

File
State



F/I

State of New Mexico
ENVIRONMENT DEPARTMENT
DOE OVERSIGHT BUREAU
P.O. Box 5400
Albuquerque, New Mexico 87185-5400

GARY E. JOHNSON
GOVERNOR

MARK E. WEIDLER
SECRETARY

EDGAR T. THORNTON, III
DEPUTY SECRETARY

M E M O R A N D U M

TO: NMED personnel involved with Environmental Restoration at DOE facilities

THROUGH: *JJP* John Parker, NMED, DOE Oversight Bureau Technical Support Program Manager

FROM: *TM* Tim Michael, NMED, DOE Oversight Bureau

DATE: April 10, 1996

SUBJECT: Environmental Restoration Document of Understanding and Annexes Training

As you may have heard from Ron Kern, HRMB Technical Compliance Program Manger, DOU training is scheduled on April 18 from 8:30 to 4:00 at the New Mexico State Land Office Morgan Hall auditorium. A copy of the agenda is attached.

To repeat some of what Ron may have already communicated to you, the Document of Understanding (DOU) is a partnering agreement among DOE, LANL, SNL/NM, EPA, and NMED to address consistent and regulatorily acceptable ways to for LANL and SNL/NM to do Environmental Restoration business. The DOU is not legally binding upon any of these agencies and does not supersede any statute, regulation, or authority (e.g. WQCC). Ed Kelly, director, Water and waste Management Division, has been instrumental in the DOU process and wants to ensue that all appropriate bureaus (i.e. SWB, SWQB, GWPRB, USTB) are adequately informed. Please plan to send as many of your staff to this training as necessary to maintain an appropriate level of understanding about the Environmental Restoration process at the DOE facilities.

If you have any questions, please call me at 827-1536 or Ron Kern. We can also be contacted by e-mail.



General

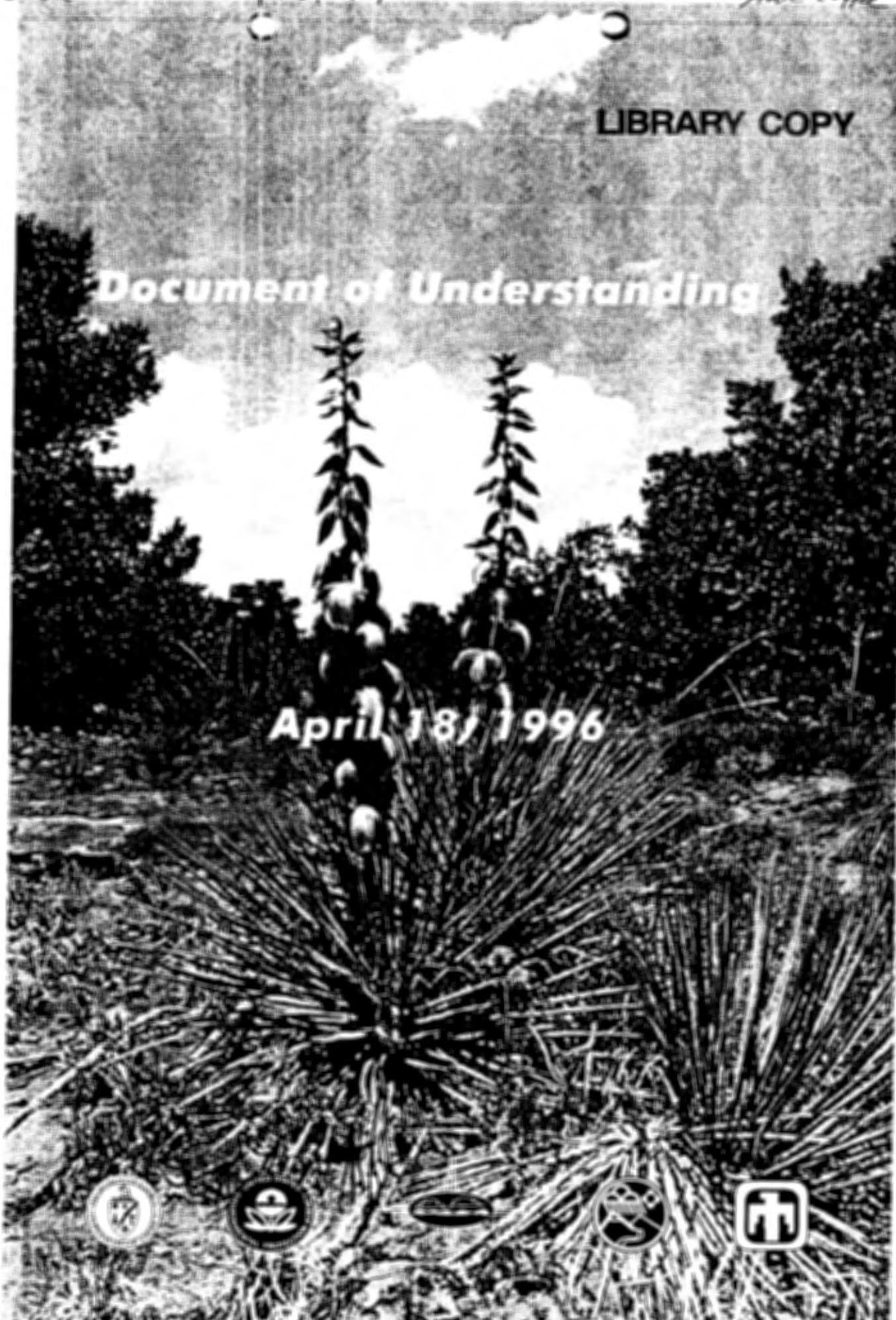
4/10/96

Flax Zappa

LIBRARY COPY

Document of Understanding

April 18, 1996



AGENDA

NMED, EPA, DOE, LANL, and SNL DOCUMENT OF UNDERSTANDING ANNEXES TRAINING

June 5, 1996

Morgan Hall Auditorium (G101), New Mexico State Land Office
310 Old Santa Fe Trail

<u>Time</u>	<u>Topic</u>	<u>Presenter</u>
8:00 - 8:15	<i>Social</i>	<i>Refreshments provided by SNL</i>
8:15 - 8:20	Introduction	Deborah Griswold, DOE/AL/ERD <i>LANL Program Engineer</i>
8:20 - 9:00	EC/VCM Process and Criteria Annex D	Barbara Hoditschek, NMED <i>Manager, RCRA Permit Program</i>
9:00 - 9:30	Sampling and Analysis Annex G	Tracy Glatzmaier, LANL <i>ER Project Consistency Manager</i>
9:30 - 9:45	Temporary Waste Storage Annex I	Nancy Morlock, EPA - Region 6 <i>RCRA Facility Manager</i>
9:45 - 10:00	Ground Water and Vadose Zone Monitoring Annex K	Warren Cox, SNL <i>ER Project Manager</i>
10:00 - 10:15	<i>Break</i>	
10:15 - 10:35	Permit Modification Annex L	Theodore Taylor, DOE/AL/LAAO <i>ER Program Manager</i>
10:35 - 10:50	Public Involvement Annex M	Deborah Griswold
11:20 - 11:30	Budget Annex O	Mark Jackson, DOE/AL/KAO <i>ER/WM Program Manager</i>
11:30 - 11:45	RCRA Closures Annex P	Ron Kern, NMED <i>Manager, RCRA Technical Program</i>
	<i>Compliance</i>	
10:50 - 11:20	Deliverable Submittal and Approval Annex N	Tim Michael, NMED <i>DOE Oversight Bureau</i>
11:45 - 12:00	Panel Discussion	Core Team

AGENDA

NMED, EPA, DOE, LANL, and SNL DOCUMENT OF UNDERSTANDING AND ANNEXES TRAINING

April 18, 1996

Morgan Hall Auditorium (G101), New Mexico State Land Office
310 Old Santa Fe Trail

Time	Topic	Presenter
8:30 - 8:45	Welcome	Edgar Thornton, NMED <i>Deputy Secretary</i>
8:45 - 9:00	Introduction	Deborah Griswold, DOE/AL/ERD <i>LANL Program Engineer</i>
9:00 - 9:45	Document of Understanding	Barbara Driscoll, EPA - Region 6 <i>RCRA Facility Manager</i>
9:45 - 10:00	<i>Break</i>	
10:00 - 10:30	Land Use Annex E	Theodore Taylor, DOE/AL/LAAO <i>ER Program Manager</i>
10:30 - 11:15	Remedy Selection, Annex H Cleanup Levels, Annex F	Warren Cox, SNL - NM <i>ER Project Manager</i>
11:15 - 11:45	No Further Action Annex B	Ron Kern, NMED <i>Manager, RCRA Technical Compliance Program</i> and Tim Michael, NMED <i>DOE Oversight Bureau</i>
11:45 - 1:00	<i>Lunch</i>	
1:00 - 1:45	Voluntary Corrective Action Annex C	Tracy Glatzmaier, LANL <i>ER Project Consistency Manager</i>
1:45 - 2:15	CAMU/TU Annex J	Mark Jackson, DOE/AL/KAO <i>ER/WM Team Leader</i>
2:15 - 2:30	<i>Break</i>	
2:30 - 3:30	Panel Discussion	Core Team
3:30 - 4:00	Close-out	Deborah Griswold

Instructions

This package contains insertions for the April 18, 1996 Document of Understanding (DOU) training notebook. This package contains a new agenda, an updated table of contents, annexes that were not complete in April, and two annexes that have now received final signatures.

The instructions for insertion into the DOU notebook are:

- 1) Insert the June 5, 1996 Agenda in the front of the notebook.
- 2) Insert the following behind the appropriate tabs:
 - a) Viewgraphs 6/5/96. Insert 6/5/96 viewgraphs and tab behind 4/18/96 viewgraphs.
 - b) Introduction. Remove and recycle existing sheet and insert updated version.
 - c) Table of Contents. Remove and recycle existing sheet and insert the updated version.
 - d) Annex A-C. Insert Annex A in front of existing Annexes B and C.
 - e) Annex D-F. Insert Annex D.
 - f) Annex G-I. Insert copies of Annexes G and I.
 - g) Annex J-L. Insert signed copy of Annex K. Insert copy of Annex L.
 - h) Annex M-O. Insert copies of Annex M-O.

Signed copies of annexes will be provided as they become available.

At this time there are no Annexes P-Z. Please save the corresponding tabs in case additional annexes are written.

Insertions for DOU Notebook

- 1) Agenda for June 5, 1996
- 2) Updated Table of Contents
- 3) Viewgraphs 6/5/96
- 4) Updated Introduction
- 5) Annex A
- 6) Annex D
- 7) Annex G
- 8) Annex I
- 9) Annex K (signed)
- 10) Annex L
- 11) Annex M
- 12) Annex N
- 13) Annex O (signed)

TABLE OF CONTENTS

Agenda

Viewgraphs
4/18/96

DOU

Introduction

Annex A-C

Annex D-F

Annex G-I

Annex J-L

Annex M-O

Annex P-R

Annex S-U

Annex V-X

Annex Y-Z

Annex Introduction

The DOU provides the basic guidelines and understandings reached among the signatory parties for the implementation of the SNL and LANL ER programs. These annexes contain more detailed agreements on specific subject areas, consistent with the guidelines and understandings of the DOU. It is noted that annexes are not stand-alone documents and are not to be implemented independently of each other. Each individual Annex must be used with its corresponding DOU section.

Each annex is signed by the appropriate representatives of each party. If any representative is replaced in their function, their replacement will also immediately sign the existing set of annexes. It is the expectation of all parties that these annexes will be revised from time to time to reflect additional experience gained, or changes in conditions. Additional annexes may be created to address new subject areas. In all cases, revisions to annexes or new annexes will be jointly developed and signed by all parties.

TABLE OF CONTENTS

Agenda

Viewgraphs
4/18/96
6/5/96

DOU

Introduction

Annex A	Acronyms and Definitions
Annex B	NFA Process and Criteria
Annex C	VCA Process and Criteria
Annex D	EC/VCM Process and Criteria
Annex E	Land Use
Annex F	Cleanup Levels
Annex G	Sampling and Analysis Guidelines
Annex H	Remedy Selection Process
Annex I	Temporary Waste Storage
Annex J	CAMU/TU
Annex K	Ground Water and Vadose Zone Monitoring
Annex L	Permit Modification
Annex M	Public Involvement
Annex N	Deliverable Submittal and Approval
Annex O	Budget

Document of Understanding

OVERVIEW

Barbara Driscoll
U.S. Environmental Protection Agency
driscoll.barbara@epamail.epa.gov (214) 665-7441

DOE EPA LANL NMED SNL

**ENVIRONMENTAL RESTORATION
DOCUMENT OF UNDERSTANDING**

**New Mexico Environment Department
U.S. Environmental Protection Agency
U.S. Department of Energy
Los Alamos National Laboratory
Sandia National Laboratories—New Mexico**

November 16, 1995

DOE EPA LANL NMED SNL

Signatories to Document of Understanding

Ed Kelley, Ph.D., Director of Water and Waste Management
Division, New Mexico Environment Department

Allyn M. Davis, Director, Multimedia Planning and Permitting
Division, U.S. Environmental Protection Agency, Region 6

Richard F. Sena, Director, Environmental Restoration Division
U.S. Department of Energy, Albuquerque Operations Office

Larry Kirkman, Acting Area Manager
U.S. Department of Energy, Los Alamos Area Office

DOE EPA LANL NMED SNL

Signatories to Document of Understanding (continued)

Michael Zamorski, Acting Area Manager
U.S. Department of Energy, Kirtland Area Office

Thomas Baca, Director, Environmental Management Program
University of California, Los Alamos National Laboratory

Thomas Blejwas, Ph.D., Director, Environmental Operations
Center, Sandia National Laboratories--New Mexico

DOE EPA LANL NMED SNL

Purpose

For the Environmental Restoration Programs at the Department of Energy's New Mexico Laboratories

- **Develop a cooperative effort among the parties to foster:**
 - timely and cost-effective program implementation
 - standardization of program planning and execution
 - development of annexes to the DOU which provide technical guidelines for criteria and processes for decision making

DOE EPA LANL NMED SNL

Objectives

1. **Define areas of agreement among all parties;**
2. **Document standard approaches to common and significant issues which impact the design and execution of the environmental restoration (ER) program;**
3. **Provide a device for revising technical agreements as additional experience is accumulated;**

DOE EPA LANL NMED SNL

Objectives (continued)

4. Clarify the regulatory and administrative process with all major aspects of the ER program; and
5. Provide a more standardized format and level of detail for documents necessary to the ER process.

DOE EPA LANL NMED SNL

**History of the Process:
January 1995 to April 1996**

- 1/95 Change of administrations in New Mexico; potential delegation of HSWA authority to New Mexico
- 2/95 Concept of DOU initiated
- 3/95 Core Team appointed; negotiations initiated
- 7/95 Core Team kick-off meeting
- 9/95 Core Team separated the DOU into an umbrella document and annexes
- 12/95 DOU signed by all parties

DOE EPA LANL NMED SNL

**History of the Process:
January 1995 to April 1996** (continued)

- 1/96 HSWA authority delegated to New Mexico; workshare agreement signed
- 3/96 Annexes B, C, E, F, H, J, and O signed by Core Team
- 4/96 Annexes A, D, G, I, K, L, and M signed by Core Team; initial DOU/Annex training conducted for all parties

DOE EPA LANL NMED SNL

Tier I and Tier II Documents: The DOU and Its Annexes

DOU

**Purpose, Scope, Objectives, Limitations, Amendment process,
and General Statements**

Decision Flowchart

Annexes

A Acronyms and Definitions

B NFA Process and Criteria

C VCA Process and Criteria

D EC/VCM Process and Criteria

E Land Use

DOE EPA LANL NMED SNL

Tier I and Tier II Documents: The DOU and Its Annexes (continued)

Annexes (cont.)

F Cleanup Levels

G Sampling and Analysis Guidelines

H Remedy Selection Process

I Temporary Waste Storage

J CAMU/TU

K Groundwater and Vadose Zone Monitoring

L Permit Modification

M Public Involvement

N Deliverable Submittal and Approval

O Budget

P RCRA Closures

DOE EPA LANL NMED SNL

Core Team – Members

NEW MEXICO ENVIRONMENT DEPARTMENT

Barbara Hoditschek

Ron Kern

John Parker (represented by Tim Michael)

U.S. ENVIRONMENTAL PROTECTION AGENCY

Barbara Driscoll

Nancy Morlock

U.S. DEPARTMENT OF ENERGY

Court Fesmire (replaced by Ted Taylor)

Mark Jackson

Julianne Levings (replaced by Deborah Griswold)

DOE EPA LANL NMED SNL

Core Team – Members (continued)

LOS ALAMOS NATIONAL LABORATORY
Bob Vocke (replaced by Tracy Glatzmaier)

SANDIA NATIONAL LABORATORIES–NEW MEXICO
Warren Cox

DOE EPA LANL NMED SNL

Process

1. DOE and Laboratory members prepare draft annexes.
2. EPA and NMED members review and provide comments on draft annexes.
3. All members discuss and revise draft annexes at regular meetings.
4. All members discuss the revised draft annexes within their organizations.

DOE EPA LANL NMED SNL

Process (continued)

5. All members approve annexes at a regular meeting; annexes are checked for consistency and are then circulated for required signatures.
6. Training is conducted for approved annexes.

DOE EPA LANL NMED SNL

Core Team – Schedule

Annexes Signed to Date

- B NFA Process and Criteria
- C VCA Process and Criteria
- E Land Use
- F Cleanup Levels
- H Remedy Selection Process
- I Temporary Waste Storage
- J CAMU/TU
- K Groundwater and Vadose Zone Monitoring
- O Budget

DOE EPA LANL NMED SNL 10-2000-116

Core Team – Schedule (continued)

Annexes to Be Completed in April

- A Acronyms and Definitions
- D EC/VCM Process and Criteria
- G Sampling and Analysis Guidelines
- L Permit Modification
- M Public Involvement

Annexes to Be Completed in May

- N Deliverable Submittal and Approval
- P RCRA Closures

DOE EPA LANL NMED SNL 10-2000-116

Core Team – Schedule (continued)

Training

- | | |
|-----------------------------|---|
| April 18, 1996 | Document of Understanding |
| | Annex B NFA Process and Criteria |
| | Annex C VCA Process and Criteria |
| | Annex E Land Use |
| | Annex F Cleanup Levels |
| | Annex H Remedy Selection Process |
| | Annex J CAMU/TU |
| June 5, 1996
(tentative) | Annex D EC/VCM Process and Criteria |
| | Annex G Sampling and Analysis Guidelines |
| | Annex I Temporary Waste Storage |
| | Annex K Groundwater and Vadose Zone
Monitoring |
| | Annex O Budget |

DOE EPA LANL NMED SNL 10-2000-116

Core Team – Schedule (continued)

Training (cont.)

July 1996	Annex L	Permit Modification
	Annex M	Public Involvement
	Annex N	Deliverables Submittal and Approval
	Annex P	RCRA Closures

DOE EPA LANL NMED SNL

Some Definitions

Administrative Authority - The agency that has the regulatory authority over the proposed action.

<u>Activity</u>	<u>Administrative Authority</u>
Corrective Action	NMED
Closures	NMED
CAMU/TU	EPA
Rad-only	DOE

DOE EPA LANL NMED SNL

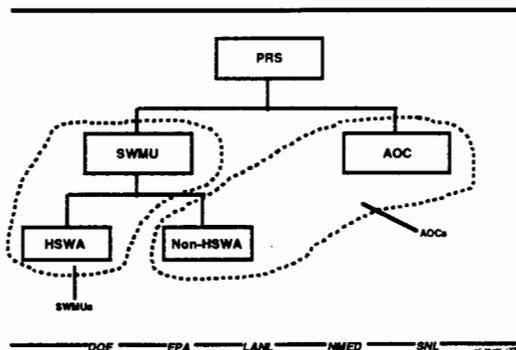
Some Definitions (continued)

SWMU - Any discernable unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste.

AOC - Unit that potentially contains hazardous substances, such as radionuclides.

Potential Release Site - Any site suspected of releasing contaminants to the environment. Includes RCRA/HSWA SWMUs and DOE AOCs.

