.292	ug/g	
	Hexadecane	153.354	ug/g	
	Octacosane	138.037	ug/g	
	Octadecane	147.228	ug/g	
	Tetracosane	138.348	ug/g	
	Tetradecane	84.716	ug/g	

Sample ID: SFE DRO 10

Level (low/med):

Date Received:

Field Sample ID:

CAS No.	Analyte	Concentration	Units	Q
	Decane	N/A	ug/g	
	Docosane	N/A	ug/g	
	Dodecane	N/A	ug/g

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☒ Summary ☐ Internet
☐ Visual Aid ☐ Software
☒ Full Paper ☐ Report
☐ Other _____

B. Document Number HNF 1953

C. Title

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G. Complete for a Presentation

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2. Group Sponsoring DEPARTMENT OF FOREST ECOLOGY AND ENVIRONMENT, GOVERNMENT OF KARNATAKA,

3. Date of Conference 01/23-25/1998

4. City/State BANGALORE, INDIA *(Sensitive Country)*

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6. Will Material be Handled Out? ☐ No ☒ Yes

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Signature

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SA WOOD

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notified
 ES&LS database determined for release 1/21/98

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V. L. Birkland

V. L. Birkland

11/21/98

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