DOE EPA LANL NMED SNL



Structure of the DOU/Annexes

Process Annexes

- L - Permit Modification**
 - regulatory procedure
- M - Public Involvement**
 - when/how to involve public
- N - Deliverables Submittal and Approval**
 - consistent formats
 - quality of deliverables
- O - Budget**
 - schedule
 - process

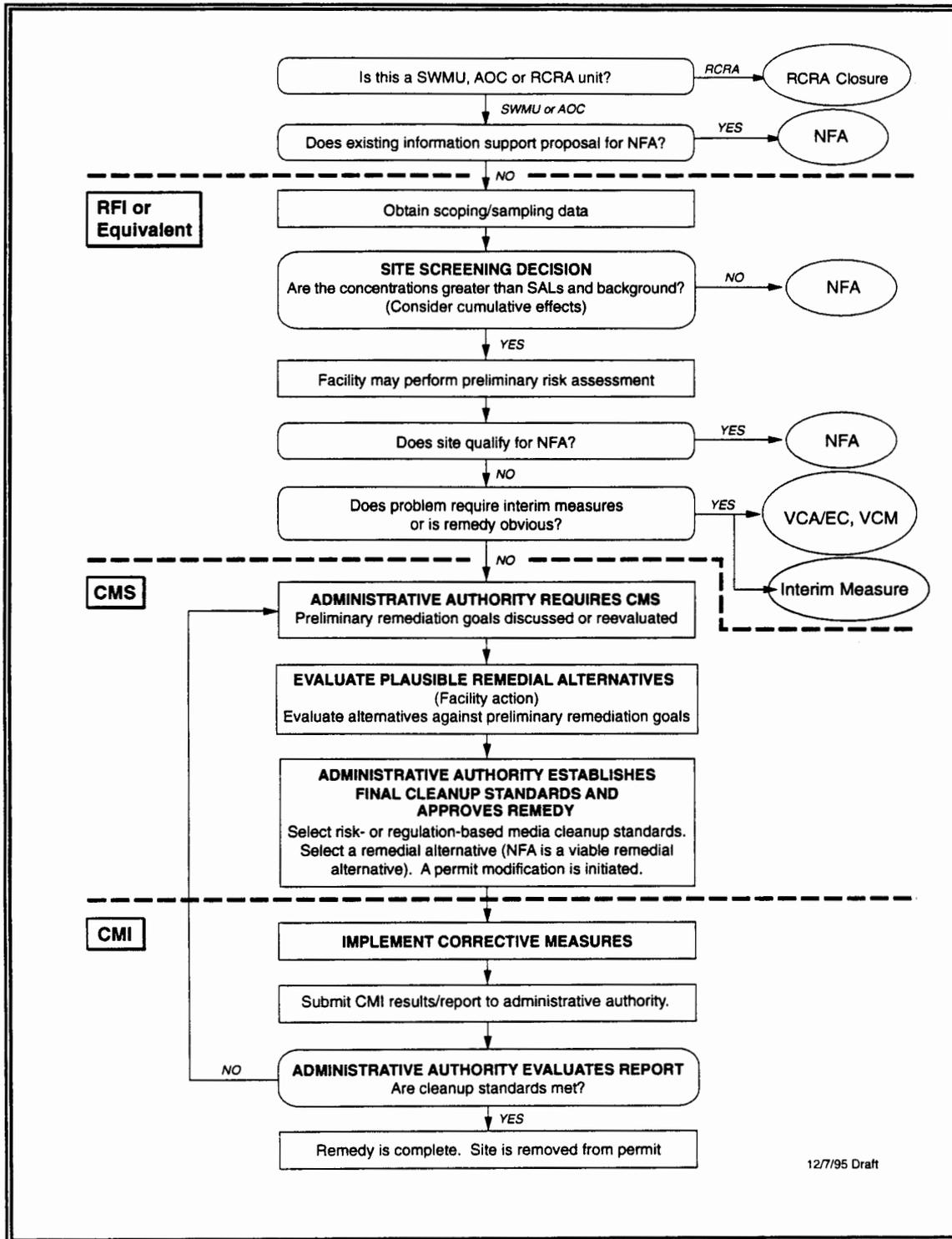
DOE EPA LANL NMED SNL 10-2000 02

Structure of the DOU/Annexes (continued)

- P - RCRA Closures**
 - standard guidelines
- Cleanup Process Annexes**
 - B - NFA Process and Criteria**
 - consistent process and criteria
 - C - VCA Process and Criteria**
 - guidelines on candidate sites
 - consistent process and criteria
 - D - EC/VCM Process and Criteria**
 - guidelines on candidate sites
 - consistent process and criteria

DOE EPA LANL NMED SNL 10-2000 02

Figure 1. Decision Flow



12/7/95 Draft

Structure of the DOU/Annexes (continued)

Implementation Annexes

- E - Land Use**
 - jurisdiction (DOE call)
- F - Cleanup Levels**
 - standard, consistent assumptions
- G - Sampling and Analysis Guidelines**
 - general guidelines on methods, QA/QC, locations
- H - Remedy Selection Process**
 - proposal guidelines and process

DOE EPA LANL NMED SNL

Structure of the DOU/Annexes (continued)

Other Annexes

- I - Temporary Waste Storage**
 - how/where to store wastes
- J - CAMU/TU**
 - regulatory (NMED/EPA) guidelines
- K - Groundwater and Vadose Zone Monitoring**
 - general guidelines on locations, process

DOE EPA LANL NMED SNL

Amendments

- A living document
- Guidelines to follow
- Open to improvements

DOE EPA LANL NMED SNL

Document of Understanding

ANNEX E. LAND USE

Ted Taylor
U.S. Department of Energy/Los Alamos Area Office
ttaylor@doe.lanl.gov (505) 665-7203

DOE EPA LANL NMED SNL

Land Use Planning

- Designated by DOE/Laboratory
- 30 year horizon, consistent with facility planning
- Not related to local zoning

DOE EPA LANL NMED SNL

Purpose of Land Use Assumptions

- Determine Risk Exposure Scenarios

DOE EPA LANL NMED SNL

Land Use Scenarios

- Residential
- Industrial
- Recreational
- Native American
- Special

DOE EPA LANL NMED SNL

Post Cleanup Conditions

- None required for residential scenario
- Institutional controls required for all other scenarios
- Controls approved by administrative authority
- Controls included in permit modifications

DOE EPA LANL NMED SNL

Types of Institutional Controls

- Industrial
 - warning or informational signs
 - general facility surveillance and security
- Recreational
 - warning or informational signs
- Deed restriction or equivalent required

DOE EPA LANL NMED SNL

Document of Understanding

ANNEX H. REMEDY SELECTION PROCESS

Warren Cox
Sandia National Laboratories
wbcox@envc.sandia.gov (505) 284-2549

DOE EPA LANL NMED SNL v0.00.00 11

Definitions

Interim Measure (or Action) - Partial remedy, not a final cleanup

Final Remedy - No other corrective action required, site could be proposed as NFA after remedy implementation

Innovative - Remedial technologies that have not been demonstrated at full scale, or the application experience base cannot be used as a reliable predictor of site-specific performance

DOE EPA LANL NMED SNL v0.00.00 12

Remedy Selection

- The applicable remedy selection approval and permit modification process will be followed:
 - one - pass
 - closure
- The DOE/Laboratories will propose for approval by the AA:
 - location where compliance (cleanup levels) must be achieved
 - verification sampling and analysis plan

DOE EPA LANL NMED SNL v0.00.00 13

Remedy Selection (continued)

- any long-term monitoring that may be required
- remedy

Note: The above does not prohibit the DOE/
Laboratories from proceeding at risk

- **The proposed remedy must be a reasonable balance of, and include consideration of:**
 - long-term reliability and effectiveness,
 - reduction of toxicity, mobility, or volume of wastes
 - short-term effectiveness
 - implementability
 - cost

DOE EPA LANL NMED SNL

Remedy Selection (continued)

- **Innovative technologies may be proposed as a remedial method, given that:**
 - the technology is consistent with the general selection criteria
 - demonstration of long-term time or cost savings are considered in applying a compliance schedule
- **Innovative technologies need not have been proven at full scale**

DOE EPA LANL NMED SNL

Completion of Remedy

- **DOE/Laboratories will submit a final cleanup verification report that indicates:**
 - established cleanup levels have been reached
 - source control has been achieved
 - long-term monitoring, if required, has been established
- **If requirements have been met, the AA removes the site from the permit list**

DOE EPA LANL NMED SNL

Document of Understanding

ANNEX F. CLEANUP LEVELS

Warren Cox
Sandia National Laboratories
wbcox@envc.sandia.gov (505) 284-2549

DOE EPA LANL NMED SNL

Purpose of Cleanup Levels Annex

- Provide guidance to the DOE/Laboratories for developing human health risk-based cleanup levels for sites to be remediated

Note: The LANL and SNL/NM Risk-Based Corrective Action Process Document provides the basic process and assumptions to be used in the application of site risk assessments

DOE EPA LANL NMED SNL

Basic Principles and Departure Points

- Cleanup levels are based on risk to human health and the environment
- Screening assessments and process knowledge are acceptable departure points for initial risk assessments in some cases
- If, based on reasonable process knowledge, a contaminant is not expected to be present at a site, it need not be evaluated in a risk assessment

DOE EPA LANL NMED SNL

Basic Principles and Departure Points (continued)

- Site-specific exposure scenarios and projected land use are considered in establishing media cleanup standards
- Exposure estimates are based on the distribution of contamination throughout areas/volumes of contaminated media, and over time periods that are consistent with projected land use
- The length of time over which residual contamination is evaluated is tied to the projected land use term

DOE EPA LANL NMED SNL

Basic Principles and Departure Points (continued)

- Fate and transport properties of contaminants are considered in establishing media cleanup standards
- Risk due to background must be presented in the risk evaluation, and may influence the media cleanup standards
- Exposure units may encompass more than one site, and thus more than one site may be aggregated for a risk evaluation

DOE EPA LANL NMED SNL

Basic Principles and Departure Points (continued)

- The cost of remediating contaminants is not excluded from decision on media cleanup standards
- Generic cleanup levels for simple sites may be proposed
- Deterministic risk assessment is required, but may be supplemented by probabilistic risk assessment

DOE EPA LANL NMED SNL

Hazardous Constituents

- Media cleanup standards for non-radioactive carcinogens are derived using EPA's target incremental risk range of 1E-06 to 1E-04
- A target hazard index value of 1 is used for non-carcinogens
- Total risk is to be evaluated, not just individual risk from constituents

DOE EPA LANL NMED SNL

Radionuclides

- For rad-only complex industrial-use sites
 - the media cleanup standard is based on DOE's 100 mrem/yr limit, with ALARA considerations
 - consideration of EPA proposed 15 mrem/yr dose
 - proposed to DOE as the regulatory authority
- Where radionuclides and hazardous constituents exist, the combined risk is considered and the 15 mrem/yr proposed EPA standard is the relevant target for risk for the radioactive components

DOE EPA LANL NMED SNL

Verification of Cleanup

- Verification sampling must collect an appropriate number of samples to calculate the 95% UTL
- Methods of calculation and risk evaluation must be supplied to the regulatory authority
- The 95% UTL will estimate average residual concentrations over the appropriate areas/volumes of contaminated media used in the risk assessment

DOE EPA LANL NMED SNL

Verification of Cleanup (continued)

- Where the 95% UTL is not demonstrated by the verification sampling to have achieved the cleanup, individual data points may be evaluated

Document of Understanding

**ANNEX B. NO FURTHER ACTION (NFA)
PROCESS AND CRITERIA**

Ron Kern and Tim Michael
New Mexico Environment Department
ron_kern@nmenv.state.nm.us (505) 827-1558
tom_michael@nmenv.stat.nm.us (505) 827-1558

DOE EPA LANL NMED SNL 11

What is NFA?

Determination by the Administrative Authority, based on a request and documentation provided by the Laboratory, that there are no significant releases from PRSs of RCRA hazardous waste or hazardous constituents, mixed waste, radioactive waste, or other CERCLA hazardous constituents.

DOE EPA LANL NMED SNL 12

Overall Decision Chart

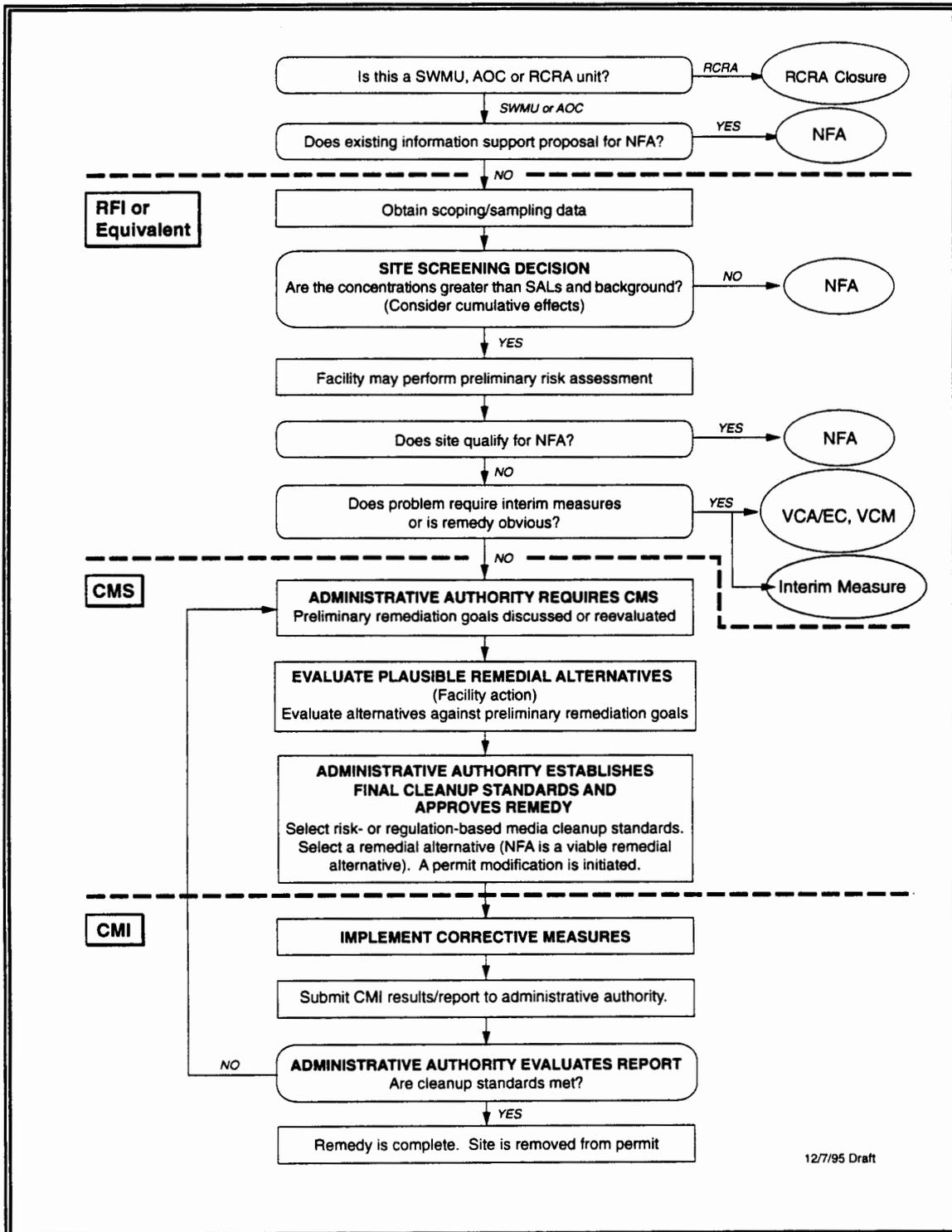


Figure 1

What an NFA Determination Does NOT Do

- **Affect other responsibilities or authorities of the NMED Secretary, EPA Regional Administrator, or DOE (e.g., requirement for air emissions control in a permit)**
- **Preclude future corrective action activities that might be required based upon new information**

DOE EPA LANL NMED SNL

Why is the NFA Annex in the DOU?

- **To expedite the NFA process**
- **To establish a consistent set of criteria for the determination of whether an NFA proposal is appropriate**

DOE EPA LANL NMED SNL

NFA Criteria

1. **The site cannot be located or has been found not to exist, is a duplicate PRS, or is located within and therefore, investigated as part of another PRS.**
2. **The site has never been used for the management (that is, generation, treatment, storage, or disposal) of RCRA solid or hazardous wastes and/or constituents or other CERCLA hazardous substances.**
3. **No release to the environment has occurred, nor is likely to occur in the future.**

DOE EPA LANL NMED SNL

NFA Criteria (continued)

4. There was a release, but the site was characterized and/or remediated under another authority which adequately addresses corrective action, and documentation, such as a closure letter, is available.
5. The PRS has been characterized or remediated in accordance with current applicable state or federal regulations, and the available data indicate that contaminants pose an acceptable level of risk under current and projected future land use.

DOE EPA LANL NMED SNL

Evidence

- Relevant
- Accurate
- Consistent
- Traceable
- Documented
- Available for review by regulators and public

DOE EPA LANL NMED SNL

Some Evidence Carries More Weight Than Other Evidence

- Interviews
- Historical records
- Site visual inspections
- Site surveys
- Sampling

Generally, no single kind of evidence provides, by itself, justification for NFA; however, the combination of several forms of evidence may be sufficient.

DOE EPA LANL NMED SNL

Interviews

- **Initiate investigation**
- **General scoping investigations**
- **By themselves are not sufficient to justify NFA**

DOE EPA LANL NMED SNL 10-0000 110

Historical Records

- **Engineering drawings**
- **Process histories**
- **Shipping records or bill of lading**
- **Test reports**
- **Historical aerial photos**

DOE EPA LANL NMED SNL 10-0000 110

Site Visual Inspections

- **Locate sites**
- **Estimate migration pathways**

DOE EPA LANL NMED SNL 10-0000 112

Site Surveys

- **Magnetic surveys**
- **Gravity surveys**
- **Soil gas surveys**
- **Radiation surveys**

DOE EPA LANL NMED SNL 10-2008 118

Release Assessment Sampling

- **May demonstrate that there was no release**
- **May demonstrate that the release was insignificant**
- **May demonstrate that the extent of contamination is known**
- **May not require an approved work plan**

DOE EPA LANL NMED SNL 10-2008 118

Final Steps of the NFA Process for HSWA SWMUs

- **Based on Laboratory documentation, Administrative Authority makes initial determination of NFA appropriateness**
- **Class 3 modification to the HSWA module of the RCRA permit will be proposed for public comment**
- **Administrative Authority makes final determination for removal of PRS from the permit**

DOE EPA LANL NMED SNL 10-2008 118

Document of Understanding

ANNEX C. VCA PROCESS AND CRITERIA

Tracy Glatzmaier
Los Alamos National Laboratory
tracyg@erproject.lanl.gov (505) 665-2613

DOE EPA LANL NMED SNL

VCA Process

- Intended to address
 - small-scale PRSs
 - low-risk contamination
- VCAs are implemented at risk
- Discussions of potential VCAs included as part of budgetary negotiations with NMED/EPA

DOE EPA LANL NMED SNL

Candidate Sites

- Radioactive-only
- Promulgated remediation criteria
- Non-systematic releases (e.g., spill cleanup criteria typically addressed by Spill Prevention Control and Countermeasures Plans)

DOE EPA LANL NMED SNL

Criteria for VCA Candidates

1. Potential remedy is obvious and can be readily applied
2. Remedy is a final resolution in order to prevent potential release or migration of contaminants from the site in the future
3. Previous sampling data and/or archival data are available to adequately identify constituents of concern
4. Adequate treatment, storage, and disposal capacity is available for all expected waste types

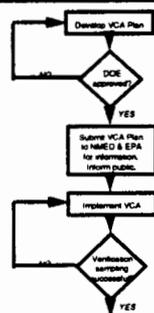
DOE EPA LANL NMED SNL

Criteria for VCA Candidates (continued)

5. Cleanup levels are based on background concentrations, promulgated standards, or previously determined risk-based levels
6. Estimated cost to complete the action is relatively small
7. Estimated time to complete field activities is relatively short

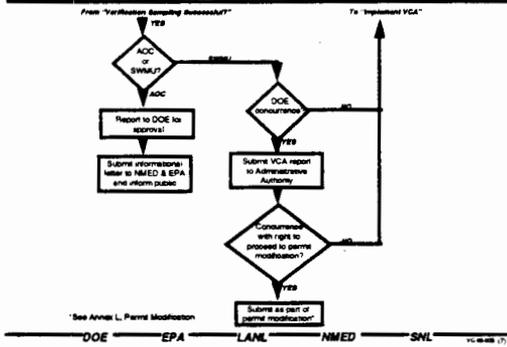
DOE EPA LANL NMED SNL

Figure C-1. VCA Process



DOE EPA LANL NMED SNL

Figure C-1. VCA Process (continued)



Completion of VCA

- Confirmation/verification sampling and analysis
- AOCs
 - report to DOE for approval
 - information letter to NMED and EPA
- SWMUs
 - report to AA for approval
 - request for Class 3 permit modification to delete from permit

Document of Understanding

ANNEX J. CAMU/TU

Mark Jackson
Department of Energy/Kirtland Area Office
majacks@sandia.gov (505) 845-6288

DOE EPA LANL NMED SNL

CAMU/TU Definition

- CAMU/TU used to handle remediation wastes per EPA final rule
- Remediation wastes could include:
 - hazardous
 - non-hazardous
 - mixed
 - low-level radioactive

DOE EPA LANL NMED SNL

CAMU/TU Process

- DOE, LANL, NMED, and EPA will review annotated outline prior to any formal submittal
- CAMU/TU proposal will:
 - include waste information (quantities & compatibility)
 - address the EPA SOP
 - address the NMED checklist
 - include an evaluation of treatment options

DOE EPA LANL NMED SNL

CAMU/TU Process (continued)

- For low-level radioactive waste proposal include waste information in proposal and permit application
- TU can operate for one year, with a possible one-year extension

Figure J-1. CAMU/TU

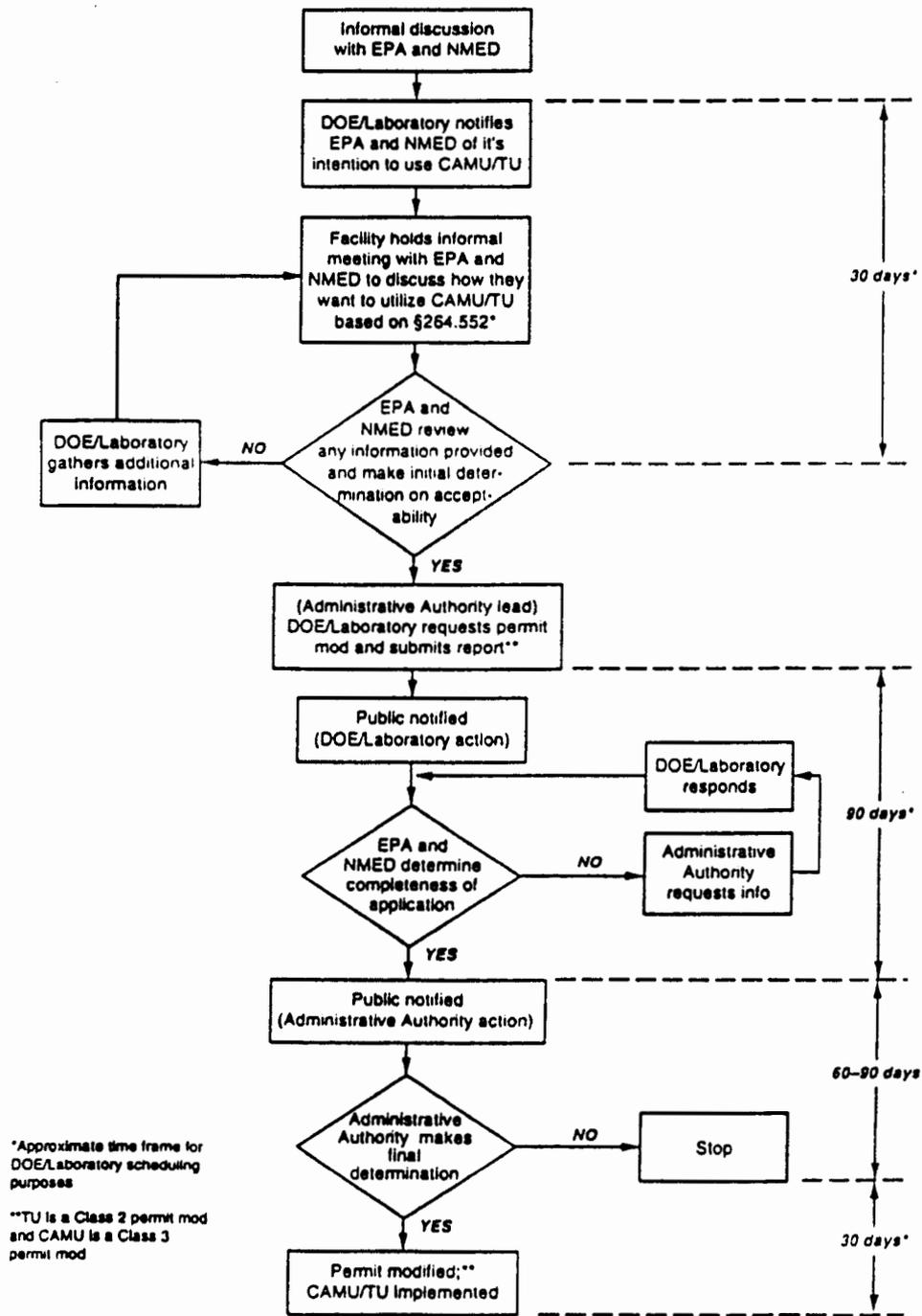


Figure J-1. CAMU/TU permit modification process and schedule.

Document of Understanding

ANNEX D. EC/VCM

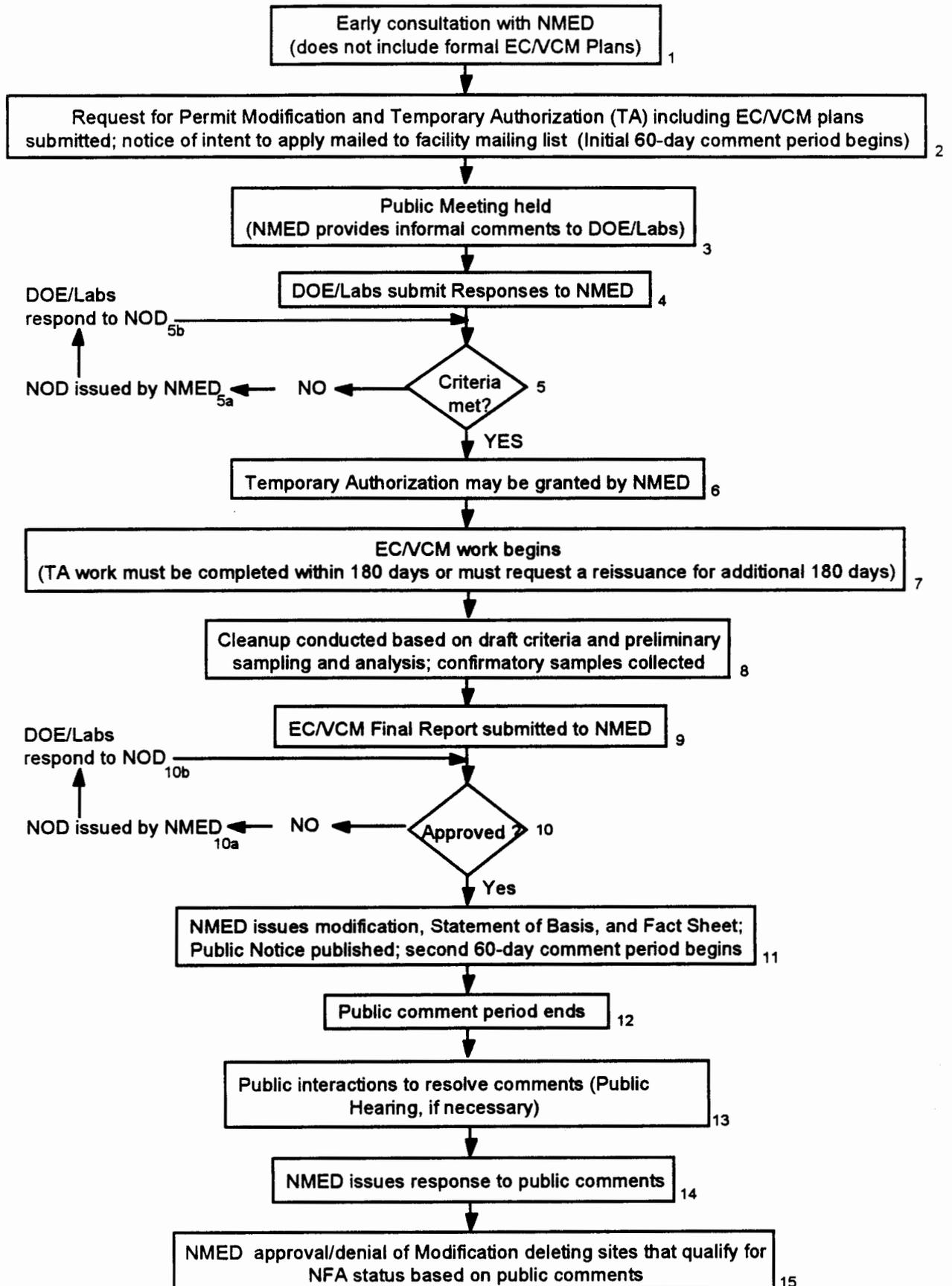
**Barbara Hoditschek
New Mexico Environment Department**

(505) 827-1561

DOE EPA LANL NMED SNL

High risk area

**Figure D-1
EC and VCM Process**



Document of Understanding

**ANNEX G. SAMPLING AND
ANALYSIS GUIDELINES**

**Tracy Glatzmaier
Los Alamos National Laboratory**

tracyg@erproject.lanl.gov (505) 665-2613

DOE EPA LANL NMED SNL

Stages of Data Development

- Screening
- Site characterization
- Waste characterization
- Confirmation/verification

DOE EPA LANL NMED SNL

Levels of Data Quality

- **Must be met and documented by analytical laboratories**
 - all laboratories must pass audit program
- **SW-846 (or EPA-approved equivalent) for waste characterization and confirmation**
- **Field analysis**
 - analytical instruments used on-site or in mobile laboratories
 - field screening and site characterization

DOE EPA LANL NMED SNL

Levels of Data Quality (continued)

- **Field screening**
 - portable instruments for real-time data
 - optimize sampling locations
 - health and safety
 - site characterization with other confirmatory analysis (≥10% verification)
 - detection limits at or below action levels

DOE EPA LANL NREED SNL

QA/QC

- **Minimum of 10% or maximum of 20% of suites required for SW-846**
- **Document in QA Plan or site-specific sampling and analysis plan**

DOE EPA LANL NREED SNL

Site Characterization Requirements

- **Screening and data development**
- **Generally, nature and extent**
 - compare with action levels and/or background
- **Background comparison necessary**
 - to determine if release has occurred
 - to use for risk assessment
- **Limit analysis to constituents of concern at early stage, when possible**

DOE EPA LANL NREED SNL

General Guidelines

- **Surface soil samples (0-2 ft)**
 - intervals \leq 6 in.
- **Deeper borings**
 - intervals \leq 12 in.
 - spacing of samples 5 ft to 20 ft, based on use of data
- **Runoff and sediment samples**
 - collect as close to source as possible
 - point of compliance

DOE EPA LANL NMED SNL

Media Sampling

- **Ground water**
 - unfiltered
 - filtered if potential drinking water source
- **Soil pore water**
 - lysimeter
- **Runoff and surface water**
 - unfiltered
- **Ambient and pore air**
 - filtered as required by air sampling method

DOE EPA LANL NMED SNL

Waste Characterization Requirements

- **Off-site or on-site**
 - analysis to meet facility requirements
- **Investigation-derived materials (IDM)**
 - label "pending analysis"
 - investigation-derived waste (IDW) as indicated by analysis

DOE EPA LANL NMED SNL

Integrated Characterization and Cleanup

- **Defined in Risk-Based Corrective Action Process**

DOE EPA LANL NREB SNL

Confirmation/Verification

- **Analyze for COPCs**
- **Justify size of sampling area on risk analysis**
- **Subject to approval by AA**

DOE EPA LANL NREB SNL

Document of Understanding

ANNEX I. TEMPORARY WASTE STORAGE

**Nancy Rinehart Morlock
EPA Region 6 RCRA Permits Branch
New Mexico and Federal Facilities Section**

morlock.nancy@epamail.epa.gov (214) 665-6650

DOE EPA LANL NMED SNL

Temporary Waste Storage

- 90-day accumulation time is permitted in accordance with 40 CFR 262.34(a)
- If more storage time is needed, the annex recommends consideration of 4 options

Note that IDW and IDM are NOT addressed in this annex. These are issues that may be addressed in a future annex.

DOE EPA LANL NMED SNL

Option 1

- 180-day temporary authorization (TA) for a storage permit
 - TAs are defined in 40 CFR 270.42(e)
 - good for up to 180 days
 - may be reissued if permit modification for storage permit has been initiated

DOE EPA LANL NMED SNL

Option 2

- **Expedited permit modification for permanent storage area**
 - 40 CFR 270.15 gives Part B information requirements for containers
 - ▲ Includes design of area, test procedures, area drainage, waste compatibility, air emissions, etc.

DOE EPA LANL NMED SNL

Option 3

- **Utilization of an approved temporary unit (TU) for temporary storage**
 - TU must be approved through a Class 2 permit modification
 - wastes may be stored for up to 1 year
 - 1-year extension may be requested

DOE EPA LANL NMED SNL

Option 4

- **Utilization of an approved CAMU to store remediation wastes prior to disposal**
 - storage provisions should be defined in CAMU permit

DOE EPA LANL NMED SNL

Document of Understanding

ANNEX K. GROUND WATER AND
VADOSE ZONE MONITORING

Warren Cox
Sandia National Laboratories

wbcoc@envc.sandia.gov (505) 284-2549

DOE EPA LANL NMED SNL

Basic Principles

- Monitor if there is a threat
 - potential to contaminate another media
 - current and/or future impacts to receptors
- Utilize all relevant data sources for designing system
 - site-wide studies

DOE EPA LANL NMED SNL

Basic Principles (continued)

- Evaluate site unless the hydrogeology is fairly predictable
 - local conditions
 - toxicity, mobility, and concentration of COCs
- Use phased approach to achieve only the level of understanding needed to evaluate/predict threat

DOE EPA LANL NMED SNL

General "If ... Then" Criteria

Location of Contaminants	Monitoring Proposed - in General
Surface contamination but no known contaminants in vadose zone	Shallow vadose zone monitoring
Contamination in vadose zone only	Vadose zone monitoring in intervals adjacent to and below depth of contamination (may potentially include ground water)
Vadose zone contamination to ground water	Ground water monitoring

-----DOE-----EPA-----LAAIL-----NMED-----SNL-----

"What to, When to, and Where to"

- Analyze relevant parameters
- Determine background values by sampling outside of the unit
- Monitor at a variable frequency, depending on the nature of the threat
- Consider background value trends

-----DOE-----EPA-----LAAIL-----NMED-----SNL-----

What's Different?

- Formalizes the conceptual approach
- Acknowledges that monitoring closest to the threat is preferred; no automatic monitoring of the saturated zone
- Explicitly recognizes a phased approach
- Allows a flexible, reasonable, but technically sound site-specific approach

-----DOE-----EPA-----LAAIL-----NMED-----SNL-----

Document of Understanding

ANNEX L. PERMIT MODIFICATION

**Ted Taylor
U.S. Department of Energy
Los Alamos Area Office**

ttaylor@doe.lanl.gov (505) 665-7203

DOE EPA LANL NMED SNL

Scope of Annex L

- **Relates only to ER activities in HSWA Module**
- **Provides for timeliness of submittals**
- **Supplements formal permit modification process**
- **Describes goals**

DOE EPA LANL NMED SNL

Permit Modification — Goals

- **Limit modifications to four per year per Laboratory**
- **Submit proposed Class 3 modifications by July 1**
- **Combine similar items into single modification**
- **Interact early**

DOE EPA LANL NMED SNL

Permit Modification — Process

1. Consult early with Administrative Authority
 - a. interact prior to submittal of modification request
 - b. discuss and resolve major issues
 - c. AA makes initial class determination
2. DOE/Laboratories may involve public early
 - a. receive public input
 - b. revise draft modification request as required

DOE EPA LANL NREB SNL

Permit Modification — Process (continued)

3. Required public meeting
 - a. describe modification request
 - b. summarize prior comments
 - c. for cleanups, describe approach, residual contamination, and associated risk
4. Comments by Administrative Authority
 - a. AA may submit significant comments early

DOE EPA LANL NREB SNL

Permit Modification — Other Features

- Allows removal of a site from the permit without additional public notice through the Class 3 process
- Allows facility-specific cleanup standards to be requested as a Class 2 modification request
- References formal permit modification process in Figure L-1

DOE EPA LANL NREB SNL

Document of Understanding

ANNEX M. PUBLIC INVOLVEMENT

**Deborah D. Griswold
U.S. Department of Energy
Albuquerque Operations Office**

dcouchman-griswold@doeal.gov (505) 845-4752

DOE EPA LANL NMED SNL

Purpose of Public Involvement

- **Ensure the public is kept properly informed of ER program activities**
- **Allow participation in the decision-making process**

DOE EPA LANL NMED SNL

Why an Annex?

- **Community relations plan is a Part B permit requirement**
- **Few other regulatory specifics**

DOE EPA LANL NMED SNL

Principles

- **Public involvement is a partnership between DOE, Laboratories, and the Administrative Authority**

DOE EPA LANL NIMED SNL

Public Involvement Activities

- **Public meetings and hearings**
- **Public briefings**
- **Tours of sites**
- **Organizational meetings**
- **Citizen Advisory Board meetings**

DOE EPA LANL NIMED SNL

Tools

- **Public involvement plans**
- **Facility mailing list**
- **Public notices**
- **Fact sheets**
- **Public information repositories**

The activities and tools are used in combination to implement a program that ensures the public is kept properly informed, and when needed, participates in the decision-making process.

DOE EPA LANL NIMED SNL

Document of Understanding

ANNEX O. BUDGET

**Mark Jackson
DOE/Kirtland Area Office**

majacks@sandia.gov (505) 845-6288

DOE EPA LANL NMED SNL

Purpose

- **Define process for interagency involvement in DOE's budget and prioritization**
 - understand baseline and budget plans
 - help assure level-of-effort of each party can support projected workloads
 - allow all parties to coordinate with each other on budget/resource priorities

DOE EPA LANL NMED SNL

Activity Prioritization

- **DOE/Laboratories will develop risk-based priority list annually**
- **NMED/EPA review and comment (July/August)**
- **Present agreed-to priority list to public**
- **Allocation of funding will be based on the priority list**
- **Priority list and funding will be used for DOE's Activity Data Sheet (ADS) input each year**

DOE EPA LANL NMED SNL

Program Baseline

- The Laboratories will modify the baseline each year to support the priority list and available funding
- Re-baselining may not occur until after the Appropriations Bill is signed by the President
- DOE/Laboratories will provide a schedule status of all deliverables on at least a quarterly basis

DOE EPA LANL NMED SNL

DOE's Annual Budget Request

- ADSs are official documents for Congressional budget request
- DOE/Laboratories agree in November with NMED/EPA on ADS involvement and review schedule
- ADSs are developed annually December-April for fiscal year (FY) + 2, and the four subsequent FYs (i.e., just completed ADSs for FY96 thru 02)
- ADSs are reviewed with NMED and EPA
- NMED/EPA comments are sent to DOE/HQ separately from the ADSs

DOE EPA LANL NMED SNL

Other Considerations

- NMED/EPA commit to providing timely review of deliverables; if not, NMED/EPA will discuss delay timeframes with DOE/Laboratories
- If funding decisions occur during any given FY, DOE/Laboratories will review impacts with NMED/EPA and jointly reprioritize work for the remainder of the FY

DOE EPA LANL NMED SNL

Document of Understanding

ANNEX P. RCRA CLOSURES

**Ron Kern
New Mexico Environment Department**

ron_kern@nmenv.state.nm.us (505) 827-1558

DOE EPA LANL NMED SNL

What is a RCRA Regulated Unit?

- A hazardous waste unit at a RCRA treatment, storage, and disposal (TSD) facility
- Unit in existence and receiving hazardous wastes (listed or characteristic) on November 19, 1980
- Landfills, surface impoundments, waste piles, incinerators, etc., used to manage hazardous wastes
- Interim status and permitted units

DOE EPA LANL NMED SNL

Interim Status Units

- Nonpermitted units at RCRA TSD facilities
- All facilities lost interim status for operation unless Part B permit application was submitted before November 8, 1988
- If Part B permit application was not submitted, all interim status units must have initiated the closure process
- Closure is conducted according to the requirements of 40 CFR 265

DOE EPA LANL NMED SNL

Permitted Units

- Units at RCRA TSD facilities with a Part B permit
- Closure is conducted according to the requirements of 40 CFR 264 and the permit

DOE EPA LANL NMED SNL

What are Closure and Post-Closure?

- "Closure" is the period after which hazardous wastes are no longer accepted by a TSD facility at a specific RCRA unit and during which the owner/operator completes treatment, storage, or disposal operations
- "Post-Closure" is the 30-year period after closure when operators of land disposal facilities must perform only certain monitoring and maintenance activities

DOE EPA LANL NMED SNL

Closure Requirements

- RCRA TSD facility owner/operator must have an approved Closure Plan that includes
 - a description of how facility will be closed
 - an estimate of maximum amount of waste handled at facility
 - requirements for decontamination of equipment and structures and for removal of contaminated soils and debris
 - an estimate of year and schedule for closure
- Public notice is required for subsequent approval of Closure Plan by NMED

DOE EPA LANL NMED SNL

Closure Requirements (continued)

- During closure, all hazardous waste must be treated, removed from the site, or disposed of on-site in accordance with the approved Closure Plan
- **Clean Closure:** RCRA units (e.g., surface impoundments, waste piles) at which all contaminants are removed; this must be demonstrated adequately with appropriate sampling for verification by NMED

DOE EPA LANL NMED SNL

Closure Requirements (continued)

- **Post-Closure:** If land disposal facility does not "clean close," post-closure care is required, which includes:
 - ground water monitoring and reporting
 - monitoring and maintenance of waste containment systems
 - security
- All closure and post-closure processes must comply with approved plans, as documented in a facility-generated certification report, which is subject to verification and approval by NMED

DOE EPA LANL NMED SNL

Document of Understanding

**ANNEX N. DELIVERABLE SUBMITTAL
AND APPROVAL**

Tim Michael
New Mexico Environment Department

tim_michael@nmenv.state.nm.us (505) 827-1536

DOE EPA LANL NMED SNL

Deliverables

- Plans, reports, proposals, responses to NODs submitted by the DOE/Laboratories to the Administrative Authority

DOE EPA LANL NMED SNL

Authority

- May be NMED, EPA, or DOE
- NMED authority – Benito J. Garcia, Chief, Hazardous and Radioactive Materials Bureau, NMED
- EPA authority – David Neleigh, Chief, New Mexico and Federal DOE Facilities Section, EPA Region 6

DOE EPA LANL NMED SNL

Scope of Deliverables

- Submitted in response to RCRA/HSWA requirements
- Should address requirements for compliance with all applicable Federal, State, and local regulations
- Should provide notice regarding all applicable regulatory requirements

DOE EPA LANL NMED SNL

Format of Deliverables

- Should be complete, concise, and follow a logical format
- Should be submitted to the AA in both paper and electronic form (electronic form for NOD responses only)

DOE EPA LANL NMED SNL

Content of Deliverables

- Verbal and informal communication between the DOE/Laboratories and the AA can and should be used to help guide the preparation and content
- Annotated outlines for common deliverables are provided as an attachment

DOE EPA LANL NMED SNL

Regulatory Review of Deliverables

- Evaluated according to regulations and guidance from RCRA, HSWA, and other applicable Federal and State regulations
- Comments on regulator-required deliverables are transmitted as an NOD
- Verbal and informal communication can and should be used to clarify issues contained in the NOD

-----DOE-----EPA-----LANL-----NMED-----SNL-----

Response to NOD

- NOD response is required within a prescribed time period
- NOD response should be submitted either as revised pages or as a supplement to the deliverable

-----DOE-----EPA-----LANL-----NMED-----SNL-----

Regulatory Review of NOD Response

- Administrative Authority reviews the response in a timely manner
- The AA may issue an additional NOD
- The AA wishes to limit the review to a maximum of two NODs
- Final approved NOD responses should be submitted in paper form and electronic form for insertion into the document

-----DOE-----EPA-----LANL-----NMED-----SNL-----

Outlines for Common Deliverables

- RFI Report
- EC/VCM Plan

DOE EPA LANL NMED SNL

**ENVIRONMENTAL RESTORATION
DOCUMENT OF UNDERSTANDING**

*New Mexico Environment Department
US Environmental Protection Agency
US Department Of Energy
Los Alamos National Laboratory
Sandia National Laboratories–New Mexico*

November 16, 1995

SIGNATURE PAGE

 12/13/95

Ed Kelley, Ph.D., Director of Water and Waste Management Division
New Mexico Environment Department

 12/6/95

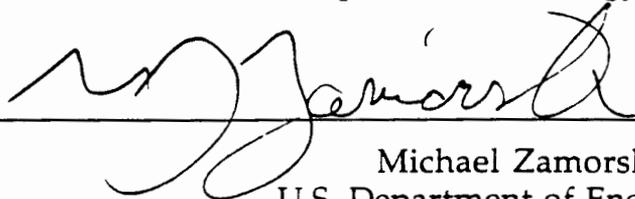
Allyn M. Davis, Director, Multi-Media Planning and Permitting Division
US Environmental Protection Agency

 11/22/95

Richard F. Sena, Director-Environmental Restoration Division
US Department Of Energy

 11/20/95

LARRY Kirkman, Acting Area Manager
U.S. Department of Energy Los Alamos Area Office

 11/21/95

Michael Zamorski, Acting Area Manager
U.S. Department of Energy Kirtland Area Office

 11/17/95

Thomas Baca, Director-Environmental Management Program
University of California
Los Alamos National Laboratory



Thomas Blejwas Ph.D., Director-Environmental Operations Center
Sandia National Laboratories-New Mexico

CONTENTS

I. STATEMENT OF PURPOSE	1
I.1. Scope	1
I.2. Objectives	1
I.3. Limitations	2
I.4. Term of Agreement	2
II. SUMMARY OF PROCESS	2
II.1. Communications	2
II.2. Budget	2
II.3. Resolution of Differences	3
II.4. Amendment of DOU	3
II.5. Developing and Updating Technical Annexes	3
III. TECHNICAL APPROACHES	4
III.1 Cleanup Process	4
<i>No Further Action Determination</i>	4
<i>Voluntary Corrective Action</i>	5
<i>Expedited Cleanups/Voluntary Corrective Measures</i>	5
III.2 Risk-Based Corrective Action Process	6
<i>Land Use</i>	6
III.3 Implementation of Corrective Action	7
<i>Sampling and Analysis Requirements</i>	7
<i>Remedy Selection and Implementation</i>	7
<i>Temporary Waste Storage</i>	8
<i>Corrective Action Management Unit/Temporary Unit</i>	8
<i>Groundwater and Vadose Zone Monitoring</i>	9
III.4. Other Important Considerations	9
<i>Public Involvement</i>	9
<i>Permit Modifications</i>	10
<i>Deliverable Submittal and Approval</i>	10

Table 1 - Annexes

Figure 1 - Overall Decision Flow Chart

DOCUMENT OF UNDERSTANDING

I. STATEMENT OF PURPOSE

This Document of Understanding (DOU) is entered into by the Department of Energy (DOE), Sandia National Laboratories--New Mexico (SNL), Los Alamos National Laboratory (LANL), the Environmental Protection Agency (EPA) Region 6, and the New Mexico Environment Department (NMED) for the purpose of facilitating the timely and cost-effective implementation of environmental restoration (ER) programs at SNL and LANL. All parties have a strong interest in greater standardization in the planning and execution of SNL's and LANL's ER projects.

I.1. Scope

The DOU contains a summary of the programmatic approach for accomplishing the ER programs at SNL and LANL. General technical guidelines are included as annexes to the DOU. Both laboratories have a list of sites in their HSWA permits, called Solid Waste Management Units (SWMUs). There is also a category called Areas of Concerns (AOCs), which are not SWMUs or listed in the HSWA permit, but are sites being investigated for potential releases. AOCs, which are not listed in the permits, are included in this document for the purpose of completeness and are under the jurisdiction of DOE. SWMUs and AOCs are collectively known as Potential Release Sites (PRSs).

I.2. Objectives

The basic objectives of the DOU are to:

1. define areas of agreement among all parties;
2. document standard approaches to common and significant issues which impact the design and execution of the ER program;
3. provide a device for revising technical agreements as additional experience is accumulated;
4. clarify the regulatory and administrative process involved with all major aspects of the ER program; and
5. provide a more standardized format and level of detail for documents necessary to the ER process.

I.3. Limitations

This DOU is not legally binding or enforceable among the parties hereto, or their designated signatories. Nothing in this DOU shall be construed to supercede state or federal laws and regulations, orders, permits, permit modifications or conditions required by EPA or NMED. This DOU is not intended and cannot be relied upon to create rights, substantive or procedural, enforceable by any party in any administrative or judicial proceeding. This document and any internal procedures adopted for its implementation are intended exclusively for the use of NMED, DOE, EPA, LANL, and SNL. It is intended to define, clarify, and outline the processes and procedures to be utilized for implementing the ER programs.

I.4. Term of Agreement

This DOU shall be effective upon the signature of all parties. It shall remain in effect until terminated by mutual consent of all the parties. Any party may withdraw from this agreement without consent and upon written notification to all other parties.

II. SUMMARY OF PROCESS

II.1. Communications

All parties agree to jointly develop and employ appropriate intra- and inter-agency communication processes to relay information during program planning and execution. This process will include consultation among all parties to this DOU prior to and following transfer of corrective action authority from EPA to NMED.

II.2. Budget

There will be early and meaningful involvement by EPA and NMED in evaluating resource allocation based on prioritization during the DOE's baseline and budget review processes.

The DOU budget annex will define a process for inter-agency involvement in DOE's budget and prioritization process for the laboratories. This process will define the general time frames for these collaborative discussions to provide the regulatory agencies sufficient opportunity to contribute substantive input to budgeting, site prioritization, scope, and schedule.

All parties are committed to achieving the most beneficial use of the DOE environmental restoration budget in addressing risk and meeting enforceable commitments under the laboratories' existing federal or state permits or orders. As

such, inter-agency collaboration will extend to a joint effort by all parties to address program efficiencies. Aspects that impact program efficiencies include program and project scope, schedule, and cost.

II.3. Resolution of Differences

The parties agree to make reasonable efforts to resolve any disputes under this DOU informally at the appropriate organizational level. If informal resolution cannot be achieved, the Administrative Authority or designee shall make a final decision. This process is intended solely to encourage resolution of disputes and not to create rights in such processes or to replace any dispute resolution processes required by law, including permits, orders or other legally enforceable documents.

II.4. Amendment of DOU

This DOU may be amended to include new or revised provisions at any time with the consent of all signatory parties. As new issues arise, the parties will agree to discuss the new issue(s) and develop an amendment to this agreement. Nothing in this DOU shall prohibit NMED or EPA from imposing additional or new requirements without an amendment when deemed necessary by regulation or law.

Designated representatives of any signatory party may propose issues for discussion. The party wishing to raise an issue will prepare a preliminary draft of the amendment for discussion. This preliminary draft will be provided to the rest of the signatory parties at least ten (10) days prior to the proposed meeting. The time and place of the meeting to discuss the issue will be determined by mutual agreement between the parties. When a final agreement is reached, the finalized amendment will be inserted into the DOU with an amendment date on the bottom of each page. Within thirty days of reaching an agreement an amendment signature form will be signed by all parties to the DOU, upon which time the amendment will be effective.

II.5. Developing and Updating Technical Annexes

All parties are committed to developing and implementing the annexes listed in Table 1 to this DOU. All annexes will be agreed to by all parties prior to inclusion in the DOU. These annexes are intended to provide technical guidelines and framework for the criteria and processes associated with determinations including No Further Action (NFA), VCA, EC/VCM, land use, and budget. The Administrative Authority has discretion to require additional or new information as necessary under the circumstances to enable any decision hereunder. As needed, the annexes will be amended or additional ones created in a manner analogous to that described in section II.4 above. This will be done in a timely manner.

III. TECHNICAL APPROACHES

III.1 Cleanup Process

No Further Action Determination

The Overall Decision Flowchart (Figure 1) indicates a number of places in the overall study and remediation process in which No Further Action (NFA) could be requested. For SWMUs, the Laboratory would propose the NFA to the Administrative Authority as a Class 3 permit modification per Module VIII, Section J of the Part B permit for LANL and Section M of SNL's Part B permit. For AOCs which are not listed in the permit, the Laboratory would propose to DOE that the site be removed from further consideration as an AOC. A courtesy copy of the request for removal from the list would be sent to NMED and EPA for information purposes only. The basic criteria for determining an NFA are listed in Annex B. These criteria will be used for designating NFA in RCRA Facility Investigation (RFI) work plans, RFI reports, or other similar documents. Any AOC, which is determined to be a SWMU, will follow proper permit notification procedures.

The decision criteria discussed in Annex B apply initially during the evaluation of archival information and development of the RFI work plans. They will apply again at each point where new data or information become available, including screening assessment data.

A request for NFA for any SWMU can be made to the Administrative Authority based on the criteria presented. If approved, a modification to the HSWA Module of the Laboratory's RCRA Part B operating permit to delete the site (if a SWMU) from the HSWA Module will be put forward for public comment. The determination of NFA shall not preclude the Administrative Authority from requiring further investigation or remediation at a later date, if new information indicates that a release may threaten human health or the environment.

The criteria in Annex B will be used for all SWMUs identified in the HSWA permit, as well as units not identified in the permit, referred to by the Laboratory's ER Project as AOCs. In using a consistent set of criteria, the ER Project can ensure to the EPA, NMED, DOE, the public, and other interested stakeholders, that the same standards used in investigating and determining NFA are appropriate for any potentially contaminated sites within the Project.

Voluntary Corrective Action

The VCA process is intended to address small-scale PRSs (mostly AOCs and some SWMUs) with relatively low-risk contamination problems where an obvious remedy may be implemented with a minimum of administrative requirements. VCAs at SWMUs are completed entirely at risk of both DOE and the laboratories. DOE accepts the risk of completing these VCAs until such time as public input has been obtained and the Administrative Authority has made a final determination. Furthermore, the completion of a VCA at a SWMU does not absolve DOE of the requirement to submit an RFI Report or any other requirements related to that SWMU under the HSWA permit.

These sites, typically cleaned up as part of normal facility housekeeping or best management practices, may include stained soils at small waste or materials storage areas, construction debris accumulation piles, or one-time historical spills of materials such as paint solvents or oils.

VCA plans will be limited in size; once developed, these plans will be submitted by the laboratories to DOE for approval prior to initiating VCA field activities. When submitted to DOE for review, the VCA plans also will be forwarded to EPA Region 6 and NMED for informational purposes. For SWMUs, formal public involvement may not be necessary because VCAs are completed at sites of low risk or inconsequential sites. However, ER Project public meetings may provide a forum for informing the public of plans and progress in implementing VCAs. All SWMUs will have public involvement prior to removal from the permit.

For AOCs, a letter will be sent to NMED and EPA stating that the AOC has been cleaned up in accordance with the VCA plan. This letter will include a brief summary of the verification data. For SWMUs, a VCA Report may be submitted in support of a NFA request to the Administrative Authority.

Expedited Cleanups/Voluntary Corrective Measures

The EC/VCM process is intended to address only SWMUs identified in the HSWA permit. These units may require a risk assessment, which will include human risk, and if needed, ecological risk, both at the appropriate level of detail. This will be used to establish cleanup levels prior to remedy implementation. Because the remedy selection is obvious, the site in question would not benefit from a full Corrective Measures Study (CMS). This EC/VCM process allows for regulatory and public review of remedy selection prior to implementation.

III.2 Risk-Based Corrective Action Process

The technical approach for the risk-based corrective action process at LANL and SNL within the ER programs depends on a number of assumptions related to statistics and risk assessment. Figure 1 depicts the decision flow in the ER programs. The ER programs will design and conduct data collection activities sufficient to implement the risk-based corrective action process.

The technical approach used by the LANL and SNL ER programs is a modified DOE streamlined approach incorporating Data Quality Objectives (DQOs) and risk assessment. In addition, LANL and SNL are employing elements of EPA's Superfund Accelerated Clean-up Model (SACM) to facilitate the rapid cleanup of those units that potentially pose an unacceptable risk. Both the technical approach and decision logic are subject to approval by the Administrative Authority.

Land Use

The DOE has the responsibility for determination of future land use for the time frame specified in the individual long-range plans within facility boundaries. DOE and the laboratories may seek input from their stakeholders on future land use. The results will be provided to NMED and EPA as reference information. Land uses, designated by the DOE and the laboratories, include but are not limited to industrial, recreational, and residential. These terms are not intended to represent zoning areas as they relate to city planning zones.

DOE and the laboratories will propose an exposure scenario. The Administrative Authority has the approval authority for the exposure scenario and reserves the right to require that a different exposure scenario (other than the one proposed by DOE and the laboratories) be considered when evaluating remedial alternatives. Public input will be considered in determining the exposure scenario. Exposure scenarios include, but are not limited to, industrial, recreational, and residential. These scenarios describe and determine the risk approach that will be used at a SWMU, and therefore in part will determine the potential remediation goals for the site.

The default exposure assumptions for each land use are addressed in the Annex F. Institutional controls are inherent in all land use scenarios except the residential. The Administrative Authority must be satisfied that these controls are adequate for a specific site at which they are used. For land remediated to levels above a residential exposure scenario, a deed restriction will be entered with the appropriate authority. If a site-specific deed restriction is not possible, DOE and the Laboratory will ensure that a mechanism acceptable to the Administrative Authority is in place to address land use in the future. See Land Use Annex for details.

Site-specific land use assumptions and exposure scenarios will be considered in establishing preliminary remediation goals and media cleanup standards, and also in risk assessments to estimate the reduction of risk that could be realized by a potential corrective action. Target risk and dose levels will be set following EPA and DOE guidance. Following EPA guidance, preliminary remediation goals and media cleanup standards for nonradioactive carcinogens will be derived using EPA's target incremental risk range of 10^{-4} to 10^{-6} . A target hazard index value of 1 is used for non-carcinogens. Hazardous constituents and radionuclide cleanup levels will be evaluated based on total overall risk from the site. If radionuclides are the only contaminant of concern, then the cleanup is under the jurisdiction of DOE and based on DOE Orders.

DOE agrees to provide information regarding radionuclide contaminants if requested by EPA or NMED as necessary to determine the appropriate corrective action level related to cleanup under RCRA or the state Hazardous Waste Act.

III.3 Implementation of Corrective Action

Sampling and Analysis Requirements

Sampling and analysis requirements will be determined by the application of DQOs that are tied to the final remedy for the site in question.

After remediation of a contaminated site, the area involved will be subject to confirmation/verification sampling. An appropriate number of samples will be collected to demonstrate compliance with cleanup levels. The samples generated will be analyzed for the constituents of concern at this site.

Remedy Selection and Implementation

The primary criteria for developing and selecting remedies are long-term reliability and effectiveness; reduction of toxicity, mobility, or volume of contaminants; short-term effectiveness; implementability; and cost. Potential remedies, which could conceivably include new technologies, will be evaluated based on their ability to meet the following standards: protection of human health and the environment; attainment of established cleanup levels; control of the source of release; and compliance with waste management requirements.

Remedy selection will be made and media cleanup standards will be established by the Administrative Authority, after the results of the CMS have been considered. As low as reasonably achievable (ALARA) considerations will enter into the determination of media cleanup standards for radionuclides. Remedy selection criteria will conform with those specified in proposed Subpart S.

If meeting the requirements of a remedy becomes difficult or impossible because of unexpected site-specific technical reasons, DOE will propose that the Administrative Authority modify the appropriate permit so that more time is allowed or additional or alternate methods may be used. Additionally, DOE and the laboratories are committed to completing remediation in an expeditious manner.

Temporary Waste Storage

ER remediation activities may generate hazardous or mixed wastes for which disposal capacity is unavailable in the short term. The ability to have on-site temporary storage (except if via a Temporary Unit, see next section) would become essential for maintaining the proper cleanup priorities for the laboratories.

The DOE and laboratories are responsible for planning for waste management needs, including temporary storage. As soon as it becomes apparent that current on-site storage may not be adequate, the Administrative Authority will be notified of the problem. A meeting then will be held with the Administrative Authority to determine the information that needs to be submitted to ensure a timely response from the Administrative Authority. Any additional data needs requested by the Administrative Authority will be submitted promptly.

Corrective Action Management Unit/Temporary Unit (CAMU/TU)

With concurrence from NMED, EPA will coordinate with DOE and the laboratories to expedite to the extent possible the CAMU/TU permitting process for the management of on-site facility remediation wastes. This concept is aimed at expediting the environmentally sound management of these remediation wastes.

Sites for unit(s) at both laboratories will be chosen in a manner compatible with the CAMU rule. The possible need for treatment of wastes (and treatment options) will be evaluated for any proposed CAMU. The CAMU is a Class 3 and a TU is a Class 2 permit modification. The laboratories will provide timely and complete submissions to EPA, with concurrent copies to NMED. All parties are committed to reviewing an annotated outline of the CAMU/TU application prior to formal submission. At a minimum, it will address EPA's SOP and any NMED CAMU/TU checklist.

A major management option for the laboratories will be to utilize CAMU for appropriate treatment and disposal of remediation wastes. Depending on the outcome of internal engineering estimates, each Laboratory currently needs the following degrees of freedom for their evaluation:

1. The ability to have one or more CAMU sites.
2. A wide range of engineering options will be evaluated. The engineering option chosen will be demonstrated to be protective of human health and the environment.
3. The CAMU disposal site(s) would be designed to handle a variable volume of waste, up to a specified maximum. Along with this, the CAMU could be generically designated to receive remediation wastes from all SWMUs and PRSs at the given Laboratory.
4. The CAMU could include an internal or associated area (i.e., TU) used for the temporary staging of remediation derived wastes, which are slated for management elsewhere. The TU can operate for up to one year, with the possibility of a one-year extension. This would not trigger the need for a permitted greater than 90-day storage area.

Groundwater and Vadose Zone Monitoring

Monitoring approaches and systems may be proposed by the DOE and laboratories, and requirements will be determined by the Administrative Authority on a site-specific basis. Considerations include, but are not limited to, the nature and extent of contaminants in the vadose zone and groundwater; and available data from the site-wide groundwater studies at both laboratories.

The DOE and laboratories may propose to install vadose and/or groundwater monitoring in a step-wise manner. The DOE and laboratories may propose vadose zone monitoring when it provides more timely detection of releases than groundwater monitoring.

III.4. Other Important Considerations

Public Involvement

All parties are committed to involving the public in early and meaningful discussions concerning the ER programs at both laboratories. Community Relations Plans will be updated to include all current RCRA public participation requirements. The Plans also will include public involvement efforts beyond the regulatory requirements, such as meeting with Citizens Advisory Boards. The goal of these public involvement efforts is to give interested citizens and affected parties an opportunity to participate in the Administrative Authority's decision-making process with respect to ER activities.

Permit Modifications

To the extent possible, a one-pass permit modification approach should be used in the corrective action process for all Class III permit modifications. DOE and the laboratories will continue to work with the Administrative Authority to define this process. The process for permit modifications related to closures in the ER programs will be evaluated in Annex L.

Deliverable Submittal and Approval

As a means of standardizing form and content and reducing unnecessary repetition in submittals used in the ER programs, key documents will be identified, and annotated outlines of the information required in each deliverable will be provided in Annex N.

DOE and the laboratories will submit documents according to a schedule provided periodically to NMED and EPA. These deliverables will be reviewed; comments will be provided on a timely basis by the administrative authority.

Table 1. Annexes

- A. Acronyms and Definitions
- B. NFA Process and Criteria
- C. VCA Process and Criteria
- D. EC/VCM Process and Criteria
- E. Land Use
- F. Cleanup Levels
 - F.1. Hazardous Constituents–Risk Based
 - F.2. Radionuclides–Risk-Based Dose Levels
- G. Sampling and Analysis Guidelines
 - G.1. Waste and Site Characterization
 - G.2. Confirmation/Verification
- H. Remedy Selection Process
- I. Temporary Waste Storage
- J. CAMU/TU
- K. Groundwater and Vadose Zone Monitoring
- L. Permit Modification
- M. Public Involvement
- N. Deliverable Submittal and Approval
- O. Budget
- P. RCRA Closures

Annex Introduction

The DOU provides the basic guidelines and understandings reached among the signatory parties for the implementation of the SNL and LANL ER programs. These annexes contain more detailed agreements on specific subject areas, consistent with the guidelines and understandings of the DOU. It is noted that annexes are not stand-alone documents and are not to be implemented independently of each other. Each individual Annex must be used with its corresponding DOU section.

Each annex is signed by the appropriate representatives of each party. It is the expectation of all parties that these annexes will be revised from time to time to reflect additional experience gained, or changes in conditions. Additional annexes may be created to address new subject areas. In all cases, revisions to annexes or new annexes will be jointly developed and signed by all parties.

Annex A. Acronyms and Definitions

A.1 Acronyms

AA	Administrative Authority
AOC	Area of Concern
ADS	Activity Data Sheet
AEA	Atomic Energy Act
AL	Action Level
ALO	DOE Albuquerque Operations Office
ANSI	American National Standards Institute
ALARA	As Low as Reasonably Achievable
BDAT	Best Demonstrated Available Technology
CAMU	Corrective Action Management Unit
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COPC	Contaminant of Potential Concern (Radioactive and Chemical)
CMI	Corrective Measures Implementation
CMS	Corrective Measures Study
DOE	Department of Energy
DOU	Document of Understanding
DQO	Data Quality Objective
EC	Expedited Cleanup
EM	Environmental Management
EPA	US Environmental Protection Agency
ER	Environmental Restoration
HSWA	Hazardous and Solid Waste Amendments
IDM	Investigation Derived Materials
IDW	Investigation Derived Wastes
KAO	DOE Kirtland Area Office
LAAO	DOE Los Alamos Area Office
LANL	Los Alamos National Laboratory
NFA	No Further Action
NMED	New Mexico Environment Department
NOD	Notice of Deficiency
PRS	Potential Release Site
QA	Quality Assurance
QC	Quality Control
RAGS	Risk Assessment Guidance for Superfund
RCRA	Resource Conservation and Recovery Act
RESRAD	Residual Radioactivity
RFI	RCRA Facility Investigation
RSVP	Remedy Selection Verification Process
SACM	Superfund Accelerated Cleanup Model
SAL	Screening Action Level

SNL	Sandia National Laboratories - New Mexico
SOP	Standard Operating Procedure
SWMU	Solid Waste Management Unit
TA	Temporary Authorization
TU	Temporary Unit
TSD	Treatment, Storage and Disposal
UCL	Upper Confidence Level
VCA	Voluntary Corrective Action
VCM	Voluntary Corrective Measure
VOC	Volatile Organic Compound

A.2.

Administrative Authority (AA) The governmental agency with jurisdiction; generally NMED, EPA, or DOE.

Area of Concern (AOC) Unit that potentially contains COPCS such as radionuclides. Such units are not regulated under RCRA or HSWA but are being addressed by DOE's ER Project.

Activity Data Sheet (ADS) Document used for DOE Congressional budget request which itemizes scope and cost for a five year period.

Atomic Energy Act (AEA) An Act of Congress which created and defined the functions of the Atomic Energy Commission, and the predecessor agency to DOE.

Action Level (AL) A health- and environment-based concentration level, used by SNL which is protective of human health and the environment.

Albuquerque Operations Office (ALO) DOE's office in Albuquerque with overall responsibility for several DOE facilities.

American National Standards Institute (ANSI) A technical standard-setting organization which is located in Washington, D.C.

As Low As Reasonably Achievable (ALARA) An approach to radiation protection to control or manage exposures (both individual and collective to the work force and general public) as low as social, technical, economic, practical, and public policy considerations permit. ALARA is not a dose limit but a process, which has the objective of dose levels as far below applicable limits as reasonably achievable.

Best Demonstrated Available Technology (BDAT) Specific Technology used as the basis for setting Land Disposal Restriction concentrations.

Corrective Action Management Unit (CAMU) An area within a facility (or coextensive with the boundaries of the facility) designated for the purposes of carrying out corrective action requirements under 40 CFR §264.101 and RCRA §3008(h). Placement of wastes generated during a corrective action in a CAMU does not constitute land disposal.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) The Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986.

A federal law passed in 1980 and modified in 1986 by SARA. The acts created a special tax that goes into a trust fund, commonly known as Superfund, to

investigate and clean up abandoned or uncontrolled hazardous waste sites. The trust fund is not available to federal facilities.

Code of Federal Regulations (CFR) A codification of the general and permanent rules published in the Federal Register by the Executive departments and agencies of the Federal Government.

Contaminant of Potential Concern (COPC) Any chemical or radioactive constituent present in environmental media or on structural debris at a concentration that may present a risk to human health or the environment.

Corrective Measures Implementation (CMI) This step of the corrective action process carries out the chosen corrective measure, verifies its effectiveness, and proposes any follow-up control and monitoring procedures.

Corrective Measures Study (CMS) If the RCRA facility investigation indicates that further action is required, a "corrective measures study" will be performed to evaluate cleanup alternatives. This study will consider risks to human health and the environment, costs and engineering factors to determine acceptable remedy.

Department of Energy (DOE) The cabinet-level organization of the federal government responsible for energy research and development, including research into and development of nuclear energy and weapons.

Document of Understanding (DOU) Agreement signed in November, 1995 between NMED, EPA, LANL, SNL, KAO, LAAO, and DOE to document understandings reached between all the parties on key ER program areas.

Data Quality Objectives (DQOs) Qualitative and quantitative statements that are developed before sampling begins to define the quality of data that must be collected. This results in specifications for sampling and analysis plans, including, but not limited to, specifications of the media and areas to be sampled, sampling protocols to be used, variables to be measured, analytical methods to be used, and precision and accuracy requirements for the sampling and analysis procedures.

Expedited Cleanup (EC) Selection and implementation of an obvious and effective corrective action, which meets treatment and disposal restrictions and other limiting criteria, during or following the RFI to expedite remedial action.

Environmental Management (EM) Environmental operations staff responsible for restoration, treatment, storage and disposal

Environmental Protection Agency (EPA) A subcabinet federal agency with overall responsibility for environmental protection.

Environmental Restoration (ER) A term used to describe cleanup of federal facility lands according to processes laid out in RCRA and CERCLA.

Hazardous and Solid Waste Amendments (HSWA) Amendments to the Resource Conservation and Recovery Act that Congress passed in 1984. HSWA added the land disposal restriction, minimum technology requirements, and expanded corrective action authorities to basic RCRA requirements.

Investigation Derived Materials (IDM) Materials derived from site investigations.

Investigation Derived Wastes (IDW) Waste derived from site investigations, for example, contaminated personal protective equipment.

Kirtland Area Office (KAO) DOE office responsible for oversight of multiple DOE facilities at Kirtland Air Force Base and other areas.

Los Alamos Area Office (LAAO) DOE office responsible for oversight of LANL activities.

Los Alamos National Laboratory (LANL) National laboratory located in New Mexico which operates under DOE and is devoted to reducing the nuclear danger and high energy physics experimentation.

No Further Action (NFA) A decision that no further investigation or remediation is warranted for a PRS, based on attainment of risk levels appropriate for the future use of the site.

New Mexico Environment Department (NMED) Executive agency with primary responsibility for environmental protection in New Mexico.

Notice of Deficiency (NOD) Formal correspondence from the Administrative Authority which details deficiencies in regulatory documents which have previously been submitted to the agency for review.

Potential Release Site (PRS) A site suspected of releasing or having the potential to release contaminants into the environment. The ER Project has responsibility for investigating and, if necessary, cleaning up such sites on and around each Laboratory. PRS is a generic term that includes hazardous waste sites (SWMUs) listed in the HSWA Module and other sites that have been identified as potentially contaminated by radioactivity (AOCs).

Quality Assurance (QA) A definition of the appropriate quality required for sampling and analysis and other activities.

Quality Control (QC) A system of procedures, checks, audits and corrective actions to ensure that all activities meet quality assurance objectives.

Risk Assessment Guidance for Superfund (RAGS) Multi-volume guidance document from EPA outlining conventional risk assessment procedures.

Resource Conservation and Recovery Act (RCRA) A federal law passed in 1976 to establish a structure to track and regulate hazardous wastes from the time of generation to disposal. The law requires that safe procedures be used in treating, transporting, storing, and disposing of hazardous wastes. RCRA is designed to prevent new, uncontrolled hazardous waste sites, and to remediate old sites at permitted facilities.

Residual Radioactivity (RESRAD) Computer code for calculating residual radioactivity from radioisotopes over time.

Resource Conservation and Recovery Act Facility Investigation (RFI) A study to determine the type and extent of contamination at a PRS.

Remedy Selection Verification Process (RSVP) Application of proposed Subpart S preamble discussion to selection of remedy of SWMU.

Superfund Accelerated Cleanup Model (SACM) Model developed by EPA for expediting cleanup of Superfund sites.

Screening Action Level (SAL) A chemical concentration in soil or water below which there is no concern under RCRA for ingestion and inhalation, provided certain conditions are met as specified in 40 CFR 264.521 (Subpart S; EPA 1990, 0432).

Sandia National Laboratories - New Mexico (SNL) National laboratory which operates under the DOE and has a primary mission of providing engineering support to the nuclear weapons program.

Standard Operating Procedure (SOP) A document which describes in detail an operation, analysis, or action which is commonly accepted as the preferred method for performing certain routine or repetitive tasks.

Solid Waste Management Unit (SWMU) Any discernible unit at which hazardous wastes or hazardous constituents have been placed any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at or around a facility at which solid wastes have been routinely and systematically released.

Temporary Authorization (TA) Permitting approval or authorization given only for a specific time period or specific project.

Temporary Unit (TU) Generally, a tank or container storage unit located within the boundaries of a hazardous waste site during cleanup. May be used to store or treat wastes generated from corrective action activities within the facility for up to one year.

Treatment, Storage and Disposal (TSD) Site where a hazardous waste is treated, stored, or disposed; regulated by EPA and states under RCRA.

Upper Confidence Level (UCL) Statistical upper boundary of the mean of a set of measurements.

Voluntary Corrective Action (VCA) Cleanup performed at risk by DOE/Laboratory for simple SWMUs.

Voluntary Corrective Measure (VCM) See Expedited Cleanup (EC) definition.

Volatile Organic Compound (VOC) Low boiling point organic material; predominantly hydrocarbons.

Annex B. NFA Process and Criteria

A request for NFA for any SWMU can be made to the Administrative Authority based on the criteria presented below. Prior to submittal, sufficient documentation must be developed to provide reasonable assurance that an NFA is appropriate. To assist this process, DOE and the laboratories will conduct a site visit with the Administrative Authority upon request and review relevant information prior to submitting a request for NFA. The Administrative Authority makes the final determination on the NFA and if approved, a Class 3 modification to the HSWA Module of the Laboratory's RCRA Part B operating permit to delete the site from the HSWA Module will be put forward for public comment.

A determination by the Administrative Authority that a site has not met NFA criteria and needs further investigation does not necessarily mean that remedial action is required. It can indicate that more information or further evaluation is required. The results of any additional investigation may potentially lead to a proposal of NFA at a future point in the overall ER process, or alternatively, a Corrective Measures Study or other action may become necessary. These criteria apply to both SWMUs and AOCs.

The laboratories, DOE and the Administrative Authority are committed to a process to expedite the completion of NFAs. The process will include an informal review upon request in a technical staff level meeting, with relevant data, maps, etc. The DOE and the laboratories will then submit documentation to justify their request for NFA. The NFA information and proposal should be consistent with the results of the informal review.

NFA Criterion 1. The site cannot be located or has been found not to exist, is a duplicate PRS, or is located within and therefore, investigated as part of another PRS.

NFA Criterion 2. The site has never been used for the management (that is, generation, treatment, storage, or disposal) of RCRA solid or hazardous wastes and/or constituents or other CERCLA hazardous substances.

NFA Criterion 3. No release to the environment has occurred, nor is likely to occur in the future.

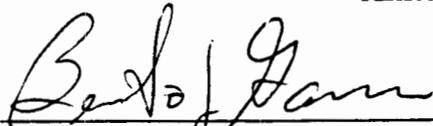
NFA Criterion 4. There was a release, but the site was characterized and/or remediated under another authority which adequately addresses corrective action, and documentation, such as a closure letter, is available.

NFA Criterion 5. The PRS has been characterized or remediated in accordance with current applicable state or federal regulations, and the available data indicate that contaminants pose an acceptable level of risk under current and projected future land use.

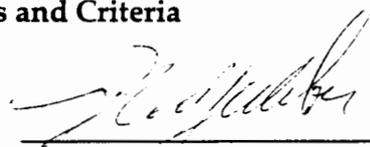
282

February 1, 1996
Revision 0

Annex B. NFA Process and Criteria



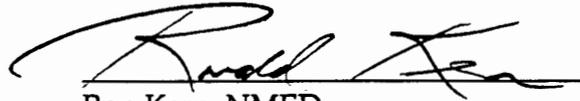
Benito J. Garcia, NMED
Chief, Hazardous and Radioactive
Materials Bureau



Neil S. Weber, NMED-AIP
Chief, DOE Oversight Bureau



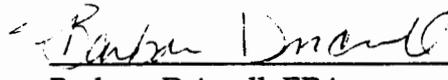
Barbara Hoditschek, NMED
Manager, RCRA Permit Program



Ron Kern, NMED
Manager, RCRA Technical
Compliance Program



FOR John W. Parker, NMED-AIP
Program Manager
DOE Oversight Technical Support



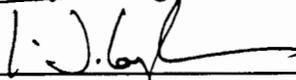
Barbara Driscoll, EPA
RCRA Facility Manager



Nancy Morlock, EPA
RCRA Facility Manager



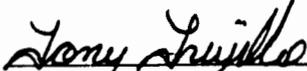
Julianne Levings, DOE/AL/ERD
ER Team Leader



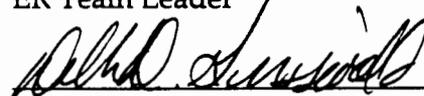
Ted Taylor, DOE/LAAO
ER Program Manager



Mark Jackson, DOE/KAO
ER Team Leader



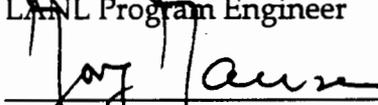
Tony Trujillo, DOE/AL/ERD
SNL Program Engineer



Deborah Griswold, DOE/AL/ERD
LANL Program Engineer



Warren Cox, SNL
Project Manager
Environmental Restoration Project



Jorg Jansen, LANL
Program Manager
Environmental Restoration Project



David Neleigh, EPA
Chief, New Mexico and Federal
Facilities Section

Annex C. VCA Process and Criteria

The VCA process is intended to address small-scale PRSs (mostly AOCs and some SWMUs) with relatively low-risk contamination. VCAs are implemented without prior approval of NMED and EPA. DOE and the laboratories will implement the VCAs at risk. Overall budgetary dollars to be allocated to VCAs will be discussed with NMED and EPA during budgetary negotiations.

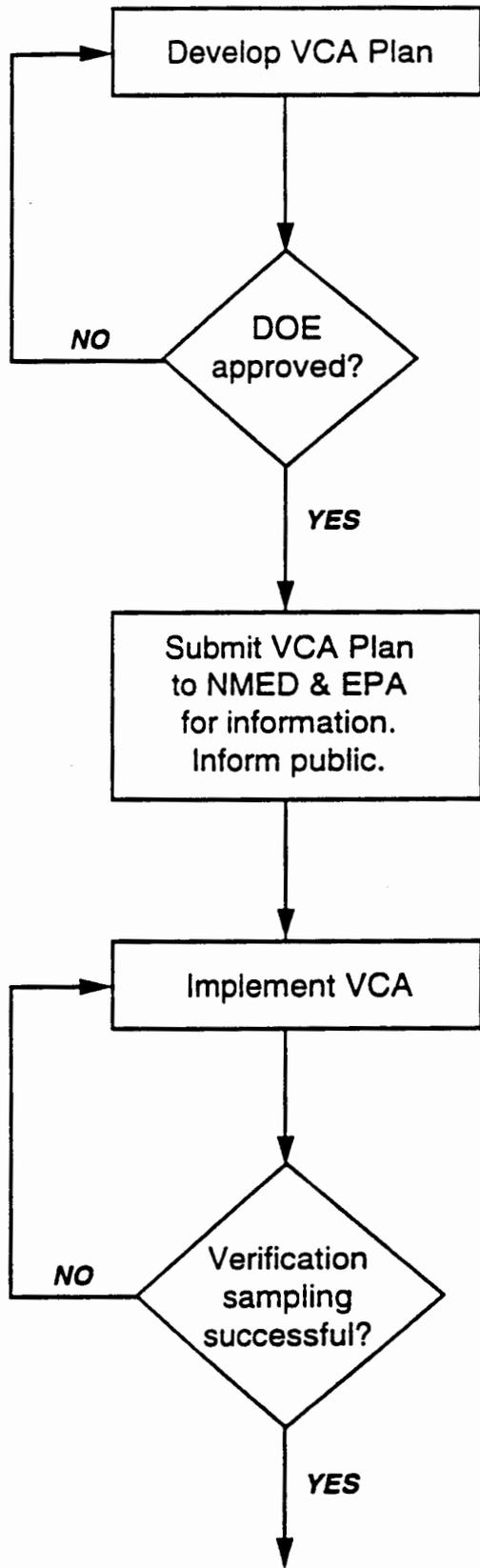
The criteria used to evaluate candidate sites for VCA include:

1. the potential remedy is obvious and can be readily applied;
2. the remedy will be a final resolution in order to prevent potential release or migration of contaminants from the site in the future;
3. previous sampling data and/or archival data are available to adequately identify constituents of concern;
4. adequate treatment, storage, and disposal (TSD) capacity is available for all expected waste types;
5. cleanup levels are based on background concentrations, promulgated standards, or previously determined risk-based levels;
6. estimated cost to complete the action is relatively small; and
7. estimated time to complete field activities is relatively short.

Candidate sites may include, but are not limited to:

- radioactive-only sites;
- some sites with promulgated remediation criteria; and
- non-systematic releases (e.g., spill cleanup criteria typically addressed by Spill Prevention Control and Countermeasures Plans).

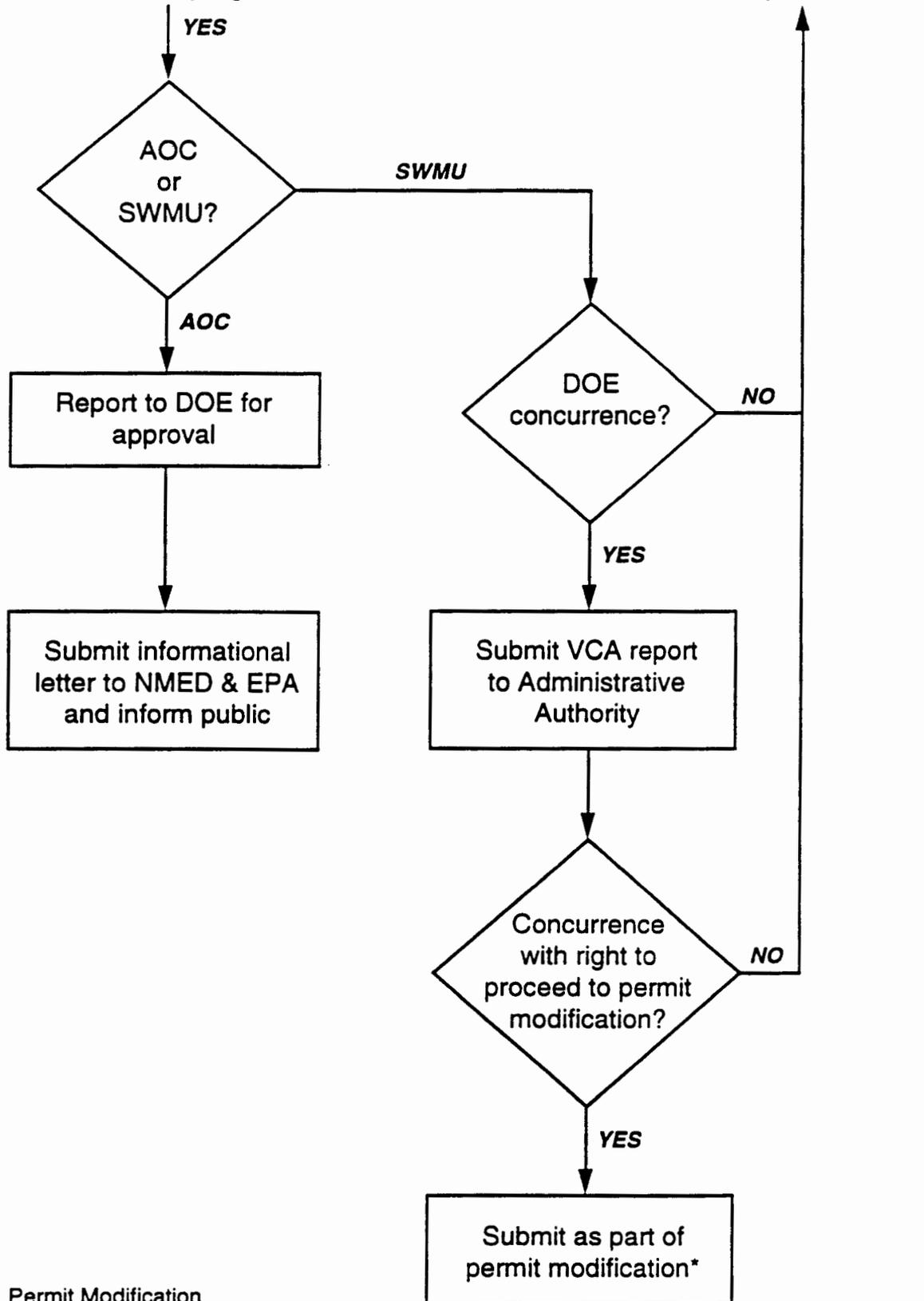
The VCA process is shown in Figure C-1. A VCA plan is developed by the facility. Similar VCA sites can be included in the same plan. Refer to the outline in Annex N (Deliverable Submittal and Approval). The VCA plan is then submitted to DOE for approval, and submitted to NMED and EPA and the public for informational purposes. VCA plans approved by DOE are implemented to the extent allowed by funding levels.



See Fig. C-1 (con't)

Figure C-1. VCA process.

From "Verification Sampling Successful?"



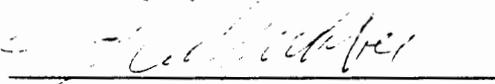
*See Annex L, Permit Modification

Figure C-1 (con't). VCA process.

After completion of the VCA, verification/confirmation sampling and analysis will be performed at Level III as defined in Annex G (Sampling and Analysis Guidelines). For AOCs, a VCA report will be sent to DOE for approval. Following approval, an informational letter will then be sent to NMED and EPA stating that the AOC has been cleaned up in accordance with the VCA plan. This letter will include a brief summary of the verification data. For SWMUs, the VCA report is submitted to the Administrative Authority for review and approval. If approved, the Laboratory will include the SWMU in an NFA for deletion from the permit.

Annex C. VCA Process and Criteria

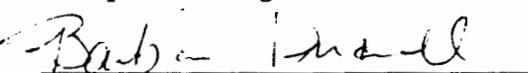

Benito J. Garcia, NMED
Chief, Hazardous and Radioactive
Materials Bureau


Neil S. Weber, NMED-AIP
Chief, DOE Oversight Bureau


Barbara Hoditschek, NMED
Manager, RCRA Permit Program

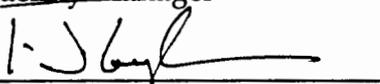

Ron Kern, NMED
Manager, RCRA Technical
Compliance Program

FN 
John W. Parker, NMED-AIP
Program Manager
DOE Oversight Technical Support

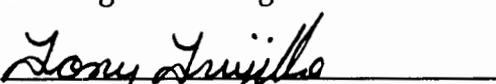

Barbara Driscoll, EPA
RCRA Facility Manager


Nancy Morlock, EPA
RCRA Facility Manager

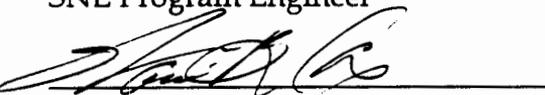

Julianne Levings, DOE/AL/ERD
ER Team Leader

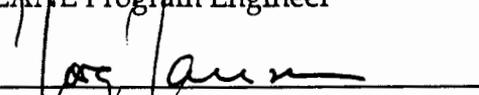

Ted Taylor, DOE/LAAO
ER Program Manager

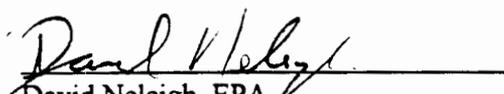

Mark Jackson, DOE/KAO
ER Team Leader


Tony Trujillo, DOE/AL/ERD
SNL Program Engineer


Deborah Griswold, DOE/AL/ERD
LANL Program Engineer


Warren Cox, SNL
Project Manager
Environmental Restoration Project


Jorg Jansen, LANL
Program Manager
Environmental Restoration Project


David Neleigh, EPA
Chief, New Mexico and Federal
Facilities Section

CANL SNL
↓ ↓
Annex D. EC/VCM Process and Criteria

The EC/VCM process is intended to address only SWMUs identified in the HSWA permit. The remedy may be more complex than for a VCA. The process is summarized in Figure D-1. In general, SWMUs meet the following initial five evaluation criteria (see previous VCA section) yet likely exceed the specific VCA when:

- the potential remedy is obvious and can be readily applied;
- the remedy will be a final resolution in order to prevent potential releases or migration of contaminants from the site in the future;
- acceptable knowledge is available to adequately identify constituents of concern;
- adequate treatment, storage, and disposal (TSD) capacity is available for all expected waste types; and
- candidates are higher ranked sites.

These units may require a risk assessment which will include human risk, and if needed, ecological risk, both at the appropriate level of detail. This will be used to establish cleanup levels prior to remedy implementation. Since the remedy selection is obvious, the site in question would not benefit from a full CMS. This EC/VCM process allows for regulatory and public review of remedy selection prior to implementation. Copies of any public comments received during the comment period will be provided to the Administrative Authority.

Candidate units for EC/VCM may include, but are not limited to:

- SWMUs where cleanup levels are based on a risk assessment, including, but not limited to those units with multiple contaminants of concern resulting in complex risk assessment issues from cumulative effects.
- SWMUs that are more complex requiring longer periods of time to remediate and more money, for example, those units with a history of continuous release likely resulting in larger volumes of contaminated media.

The contents and format for an EC/VCM plan are provided in the Deliverable Submittal and Approval Section of this DOU Annex. In addition, an EC/VCM plan may be developed for several SWMUs where the cleanup approach is similar and the approach employs similar concepts. To address several SWMUs within a single EC/VCM plan, the following elements must be analogous: SWMU types (i.e., firing sites, septic tanks, etc.), cleanup criteria, future land use, and remedial field operations and activities. When an EC/VCM plan addresses multiple units, a description of unit similarities as well as the specific details associated with each

individual unit (unit number, size, contaminants of concern, etc.) should be outlined in addenda to the plan.

EC/VCMs will follow the processes described in 40 CFR Part 270.42(c) for a Class 3 Permit Modification and 40 CFR Part 270.42 (e) for a temporary authorization (see Figure D-1). Generally, the Class 3 Permit Modification process will be followed and temporary authorization may be granted on a case-by-case basis. Once an EC/VCM plan is developed, EC/VCM procedures require public involvement and regulator review, and approval of characterization and cleanup criteria prior to site remediation. Upon receipt of approval of the permit modification or temporary authorization from the Administrative Authority, the approval letter will be attached to the EC/VCM Plan.

The DOE/Laboratories may choose to work at risk by beginning a physical cleanup before formal receipt of a temporary authorization or permit modification containing approved cleanup standards from the Administrative Authority. The DOE/Laboratories recognize that additional work at a site might be required if this is done. Conversely, the DOE/Laboratories may have EC/VCM plans pre-approved for implementation at a later time when funding permits. **[Open Item]**

After completion of the remedy, verification/confirmation sampling and analysis will be performed as discussed in Annex G, Sampling and Analysis Guidelines. The EC/VCM report will be submitted to the Administrative Authority in order to determine if the SWMU can be removed from the permit.

Summary Explanation of Figure D-1.

The primary benefit of the EC/VCM process is that all decisions related to ECs or VCMs can be made during one Class 3 Permit Modification process. A step-by-step description of the proposed process follows. Please refer to the flowchart.

Box 1. As with all permit-related initiatives, the DOE/Laboratories will pursue early consultation with EPA and NMED to discuss EC/VCMs prior to the development of the plans.

Box 2. The first formal step in the process is the submittal of a request for a Class 3 Permit Modification and a request for a temporary authorization. TAs are not intended to be used for routine purposes. According to 40 CFR 270.42 (e) (3) (ii) TAs are to be used for timely implementation of corrective action work; prevention of disruption to ongoing activities; responses to sudden changes; and to facilitate human health and environment.**[Open Item]**. Notifications (to the mailing list and in the newspaper) will address the EC/VCM process covering both the permit modification and TA requests. Publication of the newspaper notice begins the 60-day comment period.

Box 3. The DOE/Laboratory will conduct a public meeting. Public input at this stage on these topics will allow NMED to consider public comments prior to the issuance of the draft permit modification. Because only one Class 3 Permit Modification will be undertaken, this public meeting will cover all critical issues for the entire process. In particular, the following topics will be discussed by the DOE/Laboratory and the Administrative Authority as appropriate:

- the actual work to be performed (what actions will take place at which sites);
- the approval process for ECs/VCMs (the role of the temporary authorization and the one-step permit modification process, the later decisions on acceptable cleanup levels and adequacy of individual cleanups);
- the role of risk-based analysis; and
- proposed acceptable upper limits of residual contamination for cleanups.

NMED may provide informal comments to the DOE/Laboratory following the public meeting.

Box 4. The first public comment period ends. The DOE/Laboratory will summarize and submit to NMED any response to comments.

Box 5. NMED will evaluate the request, all comments, and the DOE/Laboratory responses to public comments received with respect to the two screening criteria (no unacceptable risks and no interference with attainment of the final remedy). NMED comments will be transmitted in the form of a NOD (**Box 5a**). The DOE/Laboratory will prepare and submit to NMED a response to the NOD (**Box 5b**).

Box 6. If NMED finds that the EC/VCM plans describe acceptable remedies and meet the two screening criteria, the TA may be issued. The TA only approves the conduct of the actual work and is not a commitment by NMED as to the adequacy of the cleanup. The TA is valid for a period of up to 180 days. If a TA is not issued, the DOE/Laboratory may decide to proceed at risk.

Box 7. Following issuance of the TA, the DOE/Laboratory will commence VCM field work.

Box 8. The cleanup will be conducted based upon the draft cleanup criteria. Confirmatory sampling will be performed to determine any residual constituent concentrations at the site and to verify that cleanup goals have been met.

Box 9. The confirmatory sampling results will be documented in the EC/VCM final report which is submitted to NMED, together with a deed restriction if applicable (see Annex L, Permit Modifications).

Box 10. NMED reviews final report. Any NMED comments will be transmitted in the form of a NOD (**Box 10a**). The DOE/Laboratory will prepare and submit to NMED a response to the NOD (**Box 10b**).

Box 11. NMED will issue a draft permit modification and statement of basis. The draft permit modification and statement of basis will address three primary issues, all of which were first discussed in early consultations and presented for public comment in the public meeting. These issues are: (1) the role of risk-based analysis; (2) the proposed acceptable limits of residual contamination (cleanup criteria); and (3) the process by which NMED will evaluate adequacy of cleanup, considering sampling results and the subsequent risk-based analysis.

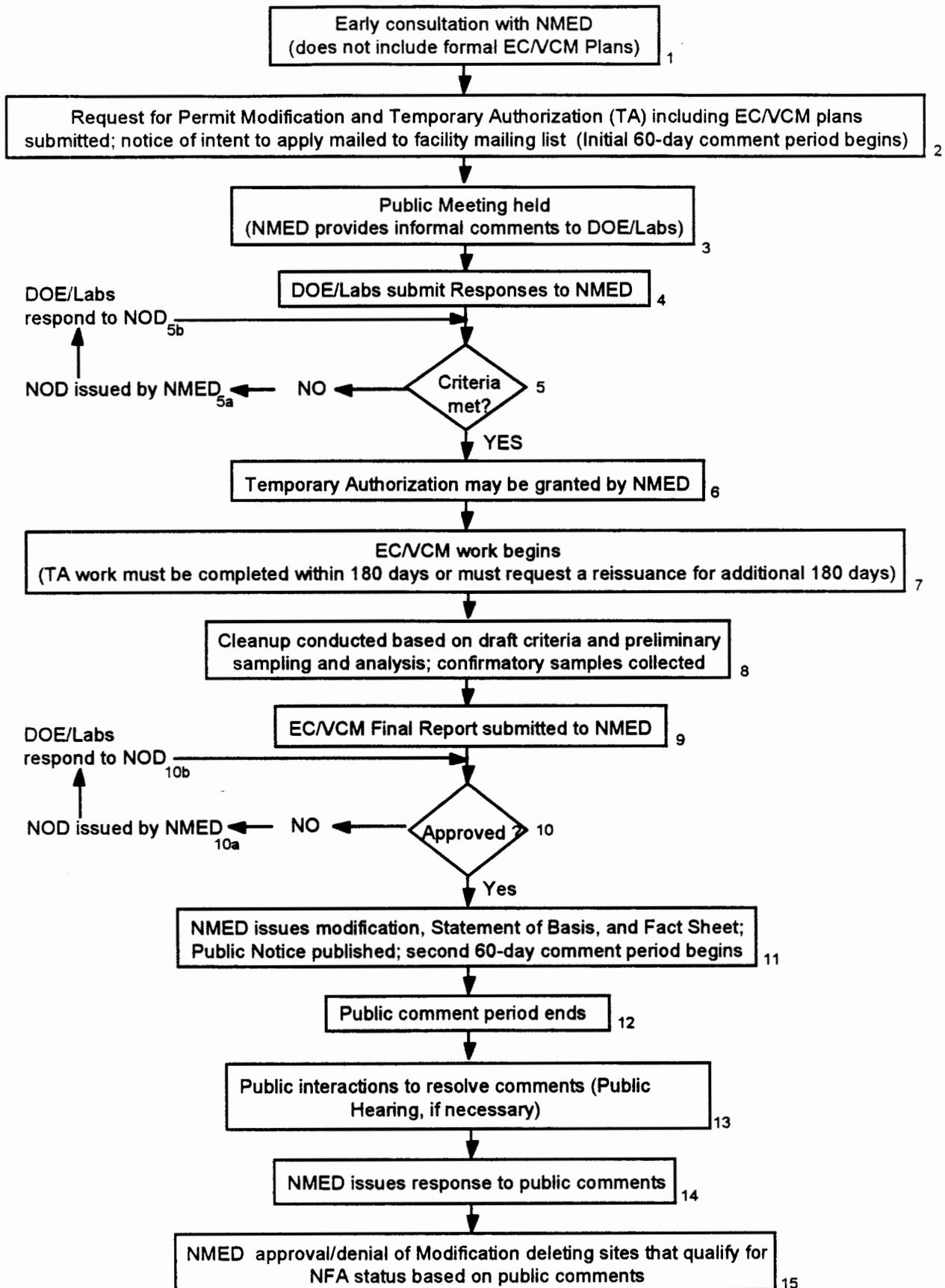
Box 12. Public comment period, initiated with the issuance of the draft permit, ends.

Box 13. Public interaction to resolve public comments if a public hearing is requested. A public hearing may be held if necessary.

Box 14. NMED issues response to public comments.

Box 15. NMED will issue a final permit decision and remove the SWMU from compliance requirements under the HSWA permit. This will conclude the Class 3 Permit Modification process.

**Figure D-1
EC and VCM Process**



Signature Page

Annex D. EC/VCM Process and Criteria

Benito J. Garcia, NMED
Chief, Hazardous and Radioactive
Materials Bureau

Neil S. Weber, NMED-AIP
Chief, DOE Oversight Bureau

Barbara Hoditschek, NMED
Manager, RCRA Permit Program

Ron Kern, NMED
Manager, RCRA Technical
Compliance Program

John W. Parker, NMED-AIP
Program Manager
Oversight Technical Support

David Neleigh, EPA
Chief, New Mexico and Federal DOE
Facilities Section

Barbara Driscoll, EPA
RCRA Facility Manager

Nancy Morlock, EPA
RCRA Facility Manager

Ted Taylor, DOE/LAAO
ER Program Manager

Julianne Levings, DOE/AL/ERD
ER Team Leader

Mark Jackson, DOE/KAO
ER Team Leader

Tony Trujillo, DOE/AL/ERD
SNL Program Engineer

Deborah Griswold, DOE/AL/ERD
LANL Program Engineer

Warren Cox, SNL
Project Manager
Environmental Restoration Project

Jorg Jansen, LANL
Program Manager
Environmental Restoration Project

Annex E. Land Use

Land uses, designated by DOE and the laboratories (over a 30-year planning horizon) include, but are not limited to, industrial, recreational, and residential. These terms are not intended to represent zoning areas as they relate to city planning zones. Rather, these terms determine the risk approach which will be proposed at a PRS by the Laboratory. For example, "residential" when used as a future land use means that the level of cleanup would provide exposure risk reduction appropriate for a residential setting. It does not mean that the area would necessarily be zoned for residential use by the city or county.

The land uses and associated exposure assumptions are fundamental to the development of risk based cleanup levels. The default exposure assumptions for each land use are addressed in Annex F (Cleanup Levels).

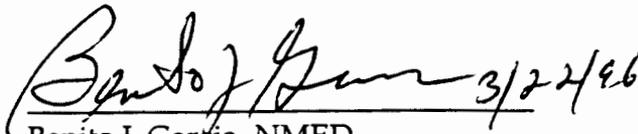
Institutional controls are inherent in all land use scenarios except residential. The Administrative Authority must be satisfied that these controls are adequate for a specific site at which they are used.

Institutional controls include:

1. For PRS(s) designated for future industrial land use on DOE property, access is limited to workers or authorized visitors by normal Laboratory operations and procedures, which restrict the general public from casual access. These include signs, sign-in procedures, and general facility surveillance and security as appropriate.
2. For PRS(s) designated for future recreational land use, warning or informational signs constitute minimum institutional controls.

The Administrative Authority may require additional institutional controls, such as water use restrictions to supplement engineering controls, as appropriate, for short- and long-term management to prevent or limit exposure to contaminants. The use of institutional controls shall not substitute for active response measures (e.g. treatment and/or containment of source material) as the sole remedy unless such active measures are determined not to be practicable during or following remedy selection.

For PRSs remediated to cleanup levels other than background or residential, a deed restriction or equivalent land use restriction will be entered with the appropriate authority and submitted to the Administrative Authority during the HSWA permit modification process (refer to Annex L, Permit Modification).

 3/22/96

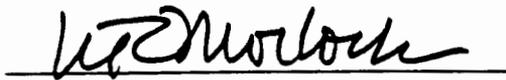
Berito J. Garcia, NMED
Chief, Hazardous and Radioactive
Materials Bureau



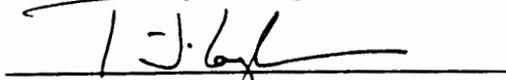
Barbara Hoditschek, NMED
Manager, RCRA Permit Program



For John W. Parker, NMED-AIP
Program Manager
DOE Oversight Technical Support



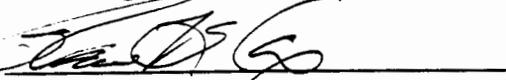
Nancy Morlock, EPA
RCRA Facility Manager



Ted Taylor, DOE/LAAO
ER Program Manager



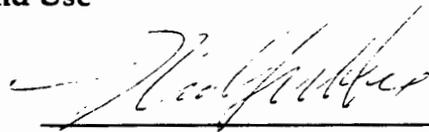
Tony Trujillo, DOE/AL/ERD
SNL Program Engineer



Warren Cox, SNL
Project Manager
Environmental Restoration Project



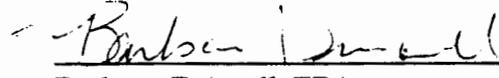
David Neleigh, EPA
Chief, New Mexico and Federal
Facilities Section



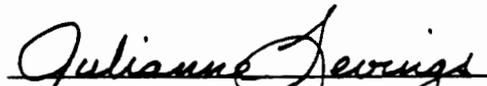
Neil S. Weber, NMED-AIP
Chief, DOE Oversight Bureau



Ron Kern, NMED
Manager, RCRA Technical
Compliance Program



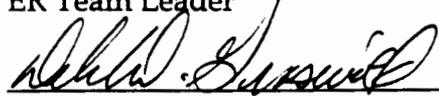
Barbara Driscoll, EPA
RCRA Facility Manager



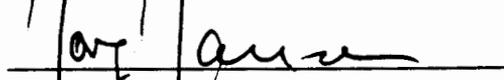
Julianne Levings, DOE/AL/ERD
ER Team Leader



Mark Jackson, DOE/KAO
ER Team Leader



Deborah Griswold, DOE/AL/ERD
LANL Program Engineer



Jorg Jansen, LANL
Program Manager
Environmental Restoration Project

ANNEX F. Cleanup Levels

Introduction

The purpose of this annex is to provide guidance to the DOE/Laboratories for developing human health risk-based cleanup levels for sites to be remediated. For any given site, the ultimate objective of the approach is to reach a point at which no further action (NFA) is necessary to achieve acceptable levels of risk to human health and the environment. If the site poses an unacceptable risk to human health or the environment, remedial alternatives will be evaluated and cleanup standards will be proposed to the Administrative Authority.

One of the ER Program's primary roles is to design and conduct data collection activities that will be sufficient to support each decision made during the corrective action process. DOE/Laboratories recognize that the Administrative Authority has final decision authority and will base decisions on data provided by the Laboratories.

The proposed approach for implementing the corrective action process at the Laboratories is intended to facilitate the rapid cleanup of those units that potentially pose an unacceptable human health risk. Sites failing an initial screening assessment may undergo further evaluation to provide data sufficient to support NFA, a site-specific baseline risk assessment, or remedy selection. A determination of whether the remediated site meets the established cleanup standards will be necessary in order to complete the corrective action.

The assumptions used to implement the corrective action process are presented in the LANL and SNL/NM Risk-Based Corrective Action Process Document, which is pending approval by the Administrative Authority. Those assumptions pertaining specifically to this annex are summarized below.

Risk-Based Decision Assumptions

Constituents identified as contaminants of potential concern (COPCs) because the detection limit was greater than the screening level may be evaluated qualitatively based on process knowledge. If a COPC is not expected to be present at a site, the COPC needs no further consideration. Risks to human health and the environment posed by contamination at a site are necessary considerations in further decisions about a site (e.g., NFA, risk assessment or remedy selection). Decisions made after comparison of analytical data to screening levels are based on generic, conservative assumptions. Appropriate site-specific risks may differ from screening conclusions because the exposure assumptions underlying the screening level calculation are not site-specific, and also because risk depends on the extent of contamination, the number of constituents, as well as the concentration. Site-specific land-use assumptions and exposure scenarios are considered in establishing media cleanup standards, and also in risk assessments to estimate the residual risk realized by a potential corrective action. Fate and transport properties of the COPCs should be

considered in establishing media-specific cleanup standards. Any generic cleanup levels proposed for simple sites and given COPCs should be formulated using USEPA conservative default assumptions. Risk due to background for the appropriate site-specific exposure scenarios will be calculated and presented with the site risk from COPCs for use in the risk management cleanup level decision. Estimation of risks to human health and the environment is based on reasonable and site-specific exposure assumptions. Human health and ecological risks can only be appropriately evaluated on a scale of relevant exposure units, thus individual sites may be aggregated as necessary for appropriate risk evaluation. The size of each aggregate may differ for human health and ecological evaluations depending on the receptors.

Media cleanup standards may also be impacted by financial constraints. Alternate standards, within the acceptable risk range, may be proposed for consideration if lower cleanup levels cause the cost of remediation to be prohibitively high. If a less conservative standard is proposed due to financial constraints the Administrative Authority will be provided a comparison of the financial and risk impacts for both standards.

Exposure estimates are based on the distribution of contamination throughout areas/volumes of contaminated media and over time periods that are consistent with land use assumptions.

The DOE/Laboratories may pursue a set of generic cleanup levels for simple sites and given COPCs. A table of these standard levels will be formulated using EPA's exposure assumptions based on several different land uses. These may be presented at a later date as a separate addendum to this annex.

F.1. Hazardous Constituents

Following EPA guidance, media cleanup standards for non radioactive carcinogens are derived using EPA's target incremental risk range of 10^{-4} to 10^{-6} . A target hazard index value of 1 is used for non-carcinogens. If prior to, or following remediation, the total carcinogenic risk at a site falls within the target range, or lower, and the non-carcinogenic risk threshold has not been exceeded, the site may be proposed for NFA.

Signature Page

Annex F. Cleanup Levels

Benito J. Garcia, NMED
Chief, Hazardous and Radioactive
Materials Bureau

Neil S. Weber, NMED-AIP
Chief, DOE Oversight Bureau

Barbara Hoditschek, NMED
Manager, RCRA Permit Program

Ron Kern, NMED
Manager, RCRA Technical
Compliance Program

John W. Parker, NMED-AIP
Program Manager
Oversight Technical Support

David Neleigh, EPA
Chief, New Mexico and Federal DOE
Facilities Section

Barbara Driscoll, EPA
RCRA Facility Manager

Nancy Morlock, EPA
RCRA Facility Manager

Ted Taylor, DOE/LAAO
ER Program Manager

Julianne Levings, DOE/AL/ERD
ER Team Leader

Mark Jackson, DOE/KAO
ER Team Leader

Tony Trujillo, DOE/AL/ERD
SNL Program Engineer

Deborah Griswold, DOE/AL/ERD
LANL Program Engineer

Warren Cox, SNL
Project Manager
Environmental Restoration Project

Jorg Jansen, LANL
Program Manager
Environmental Restoration Project

F.2. Radionuclides

For complex industrial sites with radionuclide contamination only, DOE's dose limit of 100 mrem/yr, with ALARA considerations, may be used to calculate media cleanup standards for radionuclides using RESRAD methodology or other appropriate methods. The EPA proposed dose limit of 15 mrem/yr for a single site should also be considered. If the expected radiation dose does not exceed cleanup requirements in DOE Orders, the site will proposed for NFA under DOE jurisdiction.

The estimates of the lifetime risk of cancer to exposed individuals resulting from radiological and chemical risk assessments may be summed in order to determine the overall potential human health hazard associated with a site.

Verification of Cleanup

The attainment of cleanup standards is based on achievement of the required risk levels or promulgated standards judged to be relevant to the site by the Administrative Authority. Verification sampling plans based on nature and extent will be designed to collect the appropriate number of samples to calculate a 95% UCL to compare to cleanup levels. The DOE/Laboratories will provide to the Administrative Authority the statistical method to be used to calculate the 95% UCL. The 95% UCL will estimate average residual concentrations in appropriate areas/volumes of contaminated media used in the risk analysis. The 95% UCL is a conservative comparison. If the site has been remediated to appropriate, agreed-upon, standards but the 95% UCL does not indicate this, the Laboratories may propose using a comparison of individual data points, or other similar comparison. These will be used on a site-specific basis.

Annex G. Sampling and Analysis Guidelines

Sampling and analysis for environmental contaminants are performed in, but not limited to, the following media: surface and subsurface materials, runoff, surface water, sediment, ground water, biota, ambient air, and in some cases, unsaturated zone pore gas. Generally, sampling and analysis are done during the following basic stages of site data development: screening, site characterization, waste characterization, and confirmation/verification of cleanup. Sampling and analysis are conducted consistent with the policy of the Administrative Authority and the following EPA Guidance documents.

- | | |
|------------------------|---|
| EPA, 1986. | <i>RCRA Ground-Water Monitoring Technical Enforcement Guidance Document</i> , OSWER Directive 9950.1, September 1986 (EPA/530-R-93-001). |
| EPA, 1986/updated 1992 | <i>Test Methods for Evaluating Solid Waste, Physical/Chemical Methods and Final Update</i> , SW-846, Third Edition, November 1986, revised July 1992. |
| EPA, 1989. | <i>Soil Sampling Quality Assurance User's Guide (Second Edition)</i> . Environmental Monitoring Systems Laboratory. EPA/600/8-89/046, March 1989. |
| EPA, 1989. | <i>Interim Final, RCRA Facility Investigation (RFI) Guidance Documents, Volumes I-IV</i> , OSWER Directive 9502.00-6D, EPA 530/SW-89-031, May 1989. |
| EPA, 1992a. | <i>Guidance for Data Usability in Risk Assessment (Part A)</i> , EPA Office of Solid Waste and Emergency Response (OSWER) 9285.709A, PB92-963356, April 1992. |
| EPA 1992b. | <i>RCRA Ground-Water Monitoring: Draft Technical Guidance</i> , EPA 530-R-93-001, PB93-139350, November 1992. |
| EPA, 1994. | <i>Guidance for the Data Quality Objectives Process</i> , EPA QA/G-4, September 1994. |

In the event that EPA Guidance documents change in such a way as to require a revision to this Annex, the revision procedure outlined in the Annex Introduction will be followed.

All sampling and analysis requirements will be determined by the application of data quality objectives (DQOs) that are tied to decisions regarding the site in question. A seven-step DQO process is outlined by EPA (1994), beginning with the statement of the problem, and ending with the most resource-effective design that meets all the DQOs. The process is intended to be flexible and is frequently iterative. For example, a site soil boring characterization program at a landfill might be aimed at defining the outer envelope of unsaturated zone contamination. This would allow the development of acceptable locations for future unsaturated zone monitoring devices just outside the zone of contamination.

Levels of data quality are distinguished by the types of technology and documentation used and their degree of sophistication. The appropriate data quality levels must be met by and documented for all analytical labs. DOE/Laboratories will ensure that all analytical laboratories have passed a lab audit program.

Generally, SW-846 methods, or EPA-approved equivalent, are used for waste and site characterization and confirmation/verification of cleanup. Subject to the approval of the Administrative Authority, other analytical methods may be used for site data development.

Field analysis is characterized by the use of analytical instruments which can be used on-site or in mobile laboratories stationed near a site (nearby support labs). An example would be a field gas chromatography instrument. Depending upon the types of contaminants, sample matrix, and personnel skills, qualitative and quantitative data can be obtained. These data may be used for screening and site characterization.

Field screening is characterized by the use of portable instruments which can provide real-time data, for example, an HNu meter. Field screening may be used to assist in the optimization of sampling point locations and for health and safety support. Field screening may also be used for site characterization when used with other confirmatory analysis. At least 10% of the screening data are verified using field analysis or SW-846 (or EPA-approved equivalent) analyses. Screening data without associated confirmatory analyses are not considered to be data of known quality. Field screening tools must be able to identify COPCs. Detection limits must be at or below action levels consistent with the use of data. Field screening detection limits will be presented in plans and reports. Field screening data are generated by less precise methods of analysis with simple sample preparation techniques.

QA/QC samples (duplicates; field, trip, and rinsate blanks) will generally be equal to a minimum of 10% or a maximum of 20% of the suites required for SW-846 (or EPA-approved equivalent) laboratory analyses. The higher end of

this range may be used for smaller sample sets or for particularly difficult analyses. The analytical laboratory's internal QA/QC requirements will be defined by the test method itself, and documented in the Laboratory's Quality Assurance Plan or site-specific sampling and analysis plan.

When the environmental media at a site have been remediated, the area involved will be subject to confirmation/verification sampling. An appropriate number of samples will be taken to demonstrate compliance with cleanup levels (See Section G.5). The samples generated will be analyzed for the COPCs at this site.

G.1 Site Characterization Requirements

Site characterization encompasses both the screening phase and the data development phase for determining the appropriate outcome for the site (e.g., NFA or the likely method of remediating the site). In general, the site will be sampled to characterize the nature and extent of contamination with enough confidence to compare to screening action levels (SALs) / action levels (ALs) and/or background. Comparisons to background may be required, for example, to determine if a release has occurred and/or to use in risk assessments. In order to avoid the utilization of unnecessary analytical suites on numerous samples, analyses may be phased to narrow down the constituents of concern at an early stage.

All required sampling and analyses will be defined by plans subject to the approval of the Administrative Authority. For small sites, excavation followed by verification sampling can satisfy some site characterization requirements.

The DOE/Laboratories may use process knowledge to define the analytical suites required (radionuclide, metals, VOC, etc.). A full range of analytical suites should be used for the first round of sampling unless sufficient documentation of process knowledge as acknowledged by the Administrative Authority is available.

In general, surface soil samples (0-2 feet deep), will be obtained from intervals not greater than 6 inches. Deeper soil samples from borings will be obtained from intervals no greater than 12 inches in length. The spacing of boring samples will generally range from 5-foot increments to no greater than 20-foot increments within the borehole. The sample spacing must be justified based on the actual use for the data.

Runoff and sediment samples normally are collected as close to the source as possible and supplemented by additional downstream and upstream points. This may vary depending on site-specific conditions. The point of compliance is the point where the discharge enters surface drainage or as otherwise determined by the Administrative Authority.

G.2 Media Sampling

The use of filtered or unfiltered samples for analysis will be tied to the future exposure assumptions at a site. These assumptions could be pertinent to human health risk as well as ecological risk. Some general guidelines follow.

Ground Water - Unfiltered samples will be collected. However, if ground water would be used potentially as a drinking water supply and it is normally filtered, or if there is an applicable administrative requirement, filtered samples would also be collected.

Soil Pore Water - Samples are analyzed as collected in a lysimeter.

Runoff and Surface Water - Samples are unfiltered because this measures the small particles which are suspended in the runoff.

Ambient and Pore Air - Samples are filtered only to the extent required by the air sampling method.

G.3 Waste Characterization Requirements

When wastes or contaminated media are generated from a PRS and the wastes are to be disposed off-site, analysis will be done to meet the administrative requirements of the disposal facility. If the waste is to be disposed on-site, it must be analyzed consistent with the administrative regulatory requirements for that facility unit.

Investigation Derived Materials (IDM) (i.e., any environmental media including soil core material, purged ground water, drill cuttings, etc.) will be labeled "pending analysis" and managed in an environmentally protective manner. It will not become a waste until laboratory analyses are received which indicate that the materials contain hazardous, mixed, radioactive or other constituents meeting waste definitions, including solid. At this point, the material becomes an Investigation Derived Waste (IDW).

G.4 Integrated Characterization and Cleanup

For some sites, characterization and cleanup will occur concurrently. This process is defined in the "LANL/SNL(NM Risk-Based Corrective Action Process" document. This document is pending approval by the Administrative Authority.

G.5 Confirmation/Verification

When a site has been remediated, the area which was cleaned will be subject to confirmation/verification sampling. The samples generated will be analyzed for the COPCs at the site. The size of the sampling area will be justified based on risk analysis. The detection limits must be at or below the cleanup levels. The entire confirmation/verification sampling plan will be subject to approval by the Administrative Authority.

Annex G. Sampling and Analysis Guidelines

Benito J. Garcia, NMED
Chief, Hazardous and Radioactive
Materials Bureau

Neil S. Weber, NMED-AIP
Chief, DOE Oversight Bureau

Barbara Hoditschek, NMED
Manager, RCRA Permit Program

Ron Kern, NMED
Manager, RCRA Technical
Compliance Program

John W. Parker, NMED-AIP
Program Manager
Oversight Technical Support

David Neleigh, EPA
Chief, New Mexico and Federal DOE
Facilities Section

Barbara Driscoll, EPA
RCRA Facility Manager

Nancy Morlock, EPA
RCRA Facility Manager

Ted Taylor, DOE/LAAO
ER Program Manager

Julianne Levings, DOE/AL/ERD
ER Team Leader

Mark Jackson, DOE/KAO
ER Team Leader

Tony Trujillo, DOE/AL/ERD
SNL Program Engineer

Deborah Griswold, DOE/AL/ERD
LANL Program Engineer

Warren Cox, SNL
Project Manager
Environmental Restoration Project

Jorg Jansen, LANL
Program Manager
Environmental Restoration Project

Annex H. Remedy Selection Process

This remedy selection process applies to all PRSs. The DOE/Laboratories will propose that the Administrative Authority approve the following: the location where compliance levels must be achieved; the sampling and analysis plan that will be used to determine compliance; and the length of time (if any) that a site must be monitored following attainment of approved cleanup levels.

When the Administrative Authority and DOE/laboratory agree that it is in the interest of human health and the environment to delay implementation of the final remedy, interim measures may be proposed subject to approval by the Administrative Authority. For example, interim measures may be needed at active laboratory sites. Such remedies include prompt corrective measures that reduce risk, and/or partial cleanup when total cleanup is currently impractical. When an interim measure is used, the site must be revisited after a pre-established period to determine whether additional action will be required or the interim measure is appropriate for a final remedy.

The applicable remedy selection approval and permit modification process will be followed. The remedy will be consistent with EPA's Remedy Selection Verification Process (RSVP). RSVP is an acronym developed for this Document of Understanding to serve as a shorthand for the remedy selection considerations embodied in EPA's proposed Part 264 Subpart S. Briefly stated, Subpart S requires that the following general decision factors be utilized in the selection of remedy:

- Long-term reliability and effectiveness,
- Reduction of toxicity, mobility, or volume of wastes,
- Short-term effectiveness (particularly during the implementation phase),
- Implementability, and
- Cost.

Innovative technologies may be proposed as a remedy, consistent with the above criteria. Full scale demonstration of the technology is not a prerequisite for selection. However, a bench scale demonstration might be necessary to determine if the remedy will be effective at the site. If the acquisition of additional test data is needed in order to encourage innovative technology, a reasonable extension in schedule may be required. In some cases, innovative technology may appear to be beneficial regarding technical time or cost advantages such that a delay in final remedy selection may be needed until necessary data are developed.

Completion of Remedy

Upon completion of the remedy, DOE/laboratory will submit a final cleanup verification report and may also submit a request to terminate the schedule of compliance. The final cleanup verification report or request to terminate the schedule of compliance will include verification that all media cleanup levels have been achieved (See Annex F) and actions required for source control have been satisfied. The Administrative Authority will then review the submittal to determine whether a remedy has been completed in accordance with the requirements. After such determination, the Administrative Authority will modify the permit to remove the site from the permit list. In the case of an AOC, a permit modification is not necessary because DOE is the Administrative Authority.

Signature Page

Annex H. Remedy Selection Process

Benito J. Garcia, NMED
Chief, Hazardous and Radioactive
Materials Bureau

Neil S. Weber, NMED-AIP
Chief, DOE Oversight Bureau

Barbara Hoditschek, NMED
Manager, RCRA Permit Program

Ron Kern, NMED
Manager, RCRA Technical
Compliance Program

John W. Parker, NMED-AIP
Program Manager
DOE Oversight Technical Support

David Neleigh, EPA
Chief, New Mexico and Federal
Facilities Section

Barbara Driscoll, EPA
RCRA Facility Manager

Nancy Morlock, EPA
RCRA Facility Manager

Ted Taylor, DOE/LAAO
ER Program Manager

Julianne Levings, DOE/AL/ERD
ER Team Leader

Mark Jackson, DOE/KAO
ER Team Leader

Tony Trujillo, DOE/AL/ERD
SNL Program Engineer

Deborah Griswold, DOE/AL/ERD
LANL Program Engineer

Warren Cox, SNL
Project Manager
Environmental Restoration Project

Jorg Jansen, LANL
Program Manager
Environmental Restoration Project

Annex I. Temporary Waste Storage

The generation of hazardous wastes, mixed wastes, and radioactive wastes via the cleanup of PRSs may require temporary storage beyond the 90-day accumulation time limit pursuant to 40 CFR Section 262.34 (a). It is important to assure adequate storage capacity in order to accelerate cleanup. In the spirit of partnering among all parties to this agreement, one or more of the following options will be considered:

1. A 180-day temporary authorization for a storage permit. If longer storage is required, a 180-day extension may be issued, or a permit application for a final permit may be developed and submitted during the first 60 days of the 180-day temporary authorization period, if required.
2. Development of an expedited permit modification for a permanent storage area. *270.15*
3. Utilization of an approved TU as storage for transient-approved remediation wastes for off-site shipment.
4. Utilization of appropriate space available within the outline of a CAMU disposal area to temporarily stage approved remediation waste prior to final placement in the CAMU.

If temporary storage for solid wastes becomes necessary, the affected Laboratory will establish a solid waste storage area with proper notification and/or approval from NMED's Solid Waste Bureau.

Signature Page

Annex I. Temporary Waste Storage

Benito J. Garcia, NMED
Chief, Hazardous and Radioactive
Materials Bureau

Neil S. Weber, NMED-AIP
Chief, DOE Oversight Bureau

Barbara Hoditschek, NMED
Manager, RCRA Permit Program

Ron Kern, NMED
Manager, RCRA Technical
Compliance Program

John W. Parker, NMED-AIP
Program Manager
DOE Oversight Technical Support

David Neleigh, EPA
Chief, New Mexico and Federal
Facilities Section

Barbara Driscoll, EPA
RCRA Facility Manager

Nancy Morlock, EPA
RCRA Facility Manager

Ted Taylor, DOE/LAAO
ER Program Manager

Julianne Levings, DOE/AL/ERD
ER Team Leader

Mark Jackson, DOE/KAO
ER Team Leader

Tony Trujillo, DOE/AL/ERD
SNL Program Engineer

Deborah Griswold, DOE/AL/ERD
LANL Program Engineer

Warren Cox, SNL
Project Manager
Environmental Restoration Project

Jorg Jansen, LANL
Program Manager
Environmental Restoration Project

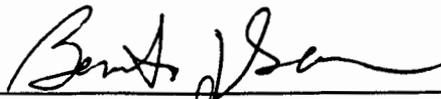
Annex J. CAMU/TU

Corrective Action Management Units(s) (CAMU) and Temporary Unit(s) (TU) will be used to handle remediation wastes consistent with EPA's final rule (2/16/93). Prior to submission of the permit modification application, the Administrative Authority can request relevant information to support the decision to proceed.

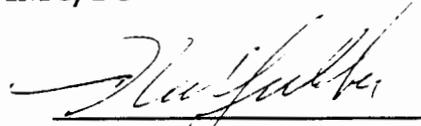
The CAMU/TU could accept all remediation wastes including hazardous, non-hazardous, mixed, and low level radioactive wastes from the ER program. Should DOE/laboratories request low level radioactive wastes be included in the CAMU, they would provide to the Administrative Authority documentation to demonstrate how all DOE requirements are met. The wastes would have to be compatible both with each other (or properly separated within the unit) and with the engineered components of the CAMU/TU units. Information on all wastes, including radioactive wastes, will be included in the CAMU/TU proposal to the Administrative Authority.

If a common infrastructure is used, boundaries of units will be clearly delineated to prevent inadvertent mixing of laboratory and remediation wastes.

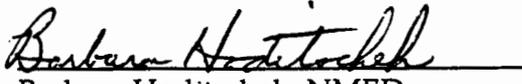
Annex J. CAMU/TU

 3/22/96

Benito J. Garcia, NMED
Chief, Hazardous and Radioactive
Materials Bureau



Neil S. Weber, NMED-AIP
Chief, DOE Oversight Bureau



Barbara Hoditschek, NMED
Manager, RCRA Permit Program



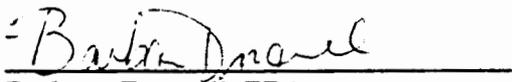
Ron Kern, NMED
Manager, RCRA Technical
Compliance Program

For 

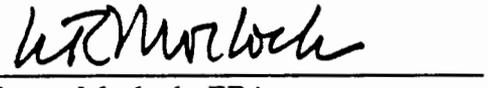
John W. Parker, NMED-AIP
Program Manager
Oversight Technical Support



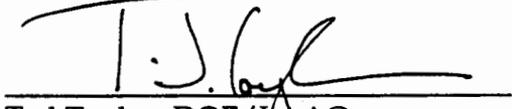
David Neleigh, EPA
Chief, New Mexico and Federal DOE
Facilities Section



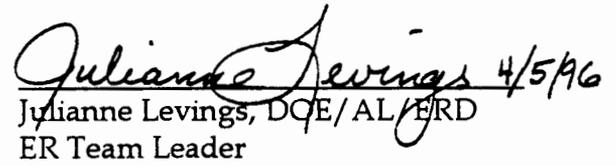
Barbara Driscoll, EPA
RCRA Facility Manager



Nancy Morlock, EPA
RCRA Facility Manager



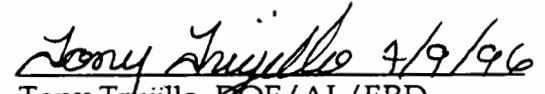
Ted Taylor, DOE/LAAO
ER Program Manager

 4/5/96

Julianne Levings, DOE/AL/ERD
ER Team Leader



Mark Jackson, DOE/KAO
ER Team Leader

 4/9/96

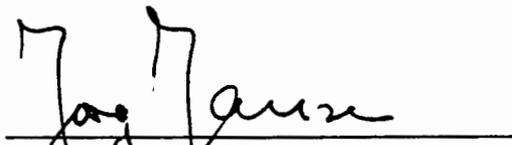
Tony Trujillo, DOE/AL/ERD
SNL Program Engineer



Deborah Griswold, DOE/AL/ERD
LANL Program Engineer



Warren Cox, SNL
Project Manager
Environmental Restoration Project



Jorg Jansen, LANL
Program Manager
Environmental Restoration Project

Annex K. Ground Water and Vadose Zone Monitoring

Ground water and/or vadose zone monitoring may be required at SWMUs that are remediated if a contaminant plume still exists. If a SWMU or multiple SWMUs have contributed to a vadose zone or ground water contamination problem, appropriate monitoring devices will be installed to monitor the contaminant plume. This will be done in an efficient and integrated fashion when more than one SWMU is involved. Monitoring requirements may be proposed by the laboratories, and will be determined by the Administrative Authority on a site-specific basis. The monitoring plan should be based on the nature, extent and concentration (to risk-based cleanup levels) of contaminants in the vadose zone and ground water; and available data from the site-wide ground water studies at both laboratories. The laboratories will generally take the following approach in proposing monitoring for specific sites.

<u>Location of Contaminants</u>	<u>Monitoring Proposed In General</u>
Surface contamination but no known contaminants in vadose zone.	Shallow vadose zone monitoring.
Contamination in vadose zone only.	Vadose zone monitoring in intervals adjacent to and below depth of contamination (may potentially include ground water).
Vadose zone contamination to ground water.	Ground water monitoring.

Unless the hydrogeology of the site is fairly predictable, all investigation wells, some of which may become monitoring wells, will be proposed to be installed in a phased, step-wise manner. When monitoring is required, vadose zone monitoring may be preferred on a site-specific basis because it will provide more timely detection of releases. Additionally, a ground water monitor well installation will take advantage of knowledge to be gained from site-wide ground water studies at both laboratories. These studies will also be approached in an integrated, continuous, and phased manner to yield the appropriate level of understanding with the most efficient use of resources.

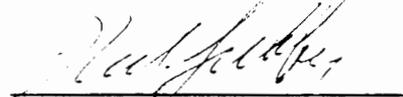
Notwithstanding requirements for RCRA regulated units, the monitoring plan will be proposed by the Laboratory on a site by site basis, and may include the following concepts:

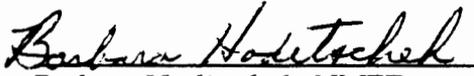
1. Relevant monitoring parameters will be required to be analyzed. Toxicity, concentration and mobility of hazardous constituents are factors that will be considered in the selection of monitoring parameters.
2. Background values for monitoring parameters will be determined by sampling outside the zone of influence of the unit.
3. Monitoring will initially be performed on a quarterly, semi-annual, or annual basis. Long term monitoring will be negotiated on a site-specific basis.
4. Ground water background values will be updated on a three year moving average, based on the variability of naturally occurring background over time.

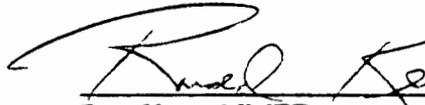
Signature Page

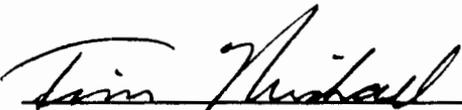
Annex K. Ground Water and Vadose Zone Monitoring


Benito J. Garcia, NMED
Chief, Hazardous and Radioactive
Materials Bureau

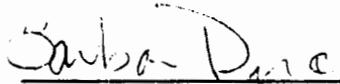

Neil S. Weber, NMED-AIP
Chief, DOE Oversight Bureau

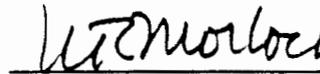

Barbara Hoditschek, NMED
Manager, RCRA Permit Program

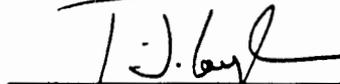

Ron Kern, NMED
Manager, RCRA Technical
Compliance Program

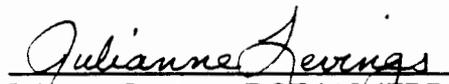
FOR 
John W. Parker, NMED-AIP
Program Manager
Oversight Technical Support

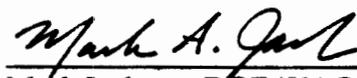

David Neleigh, EPA
Chief, New Mexico and Federal DOE
Facilities Section

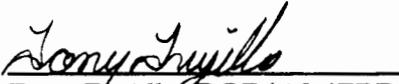

Barbara Driscoll, EPA
RCRA Facility Manager


Nancy Morlock, EPA
RCRA Facility Manager


Ted Taylor, DOE/LAAO
ER Program Manager


Julianne Levings, DOE/AL/ERD
ER Team Leader


Mark Jackson, DOE/KAO
ER Team Leader


Tony Trujillo, DOE/AL/ERD
SNL Program Engineer


Deborah Griswold, DOE/AL/ERD
LANL Program Engineer


Warren Cox, SNL
Project Manager
Environmental Restoration Project


Jorg Jansen, LANL
Program Manager
Environmental Restoration Project

Annex L. Permit Modifications (HSWA Module)

This Annex refers to items dealing with the HSWA module of the Laboratory's Part B permit, specifically ER activities. This Annex does not deal with RCRA permit modifications due to non ER-related Laboratory operations. The Administrative Authority will make permit modification determinations based on 40 CFR 270.42. Timely permit modifications are essential to the orderly implementation of the ER program. These modifications are needed for such activities as those listed in Table L-1.

For reference, Figure L-1 is a flowchart of the permit modification process. The DOE/Laboratories will generate a schedule and scope of ER program Class 3 Permit Modification requests (with review priorities) by July 1st for the following fiscal year. To the extent possible, the Laboratories will minimize the number of Class 3 Permit Modifications initiated each year by combining similar items into a single permit modification request, e.g., several NFA proposals. A maximum of four Class 3 Permit Modifications from each Laboratory each year is the goal. This information will be given to the Administrative Authority in order to provide them the opportunity to plan their permit-related workload. The schedule and scope will be reviewed on a quarterly basis by the DOE/Laboratories and the Administrative Authority, in order to identify and solve any problems with implementation.

To facilitate and expedite the entire permit modification process, the following approach will be used:

1. There must be early consultation with the Administrative Authority before a formal request for a permit modification is submitted. This will allow the Administrative Authority to review the proposed modification, resolve any major issues prior to initiation of the modification process, and allow the Administrative Authority to make an informal class determination.
2. DOE/Laboratories may obtain public input earlier in the process than required. This will allow the DOE/Laboratories to effectively address public concerns in the actual modification request.
3. The required public meeting conducted day 15 through 45 will clearly describe the permit modification request and it will also summarize any response to prior comments from the Administrative Authority and the public. The Administrative Authority may participate in the public meeting. As appropriate, the meeting will include the proposed cleanup levels and how the attainment of those cleanup levels will be verified; the levels

of any residual contamination and the associated risks. The meeting should actively solicit public comment on these issues. This will allow for a prompt response from the Laboratory after the Administrative Authority has completed their review. The Class 3 modification process will allow a site to be removed from the permit without any additional public notice.

4. As a further aid to implementation, the Administrative Authority may provide any significant comments on submitted permit modifications during the review process.

One or both Laboratories may decide to develop facility-specific cleanup standards as referenced in Annex F. Approval of the standards would be requested as a Class 2 modification of the Part B permit subject to final class determination by the Administrative Authority. In cases where a SWMU is cleaned to these standards, and the cleanup report is approved by the Administrative Authority, the SWMU will be requested to be removed from the permit as an NFA, i.e., Class 3 Permit Modification.

Deed restrictions, deed notices, and/or internal Laboratory procedures will be utilized to control future land use for sites which are not cleaned to residential standards. Non-DOE owned land would be deed noticed to provide information to its owner or any subsequent owner about its appropriate use. Such documentation will be provided with the permit modification request.

Table L-1
Common Permit Modifications

	<u>Class</u>
Changes in Corrective Action Schedule (Ref A.5.a) ²	1 ¹
Addition of SWMUs	1
Approval of a CAMU (Ref. N.1) ²	3
Approval of a TU or Time Extension for TU (Ref. N.2) ²	2
Deletion of a SWMU	3
Approval of Remedy Selection	3

Notes

1. Refers to class 1-1 Permit Modification.
2. Refers to Appendix I to 270.42.

Annex L. Permit Modifications

Benito J. Garcia, NMED
Chief, Hazardous and Radioactive
Materials Bureau

Neil S. Weber, NMED-AIP
Chief, DOE Oversight Bureau

Barbara Hoditschek, NMED
Manager, RCRA Permit Program

Ron Kern, NMED
Manager, RCRA Technical
Compliance Program

John W. Parker, NMED-AIP
Program Manager
Oversight Technical Support

David Neleigh, EPA
Chief, New Mexico and Federal DOE
Facilities Section

Barbara Driscoll, EPA
RCRA Facility Manager

Nancy Morlock, EPA
RCRA Facility Manager

Ted Taylor, DOE/LAAO
ER Program Manager

Julianne Levings, DOE/AL/ERD
ER Team Leader

Mark Jackson, DOE/KAO
ER Team Leader

Tony Trujillo, DOE/AL/ERD
SNL Program Engineer

Deborah Griswold, DOE/AL/ERD
LANL Program Engineer

Warren Cox, SNL
Project Manager
Environmental Restoration Project

Jorg Jansen, LANL
Program Manager
Environmental Restoration Project

Annex M. Public Involvement

The ER program corrective action public involvement program is a partnership among the public, the Administrative Authority and the DOE/Laboratory performing the corrective action. Together they formulate and implement programs that are responsive to the participation needs of the public. The level of public involvement in the decision-making process will depend on the public interest in or importance of the action to be taken. If there are any regulatorily mandated requirements, changes to this Annex will be made as appropriate.

The public involvement activities are governed primarily by the community relations plan required by each Laboratory's Part B permit, along with other informational activities which the Laboratories deem appropriate. These activities are conducted by the Laboratory, with the exception of public hearings, which are the responsibility of the Administrative Authority. Activities include:

- 1) Public meetings and hearings as required for permit modifications. These meetings will focus on stating information clearly, receiving feedback, and providing a precise explanation of the permit modification.
- 2) Public briefings will be held on a quarterly or as needed basis to update regulators, advocacy groups, media, and citizens on ER activities at the Laboratories.
- 3) Tours of sites may be done periodically. The objective will be to describe ER activities, answer questions, and show progress in remediation.
- 4) Occasional public or community organization meetings may be organized to seek input on specific, important issues affecting the ER program, for example, future land use plans.
- 5) Citizen Advisory Boards will be utilized to seek input on critical ER issues.

The ER program will utilize a number of tools to help accomplish the objectives of public involvement. These include:

- 1) Updating Public Involvement Plans as necessary.
- 2) Maintaining an updated facility mailing list.
- 3) Publishing required public notices in a timely manner.
- 4) Providing easy-to-read information sheets for public briefings, meetings, and hearings. These information sheets should be written in clear, non-technical language.
- 5) Maintaining and updating the public information repositories for LANL and SNL/NM. LANL's repositories are located at the LANL Community Reading Room, Mesa Public Library in Los Alamos, the Santa Fe Public Library, the Española Public Library, and the San Ildefonso Pueblo Governor's Office. SNL/NM's repository is located at the Technical Vocational Institute Library in Albuquerque.

The entire program described in this Annex will help to ensure that the public is kept properly informed of ER program activities and, when desired, participate in the ER program decision making process.

Benito J. Garcia, NMED
Chief, Hazardous and Radioactive
Materials Bureau

Neil S. Weber, NMED-AIP
Chief, DOE Oversight Bureau

Barbara Hoditschek, NMED
Manager, RCRA Permit Program

Ron Kern, NMED
Manager, RCRA Technical
Compliance Program

John W. Parker, NMED-AIP
Program Manager
Oversight Technical Support

David Neleigh, EPA
Chief, New Mexico and Federal DOE
Facilities Section

Barbara Driscoll, EPA
RCRA Facility Manager

Nancy Morlock, EPA
RCRA Facility Manager

Ted Taylor, DOE/LAAO
ER Program Manager

Julianne Levings, DOE/AL/ERD
ER Team Leader

Mark Jackson, DOE/KAO
ER Team Leader

Tony Trujillo, DOE/AL/ERD
SNL Program Engineer

Deborah Griswold, DOE/AL/ERD
LANL Program Engineer

Warren Cox, SNL
Project Manager
Environmental Restoration Project

Jorg Jansen, LANL
Program Manager
Environmental Restoration Project

Annex N. Deliverable Submittal and Approval

The submittal and approval of plans, reports, proposals, and requests, collectively known as deliverables, is critical to the progress of the Environmental Restoration (ER) program. Therefore, deliverables should be complete and concise and follow a logical format. Deliverables will address plans for compliance with all applicable federal, state, and local requirements. In order to standardize the formats of these documents, annotated outlines for common deliverables are attached to this Annex.

RFI Report
EC/VCM Plan
Corrective Measures Study
Corrective Measures Implementation Plan
Corrective Measures Implementation Report
No Further Action Report

Responses to Notices of Deficiency should be submitted to the Administrative Authority both in paper and in electronic form. The DOE/Laboratory and the Administrative Authority are committed to the timely submittal and review of deliverables. Verbal or informal communication between the DOE/Laboratory may be used to help guide the preparation and content of deliverables and may contribute to their timely review. Deliverables will be evaluated by the Administrative Authority based on regulation and guidance from the Resource Conservation and Recovery Act and the Hazardous and Solid Waste Amendments, and other applicable Federal and State regulations.

With the exception of routine reports, comments on regulatorily required deliverables will be transmitted in the form of a Notice of Deficiency (NOD). The NOD will require the DOE/Laboratory to respond within a prescribed time period. Informal meetings or communication during the response period may be used to help clarify issues addressed in the NOD. The response to the NOD should be submitted as either revised pages or as a supplement to the original deliverable. The Administrative Authority will review the NOD response in a timely manner. If the response is insufficient, the Administrative Authority will issue an additional NOD. The intent is for the Administrative Authority to issue one NOD and in no case more than two NODs for any deliverable.

RCRA Facility Investigation Report Annotated Outline

Note - The numbers in parenthesis indicate the approximate page budget (without figures and tables) for each section.

EXECUTIVE SUMMARY

Provide a brief description of the PRS(s) or PRS Aggregate(s) that is (are) being reported. Include:

- facility operation processes,
- facility location, and
- operational time frame

Briefly describe the sampling event(s), summarize the data analysis, and any significant concerns with the quality of the data.

Explain the objectives of the investigation being reported including phase of the Investigation (Phase I or II).

Summarize the results of the Investigation for each PRS(s) or PRS aggregate(s). Include table (see example below) that lists each PRS and the proposed action resulting from the investigation. This table is critical, even if there is only one PRS, because it provides the reviewer with a quick synopsis of the proposed action (NFA, VCA, EC, Phase II, or CMS).

PROPOSED ACTION

PRS	HSWA		NFA	Accelerated Cleanup		Further Investigation		Rationale
	YES	NO		VCA	EC	Phase II	CMS	
36-003(a)	X				X			Contaminants found in the septic tank require further action.
36-003(b)	X			X				Contaminants found in the septic tank require further action.
36-005	X					X		Area not sufficiently characterized.
C-36-003		X				X		Area not sufficiently characterized.

1.0 Introduction

This section should provide a brief overview of the report.

1.1 General Site History (0.5)

Discuss the operational history of the facility or technical area in which the PRS is located. Include the period of operation, types of facility processes and chemicals used at the site which contributed to the list of chemicals of potential concern (COPC). Take it from the RFI Work Plan.

1.2 RFI Overview (0.5)

Provide a brief description of the conceptual model and the objectives of the investigation. Reference the RFI Work Plan.

1.3 Field Activities (1)

Provide a brief description of field work and include start and finish dates of work, types of field surveys and screening used to support investigation, and types of sampling performed (e.g., surface sampling, trenching, etc.). Include a statement that SOPs were followed unless otherwise noted.

2.0 Environmental Setting

This section should repeat material in the RFI Work Plan, unless it is found to be different during the investigation.

2.1 Climate (0.5)

Refer to the RFI Work Plan when appropriate.

2.2 Geology (0.5)

2.2.1 Geologic Setting

Refer to the RFI Work Plan when appropriate.

2.2.2 Soils (0.5)

Refer to the RFI Work Plan when appropriate.

2.3 Hydrology (0.5)

Refer to the RFI Work Plan when appropriate.

2.4 Biological Surveys (0.5)

Refer to the RFI Work Plan when appropriate.

2.5 Cultural Resources (0.5)

Refer to the RFI Work Plan when appropriate..

3.0 Data Assessment and Analyses (2)

This section should describe the process of data assessment and analyses and include a discussion of the quantitative validation and QA/QC process. Discuss sample handling procedures, analytical methods, and data verification and validation procedures. Note any deviations from standard methods and procedures.

4.0 Results of Quality Assurance/Quality Control Activities (1-2)

Provide a summary of QA/QC results with an emphasis on potential problems associated with the usability of the data. Describe problems associated with surrogates, matrices, trip blanks, field replicates, field duplicates and holding times. These problems are summarized in the Data Quality Evaluation table in Section 7.2 which must be included in every report. Include only data that have potential problems. Under each of the following subsections, indicate whether or not the type of analysis was performed.

4.1 Inorganic Analysis (0.25 - 1)

Describe problem areas (if any) relative to all the data.

4.2 Organic Analysis (0.25 - 1)

Describe problem areas (if any) relative to all the data.

4.3 Radiochemistry Analysis (0.25 - 1)

Describe problem areas (if any) relative to all the data.

5.0 Specific Results, Conclusions and Recommendations

Include a section for each unit at the facility that this investigation covers.

5.1 Unit (0.5)

Briefly describe the site including buildings and structures, types of units, and types of contamination observed.

5.1.1 History (0.5)

Provide a brief history of the unit referencing the RFI Work Plan for detailed history. Include processes which might have created contamination and chemicals used at the site which contributed to COPCs. Provide any new information, archival data available after the RFI Work Plan was submitted

5.1.2 Physical Description (0.5)

Provide details of the geology, hydrology, soils, etc. that were not included in Section 2.

5.1.3 Previous Investigations (1)

Summarize results of previous investigations. If included in RFI Work Plan, reference Work Plan and give brief summary in this section. Include all data and/or information used from previous reports to support conclusions in this report.

5.1.4 Field Investigation (2)

Summarize objectives of the investigation. Describe field activities conducted including any problems in operation. Include field screening, instruments, frequency and range of levels detected by each instrument, results of screening (use table format), borehole sampling information, types of samples. Report any deviations from sampling plan and explanation for deviation. Include Table to summarize sampling.

5.1.5 Inorganic Contaminant Characterization (1-2)

Summarize the COPCs determined as a result of the screening. Include background values as well as SALs/ALs and detection limits. Include a map(s) depicting chemicals above background. Discuss metals and radiological constituents separately. If radiological results are not yet available, state that an addendum will be submitted at a later specified date. Include qualifiers in tables, don't leave blank cells.

5.1.6 Organic Constituents (1-2)

Summarize organic constituents in table format. Include background values as well as SALs/ ALs and detection limits. Include a map(s) if organic constituent(s) appears to be COPCs.

5.1.7 Human Health Assessment

5.1.7.1 Screening Assessment (1)

This section includes a comparison of COPCs to SALs/ ALs and background. Present three separate tables for noncarcinogens, chemical carcinogens, and radiological constituents.

5.1.7.2 Risk Assessment (1-1.5)

Present results of risk assessment based on projected land use, completed exposure pathways and actual results. Provide calculations in Section 7.3.

5.1.8 Ecological Assessment (1)

5.1.8.1 Ecotoxicological Screening

Present results of ecotoxicological screening.

5.1.8.2 Ecological Risk Assessment or Evaluation

Present result of ecological risk assessment or evaluation.

5.1.9 Extent of Contamination (2)

This section should analyze nature and extent of contamination. State if extent is not known or inappropriate for this site. Include cross section showing vertical definition and topographic map showing horizontal definition. Discuss necessity of further sampling if extent not defined. Provide pathway analysis or modeling when applicable.

5.1.10 Conclusions and Recommendations (1)

Include a refined list of COC, the extent of contamination, evaluation of the risk and proposed action for the site. If NFA is proposed action, reference and support NFA criteria. Based on the evidence outlined in this report, discuss the rationale for the NFA decision

using the criteria in Annex B (NFA Process and Criteria). Justify with evidence/data presented in this report. Address any gaps in sampling/survey data.

If further investigation is proposed, include sampling and analysis plan. If accelerated cleanup is proposed, state the reason and reference the appropriate plan to be submitted. If corrective measure study is proposed, state the reason and reference CMS plan to be submitted.

5.1.11 Sampling and Analysis Plan (2-3)

Should additional sampling, continued monitoring be necessary, include a brief discussion of the proposed sampling and analysis scheme.

6.0 References

Appendices

- A Analytical Data
- B Data Quality Evaluation Table
- C Risk Assessment Calculations

Expedited Cleanup/Voluntary Corrective Measures Plan Annotated Outline

Note - This plan is the final plan referenced to in Annex D. EC/VCM Process, Box 2 in Figure D-1. The numbers in parenthesis indicate the approximate page budget (without figures and tables) for each section.

1.0 Introduction (0.25)

Provide a brief overview of the EC/VCM plan including the objectives of the expedited cleanup.

1.1 Description of SWMU (0.5)

A physical description of the unit, including the industrial process which created the unit.

1.1.1 Operational History (0.5)

Discuss process operational history and identify contaminants of potential concern (COPCs). This subsection should be PRS-specific and not discuss the entire Technical Area. Refer to previous RFI Work Plans and/or Reports wherever possible.

1.1.2 Physical Setting (0.5)

Briefly discuss the physical setting with regard to climate, topography, geology, and hydrology.

1.2 Assumptions (0.5)

Simply list the 3 or 4 key assumptions on which the cleanup activity for this site is based. This could include such items as: the septic tank didn't leak, pipes have been plugged, etc.

2.0 Results of Quality Assurance/Quality Control Activities

2.1 Inorganic Analyses (0.25)

For sampling data assembled for this site, briefly summarize the results of field blanks, trip blanks, duplicates, etc. in narrative fashion only, i.e., field blanks were uncontaminated, duplicate analyses matched. Reference a previous report which documents this.

2.2 Organic Analyses

For sampling data assembled for this site, briefly summarize the results of field blanks, trip blanks, duplicates, etc. in narrative fashion only, i.e., field blanks were uncontaminated, duplicate analyses matched. Reference a previous report which documents this.

2.3 Radiochemistry Analyses

For sampling data assembled for this site, briefly summarize the results of field blanks, trip blanks, duplicates, etc. in narrative fashion only, i.e., field blanks were uncontaminated, duplicate analyses matched. Reference a previous report which documents this.

3.0 Results of Investigation(s)

3.1 Summary of Prior Investigations (0.25)

Briefly list historical field investigations and archival information obtained for this site. Include all relevant information, including field screening results.

3.2 Field Investigation (0.3)

Describe the scope of prior field investigations.

3.3 Summary and Evaluation of Results (0.5)

Summarize investigation and RFI sampling results, including field screening data. The RFI analytical results should be provided in table form, with comparisons to SALs/ALs and sample location IDs that correspond to an attached site map.

3.3.1 Background Comparison (0.3)

Name the COPCs which exceed accepted background values for the site.

3.3.2 Evaluation of Organic Constituents (0.3)

Name the organic constituents which were detected at the site, but are naturally occurring.

3.3.3 Human Health Assessment (0.5)

Simply identify the COPCs which have completed exposure pathways to humans for the site.

3.3.3.1 Screening Assessment (0.3)

This subsection should outline all potential migration pathways and include possible receptors. Reference other reports, studies, etc. wherever possible.

3.3.3.2 Risk Assessment (0.25)

Briefly describe anticipated future land use information. Risk information should be discussed and any detailed risk assessments provided in an Annex or as a reference. This should include human health and eco-risk concerns and assumptions leading to proposed cleanup levels. If a risk calculation was not performed, an explanation should be given as to why one was not necessary for the site (e.g., promulgated cleanup levels, etc.)

3.3.4 Preliminary Ecological Assessment (0.5)

Define any COPCs which have clearly definable completed exposure pathways to living organisms.

3.4 Conclusions and Recommendations (0.3)

State clearly whether or not enough data exist to determine the extent of contamination at the site. If not, add Section 3.5 below.

3.5 Sampling and Analysis Plan (1.0)

If needed, do this section. Clearly show in tables and figures the following: sample locations (and depths, if applicable), specific analysis methods, QA/QC requirements, sample methods and total number of analyses by type and media sampled.

4.0 Expedited Cleanup

4.1 Overview and Rationale (0.25)

Describe briefly the proposed remedial action and the rationale for selecting this action.

4.2 Permitting, Approval, and Notification Requirements (0.25)

Include a description of all permitting, approval, and notification requirements.

4.3 Cleanup Activities (1-2)

Describe activities required to implement the EC/VCM, including depth of excavations, removal methods, stabilization of debris, etc. Indicate what SPCC plans, stormwater plans, air pollution control procedures, etc. will be followed and note that plans can be provided upon request. Provide the basis for cleanup levels.

4.4 Waste Management Issues (0.25)

Describe the planned method and location of disposal. Confirm that TSD capacity is adequate for waste generated. Where applicable, include how the waste will be managed prior to disposal. Reference the Laboratory's Waste Analysis Plan, and identify any off-site TSD facilities that will be used.

4.5 Verification Plan (1)

Describe in detail the confirmation/verification sampling scheme that will be used. Describe the analytical methodology and include quantity of lab samples.

4.6 Site Restoration Plan (0.5)

Briefly describe how the site will be reasonably restored following completion of the EC/VCM (e.g., backfilling, regrading, reseeding, fence replacement, etc.). Follow up inspection(s) will be described to ensure completion of the restoration.

4.7 Final Inspection (0.3)

Describe the final inspection of the completed cleanup by defining: attendees, documentation, scope, and timing relative to completion.

4.8 Final Report (0.5)

Describe a brief a EC/VCM report to be written upon completion of the EC/VCM. The report should simply include the following: 1) Exceptions (if any) to EC/VCM plan as written 2) reason for exceptions 3) Verification/confirmation data 4) justification for EC/VCM being complete. The report itself should generally not exceed five pages including tables. This report will not constitute a permit modification.

5.0 Project Management

5.1 Cost (1)

Include the cost of completing the activities in Section 4.

5.2 Schedule (1)

Include the time frame anticipated to complete the activities described in Section 3. Use a bar chart format. The text will clearly state when the report will be issued and it will be tied to a specific event such as the final receipt of data. Describe any uncertainties in this estimate, especially the lack of adequate data on nature and extent and any other possible situations that could arise to delay completion of the EC/VCM (e.g., regulatory agencies, additional waste characterization requirements, lack of adequate waste TSD capacity, etc.).

5.3 Stakeholder Notifications (0.3)

Include dates and requirements for any stakeholder notifications including owners, government agencies, public meetings/notices, etc. prior to implementation of the EC/VCM.

6.0 References

7.0 Annexes (as needed--use existing available plans)

8.0 Implementation Plans

8.1 Quality Assurance Plan

8.2 Health and Safety Plan

8.3 Waste Management Plan

No Further Action Proposal Annotated Outline

Note - The numbers in parenthesis indicate the approximate page budget (without figures and tables) for each section.

Note - If this NFA is done for an EC/VCM, it is not a request for a permit modification.

This report is to be used when no other format (such as an RFI report) has been used for recommending no further action.

1.0 Introduction

1.1 Description of PRS (0.5)

Provide a brief physical description of the unit, including identifying the industrial process which created the unit. Describe the local setting with regard to geographical location, topography, etc.

1.2 No Further Action Basis (1)

This section should provide a brief overview of the objectives of the NFA determination. Summarize the basis for the NFA determination (e.g., no release has occurred, contaminant levels are insignificant as compared to background levels, etc.). Reference the RFI report.

2.0 History of the PRS

2.1 Historical Operations (0.5)

Discuss process operational history which resulted in the PRS. Include the period of operation, types of historical processes and chemicals used which contributed to the COPCs (if any).

2.2 Previous Audits, Inspections, and Findings (1)

Summarize historical field investigations, previous audits, inspections, and archival information. Discuss findings from these investigations. Include statements of positive findings (e.g., no evidence of release, etc.).

3.0 Evaluation of Relevant Evidence

3.1 Unit Characteristics and Operating Practices (0.5)

Provide a description of the physical characteristics of this unit, assuming the unit is actually found to exist. This description includes size, capacity, etc. and current operating practices.

3.2 Results of Sampling/Surveys (if any)

3.2.1 Summary of Prior Investigations (1-1.5)

Summarize the results of any surveys conducted which support the NFA determination (e.g., RFI, risk assessment, biological surveys, etc.). Include a table of analytical results and a map depicting sample locations which correspond to summary table of results.

3.3 Gaps in Information (1-2)

Discuss any gaps in sample results, survey data, etc. Briefly summarize any problems in data quality outlined in previous investigations. Discuss the usability of data and reference any relevant past reports. Provide an analysis and assessment of data gaps with regard to the effect on the NFA decision.

3.4 Risk Evaluation (1)

If hazardous waste or hazardous constituents were determined to be released provide justification for the decision that concentrations pose no threat to human health or environment. For example, if concentrations are below background levels provide explanation and reference any prior investigations and/or reports.

4.0 Rationale for No Further Action Decision (1)

Based on the evidence outlined in Section 3, discuss the rationale for the NFA decision. using the criteria in Annex B (No Further Action Process and Criteria). Justify with evidence/data presented in this report. Address any gaps in sampling/survey data. (also include in section 5.1.10 of RFI Report)

5.0 References

6.0 Annexes

- 6.1 RFI Analytical Results
- 6.2 Site Map
- 6.3 Other Survey/Investigation Data

Signature Page

Annex N. Deliverable Submittal and Approval

Benito J. Garcia, NMED
Chief, Hazardous and Radioactive
Materials Bureau

Neil S. Weber, NMED-AIP
Chief, DOE Oversight Bureau

Barbara Hoditschek, NMED
Manager, RCRA Permit Program

Ron Kern, NMED
Manager, RCRA Technical
Compliance Program

John W. Parker, NMED-AIP
Program Manager
Oversight Technical Support

David Neleigh, EPA
Chief, New Mexico and Federal DOE
Facilities Section

Barbara Driscoll, EPA
RCRA Facility Manager

Nancy Morlock, EPA
RCRA Facility Manager

Ted Taylor, DOE/LAAO
ER Program Manager

Julianne Levings, DOE/AL/ERD
ER Team Leader

Mark Jackson, DOE/KAO
ER Team Leader

Tony Trujillo, DOE/AL/ERD
SNL Program Engineer

Deborah Griswold, DOE/AL/ERD
LANL Program Engineer

Warren Cox, SNL
Project Manager
Environmental Restoration Project

Jorg Jansen, LANL
Program Manager
Environmental Restoration Project

Annex O. Budget

The purpose of this annex is to define a process for inter-agency involvement in DOE's budget and prioritization activities for the ER programs at SNL and LANL. This process will include prioritizing activities and requesting funding for the laboratories' programs.

Baseline and budget plans must be understood by all parties to this agreement to be used to: 1) implement ER work at the laboratories, and 2) provide a baseline of information so DOE and the Administrative Authority can schedule resources. This process will help ensure that the level of effort of each party is consistent with the activities of all parties. This process will also define schedules and priorities, so all parties can properly plan activities and coordinate with each other, as appropriate. In sum, this process will join all parties into an integrated project team to expedite implementation of the ER programs at the laboratories.

Prioritization of Activities

Each of the DOE laboratories has developed a prioritized list of ER activities, which have been ranked based on risk to human health and the environment followed by other relevant criteria (e.g., technology availability, internal DOE strategies, etc.). The laboratories and DOE will present the prioritized lists for comment to the NMED and EPA each year in the July to August timeframe. The prioritized lists will be agreed upon between DOE/laboratories and NMED and EPA followed by presentation to the public for comment. The final prioritized lists will be used to allocate available funding for the next fiscal year and to plan funding for subsequent fiscal years. This information will be incorporated into the Activity Data Sheet (ADS) process.

Program Baseline

Annually, each of the DOE laboratories revises the baseline of work to be performed for the fiscal year based on site prioritization and available funding. The baseline will identify permit deliverables to be completed for the current fiscal year, as well as other priority work. The baseline will include delivery dates to the Administrative Authority and review schedules for VCAs, ECs, VCMs, NFAs, RFIs, etc. Generally, technical scope and schedule review will occur during the annual baseline revision process and incorporate changing priorities and available funding. However, the review could be delayed until enactment of the Appropriations Bill.

On at least a quarterly basis, the laboratories and DOE will provide a schedule status update of all deliverables to the NMED and EPA.

DOE's Annual Budget Request

The ADSs serve as the official document for requesting budget and are rolled up into the EM budget submittal to Congress. During the December to April timeframe, the laboratories and DOE prepare the ADSs for the planning year (current fiscal year plus 2) and for the subsequent four years. The laboratories and DOE will develop the ADSs and review them with NMED and EPA prior to submittal to DOE Headquarters to ensure the priorities are consistent with permit requirements, the agreed-to priority lists, and the Administrative Authority's expectations. The laboratories and DOE will provide a written response to any unresolved comments made by NMED and EPA prior to submittal of ADSs to DOE Headquarters. Any comments provided by NMED or EPA on the ADSs will be forwarded to DOE Headquarters separate from the ADS submittal.

Variations in Funding

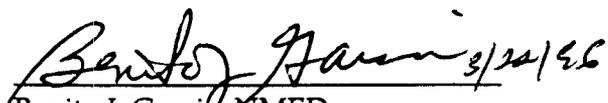
Funding limits for individual laboratories are determined in the overall EM budget for the entire DOE complex. Budget for the current fiscal year may vary as a result of changing focus and priorities at the DOE Headquarters and/or Congressional level. These changes may result in one or more recisions during the fiscal year. The magnitude and effect of recisions on planned work will be discussed and reviewed with EPA and NMED to jointly reprioritize work to be completed for the year.

Schedule

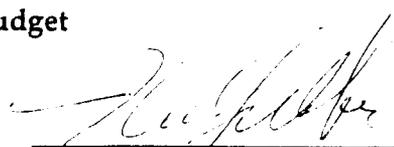
The laboratories and DOE will meet with NMED and EPA in November to agree on a review schedule for regulator involvement in the ADS preparation process, including reprioritization of activities.

Administrative Authority

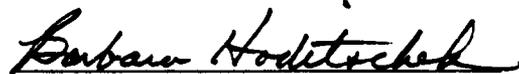
The Administrative Authority is committed to providing adequate resources for review and approval of DOE/Laboratory deliverables in a timely manner. If this commitment cannot be sustained reasonably, the Administrative Authority will notify the parties to this agreement of potential delays in the review/approval process and discuss timeframes for completion of the process.



Benito J. Garcia, NMED
Chief, Hazardous and Radioactive
Materials Bureau



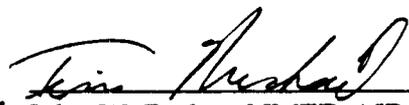
Neil S. Weber, NMED-AIP
Chief, DOE Oversight Bureau



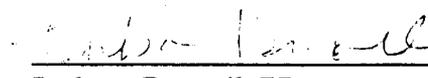
Barbara Hoditschek, NMED
Manager, RCRA Permit Program



Ron Kern, NMED
Manager, RCRA Technical
Compliance Program

For 

John W. Parker, NMED-AIP
Program Manager
DOE Oversight Technical Support



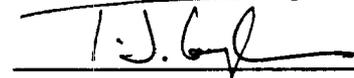
Barbara Driscoll, EPA
RCRA Facility Manager



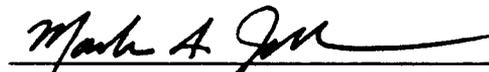
Nancy Morlock, EPA
RCRA Facility Manager



Julianne Levings, DOE/AL/ERD
ER Team Leader



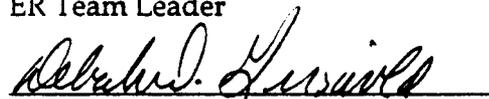
Ted Taylor, DOE/LAAO
ER Program Manager



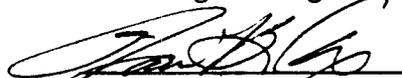
Mark Jackson, DOE/KAO
ER Team Leader



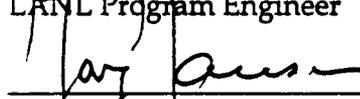
Tony Trujillo, DOE/AL/ERD
SNL Program Engineer



Deborah Griswold, DOE/AL/ERD
LANL Program Engineer



Warren Cox, SNL
Project Manager
Environmental Restoration Project



Jorg Jansen, LANL
Program Manager
Environmental Restoration Project



David Neleigh, EPA
Chief, New Mexico and Federal
Facilities Section